



Agenda

1. Call to Order
2. Pledge of Allegiance
3. Invocation
4. Adjustment and approval of March 1, 2022 meeting agenda

PUBLIC COMMENT PERIOD

Notes on the 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.

RECOGNITIONS

5. Traumatic Brain Injury Awareness Proclamation
6. Developmental Disabilities Awareness Proclamation

REQUESTS AND COMMUNICATIONS

7. Holly Springs Chamber of Commerce Update
8. Secondary and Cumulative Impacts Master Mitigation Plan (SCIMMP) Update

CONSENT AGENDA

9. Approve the minutes of the February 8, 2022 workshop meeting and the February 10th - 12th Mayor and Council Retreat.
10. Development Procedures Manual 2022 UDO Consolidation Amendments 22-DPM-01
11. Authorize the Town Manager to allocate \$299,730 per Memorandum of Understanding for the Joint Water Treatment Conveyance System from Sanford
12. 2022 Pavement Condition Survey and Lifecycle Modeling - Contract

PUBLIC HEARINGS

13. Zoning Reassignment and Zone Map Adoption 22-REZ-01 - Legislative Public Hearing
14. UDO Text Amendment 22-UDO-01 Planning Board and Board of Adjustment

NEW BUSINESS

15. Land Use Advisory Committee Town Code Amendment
16. Cass Holt Road Park - Master Plan Approval
17. Bid award for Twelve Oaks Pump Station Expansion & Modifications Project (TP 18-005, Task 2)

UNFINISHED BUSINESS

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: Traumatic Brain Injury Awareness Proclamation

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

Staff Resource: Mayor Mayefskie

Action(s):

Proclaim March Traumatic Brain Injury Awareness Month

Explanation:

- Brain Injury Awareness Month, recognized each March, provides an important opportunity to bring attention to the prevention of traumatic brain injury (TBI) and to promote strategies to improve the quality of life for persons living with TBI and their families.
- More than 80,000 North Carolinians sustain TBI each year.
- Athletes in contact sports, active duty and reserve service members and older adults are at increased risk of sustaining TBI.

Background:

- Traumatic brain injuries are caused by an impact or force to the head or body or a penetrating injury to the head.
- Brain injury is a leading cause of death and disability in the United States.

Funding Source(s):

N/A

Attachment(s):

1. Traumatic Brain Injury Month.pub (Read-Only)

Town of Holly Springs



A Proclamation By The Mayor

Traumatic Brain Injury Awareness Month

WHEREAS, traumatic brain injury (TBI) is a form of acquired brain injury caused by external force such as a significant blow, jolt, or penetrating injury to the brain that can lead to a lifetime of physical, emotional, cognitive, and/or behavioral challenges, long-term disability, or death; and

WHEREAS, an estimated more than 2.8 billion Americans sustain TBI every year and approximately 5.3 million Americans live with a TBI-related disability, and the leading causes of TBI are falls, motor vehicle accidents, and assaults; and

WHEREAS, some reports estimate that more than 10 percent of all contact-sports athletes sustain a concussion each year and that as many as 50 percent of all concussions go unreported due in part to a lack of understanding of the signs and dangers of brain injury; and

WHEREAS, active duty and reserve service members are at increased risk for sustaining TBI and between 11 and 23 percent of American soldiers who served in Iraq or Afghanistan suffered TBI, and treatment is often complicated by higher rates of post-traumatic stress injury, depression, anxiety, chronic pain, and suicidal ideation; and

WHEREAS, more than 80,000 North Carolinians will sustain a TBI this year, some percentage of whom live within the boundaries of Holly Springs, and many survivors will be left with a permanent disability; public awareness and understanding of the dangers, prevention, and treatment of these injuries and effects on the family are critical to help protect the people of Holly Springs; and

WHEREAS, the North Carolina Department of Health and Human Services, the North Carolina Brain Injury Advisory Council, the Brain Injury Association of North Carolina and other stakeholders provide awareness, education, prevention, training, and services to North Carolinians living with TBI and their families, health care professional, and others; and,

WHEREAS, the Town of Holly Springs encourages people to support and advocate for those affected by TBI in our communities;

NOW THEREFORE, I, Sean Mayefskie, Mayor of the Town of Holly Springs, North Carolina, do hereby proclaim March, 2022 as

Traumatic Brain Injury Awareness Month

in the Town of Holly Springs and call upon the people of Holly Springs to educate themselves on prevention and treatment of Brain Injuries.

Proclaimed this, the 1st day of March, 2022.

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 1st day of March, 2022.

Sean Mayefskie, Mayor



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 6.

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 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.
- 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, 2022 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 1st day of March, 2022.

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 1st day of March, 2022.

Sean Mayefskie, Mayor



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 7.

Requests & Communications

Title: Holly Springs Chamber of Commerce Update

Strategic Priority Area: Economic Prosperity & Diversity
Organizational Excellence

Staff Resource: Randy Harrington, Town Manager, Daniel Weeks, Asst. Town Manager, Irena Krstanovic, Director, Economic Development, Anna Murphy, Economic Development

Action(s):

Guidance to Town Manager on execution of FY2021-22 Holly Springs Chamber of Commerce and Town of Holly Springs contract for Governmental Support programs.

Explanation:

- Debra Kuffner, Executive Director of the Holly Springs Chamber of Commerce (Chamber), will share an update on the strategic direction of the Chamber. Ms. Kuffner, along with Town staff, will also share a contract framework between the Chamber and the Town outlining key partnership roles, responsibilities, and potential future opportunities.

Background:

- At the May 25, 2021 Council Budget Workshop, Council directed the Town Manager to hold disbursement of \$20,000 in FY 2021-22 "Governmental Support" funding to the Holly Springs Chamber of Commerce pending additional strategic information requests of the Chamber and the creation of a contract for the Town's funding contribution.
- During this period of information gathering and discussion, the Chamber agreed to continue with planned Governmental Support program events in good faith in the anticipation of Town payments at a future time in FY2021-22.
- If the shared information and contract framework are satisfactory to the Council, the Town Manager and Town Attorney will finalize and execute the contract with the Chamber. The contract will retroactively cover the time period from July 1, 2021 - June 30, 2022.
- A RACI matrix outlining functional roles for the Chamber and Town is also included in the agenda packet. The matrix is envisioned by Chamber representatives and Town staff to serve as an administrative functional role guidance tool, and is not proposed to be included as an addendum to the contract.

Funding Source(s):

N/A (under \$50,000)

Attachment(s):

1. Chamber-Town Partnership Framework 3-1-22

Town Council Business Meeting
March 1, 2022

2. Chamber and Town RACI Model_FINAL 3.1.22
3. Chamber Strategic Plan 2022

**Proposed Partnership / Contract Framework between the
Town of Holly Springs and the Holly Springs Chamber of Commerce**

Purpose: The Town and Chamber mutually agree to a partnership to advance “Governmental Support Programs” that advance and connect Town and Chamber interests to all residents and the local business community.

Key Partnership Components:

- \$20,000 paid by the Town to the Chamber in the Town’s Fiscal Year 2022-21 (this agreement is separate from any “membership” dues and associated benefits provided by the Chamber to the Town as a member of the Chamber)
- Chamber will invoice the Town for event payment upon the successful delivery and completion of the specified governmental support program

Governmental Support Partnership Programs:

Event	Date	Town Payment	Chamber Responsibilities	Town Responsibilities
State of Town / Climate for Success Forum	Late Summer / Early Fall	\$5,000 (no charge to attendees)	• Advertise (development and distribution) • Coordinate with event location • Host (e.g. facilitation; food/beverage) • Coordinate with speaker(s)	• Forward distribution of Chamber advertising on Town channels • Develop presentation content • Identify speaker(s) with Chamber
Municipal Candidate Forum	Fall (<u>odd</u> calendar years)	\$5,000	• Advertise (development and distribution) • Coordination with event location • Host (e.g. facilitation; food/beverage) • Coordination with candidates • Free to attendees	• Free use of Cultural Center Theater • Record event
Workforce Development	Fall (<u>even</u> calendar years)	\$5,000 (assumes no charge to participating businesses; TBD)	• Advertise (development and distribution) • Coordination with event location • Hosting • Coordination with participants	• Support and coordination with other local and state Workforce partners for event • Forward distribution of Chamber advertising on Town channels

			• Free to attendees	• Free use of Cultural Center Theater, if an appropriate space
Holiday Tree Trail (Potential for following Town fiscal year; actual partnership design TBD)	Early December	\$2,500 (Chamber also retains tree sales, which can include in-town and out-of-town rates; free to general public to visit)	• Advertise (development and distribution) • Coordination with event location • Welcome staffing at entrances • Coordination with participants • Tree purchase and selling of trees • Purchase/rental of tree stands • Coordination of entertainment	• Coordination with Chamber on event date in light of other Town holiday events • Use of Ting Stadium free of charge; porter services; stadium cleaning • Forward distribution of Chamber advertising on Town channels
Tri-Town Economic Development Forum/Forecast	January	\$5,000	• Advertising • Coordination with event location • Host (e.g. facilitation; food/beverage) • Coordination with participants • Free to attendees	• Forward distribution of Chamber advertising on Town channels • Free use of Cultural Center Theater • Develop Town presentation content • Provide Town speaker
Holly Springs Partners' Breakfast	Feb-May (depending on long or short legislative session)	\$5,000 (assumes in person event with breakfast)	• Advertising / Invitations • Coordination with event location • Host (e.g. facilitation; food/beverage) • Coordination with participants • Free to invitees	• Support / feedback with identifying invitee list and potential event agenda • Free use of Town facility, if space can accommodate group

Other Non-Direct Funding Partnerships:

Event	Timeframe for Event	Town Payment	Chamber Responsibilities	Town Responsibilities
HollyFest Business Expo	Late October	N/A (Chamber retains booth fees, which can include in-town and out-of-town rates)	• Advertising of Business Expo • Coordination with Town event organizers • Coordination with booth purchasers • Managing Expo area on day of HollyFest	• Community advertising of HollyFest event • Provide space at HollyFest
Downtown Block Party / International Food Festival	Spring	N/A	• TBD; potential for additional partners	• TBD

Draft RACI Matrix - Town of Holly Springs & Holly Springs Chamber of Commerce

Responsible: Completes the work | Accountable: Ultimate approval authority |

Consulted: Provides input | Informed: Updated, but not tasked to provide input or work

For administrative functional role guidance purposes

ACTIVITY	STAKEHOLDERS				
	Chamber of Commerce	Economic Development	Town Manager's Office	Mayor & Town Council	Supporting Departments
Targeted Business Recruitment & Expansion	I	R	C	A/C	C (Multiple)
Chamber Business Member Expansion and Growth	R	C/I	I		
Business Resources:					
- Government Support		R/A	I	I	C (Dev Services)
- Member Support/Advocacy/Promotion	R				
Hotel Recruitment & Development Process		R	I	A/C	I (Dev Services)
Sports/Leisure Tourism Recruitment	R/I/C	I	I	I	R/I/C (Parks & Rec)
Destination Marketing	R (Private Entities)	I	C/I		R (Parks & Rec)
Formulation of Village District Business Consortium (<i>Temporary</i>)	C	R	C	C/I	
Community Events / Partnerships / Government Support Programs (per contract or agreement)					



Holly Springs Chamber of Commerce Strategic Plan 2022

MISSION & VISION & VALUES



VISION (who do we want to be)

We are indispensable to the business community.

MISSION (what do we care about)

We help Holly Springs businesses achieve success by providing visionary leadership, connection, education and access to information and resources.

PURPOSE (why are we in business)

We connect and promote prosperity within the local business community and greater region.

CORE VAUES (what we stand for)

We believe in transparency, fairness, equity & equality in all aspects of business. We act with high-ethics and high-integrity. We are passionate about serving our membership and advancing economic success in our community, and throughout the region.

CHAMBER LEADERSHIP COMMITTEES

AMBASSADORS

Chamber Ambassadors are a key connection to member businesses. Ambassadors take a leadership role keeping Chamber members engaged and informed through personal outreach, referrals, attending ribbon-cutting and serving as public relations liaisons at networking and membership events. Ambassadors are enthusiastic people who are energized by connecting with other people – and making sure everyone feels included and valued. Time Commitment: 2-4 hours per week.

GOVERNMENT RELATIONS

Members of the Government Relations committee are interested in learning how local, state and federal agencies interact; and how legislation / public policy impacts economic development and business opportunities. This committee plans guest speakers, discusses policy areas impacting the business community, connects with elected officials and plans special events related to voter education. Time Commitment: 2-4 hours per month.

EVENTS

The Events Committee plans, facilitates and promotes signature chamber-hosted events such as Casino Night, Grapes, Grains & Giving, Women’s Empowerment Luncheon, Chamber Challenge and our Business Awards Celebration! Members of this committee should enjoy interacting with people and be willing to assist with logistical tasks and creative solutions for our event gatherings. Time Commitment: 1-3 hours per week.

COMMUNICATIONS

The Communications Committee will share stories and success about the Chamber, our members and the community at-large. Members of this committee should be comfortable communicating on social media and be willing to assist with logistical tasks and creative outreach for Chamber programming. Time Commitment: 1-3 hours per week.

2022 PRIORITY AREAS

- **Internal Stability**
- **Membership Services**
- **Events + Communications**
- **Membership Growth**



NONPROFIT INFRASTRUCTURE

- **501c3 / 501c6**
- **Bylaws & Handbook**
- **Financial Policies**
- **BOD Onboarding**
- **Volunteer Structure**



COMMUNICATION CHANNELS



- **Website**
- **Social Media**
- **Out & About Videos**
- **Weekly Newsletter**
- **Word-of-Mouth**
- **Printed Publications**
- **Personal Emails**
- **Chamber Committees**
- **Board of Directors**
- **Partner Communications**



OBJECTIVE 1:

Connect the community via regular networking activities.

Action Item 1a:

Host regularly-scheduled Business After Hours networking events.

Action Item 1b:

Reach targeted business sectors by hosting topical and timely Breakfast Eye-Openers.

Action Item 1c:

Collaborate with Ambassadors to celebrate new member Ribbon Cuttings.



OBJECTIVE 2:

Bring awareness to businesses via marketing opportunities.

Action Item 2a:

Highlight members in weekly newsletter.

Action Item 2b:

Share member stories / successes via social media.

Action Item 2c:

Share member news in local publications.

Action Item 2d:

Produce membership director and buyer's guide.



OBJECTIVE 3:

Link government to local businesses via information, access and education.

Action Item 3a:

Continue our partnership with the Town to promote civic education, outreach and positive government relations.

Action Item 3b:

Include Town information in weekly newsletter, social media channels and other communication methods.

Action Item 3c:

Participate in discussions with downtown merchants to identify business needs and opportunities.

Action Item 3d:

Liaison with regional partners and stakeholders to promote workforce development and targeted skills-training.



OBJECTIVE 4:

Assist our members by providing professional development opportunities, DEIA information and business resources.

Action Item 4a:

Curate list of educational resources currently available for local business access. Identify gaps in business education and skills development needs.

Action Item 4b:

Solicit members on educational needs.

Action Item 4c:

Identify new educational opportunities.

Action Item 4d:

Collaborate with partners on DEIA outreach.



OBJECTIVE 5:

Remain financially stable via strong fiscal management, product diversification and membership growth.

Action Item 5a:

Update fiscal policies and procedures.

Action Item 5b:

Identify new revenue stream opportunities.

Action Item 5c:

Procure an annual/bi-annual audit to be shared with members for fiscal transparency.

Action Item 5d:

Collaborate with partner organizations to feed membership pipeline and fuel growth.



OBJECTIVE 6:

Serve as a civic leader and community strengthener by elevating issues important to community quality of life and economic sustainability.

Action Item 6a:

Poll membership on issues impacting their business growth.

Action Item 6b:

Convene members and stakeholders on topics of community importance.

Action Item 6c:

Participate in regional collaborations to enhance local economic impact.



*This is a working event calendar. Events are subject to change.



2022 EVENT CALENDAR

WINTER

JAN. 12 – Economic Forecast with FV/Apex

FEB. 22 – Business + Community Awards

MAR. TBD – Business Skills: Social Media Tips+Tricks. (Triangle Social Media)

MAR. 21 – Chamber Challenge Golf Tournament @ Bentwinds

SPRING

APR. 1 – Partnership Breakfast @ Devil's Ridge

APR TBD – Business Skills Training

APR. TBD– Breakfast Eye-Opener: TOPIC TBD

MAY 6 – Cultural / International Food Festival

MAY TBD – Business After Hours with Rotary

SUMMER

JUNE TBD – Women's Empowerment Luncheon

JULY TBD – State of the Community

JULY TBD – Breakfast Eye-Opener: TOPIC TBD

JULY 29 – Member Appreciation Night @ Ting Park

AUG. TBD – Business Skills Training

FALL

SEPT. 15 – Breakfast Eye-Opener: TOPIC TBD

SEPT. 23/24 – Casino Night @ 12 Oaks

SEPT. 29 – Business After Hours: Sponsored by Cary Estate Planning

OCT. 20 – Business After Hours: Sponsored by Coastal Credit Union

OCT. 29 – HollyFest Business Expo

NOV. 11 – Grapes Grains & Giving @ 12 Oaks



2022 CALENDAR

Blue X = BAH / Networking
Orange X = BEO / Education
Red X = Special Events

JANUARY							FEBRUARY							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
26	27	28	29	30	31	1	30	31	1	2	3	4	5	27	28	1	2	3	4	5
2	3	4	5	6	7	8	6	7	8	9	10	11	12	6	7	8	9	10	11	12
9	10	11	12	13	14	15	13	14	15	16	17	18	19	13	14	15	16	17	18	19
16	17	18	19	20	21	22	20	21	22	23	24	25	26	20	21	22	23	24	25	26
23	24	25	26	27	28	29	27	28	29	30	31	1	2	27	28	29	30	31	1	2
30	31	1	2	3	4	5														

APRIL							MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
27	28	29	30	31	1	2	1	2	3	4	5	6	7	29	30	31	1	2	3	4
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25
24	25	26	27	28	29	30	29	30	31	1	2	3	4	26	27	28	29	30	1	2

JULY							AUGUST							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
26	27	28	29	30	31	1	31	1	2	3	4	5	6	28	29	30	31	1	2	3
3	4	5	6	7	8	9	7	8	9	10	11	12	13	4	5	6	7	8	9	10
10	11	12	13	14	15	16	14	15	16	17	18	19	20	11	12	13	14	15	16	17
17	18	19	20	21	22	23	21	22	23	24	25	26	27	18	19	20	21	22	23	24
24	25	26	27	28	29	30	28	29	30	31	1	2	3	25	26	27	28	29	30	1
31	1	2	3	4	5	6														

OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
25	26	27	28	29	30	1	30	31	1	2	3	4	5	27	28	29	30	1	2	3
2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10
9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17
16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24
23	24	25	26	27	28	29	27	28	29	30	1	2	3	25	26	27	28	29	30	31
30	31	1	2	3	4	5														

KEEP ON THE RADAR



- **Downtown Infrastructure**
- **Business Expansion properties**
- **Multicultural Awareness**
- **501c3 Foundation Grants**
- **NE Gateway**
- **Friendship Site**
- **Carolina Springs**



Holly Springs Chamber of Commerce Strategic Plan 2022



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 8.

Requests & Communications

Title: Secondary and Cumulative Impacts Master Mitigation Plan (SCIMMP) Update

Strategic Priority Area: Responsible & Balanced Growth

Safe & Friendly

Staff Resource: Daniel Colavito, Utilities and Infrastructure

Action(s):

Provide Council with an update regarding the required Secondary and Cumulative Impacts Master Mitigation Plan (SCIMMP) 5-year submittal and acceptance by NCDEQ.

Explanation:

- The Secondary and Cumulative Impacts Master Mitigation Plan (SCIMMP) provides for a holistic review of the environmental impacts associated with planned land use changes and infrastructure projects required to accommodate future population growth. Specifically, for projects that involve public funding and that exceed certain minimum criteria, the North Carolina (State) Environmental Policy Act (SEPA) requires that they include the preparation of an environmental document (environmental assessment (EA)) or environmental impact statement (EIS) that outlines the direct, indirect and cumulative impacts to natural, cultural and historical resources.
- The Town of Holly Springs has a Memorandum of Agreement (MOA) with the North Carolina Department of Environmental Quality (NCDEQ), outlining how the SCIMMP will be used, the time period during which it can be cited, and circumstances requiring an update.
- The Town entered into this MOA in order to help avoid inefficiencies for both the regulatory agencies and the regulated community.
- The SCIMMP is required to be updated, reviewed and approved by NCDEQ on the agreed upon schedule as outlined in the original MOA.

Background:

- The North Carolina Environmental Policy Act (SEPA) requires environmental assessments (EA) or environmental impact statements (EIS) for projects that involve public funding, outlining the direct, indirect (secondary), and cumulative impacts to natural, cultural, and historical resources. Highlights from the recent update include:
 - Wastewater planning updates to include Utley Creek WRF upgrades and permit to expand effluent line
 - Updates to Town's utility values
 - I-540 construction status updates
 - Updates to federally listed species
 - Existing + Future Land Use updates
 - Addition of several residential subdivisions and non-residential projects, predominantly located on the south side of Holly Springs

- Updated National Pollutant Discharge Elimination System (NPDES) Post Construction Stormwater references

Funding Source(s):

N/A

Attachment(s):

None



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 9.

Consent Agenda

Title: Approve the minutes of the February 8, 2022 workshop meeting and the February 10th - 12th Mayor and Council Retreat.

Strategic Priority Area: Organizational Excellence

Staff Resource: Linda McKinney, Town Clerk

Action(s):

Approve the minutes of the Council's workshop meeting held February 8, 2022 and the Mayor and Council Retreat held February 10-12, 2022.

Explanation:

- Minutes in draft form are attached for the Council's review.
- If there are any corrections, please call the Town Clerk at 919-557-3900 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. 2.8.22 workshop minutes_notes
2. 2022 Mayor and Council Retreat minutes-DRAFT



MINUTES

The Holly Springs Town Council held a workshop meeting on Tuesday, February 8, 2022 at the Law Enforcement Center and via livestream. Mayor Mayefskie presided, calling the meeting to order at 6:00 p.m. A quorum was established as the Mayor and four Council members were present as the meeting opened, and one Council member was present via livestream.

Council Members Present in the room: Mayor Sean Mayefskie, Mayor Pro Tem Dan Berry, and Council members Aaron Wolff, Timothy Forrest, and Kristi Bennett.

Council Member present via electronic means: Council Member Shaun McGrath

Council Members Absent: None.

Staff Members Present: Randy Harrington, Town Manager; Scott Chase, Assistant Town Manager; Daniel Weeks, Assistant Town Manager; Corey Petersohn, Administration; Mathew Mutter, IT; John Schifano, Town Attorney; John Mullis, Public Works; Chris Hills, Director, Development Services; Linda McKinney, Town Clerk (recording the minutes); Kimberly Keyes, Utilities and Infrastructure; LeRoy Smith, Fire Chief; Aaron Levitt, Utilities and Infrastructure; Paige Scott, Director, Public Works; Cassie Hack, Director of Communications and Marketing; Kendra Parrish, Executive Director of Utilities and Infrastructure; Patty Dressen, Finance.

1. Overview: Randy Harrington, Town Manager, gave an overview of the meeting agenda.

2. South Wake Landfill Working Group and Odor Metrics Update

John Mullis, Public Works, said that the purpose of this item was to update Council on the South Wake Landfill Working Group whose purpose is joint collaboration and agreement on defining success that minimizes odors and negative impact on the quality of life; to facilitate coexistence with the South Wake Landfill (SWLF); to build trust with residents through effective communications; and to establish data and means of monitoring. He would like feedback on Council's agreement with the proposed metrics.

There has been discussion on three odor metrics: Daily Metric Goal, Monthly Metric Goal, and Monthly Distance Metric Goal. The Town and County agree that the Daily Metric Goal is no more than 24 odor reports per day, or 5 in an hour. The Monthly Metric Goal is fewer than 200 total odor reports that are Probable and Potentially from SWLF, with fewer than 100 of those being likely or probably connected to SWLF. On the Monthly Distance Metric Goal the working group has agreed to geocode and map odor complaints. The Town members of the group have proposed that the goal be 90% of odors be contained within the half mile radius. The County members counter proposed that 90% was a goal in principal, but would like to start with a goal of 70% of odors being contained within that half mile radius. This metric is still being discussed.

Mr. Mullis gave an update on the Envirosuite eNose Sensors, showed the location of the where the sensors will go in Arbor Creek, the Water Reclamation Tower near the Target shopping center, and 12 Oaks. He said that staff was working on finding a location closer to the Target Shopping Center than the water tower location that is currently identified.

Mr. Mullis said that Wake County continues to make significant investments in odor mitigation at the landfill, including \$4.5 million in funding for interim cover, landfill gas collection upgrade, and a planned tipping fee increase. The tipping fee increase will help them pay for the upgrades that the Town is requesting. The impact of these improvements has been a reduction in odor complaints, with less duration and frequency of actual odors, limited working face area, and timely daily closure. He said that staff now has a voice in technical meetings.

Council asked for a map showing the half mile radius. They discussed that the 90% was not a final metric, but could be amended if it was met reliably over a period of time. Council discussed the challenges with finding a location closer than the water tower. There was discussion of whether locating an eNose inside the half-mile radius would be preferable to having them all at the one-mile area. Mr. Mullis said that the sensors are easy to move, so if one is installed on the water tower and then another site is located, it could be moved, and that if a sensor was not receiving any hits, staff would consider moving it.

Randy Harrington, Town Manager, gave an explanation of the Interlocal Agreement regarding the landfill, why Holly Springs chose not to joint at the time, and advantages and disadvantages of joining should the eleven municipalities agree. John Schifano, Town Attorney, outlined some legal obligations that would be incurred should the Town join.

Mr. Harrington thanked the county for their hard work and continued engagement on this issue.

3. Comprehensive Transportation Plan: Traffic Impact Analysis

Chris Hills, Director of Development Services said that the purpose of this item is to continue discussion on the new Traffic Assessment Policy component of the new CTP and receive direction from Council. The Comprehensive Transportation Plan (CTP) Update includes a task to develop a Traffic Impact Analysis (TIA) policy. At the June 2021 Workshop Council discussed the current TIA process versus the Alternate process recommended by the consultant. In January 2022 staff presented a follow-up on the Traffic Assessment Policy and Council requested additional research from stakeholders and neighboring municipalities on their TIA process. He reviewed the current process of the Developer hiring a consultant to prepare the TIA followed by review of that TIA by the Town's consultant, and the Alternate process where the TIA would be prepared by the Town's consultant and reviewed by the Developer's consultant.

Mr. Hills said that staff pursued further engagement with stakeholders, and the Triangle Community Coalition and Home Builders Association of Raleigh – Wake County and both preferred keeping the process the way it is, with developer's consultant performing the TIA and the Town's consultant reviewing the TIA. These groups also offered another option where there would be a pre-qualified list of consultants that developers would be required to use.

Mr. Hills said that staff contacted other municipalities in the area, and the town of Rolesville uses the Alternate TIA process. The Town of Cary uses a hybrid procedure with the Alternate Process used for rezoning matters, and the current Holly Springs' process for subdivision and development plans. Kimley Horne said there were three other municipalities in the state that use the alternative process, but most use the process that Holly Springs currently uses. Staff recommends adopting a new Traffic Assessment Policy with the CTP update which continues the current process of the Town's consultant reviewing traffic assessments prepared by the developer's consultant.

Council discussed the reasoning behind staff changing their recommendation. Staff was asked about the third option of a list of pre-qualified consultants and Mr. Hills said the problem with that was there was no review of the TIA to protect the Town's interests. Council member Wolff asked if there was a way to build institutional knowledge of the town among consultants into the process and Mr. Hills said that the addition of a transportation planner position would give the Town the ability to build that relationship.

Mayor Mayefskie asked for consensus, and Council decided to stay with the current process.

4. Fire Station 3 & Operations Campus Update

Randy Harrington said staff is very excited to get these two projects under way. He prepared Council for cost increases due to supply chain issues and inflation that have increased the estimated costs on all construction contracts.

Daniel Weeks, Assistant Town Manager, said the purpose of this item was to provide an update on the conceptual design, facility features, site location, and next steps for Fire Station 3 and the Operations Center. He said they would address the fire station first. He showed where the station would be located close to Carolina Springs, 12 Oaks, the new Wake County public school and the Friendship site. The Town has established biweekly meetings with Duke Energy to be sure we are in alignment with them on their plans for their operations center. On Friday we received positive feedback from Duke on two property boundaries that we proposed to them. One is 4.5 acres and one is 8.5 acres. They gave us the go ahead to engage an appraiser and do environmental studies, two things which need to happen before Duke can go to the Utilities Commission, which they have to do before they sell any land.

Kimberly Keyes showed a conceptual design for Fire Station 3, with two engine bays, dormitories, and office quarters.

Fire Chief LeRoy Smith said that the first thing that they think about when building a new facility is the health and safety of the fire fighters. Some features the fire station must have include a vehicle exhaust system to remove exhaust from the station to the outside, HVAC with contaminant containment zones for high, moderate and low hazard materials. There would need to be decontamination areas for vehicles, personnel, and equipment. Because personnel work long shifts, the station needs kitchen, dining, and day room areas, and an open plan is preferred. Office space is needed for administrative work. The station needs gender neutral sleeping quarters and a police touch-down area for their work on that side of town. Storage space for PPE is required as well as fast opening bay doors, and a station alerting system.

Chief Smith said that should the budget allow, optional features would be a fitness area with roll-up door for access to the outside, a stand-alone climate-controlled storage area, a house storage tower with multi-purpose training props, sealed and painted concrete flooring, shared bathrooms in the sleeping areas so personnel do not have to use the public restrooms, heated concrete ramp and walkways, community art, and sustainability and smart technology components.

Ms. Keyes shared the cost estimate for the total project total. She said that there was a normal contingency and a COVID contingency included in these estimates to try to stay ahead of the situation. She shared that there was flexibility in some areas, such as the number of acres of land purchased, and that staff is working with Duke Energy to evaluate cost-sharing on needed infrastructure that would be shared between the fire station and a Duke Energy project in the same area. The \$11.1 million is a worst-case scenario. There is an expectation of cost sharing but it is not agreed upon yet. Randy Harrington, Town Manager, said that staff is exploring the larger acreage in case favorable land prices allow us to have the larger space for future expansion.

Council discussed the cost per square foot estimate, how long this expansion would set the town up for, future locations for fire stations after this one, and whether there were other cost sharing option available.

Ms. Keyes shared the timeline for progress on the project, with construction anticipated to begin in 2023. The Duke Operations Center is projected to be built at the same time. Mr. Weeks said that the town has a very motivated partner to cost share in this, so it is not expected that the Town would have to pay for it all. He believes there will be cost sharing.

Council discussed the features that Chief Smith said were optional and how, since costs have escalated as this process took more time than expected, whether there would be more value in building those now rather than waiting for costs to go up again. Additional partnerships and funding sources were discussed as well as various sustainability options.

Kimberly introduced Keith Carlyon with ADW Architects. He said they did tours of existing facilities, explored the challenges with the current public works facility and the expected needs due to the dramatic growth of the Town. He said the center would affect 13 different departments and divisions across the Town. Mr. Carlyon shared the outreach work that was done with each of these stakeholders to determine current and future needs. He showed a 3-D animation of what the project could look like at Phase 1 and at full buildout. He shared the location of the property, next to the waste water treatment plant and outlined project considerations including budget, supply chain issues and inflation; phasing for current needs and future growth, and site work required. He discussed the benefits of a Construction Manager at Risk (CMAR) to manage the current construction costs better than waiting to bid things out.

Mr. Carlyon said that Phase 1 would include office space for Utilities and Infrastructure as well as Public Works, operations space, material storage, sustainability storage and parking for EV and non-EV vehicles, and a public convenience center. The existing public works facility would continue to be used for vehicle fueling, fleet maintenance, and material storage. He said that Phase 2 would add fleet maintenance, a vehicle wash, fueling, material storage, an expansion of the convenience center, and further sustainability elements. He said they are targeting 2% of the budget toward sustainability elements. These elements include storm water control, greenway connections, use of renewable energy, EV charging stations, recycling program, low flow fixtures, minimal irrigation and rainwater harvesting, and indoor environmental quality measures. He gave some rough numbers for the Phase 1 budget and said that next steps would include getting a full design to Council in spring of 2022, and a CMAR Contractor the summer of 2022. He said that getting the CMAR on board early adds value at the design process. He said the design period would run from Spring 2022 to 2023. Phase 1 construction would begin in 2023 and would include the Phase 1a Access Road/Laydown area.

Aaron Levitt, Utilities and Infrastructure said that this facility would be a recruitment tool for hiring and retaining valuable employees. Tying it in to the Utley Creek Greenway and the shared outdoor amenities could help with this process.

Council member Bennett said she was surprised that the administration building was in Phase 1. She would have thought that Fleet Maintenance would be more important. Paige Scott, Director of Public Works said that the thought process was that if we move others out of the current area Fleet Maintenance would have more space and could stay there until there is funding for future phases. Mr. Harrington said that while there are efficiencies to having Fleet on the main campus, that piece will cost about \$6.5 to \$7 million. And we do have an existing ability to maintain our fleet, so even though it is needed, other things are needed more.

5. Legislative Action Committee

Randy Harrington, Town Manager, turned this item over to MPT Berry and CM Wolff. MPT Berry said that last year was the first year for this committee and he thinks it worked well to have a documented set of goals and objectives that Council can advance with our delegations at the state and federal level. Many of the things that the Committee is recommending are the same as Council had last year. Economic Development was a large focus last year, and things that we accomplished, like recruiting Amgen and FUJI were important last year, but we still need the support of our county, state, and federal partners to recruit large and small businesses. He said last year there were areas of the Charter that Council wanted to tweak, and we didn't get to. But this year the committee considered the topics that would be covered under a charter amendment under the topic of maintaining local authority. We have seen legislation over the last 12 months that was designed to infringe that authority. The Committee focused on the three

levels of government: county, state, and federal. They all have different pocketbooks and different focuses. The committee spent a lot of time at the state level, because they have so much control over municipalities. The priorities put forward by the Committee are not a drastic departure from last year.

County level:

- Reduce landfill malodors
- Expand public transit

State level:

- Preserve Local Authority
- Support Investment in Transportation Infrastructure
- Water/Wastewater/Reuse Infrastructure Funding Partnerships
- Economic Development

Federal:

- Water/wastewater/reuse Infrastructure funding partnerships
- US Post Office Facility Investments

Council member Wolff said that Economic Development projects are not the top focus this year like they were last year. The urgent thing we are looking for with all our partners is water. The other things are preserving local authority, and transportation impact fees. Meetings with representatives and industry partners on transportation impact fees went better than expected. Industry representatives do not want transportation impact fees, but said they would bring back alternative suggestions, but the Committee wants to re-engage since they have not done that in the last ten months.

MPT Berry asked for consensus on these topics. Does anything need to be added or removed and have this put on the agenda for formal adoption at a future meeting. The state “short session” starts in a few months. We are looking at options to do some lobbying in DC as part of our water project, so having group consensus would help us.

Council discussed adding other infrastructure to the federal discussions, in case they don’t want to fund water, like specific road projects. Mr. Harrington said that they are hearing that to get more than \$3 million on transportation it has to be a regional project and that is more difficult to receive as an earmark. There is money at the agency level that would be easier to pursue given the challenges. He would recommend having a signature project to take to the federal legislature. Council discussed hiring a grant writer, either as a staff position or as a consultant. Council member McGrath said he wanted to address the County in transportation issues, particularly mass transit.

Consensus was to bring the legislative agenda back to the next meeting for approval. The Committee said that if other issues arise that need to be discussed with one of our legislative partners they will bring them back to the full Council to be addressed.

OPEN DISCUSSION

Randy Harrington, Town Manager, said he was looking forward to the retreat. He said on Friday morning there would be a fun activity, and he wanted Council to think ahead about what personal values they use to help make decisions. There will be two or three other fun questions as a way to start Friday morning’s session.

Mayor Mayefskie said there is a lot of information to cover at the retreat and we are going to stay on task. If something comes up we will put it in the “parking lot” and deal with it later.

Closed Session: none.

5. Adjournment: There being no further business, Motion to adjourn was made by MPT Berry seconded by Council member Forrest and passed with a unanimous vote. The February 8, 2022 Workshop meeting of the Holly Springs Town Council was adjourned at 8:00 pm.

Respectfully Submitted on Tuesday, March 1, 2022.

Linda C. McKinney
Town Clerk

Mayor and Council Retreat

February 10-12, 2022

The Rizzo Center, Chapel Hill, NC, and livestreamed



MINUTES

The Holly Springs Town Council met for their annual retreat at the Rizzo Center in Chapel Hill and via video conferencing. Mayor Mayefskie presided, calling the meeting to order at 1:30 p.m. A quorum was established as five Councilmembers and the Mayor were present as the meeting opened.

Council Members Present in the room: Mayor Sean Mayefskie, Mayor Pro Tem Dan Berry, and Council members Aaron Wolff, Shaun McGrath, Timothy Forrest, and Kristi Bennett.

Council Members Absent: None.

Staff Members Present: Randy Harrington, Town Manager; Scott Chase, Assistant Town Manager; Daniel Weeks, Assistant Town Manager; Corey Petersohn, Administration; Mathew Mutter, IT; John Schifano, Town Attorney; Erika Phillips, Director, Human Resources; LeeAnn Plumer, Director, Parks and Recreation; Chris Hills, Director, Development Services; Linda McKinney, Town Clerk (recording the minutes); LeRoy Smith, Fire Chief; Paige Scott, Director, Public Works; Cassie Hack, Director of Communications and Marketing; Kendra Parrish, Executive Director of Utilities and Infrastructure; Antwan Morrison, Director, Finance; Paul Liquorie, Police Chief; Irena Krstanovic, Director, Economic Development; Jeff Wilson, Director, IT.

THURSDAY:

Review of Agenda

Randy Harrington, Town Manager, gave an overview of the agenda and discussed with Council what they needed to have a successful retreat. Mayor said that engagement was important. Council member Wolff said clear actionable items to take home to staff, conversation and debate focused on solutions, and an understanding of where we are and not arguing for the sake of arguing when there is a consensus that you do not agree with. Council member Forrest said unbiased remarks. Council member McGrath said to get out of decision-making mode and engage in strategic thinking, to think about where we go as we cross the 50,000 population mark.

Assessing Our Community

Community Satisfaction Survey Results

Cassie Hack, Director of Communications and Marketing, said we listen to our residents. She explained that, to get a consensus of opinion from all residents, it was necessary to conduct a statistically valid survey. She introduced Jason Morado from ETC Institute who conducted the Community Survey. He explained that ETC has done surveys in 49 of the 50 states, and has done many in NC among neighboring municipalities, which allowed them to compare the Town's results to those of other NC municipalities and across the US. He gave an overview of the purpose and methodology of the survey. He said that satisfaction with Town services is much higher in Holly Springs than other communities. The Town rates above the US average in 46 out

of 48 areas, satisfaction with the overall quality of Town services is 25% above the US average, and satisfaction with customer service from Town employees is 32% above the national average. He said that the top community priorities identified in the survey were:

- Management of traffic;
- Management and planning of growth/development;
- Walking and biking trails;
- Adequacy of street lighting;
- Maintenance of Town streets; and
- Visibility of police in neighborhoods.

He then went into more detail with Council on the specifics of those findings. Mayor Mayefskie asked how the respondents were chosen. Mr. Morado said they were selected totally at random from addresses within the Town. Mayor Mayefskie asked how many were sent out. Mr. Morado said 3,000 went out because at the normal response rate that would bring in 400. But they received 530, which was an increase. Council member McGrath asked if there were any trends in the areas that were lower rated (traffic and growth) Mr. Morado said it was not unusual for fast-growing communities to rate these lowly. It is a theme in any area that is growing quickly. There were some open-ended comments related to this, but they trended towards growth being too fast and infrastructure not keeping up.

Council member Bennett asked if there was a map for the street lighting issue. Mr. Morado said it is in the report. MPT Berry asked if, outside of the survey questions, the free-form responses were grouped by theme. Mr. Morado said there was a little bit of that with Word Clouds, which gives you a bit of summary. Otherwise there are about 35 pages of open-ended comments. MPT Berry said sometimes the comments don't line up with the statistical ratings and asked if that was typical. Mr. Morado said the comments trend more negative than the overall results. One thing to keep in mind is that many people only commented when they had dissatisfaction. MPT Berry said there were a few actionable items in those free comments that the Town could do. Council member McGrath said it's awesome that our communications are working, and that people are listening. We should leverage that to increase people's confidence in what we are doing. And also, with what we expect some of these large developments to bring, in terms of restaurants, etc. that might come in following the large Economic Development projects. He said that on maintenance of streets, we need to communicate better which streets are the Town's to maintain and which are NCDOT. With Parks and Recreation, we have more walking and biking trails coming and we can address some of the concerns that are raised.

Council member Wolff said he was most pleased with the ratings of Town staff and their responsiveness. That is top-down cultural. It's amazing that our leadership has brought that culture to the Town. Mr. Morado said that this level of satisfaction with customer service is something you never see. Council member Wolff said we need to remember to invest in people as we decide where to spend money.

Randy Harrington, Town Manager, said the comments about staff are well deserved. Our staff works extremely hard to try to address resident's concerns. Town Council hears from those who maybe weren't satisfied, but most of our interactions are good. There were a few areas we were below the national and regional ranking, including enforcing Town codes on private property. We will bring those back to you tomorrow. Mr. Morado said that with the code, there were not a large number of dissatisfied people, but a lot who ranked it 3 out of 5, so those are people who can be swayed one way or the other.

Mr. Harrington said that on the street lighting issue, that's one that a few neighborhoods have made requests from time to time, but we haven't had a fund for that, so maybe we need to address that in the Capital Projects. Council member McGrath asked if that was primarily focused in the older neighborhoods. Corey Petersohn, Administration, said it was across the

board. There was discussion about identifying which areas could be identified as having this need. Council discussed the difficulty of perception of code enforcement in areas where the county is adjacent to Town and people don't always know which properties belong to which jurisdiction.

Mayor Mayefskie asked if staff keeps a log of people who come with a concern that staff is unable to address. Mr. Harrington said he doesn't know if there is a formal process, but we do talk about these situations as a staff as opportunities to grow. And there are some times that we cannot satisfy someone, either due to law or some other reason.

Mr. Harrington said this survey provides a good opportunity for us to benchmark where we are today. Best practice will be to do another survey in 2 or 3 years to track how we are doing.

There was a short recess.

Planning for the Future

FY2022-23 Budget Outlook

Mr. Harrington said the purpose of this item was to give Council a preliminary snap shot of what might be coming up in the budget. Departments have not yet submitted budget requests, so over the next several months is when he will match those needs to Council priorities and create a budget. He turned it over to Corey Petersohn. Mr. Petersohn gave the timeline for the budget process through the spring for adoption in May. He described the two major funds: General Fund and Enterprise Funds that comprise the Operating budget. He defined the Community Investment Plan. Within that plan, debt may be planned for, for higher cost long-term infrastructure needs.

Antwan Morrison, Finance Director, said for revenue projections, property taxes are looking good for FY2022. We are tracking well and with 4-7% growth and a collection rate of 99.5% we are in good shape on this front. He said the figures are based on the 2020 assessed value. The next assessment will be in 2024. Sales tax has been very strong. The Town budgets conservatively and over the past 5 years, there has been between 7% and 12% growth. As of 12/31/21, the Town was 30% ahead of budget and we are still seeing sales tax growth. We are surpassing the conservative predictions and over the next few years we will re-evaluate our predictions after watching market factors. He said Development Fees are slightly down from last year due to supply chain impacts reducing housing production. But this is very dependent on the housing market. Finally, back in 2016-2017, HB255 passed saying that inspection revenue had to be spent on inspection purposes, which means any overage goes into a reserve fund. Parks and Rec continues to grow, with modest increases since the beginning of the pandemic. We have not reached pre-pandemic levels, probably due to fear of COVID. The Utility Fund is on target, and has potential budget considerations for capital planning and asset management. The Stormwater Fund reached the updated rate structure on January 1, 2021. Now staff can evaluate the effect of that rate change. FY23 potential budget considerations include drainage repair projects and system maintenance.

Mr. Petersohn said that potential budget considerations include benefit changes; implementation of pay study recommendations; Public Works resourcing and staffing; vehicle replacement; new positions to keep pace with growing service demand and population growth, and advancement of strategic initiatives, such as the Customer Care Center. Vehicle expense is about the same as last year, so while it is not a new expense, it is needed again. He said next steps would be adopting the Strategic Plan, the May budget presentation followed by the Public Hearing and workshop, with adoption of the new budget in June.

MPT Berry said that revenue projections have been historically conservative. Given last fiscal year and the expense expectations, are we in a position to be a little more aggressive in

the forecasting of revenue? Mr. Morrison said yes, especially in *ad valorem* taxes. Being conservative has allowed us to build that fund balance. So we are looking to be a little less conservative than we have been in the past, because we need to prepare for needs that are coming up. We need to shift the mind set from building fund balance to increasing funds available for needs. Mr. Petersohn said we have had a lot of unknowns in the recent past. But it's good to be wrong in the direction of underestimating revenue. There was some concern about leveling off, but we have not seen that. Last year we were thinking 20-25% reductions because of the pandemic, not the 30% increase that we experienced.

Council member McGrath asked for an explanation of how sales tax is captured. Mr. Morrison said everything is collected at the state and county levels and there is a two-month lag between then and when the Town receives it. They calculate it by point of delivery, and population, and forward it to the municipalities on a per capita basis. One thing is we now collect sales tax on online shopping, which has increased our sales tax collection, in addition to people shopping instead of traveling, due to the pandemic. Staff will continue to monitor it closely.

Mr. Harrington said that in 2009-2010 there was a decrease in home values, but then a huge increase lately. And Wake County has a great tax assessor. We do not get a proportion of the transit tax, but we do get food tax and other taxes proportionately.

Council member Wolff asked if on the benefit changes and pay plan, if the current ability to recruit people was being factored in. Mr. Petersohn said the figure given is without a plan picked or solid number, but for the general outlook. There was discussion about how many new positions were budgeted for in the last budget and if this should be a greater focus for the next budget.

There was discussion about considering new residents and businesses when calculating sales tax estimates, and the reasons Development Fees have spikes and dips.

There was a short recess.

Debt Capacity Outlook

Antwan Morrison, Finance Director, introduced Andrew Carter and Doug Carter, the Town's financial advisors who gave a presentation on the Town's Debt Capacity Outlook.

Doug Carter said the purpose of this presentation was to review and update the Town's financial planning decisions since 2020, the Community Investment Fund, Debt affordability and future strategic decision needs. He said he doesn't know of another entity who has grown this fast this quickly. And that brings many challenges. He gave an overview of the benefits of financial planning, and said that the most important part of planning is to provide a road map and give you a way to know where you are. He discussed the fact that maintenance sometimes gets overlooked in the drive for new needs. He outlined the decision drivers that were specific to Holly Springs.

Doug Carter outlined why having a Community Investment Fund was important, rather than just having the funds in the General Fund, particularly because even when operating is down, capital needs to be maintained. Rapidly growing municipalities often need higher allocations to Capital than slower growth areas. He outlined the four ways that municipalities can raise revenue in North Carolina.

Mr. Doug Carter gave the elements that are considered in deciding the credit rating for a municipality. Economy 30%, Finances 30%, Management 20%, Debt (including pensions) 20%. He outlined the rating grades that are available. He said that in the recent past Holly Springs was upgraded by Standard & Poor's to AAA and Moody's from Aa2 to Aa1, and he believes that Aaa is on the way.

He showed the measurements used by Moody's and how Holly Springs scored on each. He showed how the Capital Investment Fund works in connection with the rest of the financial system of the Town. He said that to get new capacity, you look at projected revenues, and

projected expenses. Then you look at projects' speed, actual debt cost that are lower than projection, actual revenues that are higher than projected, rapid debt reduction, and other factors. He then showed three models: what is currently available, and two alternatives of higher amounts. Andrew Carter walked through the CIP model, explaining how it works and what would be available for capital investment over the next several years.

MPT Berry asked what the numbers in red on the chart mean. Andrew Carter said that those are the years that Fund Balance has to be used to meet expenses, with the current revenue model. The model is a living document, based on current thoughts and conditions. These numbers will change as we get actual real numbers.

The first optional model was the same with a change of finding an additional penny equivalent in 2026 which brings it up to \$30 million. This changes according to the timing and when the debt service hits. The models track cash flows, not when projects are approved; when they require expenditure. The second optional model would require 2.75 cents new resources. Each option would keep the Town in the healthy range.

Mr. Carter then said that future strategic decisions will be around community growth; inflation that has increased capital and borrowing costs; and significant private sector projects to increase the value of the penny materially in the next five years. The timing of future projects and updated costs will adjust these models. To bridge the potential funding need in the CIF, due to tax value increase, consider adding to CIF funding over current levels; move current debt service levy level up from the current 12 cent level, move one-time revenues (e.g. land sales) to CIF or other sources. This is something that needs to be looked at each year and adjusted as Council evaluates how to spend money.

Mr. Harrington said tomorrow we will talk a lot about capital, so understanding how it works and having confidence in how it works will help you with that. What you see is the benefit of the new economic growth, and the benefit of the investment of the 5 cent property tax increase from a previous budget.

There was discussion about when General Obligation Bonds were preferred and when Limited Obligation Bonds were the better choice, and on the projected interest rate used in the models.

The meeting recessed until 8:30 am on Friday.

FRIDAY:

Mayor & Council Decision-Making Values:

Elected officials discussed their top values for decision making, and the top four were: authenticity; respect; unbiased; and integrity.

Planning for the Future

Utility System

Antwan Morrison, Finance Director, introduced Michael Maker of NewGen Strategies who studied water, waste water, and reclaimed water rates to make sure they are aligned for current needs and future growth. Kendra Parrish, Executive Director of Utilities and Infrastructure, said the operating and maintenance of existing systems is funded by existing customers and incoming development. She explained the statutory basis for the allowable fees, and the level we need to get to in order to sustain current capacity and meet future needs.

Mr. Maker outlined the guiding principals and objectives of the study. The water and wastewater enterprise funds should be financially self-supporting and maintain reserves for contingencies and unplanned expenses. The objective is to ensure that rates are stable through sound financial management and system maintenance. He outlined factors that affect fees and

rates. He said that existing customers pay existing rates, and new development pays System Development Fees. Operating expenses have to be paid by existing user rates. Capital expenses for system maintenance and system expansion can be cash or debt funded. He outlined the planned capital projects for water, wastewater, and reclaimed water. Long-term projects funded by debt contribute to generational equity, as future users are paying for the system as well as current users. He showed what the shortfalls are projected to be over the next five years if there is no change in current fees. He showed what increase in rate revenue would be needed to make the system self-supporting. This would not be all rate increase; it would include increases due to growth.

Mr. Maker outlined the current rates. He discussed alternatives for rate designs for water and wastewater to bring the Town closer to best practices. He said that best practice for waste water is a single volume rate, which could be phased in over three years. Using the alternate design access fee, the majority of customers' access fees would go down, large users would go up. He showed typical bills for residential customers under the different alternatives. He showed a comparison of Holly Springs' utility rates compared to neighboring municipalities.

Mr. Maker said that to meet the demand of continued growth, water and wastewater services need to be expanded, and to improve equity, costs need to be allocated to the customers who cause them to be incurred (existing vs. new; water vs. wastewater). The consultant recommends adopting alternative design 2 water and wastewater with monthly access fees varying by meter size, water having a five-tier system with revised multiples, and wastewater phased to all unit volume rates over three years.

Council discussed which customers in town use the giant meters and Mr. Morrison said it was larger industries and that master-metered apartment buildings use the standard ¾ inch rate. The tier system was discussed, as well as the factors that influence the cost of water in Town. The capacity to increase development fees was discussed as was balancing the impact of changing rates for customers. Council discussed that the current rate system has current users subsidizing development. They discussed the industrial rates and whether businesses would accept the higher rates.

Randy Harrington, Town Manager, asked for direction on which alternative Council feels most comfortable with, and some direction in regards to the System Development Fees balance. Then the financial advisor will take those new rates and create a new Debt Model based on them. Council requested that staff take Alternative 1 and run models with the current System Development Fees, a \$9,500 System Development Fee, 50% higher, and perhaps one other. This would be brought back to Council at a future workshop. From that, staff would look for a final decision so that it can be worked into the budget.

There was a short recess.

Strategic Plan Updates

Corey Petersohn, Budget, Innovation, & Strategic Initiatives Manager, said that as an organization grows, the strategic plan needs to change. He gave an overview of the timeline and then said that today we were looking at the 1- to 3-year initiatives, that are more achievable.

Daniel Weeks, Assistant Town Manager, said that he was going to touch on some of the successes and challenges with the strategic plan. He said that in 2021 there were huge Economic Development successes with FUJifilm, Amgen, Crescent etc. and great strides in adjusting the tax base to the 70/30 ratio. Challenges include the identification of future sites for large economic centers, and the strain on staff of accommodating these large economic development projects with water, policing, etc. Engaged Health and Active: Completion of the Parks Recreation and Greenways Master Plan is big success. A challenge with this priority area is the prioritization of limited resources in the midst of competing needs and wants. Scott Chase, Assistant Town Manager, said that for Organizational Excellence there were many successes,

but one that had a powerful impact was the AAA bond rating with Standard & Poor's. CityView permitting software is another big success for improving customer services. This provides an online portal for customers to be able to schedule, check on and request inspections, etc. Challenges include recruiting employees. This is a problem that municipalities around the region and nationally are facing. The Pay and Class study could assist us with this recruiting. For Responsible and Balanced Growth a success is the new UDO which goes into effect on March 1st. A challenge is the "missing middle" in the housing stock in town. Housing prices have escalated to the point where new employees cannot afford to live in town, which will soon affect service delivery. He talked about the increase in material costs and the vacancies in the construction labor market which affect these costs.

Mr. Weeks said a success story under Safe and Friendly is Ladder 14 for the Holly Springs Fire Department, where the build time was a little over a year. It is a source of pride in the Fire Department and the community. A challenge is achieving CALEA (Commission on Accreditation for Law Enforcement Agencies), the gold standard in public safety. The Holly Springs Police Department is actively working on a plan with a goal of having the assessment in 2022. This is very in-depth, involved process with a lot of evaluation, and revising policies, and creating policies where they do not exist. There are over 207 standards to meet or exceed.

Mr. Petersohn outlined the current initiatives which are complete or in-progress. He said there would be six recommended changes or updates, and 20 proposed new initiatives; 14 of these are related to Engaged, Healthy & Active Community section that is being reworked. He gave an overview of the five strategic priority areas and the initiatives under each.

Council discussed including leveraging regional projects and public-private partnerships to achieve goals, and clarifying the wording of some.

Mr. Petersohn said this feedback will be used to revise these goals and initiatives. It will be brought back to the March workshop, and brought to an April meeting to be adopted.

Mr. Harrington said Council was running ahead of schedule so parking lot items could be discussed now.

Council discussed the new UDO. They requested staff do more than statutorily required notification for development projects, and staff said that text amendments could be brought back to Council in the first quarter, after there has been time to see what areas of the UDO need to be adjusted. The idea of "grandfathering" was brought up and staff informed Council that projects which have already been initiated are allowed to choose which UDO to apply. There was discussion on whether to "un-merge" the Planning Board and Board of Adjustment. Qualifications for membership on a board, and the formation of a Citizens Academy were discussed. There was unanimous consent to expand the notification distance and a majority opinion to separate the Boards, with that decision to be brought to a formal vote at a future Council meeting.

There was a one-hour recess for lunch.

Investing in a Place "We Are Proud to Call Home"

Transportation

Kendra Parrish, Executive Director of Utilities and Infrastructure, said the community survey showed that transportation is on the minds of the community. She said she is going to outline potential priority projects for the next 5 to 10 years. She outlined the potential funding sources for transportation projects. She said that four projects are currently funded as part of the 2018 transportation bonds. Since the bond there have been a lot of changes. The I540 completion is going to create two interchanges in Holly Springs, which is going to increase traffic not only from Holly Springs growth, but from regional growth. The land use plan has been

updated which changes the density, and the CTP highlights hotspot areas that need focus. The Wake County Public School System has planned schools in Holly Springs, and to the north and south of us, which adds traffic.

She discussed the funding outlook over the next five years, to fund these projects. Chad Beck from Kimley Horne showed the dashboard for Holly Springs Road, which would allow residents to keep track of progress. He talked through the phases of the Holly Springs Road widening, which will help improve the travel in the east-west corridor. He showed where in town the potential projects are and what the changes would be.

Ms. Parrish said that each of these projects was looked at from a cost/benefit perspective evaluating:

- congestion
- safety
- truck traffic
- economic development aspects
- Intelligent Transportation system elements
- bike/pedestrian elements
- transit
- accessibility
- connectivity

These get totaled up and cost is divided by benefit for a cost/benefit prioritization.

The project with the highest cost/benefit score was the Avent Ferry/Holly Meadow Signal. It has existing Town funding, and existing outside funding. New Hill improvements near Grand Hill Place was second. Avent Ferry at Cass Holt (realigning Cass Holt and Capeside) was third. Holly Springs Phase 1 was fourth.

Ms. Parrish said that potential target areas are:

Option 1 – New Hill/Old Holly Springs Rd.; Holly Springs Road Phase 1; Avent Ferry, Cass Holt, Capeside; and Avent Ferry Holly Meadow Signal.

Option 2 – New Hill, Old Holly Springs Apex Road & Grand Hill Place; Holly Springs Rd. Phase 1 and 3; Avent Ferry Holly Meadow Signal

Option 3 – Avent Ferry Rd. corridor – Avent Ferry widening Phase 2; signal at Holly Meadow; realignment of Cass Holt - Capeside.

She asked Council to use the dot stickers at their place (each dot = \$2.5 million) and put their dots on the maps where they want the funds spent.

The consensus of Council was that Holly Springs Road Phase 3 and 1 were their top priorities, with Avent Ferry Road widening the third. There was discussion about the costs of completing all of the projects, the definition of a free-flow right turn lane, the reasoning behind the phasing of the Holly Springs Road widening and the right turn lane on Highway 55. Ms. Parrish said there was consensus on Holly Springs Road Phase 1 and asked for direction on the second project. Consensus was Holly Springs Phase 3, with additional pressure put on NCDOT to advance the Avent Ferry Road project to earlier than the currently planned 2029. There was discussion about partnering with municipal neighbors to advocate with NCDOT for the Avent Ferry/Cass Holt corridor.

Council discussed funding sources to complete this work, and Ms. Parrish said that now that staff had Council's direction, they can explore options for funding such as LAPP grants and funding from new development in the area. Mr. Harrington said that there is an intent to transfer \$1 million at the end of each fiscal year from savings and that at the end of five years there would be enough in the general fund.

Yard Waste Collection – interim topic

Paige Scott, Public Works Director said that we are transitioning from the biweekly to weekly collection, and she would like to ask Council to extend the biweekly collection for one month, to the end of March. This would give time for maintenance of equipment before we ramp back up for grass collection in the spring. Council agreed to the new schedule.

There was a short recess.

Parks and Recreation

LeeAnn Plumer, Director, Parks and Recreation, said Parks and Recreation is a passion for many of our residents. She said she would explore the Master Plans for three not-yet-developed parks, and receive direction from Council. The recently completed Master Plan document provides a guide to follow based on scientific survey results and staff expertise. She showed on a map where existing parks are, and where there is room to create parks.

Ms. Plumer said the Mims Park Property is 17 acres. A concept plan was done in 2012 and could include a Farmers Market pavilion, open space, programming space, natural and paved trails, adventure play and a stormwater amenity (added in 2013.) Since that time, a lot has changed in the downtown area. Most of the development happened south of Town Hall and the need for the stormwater facility became less. The size of the Farmers Market has grown significantly since this plan was envisioned and the proposed area is now too small. Parking is another challenge in this area, with inadequate parking for the Farmers Market. This is a woodland area, and the community survey indicated a desire to conserve trees. One thing she would like to propose is to activate the natural trails as we wait for the Village District plan. This could be a great destination, but staff suggests making minimal investment to create trails until such time as the Village District plan is updated.

Sugg Farm Park had a 2013 Concept Plan. It is 110 acres, and the Master Plan is highly program oriented for an area that has a conservation easement on it. In 2021 the Dog Park and restrooms were opened. This space is used for many Town events and we are finding that it is a great place to gather as a community. Ingress-egress is a problem, but will be addressed later. She listed some things that were in the 2013 plan, but the Conservation Easement does limit some of these uses, and there has been expansion of the use of this park for an event space. Some of the identified uses are still viable but others are no longer viable.

Cass Holt Road Park is 56 acres. It is the first park on the west side of 55, and the proximity to the schools is a plus. The final recommendations included indoor aquatic and fitness areas, some outdoor courts and fields, trails, picnic shelters and restrooms, and preserving the forested space.

Ms. Plumer said that greenways and trails are a priority for the community. The Master Plan identified them as a needed amenity. She showed the existing greenways (about 12.5 miles total) but many are in small sections. She showed the four sections that are currently under construction. These four projects add another 6.1 miles. There are development-funded greenways expected in the next two years, which add over 8 miles in greenways and sidepaths. There are 6 priority connections to increase length and provide connections that will come before Council over the next several months. The greenways will more than double over the next few years.

Ms. Plumer said considerations to keep in mind are location equity; variety of amenities; community desires; new park land needs; location opportunities; potential partnership opportunities; and funding and financing availability. She laid out some project options for Mim's Park, Sugg Farm, Cass Holt Road Park, greenways, renovation and maintenance needs, and future development. She asked for direction on Council's direction on which projects they wanted to tackle with the available funds.

Council discussed potential locations for a permanent Farmers Market space, the desire to keep it downtown at Mims', the lack of adequate space and parking there, plus the tree removal that would be necessary, and whether the Conservation Easement would allow for the Farmers Market at Sugg Farm. It was discussed that nature play and community gardens would be allowable uses at Sugg, but ball fields were not.

Ms. Plumer gave some preliminary costs for Mims Sugg and Cass Holt parks. She expressed the need for a rec center, since programming is currently limited for lack of space, and the Town pays to rent space in schools. She explained different kinds of aquatic centers and said there is more work needed to define what the Town wants and to search for potential partners. She asked Council to consider whether the Town would follow the road improvement requirements that a private developer would have to follow. She said these are all things that would change the cost estimates.

Ms. Plumer showed potential funding sources, and how much is currently available, allocated but not spent, for the Cass Holt Road Park. She reminded Council how volatile the current market is. She asked for feedback on Cass Holt Road.

There was more discussion on Mims versus Sugg Farm as a place for the Farmers Market pavilion, and whether there was opportunity for partnerships. Council agreed that building trails was something that could be done more quickly and cheaply, and to pursue greenway connections.

Council discussed whether Cass Holt was the right location for an aquatic center and whether it would be advisable to seek public-private partnerships and a more regional location for that amenity. Ms. Plumer recommended a market analysis be completed to understand what is being provided and what is needed and outline the cost/revenue realities. Council asked Irena Krstanovic, Director of Economic Development, to explore partnerships for an aquatic center.

Council discussed what amenities could be afforded and made sense to construct. They want to do *something* at Cass Holt and not wait for the work needed for the aquatic center before doing other things. There was discussion on where to find the funds, whether to issue more debt, and whether or not to wait until Avent Ferry was widened.

Ms. Plumer asked for clarity of the concept Council would like before staff brings it back to them. Mr. Harrington said there were three options to choose from for Cass Holt:

1. Move forward on recreation center and amenities
2. Move forward on recreation center and amenities and continue exploration on aquatic center; or
3. Focus on amenities with no rec center.

Consensus was to move forward on amenities, to analyze whether the rec center should go at this location, and to explore partnerships for an aquatic center in other locations. Mr. Harrington asked what kind of analysis Council would be comfortable with on the rec center.

Council discussed possible new uses at Ting and the Hunt Center. The best location for the new rec center was discussed.

Mayor Mayefskie said consensus was to do the "green" projects for Mims and Sugg: natural and paved trails and signage, community and educational gardens and nature play. For Cass Holt, Council agrees that we are in dire straits for at least a 3-court rec center, and staff should investigate whether Cass Holt is the best location for it, and to pursue amenities for that park. Also, Economic Development department would assist Parks and Rec in finding a partnership for an aquatic center.

The meeting was recessed until 9:00 am Saturday.

SATURDAY:

Randy Harrington, Town Manager, reminded Council of the Open House for the renovated Town Hall Annex and Development Services Lobby on Tuesday before their meeting.

Providing Excellent Service for a Growing Community

Employee Pay & Classification Study Preliminary Findings

Erika Phillips, Director Human Resources, explained what the Pay and Classification Study covered and what the Town hoped to achieve. She introduced Malayna Halvorson-Mayes from McGrath Consulting, to discuss the progress of the survey.

Ms. Halvorson-Mayes gave an overview of McGrath Consulting and their experience in the field. She said the first goal of the study was to ensure the Town can attract and retain high quality employees, and the second is to ensure Holly Springs can match peer communities and the regional labor market. She explained the methodology of the study and how that would meet the stated goals. The comparable organizations studied were Durham City, Durham County, Fayetteville, Raleigh, Sanford, Apex, Cary, Chapel Hill, Clayton, Fuquay-Varina, Garner, Morrisville, Wake Forest, and Wake County. She gave an overview of the Town's compensation history – how often positions are analyzed, how often the salary schedule is adjusted, and annual performance adjustments.

Ms. Halvorson-Mayes said that in order to build a new salary schedule, she needed to know Council's compensation philosophy, and where the Town wants to be in the market. She said there are three options for where the Town could be:

1. Lead the local market (Can the Town afford to lead the market?)
2. Be average (Most organizations strive for average)
3. Follow the local market (this usually happens for financial purposes and fiscal resources will then be allocated to recruitment and turnover)

She said that if you don't set wages at least at market level, you will pay that money in recruitment, turnover, and overtime. So you are still spending the money, just on different things.

She laid out things to consider in order to come to a compensation philosophy. She said that the Research Triangle has a population of 2.1 million with low unemployment (3%) with a future job growth estimate of 53.84%, and a median home cost of \$403,000.

She explained that a Comp Ratio was a comparison of the Town's salary range to the market. She then explained how it was derived. The Average Market Rate is 50%, so that is what you want to see. An acceptable comp ratio range would normally be 40%-60% but current market conditions show that 40-44% is too low in some markets. She said for the Town's entry rate 36% of positions are under Market, 64% are aligned with the Market, but 24% are at risk to fall under Market. The Town is often hiring above minimum. At the midpoint of the salary scale, she said that 25% are under market, 75% are aligned with the market, but with 19% at risk to fall under the market. The Town's midpoint is not consistently aligned to the market. There is a large spread, with the midpoint at 33%, it is unknown how long it takes an employee to be "market competitive." In the current market, employees can go elsewhere if they are not making market wages. She said about half of the positions have the ability to meet or exceed the maximums of other locations, but the other half does not. She said there needs to be some adjustments to the ranges. Because it is so broad, they might need to be narrowed to get employees to market level faster. She said that for incumbents, 45% are under market; 55% are aligned with the market with 18% at risk to fall under market. Tenure, frequency of salary adjustments, and performance impact these findings.

Ms. Halvorson-Mayes talked about the demographics of current Town employees. Currently there is an average years of service of just under 7 years. She said that 48% of the

Town's workforce are under 40, are new to the organization, and are taking time to move through the salary schedule, and this is the mobile generation, who are not afraid to leave and work elsewhere. She said the Town has a good cross section of generations, but they are generations that should be retained, and that are recruited by other organizations in the public and private sector. She illustrated how, if an employee was hired at the minimum rate of a salary grade, and received a standard salary adjustment, it could take 16 years for that employee to reach market rate. That employee will look for other employment to reach market rates.

Ms. Halverson-Mayes said she is in the process of developing a compensation structure, and she has an idea of where the Town would like to be, but she wanted to hear from the elected officials on where they want to be in their compensation philosophy.

Council discussed whether benefits were factored into this study and were told no, this was a salary study, but increasing salaries can help offset the increased costs of health insurance. Council discussed the rising cost of living in Holly Springs and whether other municipalities were having the same issues with hiring and retention. Council asked to hear from some of the department heads present regarding hiring and retention difficulties.

Paige Scott, Director of Public Works, said when she started here she met with employees, and the number one thing they said needed to be improved was salary. There are positions open for over a year and they are not getting applicants with the right skills. She has 7 vacancies for 39 positions. The rate is not competitive and it is difficult to get good employees. Most employees in her department don't live in Holly Springs because of affordability issues, and their commutes vary from an hour to an hour and a half. Things like snow response become difficult and the service level will eventually drop because employees won't be able to make it in. She said that in Public Works you are very tied to the market, and construction work is hot right now, but we are in the low end of the scale and are losing employees.

Kendra Parrish, Executive Director of Utilities and Infrastructure, said her department is made up by a majority of labor positions and having been here for 20 years, she noticed that in recessionary times people run to government jobs, and in good times to private sector jobs. But what is happening now is different. Her department isn't losing employees to the private sector, but to other municipalities. And labor employees live so far away, due to housing costs, that in the case of a water line break, for example, service times are slowing and service is being affected. We are being asked to do more with less. Employees are losing ground, due to inflation.

LeRoy Smith, Fire Chief, said that salary compression, keeping some employees in the same grade disadvantages those who have been with the Town for many years. We average a 4.5% pay increase, and inflation is 7%. Employees are losing buying power. He said that Wake County, Garner, and Fuquay-Varina are seeing the same issues.

Council discussed whether cutting some benefits would allow an increase in salaries. Ms. Halverson-Mayes said that if you allow employees to drop out of the health insurance plan, only those who use it most would stay in, which would increase the costs, not decrease them.

Mayor Mayefskie asked what next steps would be. Ms. Halverson-Mayes said we were favorable to be a leader in terms of compensation for recruitment and retention. Because our demographics are attracting a younger workforce, the Town needs the higher compensation to support retention. She recommends keeping performance management, but it needs to be substantial enough that employees are keeping up with inflation. Next McGrath Consultants is going to rebuild the compensation system, to keep the Town within the leader position, maybe not the top, but above average. Then she will meet with Town Administration and then Department Directors to go through recommendations and get feedback. Along with that is a cost estimate for administration to incorporate into the budget process.

Randy Harrington said there was a lot to unpack here. Directors are experiencing a real challenge every day. Conversations about total compensation are relevant because all of that is considered in the budget process. Staff has been so appreciative of the Council supporting

parental leave and elder leave and the other benefits. On insurance, the family cost is a hard pill to swallow, and we are going to work on moving that needle more. The other thing is the 401k program. Typical in the region is 5% from the organization. 6% is paid by the employee into the retirement system and 1% from the Town. You have to look at the totality, and we want to make sure we are competitive to meet your Strategic Plan.

There was a short recess.

Customer Care Center

Daniel Weeks, Assistant Town Manager, said staff has been doing research for a year. He described the participants on the steering committee, from all departments. Staff is ready to recommend the conceptual design for a new Office of Customer Care and next steps towards implementation. We want to make sure that customer satisfaction remains high. He defined an Office of Customer Care (OCC) and what its purpose is. The vision is for the OCC to serve as the “front door” to the Town. Once contact number for basic services to improve efficiency in service and processes, easy access to services for all, reduce non-emergency 911 calls, and this is part of our Smart Cities Strategy.

LeeAnn Plumer gave an overview of what the steering committee has been doing over the past year. She gave a snapshot of what the current process is for delivering customer service. She outlined the analysis of what other municipalities do who have had an OCC for a long time. She talked about meeting the resident where they are in terms of preferred communication method, and outlined the lessons learned and keys for success. The committee said that we should start small and build over time. She said customers should be the primary focus rather than number of calls answered, and agents should “own” the inquiry to ensure success. Bilingual ability would be extremely helpful.

Ms. Plumer said there are three models possible: Direct service, Hybrid, or Operator/transfers. The Hybrid model can resolve many services, but some may need to be referred to other departments. This balance can shift over time as we get the system up to speed. She said the service would be brought in over phases, with phase one being simpler, more timely communications, and common service requests.

Jeff Wilson, CIO, said that the technical challenges have a lot to do with security of payment systems and integration of software. It will involve multiple formats, from phone calls to texting, email, and website communications. The Phase 1 staffing model starts with a center manager to find out what needs to be done. Then add a few customer care positions and start training. It would be under the Town Manager’s office, highly integrated with Communications, and perhaps physically located somewhere in Finance. Proposed hours at this point would be 8-5, Monday to Friday. Currently the Holly Springs Police Department dispatch center takes after hours calls, but this can be revisited. Many services could be resolved up front, but calls that need to be transferred, the agent who answers still takes ownership of that call. Currently we are in the process of integrating the IT components. Next steps are to analyze the community survey results and this spring an RFI will go out for a customer service platform. In the summer and fall Communications will look at the marketing plan, with training following, and a soft-launch in the spring of 2023. Mr. Wilson said he is working on a 311 number to find out the process. Initially Century Link said we couldn’t get it. But he worked with the Utilities Commission and was told that, since we have a 911 we can have a 311. He said he is still working with Century Link to make sure cell phones as well as land lines go to that number. If we get the 311 it will be forwarded to the main phone number until the OCC is up and running.

Mr. Harrington said that nationally 311 is used for municipal customer service, but if we cannot get it, we will try to get a simple, easy to remember, phone number.

Council discussed having a customer survey sent out after a question is resolved to evaluate customer satisfaction. There were questions about the work needed behind the scenes

to insure a successful launch, which is driving the timeline. Agents who are not specialized in one department, but are trained on all the different software systems and department procedures are more successful than those who specialize, and result in better outcomes on the customer end. And a good workorder system needs to be in place behind the scenes to ensure success.

Yard Waste Collection

Paige Scott, Director of Public Works, said the purpose was to discuss the sustainability of our current yard waste collection model. Currently yard waste has 12 employees and 10 pieces of equipment, and is divided into leaf season and non-leaf season. The current model of putting yard waste in the street is not sustainable. This puts us out of compliance with our stormwater permit. The program is not self-supporting, with a 40% cost-recovery rate. Alternative models include requiring the use of compostable bags; establishing setout limits; switching to call-in services during seasons of low demand; converting to automated yard waste collection with containers; or a citizen convenience center. She discussed what neighboring communities' models are. She said that the National Solid Waste Association's 2017 study had key findings that included that converting to a bi-weekly collection with 96-gallon roll-out carts was feasible. Automatic collection is safer for employees, improved neighborhood esthetics and provided equitable service.

Ms. Scott said staff is recommending the carts, moving to bi-weekly collection with 2 announced fee free curbside yard waste collection events, bulk items or brush scheduled and collected for a fee, and a convenience center at the new operations campus. This will maintain current service levels. She recommends that Council review the cost-recovery model for financial stability.

She said the cost would require a \$2 million upfront capital investment. The estimated impact on the budget though, would go down, due to decreased maintenance and personnel costs. She said that to stay with the cost recovery 40% model at the current practice, rates would need to go up from \$4 to \$5.89; with the new model it would be \$4.47 to stay at 40% cost recovery, and \$11.18 for full cost recovery. She said staff has been attending HOA meetings to gather input and the general feedback was positive. The major concern was having another cart when they have a cart hut. They were asked about opt-out options, but if that happens people would still pay the fee. She outlined next steps to get to full implementation in the spring of 2023.

Council discussed where the yard waste is being taken, why the fees have gone up, and whether there are other sites that would charge less. They discussed whether there should be an opt-out option or an opt-in option. Contracting yard waste collection out was discussed and staff explained that we were too large, and the costs would be more than collecting it ourselves. There was discussion of how violating the storm water permits would affect the Town as well as the costs incurred due to yard waste causing flooding and equipment failures.

Mr. Harrington said he was hearing three council members who support the new model with some phasing, but a request for more information from all members, particularly on an opt-in or opt-out model. He said it would be brought back to Council at the March workshop.

Open Discussion/Parking Lot Items

Mayor Mayefskie asked if there was consensus about the UDO and undoing the merge of the Board of Adjustment and Planning Board. Consensus was to make that amendment to the UDO. There was discussion around requiring certain qualifications in order to serve. Chris Hills, Director of Development Services, said that we are required by statute to have a Board of Adjustment so Council could request certain qualifications but if no one with those applied, we

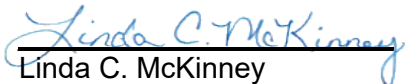
would still have to have a Board of Adjustment. The formation of a Citizens Academy was discussed and Mr. Harrington said he would bring something back to Council on that.

The question of whether Vape Shops could be moved to the Industrial zoning to keep them out of neighborhoods and from targeting youth. Mr. Hills said a new designation would have to be created but that could be brought to Council at the first UDO update. There was discussion of code enforcement around neon signs and other similar issues, and whether the Town should move from a complaint-based system of enforcement to a more proactive model.

Mr. Harrington asked Council if the second week in February works as the timing for the retreat each year so that staff can plan more ahead. Consensus was that it was.

Adjournment: There being no further business, Mayor Mayefskie adjourned the 2022 Mayor and Council Annual Retreat at 12:30 pm on Saturday, February 12, 2022.

Respectfully Submitted on Tuesday, March 1, 2022.


Linda C. McKinney
Town Clerk



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 10.

Consent Agenda

Title: Development Procedures Manual 2022 UDO Consolidation Amendments 22-DPM-01

Strategic Priority Area: Responsible & Balanced Growth

Staff Resource: Sean Ryan, Development Services

Action(s):

Adopt Resolution 22-03 to adopt the Development Procedures Manual UDO consolidation amendments

Explanation:

- The Development Procedures Manual (DPM) serves as a reference for town staff and the development community by providing specific requirements, processes, and procedures for the submittal, processing, and review of development petitions and applications.
- The recently adopted Unified Development Ordinance (UDO), effective March 1, consolidated the review process and procedures from the DPM into the UDO.
- This amendment eliminates most of the DPM so that the Town does not have conflicting documents that outline the review processes and procedures.
- The Town will maintain the DPM for future policy updates, such as the upcoming Traffic Impact Assessment Policy (also known as the TIA policy) as well as for the appendices, which include development applications and review calendars.

Background:

- The Development Procedures Manual (DPM) was adopted in 2002 and contains the review procedures that correspond to the 2002 Unified Development Ordinance (UDO).
- As specified in Section 1 of the DPM, amendments to the document are approved by resolution of the Town Council.
- The portion of the Manual that is subject to modification by the Town Council are Sections 1-12, which are the sections that outline the review process "policies".
- The Appendices are the Application Packets for the various review procedures which require review and approval by the UDO Administrator.

Funding Source(s):

N/A

Attachment(s):

1. 22DPM01_2022 UDO Consolidation Amendments_TrackChanges
2. Resolution 22-03 22DPM01 2022 UDO Consolidation



TOWN OF HOLLY SPRINGS DEVELOPMENT PROCEDURES MANUAL

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~~7.01—Variance of Development Standards~~

~~7.03—Environmental Appeals and Variances [Amended Resolution #10-24]~~

~~8—CONSTRUCTION DRAWING AND SOIL AND SEDIMENTATION CONTROL PROCEDURES~~

~~8.00—Construction Drawing & Erosion and Sedimentation Control Plan Approvals~~

~~8.01—Stormwater Permit Procedure~~

~~8.02—Stormwater Surety Procedure [Added Resolution #08-10][Amended Resolution #09-34]~~

~~9—PLATTING PROCEDURES~~

~~9.00—Platting Procedures~~

~~—[Removed Resolution #16-42]~~

~~—[Removed Resolution #18-37]*~~

~~10—CONSTRUCTION/BUILDING PROCEDURES~~

~~10.00—Certificate of Compliance~~

~~10.01—Building Permit/Required Inspections~~

~~10.02—Certificate of UDO Compliance~~

~~10.03—UDO Compliance Surety [Amended Resolution #11-19]~~

~~10.04—Certificate of Occupancy Procedures~~

~~11—TOWN GATEWAY DESIGN GUIDELINES [Amended Resolution #11-19]~~

~~—11.00—Gateway Design Guidelines~~

~~—11.01—Secondary Gateways~~

~~11.02—Primary Gateway Design Guidelines [Amended Resolution 18-37]*~~

~~12—PREFERRED DESIGN TECHNIQUES~~

~~12.00—Preferred Landscape Material [Added Supplement #6]~~

APPENDICES

A.01 Review Schedules

A.02 Rezoning Packet

A.03 Planned Unit Development Packet

A.04 Development Petition Packet

A.05 Zoning Vested Rights Packet

A.06 Development Waiver/Alternate Compliance Packet [Amended Supplement #5]

A.07 UDO Permit for Accessory/Temporary Uses and Structures Petition Packet

A.08 UDO Permit for Wireless Telecommunications Packet [Amended Resolution #09-34]

A.09 UDO Permit for Forestry Activity, Timbering Operations and Site Clearing Petition Packet

A.10 UDO Permit for Sign Installation

A.11 Riparian Buffer Modification Packet

A.12 Reserved [Amended Resolution #18-37]*

A.13 Home Occupation Registration Packet

A.14 Voluntary Annexation Packet

A.15 Administrative Appeal Packet [Amended Resolution #09-34]

A.16 Variance of Development Standards Packet [Amended Resolution #09-34]

A.17 Request for Construction Drawing Review Packet

A.18 Final Plat Packet

A.19 ~~TRC-LUAC~~ Request & Communications Application [Added Resolution #18-12]*

- A.20 Residential Building Permit Packet
- A.21 Non- Residential Building Permit Packet
- A.22 UDO Compliance Surety Packet [Amended Supplement #14]
- A.23 Zoning Verification Letter [Added Resolution 16-08]
- A.24 UDO Permit for Laying Hens [Added Resolution 16-08]



SECTION 1.00

Introduction

INTRODUCTION

This manual has been adopted by the Holly Springs Town Council to serve as a reference tool for Town Staff, Design Professionals, and anyone who needs to submit a Development Petition or Application for review to obtain a permit or any other development related approval in conjunction with the Town of Holly Springs Unified Development Ordinance (referred to as UDO throughout this Manual). This manual is a compilation of development procedures, policies, and design preferences. It should be used to assist the user with the information regarding the specific review process from submitting a petition/application through obtaining the final determination of your request. [Amended Ordinance #04-06]

~~Each of the Procedure sections provides specific information for pre-submittal data collection, detailed review procedures as well as next steps after gaining approval of your request. If you have any questions about any of the specific review procedures, you are encouraged to contact the Director of the Department responsible for that particular review procedure as specified.~~

JURISDICTION

Any development within the Corporate Limits of the Town of Holly Springs or its Extraterritorial Jurisdiction (ETJ) is required to comply with the UDO and all adopted ordinances, standards, and policies of the Town and the procedures of this Manual. If a proposed development is not within the corporate limits of the Town of Holly Springs or its ETJ, the property owner must submit a Petition for Voluntary Annexation in order for the Town of Holly Springs to consider the development petition.

WITHDRAWAL OF PETITION/APPLICATION DUE TO INACTIVITY

~~Petitioners/Applicants must make a complete re-submittal of application/petition materials within ninety (90) calendar days of issuance of written comments from staff or recommendation from Planning Board or to all the petition/application will be deemed withdrawn by the Petitioner/Applicant. This policy applies to all review procedures unless specified otherwise in this Manual. If the petitioner/applicant cannot make a complete resubmittal within the ninety (90) day window and wishes to keep the application active, they must make a written request to the Department Director of the Primary Processing Department with an explanation of the reason resubmittal will be delayed. If the Director determines sufficient extenuating circumstances exist, a one-time sixty (60) day extension may be authorized.~~

~~If the Petitioner/Applicant wishes for the project to be reconsidered after the petition/application is deemed withdrawn, a brand new Development Petition or Application will be required to be filed and shall follow the entire review procedures as specified for the particular petition/application from the beginning.~~

WITHDRAWAL OF PETITION/ APPLICATION PRIOR TO DETERMINATION OF OFFICIAL ACTION

The Petition or Application may be withdrawn from consideration at any point in the review process prior to the determination of official action. However, the fees and cost associated with the Petition or Application will not be refunded.

[Amended Resolution #03-25][Amended Resolution #18-37]*

WAIVER OF REQUIREMENTS

~~Where a Petitioner/Applicant determines that conformance with the procedures in this manual would create an unreasonable hardship or burden, a written request for a waiver may be submitted to the Department Director of the Primary Processing Department responsible for the specific review. That Director may grant a waiver of the requirements after consulting with the other Department Directors involved with the specific review procedure.~~

WAIVER OF VOLUNTARY ANNEXATION REQUIREMENTS [Added Resolution #07-25]

~~Where a Property Owner determines that conformance with the voluntary annexation requirements in this manual would create an unreasonable hardship or burden, a request for a waiver may be submitted to the Department of Planning & Zoning by completing the Annexation Waiver Petition. The request will be reviewed by the Town Manager who may grant a waiver of the requirements after considering the following factors:~~

- ~~▪ Parcel is less than 50% contiguous to the Corporate Town Limits~~
- ~~▪ Parcel is not within a reasonable distance to connect to municipal water and/or sewer~~
- ~~▪ Parcel does not gain access from a Town maintained roadway~~

~~See Section 6.06, *Development Waivers* for more information on the waiver process.~~

~~[Amended Resolution 18-37]*~~

AMENDMENTS

This manual may be subject to periodic change. Amendments to the Development Procedures and Policies ~~in Sections 1 through 12~~ shall require review and consideration by the Town Council through Resolution. Modifications to the Appendices shall be modified by review and consideration by the ~~Director(s) of the Department(s) that are involved with the specific Petition/Application process as specified in this Manual.~~ Administrator of the Unified Development Ordinance.

[Amended Resolution #03-25, Ordinance #04-06] [Amended Resolution #09-28]*

~~Registered holders of this Manual will be notified if/when amendments are made.~~

OTHER RELATED DOCUMENTS

This manual is intended to complement the following Town documents that also contain development regulations:

- The Town of Holly Springs Unified Development Ordinance (UDO)
- The Holly Springs Engineering Design and Construction Standards
- Town of Holly Springs Town Code
- Town of Holly Springs Policy Manual

DEFINITIONS OF TERMS USED IN THIS MANUAL

Note: If a term is not defined below, the term shall be defined as specified in the Unified Development Ordinance.

Department Directors: All of the Directors of the Departments involved in the specific review procedure as specified, or their designee.

Director: The Director of the Department of the Primary Processing Department for the specific review procedure or their designee, unless otherwise specified.

Expected Review Time: The typical time required to complete the specific review procedure depending upon the completeness of plans submitted, the thoroughness of responses to staff comments, and timely submittal of each set of plans for review.

Primary Processing Department: The specified Department responsible for the acceptance and processing of the Development Petition or Application for the specific review procedure. This is the Department from which most of the communication will be handled through regarding distribution of Staff Comments or requests for additional information to complete the review process.

Staff: The staff members in the Departments that are involved in the review of the petition/ application for the specific review procedure as indicated.

[Amended Resolution 18-37]*



SECTION 1.01

Concept Plan Review Meeting

~~Prior to the submittal of any new development petition, a Concept Plan Review meeting must be scheduled through the Department of Planning & Zoning. Representatives from the Departments of Planning & Zoning, Engineering, Economic Development, and Parks and Recreation may be present at this meeting to provide the information needed to proceed with the development process successfully as well as members from other departments when deemed necessary. This meeting must take place no more than (8) eight weeks prior to petition/application submittal, as indicated in the applicable review section.~~

~~Following the Concept Plan Review meeting, if it is determined that a petition for a Planned Unit Development or Development Plan for Development Options will be requested, or if the proposed project is not in conformance with the Town's Comprehensive Plan, a recommendation may be made to the Petitioner to meet with the Technical Review Committee (TRC) prior to filing a development petition. See Section 1.04 of this manual for more information on the Technical Review Committee.~~

~~[Amended Resolution #03-25], [Amended Resolution #07-34]~~

CONCEPT PLAN REVIEW

~~**What kind of information will be provided by Town Staff during the Concept Plan Review?**
(The level of information received at the Concept Plan Review is dependent upon the quality and quantity of information provided by the Project Team.)~~

- ~~— Site Design/ Zoning District requirements~~
- ~~— Whether request for a Zoning Map Change to a different zoning district may be considered~~
- ~~— Whether annexation will be required~~
- ~~— Level of Architectural Standards that will be required~~
- ~~— Possible development options or waivers that may be applicable~~
- ~~— Type(s) of development petition(s) that should be filed~~
- ~~— Timeline for the review of the proposed project~~
- ~~— Applicable applications/petitions and fees that will be required~~
- ~~— Comprehensive Plan designations for the area (land use designation, parks and greenways, development policies, etc.)~~
- ~~— Utility/ infrastructure improvements~~
- ~~— Construction process, fees, etc.~~
- ~~— Whether the proposed project will require review by the TRC prior to filing of the development petition~~

~~[Amended Resolution #03-25], [Amended Resolution #07-34]~~

~~**Who should attend the Concept Plan Review?**~~

- ~~— Town Staff may include representatives from: Planning & Zoning, Engineering, Parks & Recreation, Economic Development, and the Town Manager's Office~~
- ~~— Petitioner/ Applicant~~

- ◆ ~~Developer~~
- ◆ ~~Project Team *Engineer, Site Designer, Landscape Architect, Architect, etc.*~~
- ◆ ~~Property Owner~~

~~What should be provided by the Developer/Property Owner at the Concept Plan Review?~~

◆ ~~Concept plan~~

- ◆ ~~Concept plans can be hand sketched, preferably to a measurable scale, and should include information such as: lot location(s) and size, approximate building size and placement on lot, number of buildings, lots, proposed roads and pedestrian circulation, phasing information and open space.~~

◆ ~~Stormwater Information regarding the proposed development~~ [Added Resolution #08-10]

- ◆ ~~Sketch Plan showing general site layout and proposed stormwater concepts, this can be included on the sketch plan described above.~~
- ◆ ~~Complete Natural Resources Inventory: Appendix A-1 of the Section 8.00 of the Engineering Design and Construction Standards list specific environmental documentation to be submitted at the Concept Plan Review Meeting which will be used to assist staff in determining if a Flood Study will be required by the Town, applicable environmental regulations in the development such as but not limited to riparian buffers and possible locations and types of BMPs that may be appropriate for the development.~~

◆ ~~Traffic Count Data~~ [Added Resolution #10-24, Amended Resolution 18-37]*

- ◆ ~~To determine if a Traffic Impact Analysis (TIA) will be required, the following information must be provided:~~
 - ◆ ~~Completed TIA Scoping form (if not previously submitted)~~
 - ◆ ~~Concept Plan showing site layout and relationship to major streets and intersections.~~
- ◆ ~~If a TIA is deemed necessary, it must be submitted with the first submittal of the Development Petition.~~

◆ ~~Information regarding the proposed development.~~

- ◆ ~~What is the proposed use?~~
- ◆ ~~What size is the proposed use?~~
- ◆ ~~Where is the ingress/egress?~~
- ◆ ~~What type of building materials are proposed?~~
- ◆ ~~Where are the closest existing utilities?~~
- ◆ ~~What is the proposed name of the development? (You may need to submit several names to ensure that it does not duplicate any other project names)~~

◆ ~~Preliminary Building Elevations~~

- ◆ ~~Building elevations can be hand sketched, preferably to a measurable scale, and should include information such as: primary building material, secondary building materials (including percentages of coverage), colors, textures, architecture, roof treatment, façade modulation, and any other aesthetic components. [Added Resolution # 07-31]~~

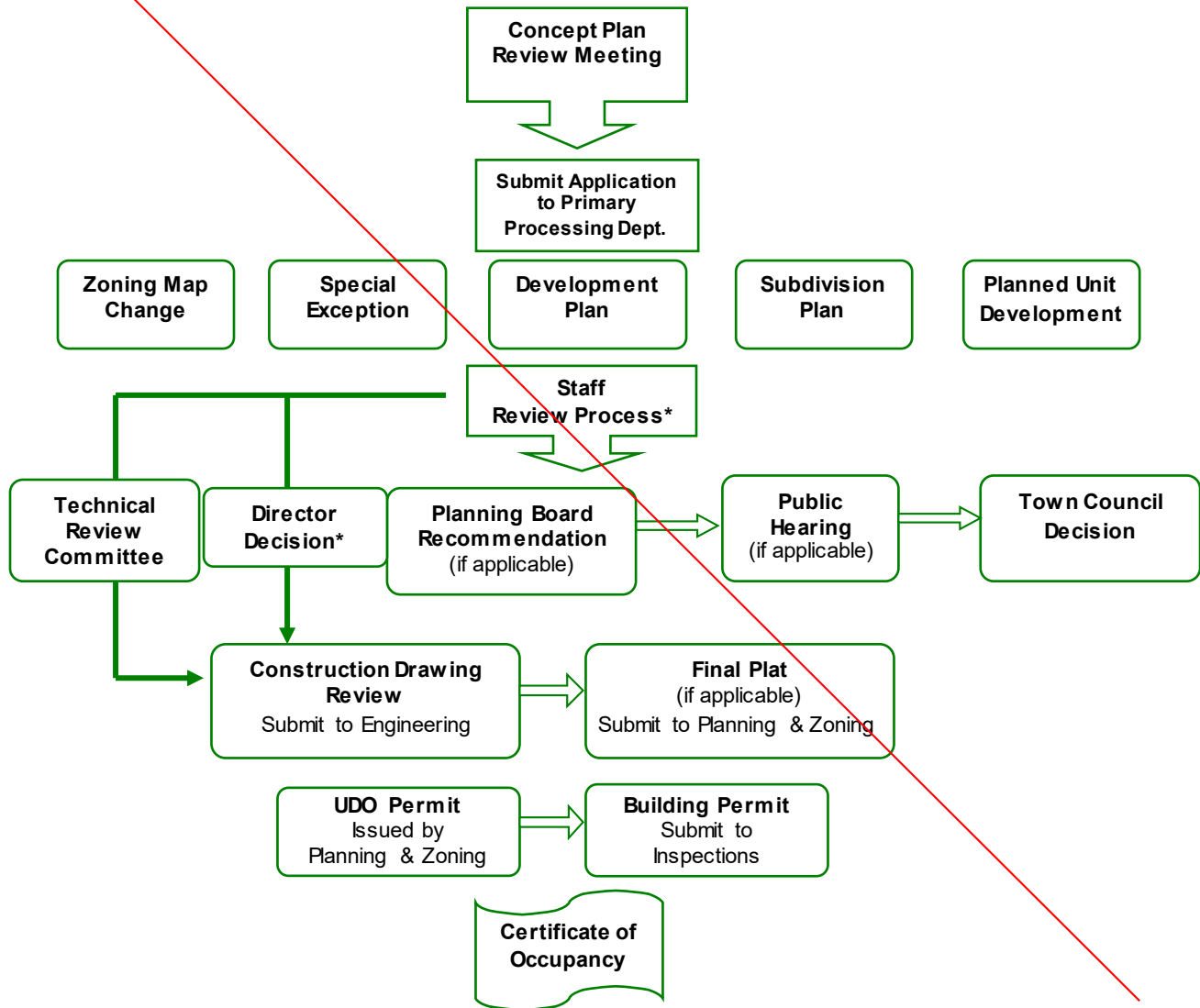
Overview of Development Process

The type of development proposed will determine the type and length of the review processes required to obtain a Certificate of Occupancy. **Development Plans** are required for all residential projects utilizing the development options in UDO Section 2.09, multifamily development, and non-

residential projects for Architectural and Site Design Review. **Master Plans** may be submitted for multi-phase residential projects and are required for non-residential subdivisions using the incremental platting process. **Preliminary Plans** are required for all subdivisions (residential and non-residential) that have not obtained Master Plan approval. [Amended Resolution #07-31]

Following Director [Amended Resolution #11-19]*, Town Council or TRC Approval of the applicable Development Petitions, **Construction Drawing and Soil and Sedimentation Control** petitions are to be submitted to the Department of Engineering for review and approval. Following Construction Drawing approval, **Final Plats** and **UDO Permits** (if applicable) are to be filed with the Department of Planning & Zoning and **Building Permits** are to be filed with the Department of Building Code Enforcement. Prior to issuance of the Certificate of Occupancy, all inspections as specified in this Manual are to be completed and approved. [Amended Ordinance #04-06]

All petitions/applications for each of these steps are to be submitted in accordance with the provisions specified within this Manual.
[Amended Resolution #03-25]



~~*Length of staff review varies based on the type of review taking place.
[Amended Resolution #11-19]*~~



SECTION 1.02

Developer Conference

~~After the submittal of a complete development petition, the Department of Planning and Zoning will schedule a Developer Conference. Representatives from the Departments of Planning & Zoning, Engineering, and Parks and Recreation may be present at this meeting to review Staff's comments on the development petition and the first set of plans.~~

Who should attend the Developer Conference?

- ~~• Town Staff may include representatives from: Planning & Zoning, Engineering, and Parks & Recreation~~
- ~~• Petitioner/ Applicant~~
- ~~• Developer~~
- ~~• Project Team Engineer, Site Designer, Landscape Architect, Architect, etc.~~
- ~~• Property Owner~~

What will be discussed at the Developer Conference?

~~Staff will bring a copy of the plans submitted for review and copies of Staff's review comments~~

- ~~• Staff comments regarding Site Design/ Zoning District requirements/needs/changes~~
- ~~• Whether Architectural requirements are being met~~
- ~~• Whether the findings for the waiver(s) have been adequately met~~
- ~~• Open Space needs/requirements~~
- ~~• Implementation of Utility/ Infrastructure improvements~~
- ~~• Additional fees that may be required~~
- ~~• Review Schedule~~
- ~~• Additional requirements with next review~~



SECTION 1.03

Public Hearing Procedures

~~A Public Hearing is required for any Development Plan for Development Options, Development Plan for Architectural and Site Design Review or Waivers in a Multifamily District, Zoning Map Change, Administrative Appeal, Variance of Development Standards, or Special Exception Use as specified in the Decision Matrix found in UDO Section 9.09. [Amended Resolution #07-34]~~

DETERMINATION OF PUBLIC HEARING

~~During the Concept Plan Review Meeting or Preliminary Consultation, the need for a Public Hearing will be determined. The Department of Planning & Zoning will be responsible for all legal notifications required according to North Carolina General Statutes and this Development Procedures Manual unless otherwise specified. The Public Hearing Procedures vary by type of Public Hearing required for the specific request.~~

LEGISLATIVE PUBLIC HEARING [Amended Resolution 15-26]*

~~The following petitions require a Legislative Public Hearing: Development Plan for multi-family residential or Residential Development Options, Zoning Map Change General Use District, Planned Unit Development. [Amended Resolution 15-26]*~~

~~All Legislative Public Hearings required as specified in the Unified Development Ordinance shall be noticed in accordance with these procedures. (NC General Statute reference §160A-364 and §160A-384) [Amended Resolution 15-26]~~

Publication of Notice:

- ~~1. The Department of Planning & Zoning shall prepare a Public Hearing Notice for publishing in a newspaper with general paid subscription in Holly Springs (e.g. News & Observer). [Amended Resolution #15-26, Amended Resolution 18-37]*~~
- ~~2. The Notice shall include the date, time, and location of the Public Hearing; 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 published once a week for two consecutive calendar weeks with the first time not less than 10 days nor more than 25 days before the date fixed for the hearing. [Amended Resolution #15-26]~~
- ~~4. The staff person who prepared the publication of the notices, shall submit a certification as provided by the Department of Planning & Zoning of that fact.~~
- ~~5. The Publisher's Affidavit from the publication newspaper shall be maintained in the specific project file.~~

Notification of Owners:

- ~~1. Notification shall take place according to NCGS §160A-384. The Department of Planning & Zoning shall prepare a Public Hearing Notice to be sent via first class mail to the owner(s) of the land specified on the petition and the owners of all parcels of land abutting that parcel of land as shown on the county tax listings. The Department may elect to publish a ½ page newspaper advertisement when the number of affected properties exceeds 50, pursuant to the statute. [Amended Resolution #15-26, Amended Resolution 18-37]*~~
- ~~2. The Notice shall include the date, time, and location of the Public hearing; 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 fixed for the hearing. [Amended Resolution #15-26]~~
- ~~4. The staff person who deposited the notices in the mail, shall submit a certification as provided by the Department of Planning & Zoning of that fact.~~

Notification of Owners for Third Party Zoning Map Change (Rezoning): [Added Resolution #00-43, Amended Resolution 18-37]

- ~~1. The Petitioner for a Zoning Map Change that is not the owner or owner's agent must notify the property owner of such request. [Added Resolution #00-43], [Amended Resolution #15-26, Amended Resolution 18-37]*~~
- ~~2. The notice shall include the date, time, and location of the Public Hearing; 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. [Added Resolution #00-43]~~
- ~~3. The notice shall be sent by certified mail to the current property owner(s) according to the Wake County tax records at the time of submittal. [Added Resolution #00-43]~~
- ~~4. The receipt of certified mail shall be included with the Rezoning, Comprehensive Plan/UDO Amendment Petition. [Added Resolution #00-43, Amended Resolution #18-37]*~~

Posting of Notification on Property:

- ~~1. The Department of Planning & Zoning shall post a Public Hearing Sign on the subject parcel(s) of land as specified on the Development Petition.~~
- ~~2. The Sign shall be placed so as to be visible from the adjacent right of way(s).~~
- ~~3. The Sign shall be posted not less than 10 days nor more than 25 days before the date fixed for the hearing.~~
- ~~4. The staff person who posted the sign on the property, shall submit a certification as provided by the Department of Planning & Zoning of that fact.~~

Legislative Public Hearing Process: [Amended Resolution #15-26]

~~A Legislative Public Hearing is a public hearing to solicit input on a proposed legislative decision such as a rezoning. [Amended Resolution #15-26]~~

- ~~1. Presentation of Statements.
Any person giving comments to the Board regarding any pending Petition shall first state their name and address for the record prior to beginning presentation of statement.~~
- ~~2. Time Allowed and Procedure for Hearing of Petitions~~

~~In order to provide all interested parties with a fair hearing, Petitioners and remonstrators shall be afforded a reasonable amount of time for the presentation of evidence, statements and argument at the public hearing of every Petition before the Council. The order of the presentation of evidence, statements and arguments shall be as follows:~~

- ~~a. Staff shall be given a reasonable time by the Council to introduce the matter being considered and for the presentation of evidence, statements regarding the matter being considered.~~
- ~~b. Petitioners shall be allotted a total of fifteen (15) minutes to present evidence, statements and arguments in support of the matter being considered.~~
- ~~c. Persons appearing in support of a Petition shall be allotted a total of fifteen (15) minutes to present evidence, statements and arguments in support of the matter being considered.~~
- ~~d. Remonstrators and persons appearing in opposition to a Petition shall then be allotted a total of fifteen (15) minutes to present evidence, statements and arguments in opposition to the matter being considered.~~
- ~~e. The Petitioner shall then have a total of five (5) minutes for rebuttal, which shall include only evidence, statements and argument in rebuttal of remonstrators' or the Staff's evidence, and a brief closing statement.~~

~~At the conclusion of remarks by any party, the Council shall have the right to ask questions pertaining to the evidence, statements and argument presented. Time involved in responding to questions by the Board by either the Petitioners or remonstrators shall not be considered for purposes of calculating equal time for presentation. [Amended Resolution #15-26]*~~

~~The presiding officer shall have authority to cut off repetitious and irrelevant testimony and shall make reasonable efforts to allow equal time for Petitioners and remonstrators.~~

QUASI JUDICIAL PUBLIC HEARING: ~~[Amended Resolution #15-26]*~~

~~The following petitions require a Quasi Judicial Public Hearing: Administrative Appeal, Variance of Development Standards, Special Exception Use, Zoning Map Change Conditional Use District, or Environmental Variance.~~

~~A quasi-judicial public hearing is one that predicates a quasi-judicial decision which is defined as a decision involving the finding of facts regarding a specific application of an ordinance and that requires the exercise of discretion when applying the standards of the ordinance. Quasi-judicial decisions include, but are not limited to, decisions involving variances, special use permits, certificates of appropriateness, and appeals of administrative determinations. Decisions on the approval of subdivision plats and site plans are quasi-judicial in nature if the ordinance authorizes a decision-making board to approve or deny the application based not only upon whether the application complies with the specific requirements set forth in the ordinance, but also on whether the application complies with one or more generally stated standards requiring a discretionary decision on the findings to be made by the decision-making board.~~

~~All Quasi-Judicial Public Hearings required as specified in the Unified Development Ordinance shall be noticed in accordance with these procedures. (NC General Statutes reference §160A-388)~~

Notification of Owners: ~~[Added Resolution #15-26]*~~

- ~~1. The Department of Planning & Zoning shall prepare a Public Hearing Notice to be sent via first class mail to the owner(s) of the land specified on the petition, the owners of all parcels of land~~

~~abutting that parcel of land as shown on the county tax listings, and the applicant specified on the petition.~~

- ~~2. The Notice shall include the date, time, and location of the Public hearing; 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 fixed for the hearing.~~
- ~~4. The staff person who deposited the notices in the mail, shall submit a certification as provided by the Department of Planning & Zoning of that fact.~~

Posting of Notification on Property: [Added Resolution #15-26]*

- ~~1. The Department of Planning & Zoning shall post a Public Hearing Sign on the subject parcel(s) of land as specified on the Development Petition.~~
- ~~2. The Sign shall be placed so as to be visible from the adjacent right of way(s).~~
- ~~3. The Sign shall be posted not less than 10 days nor more than 25 days before the date fixed for the hearing.~~
- ~~4. The staff person who posted the sign on the property, shall submit a certification as provided by the Department of Planning & Zoning of that fact.~~

Quasi-Judicial Public Hearing Process:

[Amended Resolution #15-26]*

~~Whenever an elected or appointed board is assigned the responsibility for approving a permit or hearing an appeal in its administrative capacity, it must do so in a quasi-judicial proceeding.~~

- ~~1. Testimony
Any person giving testimony to the Board regarding any pending Petition shall be placed under oath and shall first state their name and address for the record prior to beginning testimony. The chairman of the Board of Adjustment, or any member temporarily acting as chairman; the Town Clerk; A Notary Public or the Clerk to the Board is authorized in his/her official capacity to administer oaths to witnesses in any matter coming before the board.~~ [Amended Resolution #15-26]*
- ~~2. Contacting Board Members Regarding Pending Petition Prohibited
No person shall contact any member of the Board in advance of a quasi-judicial public hearing on any pending Petition with intent to influence the Board member's action on such Petition.~~
- ~~3. Time Allowed and Procedure for Hearing of Petitions:
In order to provide all interested parties with a fair hearing, Petitioners and remonstrators shall be afforded a reasonable amount of time for the presentation of evidence, statements and argument at the public hearing of every Petition before the Board. The order of the presentation of evidence, statements and arguments shall be as follows:
 - ~~a. Staff shall be given a reasonable time by the Board to introduce the matter being considered and for the presentation of evidence, statements regarding the matter being considered.~~
 - ~~b. Petitioners shall be allotted a total of fifteen (15) minutes to present evidence, statements and arguments in support of the matter being considered.~~~~

~~c. Persons appearing in support of a Petition shall be allotted a total of fifteen (15) minutes to present evidence, statements and arguments in support of the matter being considered.~~

~~d. Remonstrators and persons appearing in opposition to a Petition shall then be allotted a total of fifteen (15) minutes to present evidence, statements and arguments in opposition to the matter being considered. The petitioner at this time may cross examine the remonstrators or those in opposition to a petition. The chairman of the board (or mayor in the event it is the Town Council) shall determine a manner in which a party may cross examine a witness in such way as to preserve decorum of the proceedings. [Added Resolution #11-10], [Amended Resolution #15-26]*~~

~~e. The Petitioner shall then have a total of five (5) minutes for rebuttal, which shall include only evidence, statements and argument in rebuttal of remonstrators' or the Staff's evidence, and a brief closing statement.~~

~~At the conclusion of remarks by any party, the Board shall have the right to ask questions pertaining to the evidence, statements and argument presented. Time involved in responding to questions by the Board by either the Petitioners or remonstrators shall not be considered for purposes of calculating equal time for presentation.~~

~~The presiding officer shall have authority to cut off repetitious and irrelevant testimony and shall make reasonable efforts to allow equal time for Petitioners and remonstrators.~~

~~4. Only for hearings before the Board of Adjustment, the concurring vote of four fifths of the members of the Board shall be necessary to grant a variance. For decisions regarding reversing any order, requirement, decision, or determination of any administrative official, a simple majority is required. [Amended Resolution #15-26]*~~

~~5. Every quasi-judicial decision shall be subject to review by the superior court by proceedings in the nature of certiorari pursuant to G.S. 160A-393. A petition for review shall be filed with the clerk of superior court by the later of 30 days after the decision is effective or after a written copy thereof is given in accordance with subdivision (1) of this subsection. When first class mail is used to deliver notice, three days shall be added to the time to file the petition. [Amended Resolution #15-26]*~~



SECTION 1.04

Technical Review Committee

~~The Technical Review Committee (TRC) is established as a Staff Agency in the Town of Holly Springs Unified Development Ordinance Section 9.04, D. The purpose of the TRC is to provide technical support and assistance as well as comment and critique to the development community in the assessment of proposed development petitions for those projects that may not be in strict compliance with the rules and regulations of the UDO; to the *Director* and *Staff* in the review of special studies, plans, or other projects; and make determinations regarding development petitions and/or waivers as specified in UDO Section 9.09—Decision Matrix. [Amended Resolution #00-28]~~

~~TRC Review Required Prior to Development Petition Submission~~

~~Following the Concept Plan Review meeting with Staff (see Section 1.01), if it is determined that a petition for a Planned Unit Development or Development Plan for Development Options will be requested, or if the proposed project is not in conformance with the Town's Comprehensive Plan, staff may recommend that the Petitioner meet with the TRC prior to filing a development petition. [Amended Resolution #07-34]~~

~~To be placed on the next available TRC agenda, submit a TRC Request & Communications Application and any supporting documentation to the Department of Planning & Zoning by Noon on Monday a minimum of 3 weeks prior to the scheduled meeting date. TRC Meetings will have a maximum of two (2) items for Requests & Communications. Items will be scheduled in the order that applications are submitted. An application to be placed on an additional agenda cannot be submitted until the Monday after the item was reviewed by the TRC. [Amended Resolution #18-12]*~~

~~What should be provided by the Developer/Property Owner at the Concept Plan Review?~~

- ~~• Concept plan~~
 - ~~▪ Concept plans can be hand sketched, preferably to a measurable scale, and should include information such as: lot location(s) and size, approximate building size and placement on lot, number of buildings, lots, proposed roads and pedestrian circulation, environmental, utility service, phasing information and open space. If you wish to have your plans included in the agenda packet that is sent to the members prior to the meeting, you must have all documentation submitted to the Department of Planning & Zoning a minimum of 2 weeks prior to the scheduled meeting.~~
- ~~• Information regarding the proposed development.~~
 - ~~▪ What is the proposed use?~~
 - ~~▪ What size is the proposed use?~~
 - ~~▪ Where is the ingress/egress?~~
 - ~~▪ What type of building materials are proposed?~~
 - ~~▪ Where are the closest existing utilities?~~
 - ~~▪ What is the proposed name of the development? (You may need to submit several names to ensure that it does not duplicate any other project names)~~

~~Who should attend the TRC Meeting?~~

- ~~• Petitioner/ Applicant~~

- ~~Developer~~
- ~~Project Team *Engineer, Site Designer, Landscape Architect, Architect, etc.*~~
- ~~Property Owner~~

~~What will be discussed at the TRC Meeting?~~

~~The TRC will discuss the merits of the project and how the proposed project fits into the Town's overall goals for the area in which the project is to be located. The TRC will offer suggestions on project design and layout based upon their view of the Planning Board and Town Council goals for development in the Town. The TRC comments and suggestions are to be considered as advisory in nature and not a guarantee of approval or support by TRC members if such modifications or suggestions are made since the TRC is not the decision making body for the Development Petition Request. {Amended Ordinance #04-06}~~

~~TRC Review and Recommendation of Waiver Petitions~~

~~According to UDO Section 9.09 Decision Matrix the TRC is to make recommendations to the Town Council on certain Waiver requests. The TRC must review the Waiver request prior to presentation of the Development Petition associated with the Waiver request to the Planning Board for review and recommendation. At the Developer Conference (Section 1.02) the schedule for the Waiver request to be presented to the TRC will be provided. {Amended Ordinance #04-06}~~

~~TRC Determination of Final Action for Certain Development Petitions~~

~~According to UDO Section 9.09 Decision Matrix the TRC is to make the final determination on certain Development Petitions. The review process for these projects are to follow the procedures as specified in this Manual and will follow the associated review schedule for submittal and review dates.~~



SECTION 2.00

Zoning Map Change

~~A Petition for Zoning Map Change is required to be submitted to propose a change of the zoning designation of a parcel of land or to change the commitments of a Conditional Use Permit within the Town of Holly Springs' Corporate Limits or Extra-Territorial Jurisdiction.~~

COMPREHENSIVE PLAN AMENDMENT ~~[Amended Resolution #08-07]~~

~~**Expected Review Time:** See Associated Zoning Map Change Procedure~~

~~**Primary Processing Department:** Planning & Zoning~~

~~**Departments involved in Comprehensive Plan Amendment review process:** Planning & Zoning~~

~~A Comprehensive Plan Amendment is required to be submitted if a proposed zoning map change petition is not consistent with the Town of Holly Springs comprehensive plan. [Amended Resolution #15-26]~~

GENERAL USE DISTRICT

~~**Expected Review Time:** Approximately 116-138 days [Amended Resolution #18-07, 10-02]*~~

~~**Primary Processing Department:** Planning & Zoning~~

~~**Departments involved in General Use Zoning Map Change review process:** Planning & Zoning and Engineering~~

~~A Petition for Zoning Map Change to a General Use District is a rezoning request to change the zoning of a parcel of property without the request for additional use or development standard restrictions by the owner of the property. General Use District rezoning requests have a faster review process than either a Conditional Use District or Planned Unit Development rezoning request.~~

CONDITIONAL USE DISTRICT/CONDITIONAL USE PERMIT

~~**Expected Review Time:** Approximately 116-138 days [Amended Resolution 16-08, #18-07, 10-02]*~~

~~**Primary Processing Department:** Planning & Zoning~~

~~**Departments involved in Conditional Use Zoning Map Change/Conditional Use Permit review process:** Planning & Zoning, Engineering, and Parks & Recreation~~

~~A Petition for Zoning Map Change to a Conditional Use District must be accompanied by a request for a Conditional Use Permit which includes a written statement signed by the property owner which details additional use or development standard restrictions offered by the owner as a part of the request for the Conditional Use Permit. A Conditional Use Permit may only further restrict the use or development standards that are typically required for the corresponding General Use District. A Conditional Use Permit cannot grant additional uses or less restrictive standards than are those required for the corresponding General Use District. For additional information, see UDO Section 9.07: Conditional Use Districts and Conditional Use Permits.~~

PLANNED UNIT DEVELOPMENT

~~**Expected Review Time:** project specific [Amended Resolution 16-08, 10-02]*~~

~~**Primary Processing Department:** Planning & Zoning~~

~~**Departments involved in Planned Unit Development review process:** Planning & Zoning, Engineering, Parks & Recreation, Fire & Rescue, Public Works, and Water Quality~~

~~A Petition for Zoning Map Change to Planned Unit Development District may be requested to allow for a use that is not permitted as a Primary Use or Special Exception Use in any Zoning District of the UDO. A PUD District request is also appropriate for mixed use developments that cannot be completed under the development standards of a zoning district or through the utilization of the use of Development Options for residential districts (UDO Section 2.09). A request for zoning to the PUD District must be accompanied by a PUD Master Plan. Due to the complexity of such projects, the review schedule for a PUD request will be determined by Staff after the Concept Plan Review Meeting and may be modified during the review process in collaboration with the Petitioner. {Amended Resolution #07-31, 19-02}*~~



SECTION 2.01

General Use District

Petition for Zoning Map Change to a General Use District Procedures

Notes:

- ~~• A Petition for Zoning Map Change to a General Use District may be converted into a Petition to a Conditional Use District, in accordance with the procedures for Conditional Use District (Section 2.02), at any point in the review process. However, any difference in the fees will not be refunded or if additional fees are due, such fees must be paid prior to official action. [Amended Resolution #15-26]~~
- ~~• A Petition for Zoning Map Change to a General Use District, in association with a request to modify or terminate a previously approved Conditional Use District, shall include a Termination of Conditional Use District/Permit signed by the owner of the parcel of property. The Owner(s) may sign an affidavit allowing another person to submit such petition, documents, and make modifications to such. [Added Resolution 16-08]~~

Prior to Filing Petition:

- ~~1. Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Petition for Zoning Map Change, however, it is recommended that you have this meeting at least ten (10) business days prior to filing. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review for more information regarding this required meeting. [Added Resolution #11-10]~~
- ~~2. If the Zoning Map Change is determined to not be in conformance with the Comprehensive Plan during the Concept Plan Review Meeting, a recommendation may be made to the Petitioner to meet with the Technical Review Committee prior to submitting a Petition for Zoning Map Change and a Petition request for Comprehensive Plan Amendment. [Amended Resolution #03-25, #08-07]~~

Petition Filing:

- ~~1. Submit Petition for Zoning Map Change and any supporting documentation by the posted deadline date to the Department of Planning & Zoning as shown on the Rezoning and Special Exception Use w/o Development Plan Schedule. The Rezoning Application Packet provides a detailed list of all application submittal requirements. [Amended Resolution #08-10, #18-07]*~~
- ~~2. The Department of Planning & Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the petition will be placed in the next available review cycle after the information is submitted and the petition is deemed complete.~~
- ~~3. The Department of Planning & Zoning will notify Petitioner after determination of complete submittal of the anticipated review schedule and Public Hearing information. Staff will advertise the public hearing notice, notify the adjacent property owners, and post the property in accordance with the Town's Public Hearing procedures as specified in this Development Procedures Manual.~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the specific review process.~~

- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition if additional information or clarification of a petition is needed.~~

Determination of Official Action:

- ~~1. Staff shall then prepare a report to the Planning Board including discussion of all plans and policies relevant to the proposed petition along with a recommendation by the Staff to approve or deny the proposed Petition for Zoning Map Change.~~
- ~~2. Staff and the Petitioner shall attend the Planning Board meeting. The Planning Board will review the submitted petition as follows:~~
 - ~~a. Staff shall be given a reasonable time by the Planning Board to introduce the matter being considered and for the presentation of evidence, statements regarding the matter being considered, and to provide a recommendation on the Petition.~~
 - ~~b. Petitioner(s) shall be allotted a total of fifteen (15) minutes to present evidence, statements and arguments in support of the matter being considered.~~

~~At the conclusion of remarks by any party, the Planning Board shall have the right to ask questions pertaining to the evidence, statements and argument presented. Time involved in responding to questions by the Planning Board by the Petitioner shall not be considered for purposes of calculating time for presentation.~~

~~After collecting the evidence and the Planning Board has no remaining questions, the Planning Board shall first vote on a written recommendation to the Town Council regarding the Petition that addresses plan consistency and other matters deemed appropriate by the Planning Board, then shall make a recommendation to the Town Council to either approve or deny the Petition for Zoning Map Change. Only upon request by the Petitioner, shall the recommendation on the Petition be continued to the next regularly scheduled Planning Board meeting so as to be able to provide additional evidence in support of the request. [Amended Resolution #06-16]~~

- ~~3. Staff will forward the Planning Board and final Staff recommendation to the Town Council prior to the Public Hearing. If no written report is received from the Planning Board within 30 days of referral of the Zoning Map Change Petition, the Town Council may proceed in its consideration of the rezoning without the Planning Board Report. [Amended Resolution #06-16]~~
- ~~4. Staff and the Petitioner shall attend the Public Hearing before the Town Council. The Public Hearing shall be conducted in conformance with the Legislative Public Hearing Procedures in Section 1.03 of this Manual. After the Public Hearing, the Town Council may make a final determination to either: approve, deny, table the petition request or refer the proposal back to the Planning Board for further review. Prior to making their final determination, the Town Council shall adopt a statement describing whether its action is consistent with the Comprehensive Plan and explain why the Town Council considers the action taken to be reasonable and in the public interest. A comment by the Planning Board that a proposed amendment is inconsistent with the Comprehensive Plan shall not preclude consideration or approval of the proposal by the Town Council. [Amended Resolution #06-16, #15-26]~~
- ~~5. Staff will notify all persons named on the Petition for Zoning Map Change regarding the Town Council's decision within ten (10) days of their action. If the Petition request was approved, staff, will also notify Wake County GIS of the change to ensure all property records are updated. [Amended Ordinance #04-06] [Amended Resolution #06-16, #09-16]~~

~~[Removed Resolution #16-08]*~~



SECTION 2.02

Conditional Use District/ Conditional Use Permit

Petition for Conditional Use District with Conditional Use Permit Procedures

Notes:

- ~~A Petition for Zoning Map Change to a Conditional Use District shall not be converted into a petition to a General Use District at any point in the review process. If this change should be requested, the Petitioner must withdraw the previous Petition and submit a new Petition in accordance with the procedures for General Use District (Section 2.01). All fees paid for the Conditional Use District Petition will not be refunded or credited to the new General Use District Petition. [Amended Resolution #15-26]~~
- ~~All Petitions for Zoning Map Change to a Conditional Use District must also include a written statement, signed by the owner of the parcel of property as a request for Conditional Use Permit. The Owner(s) may sign an affidavit allowing another person to submit such petition, documents, and make modifications to such.~~
- ~~After filing of the Petition for Conditional Use Permit, no additional use or development standard offered in the written statement may be modified to be less restrictive without re-filing a brand new Petition request. [Amended Resolution #15-26]~~
- ~~The petitioner is required to notify the Department of Planning & Zoning and provide a copy of any deed including deed book/page number as evidence of any change of ownership on the subject property(s) from the petition deadline date to the date of action by the Town Council and provide updated Petitions and Conditional Use Permit written statements with signatures from all of the new owners in order to be considered.~~
- ~~A Petition for Zoning Map Change to a General Use District, in association with a request to modify or terminate a previously approved Conditional Use District, shall include a Termination of Conditional Use District/Permit signed by the owner of the parcel of property. The Owner(s) may sign an affidavit allowing another person to submit such petition, documents, and make modifications to such. [Added Resolution 16-08]*~~

Prior to Filing Petition:

1. ~~Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Petition for Zoning Map Change, however, it is recommended that you have this meeting at least thirty (30) days prior to filing to ensure that the written statement of additional use and development standard restrictions will be accurate and acceptable for consideration. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review for more information regarding this required meeting.~~
2. ~~If the Zoning Map Change is determined to not be in conformance with the Comprehensive Plan during the Concept Plan Review Meeting, a recommendation may be made to the Petitioner to meet with the Technical Review Committee prior to submitting a Petition for Zoning Map Change and Petition for Comprehensive Plan Amendment. [Amended Resolution #03-25, #08-07]~~

Petition Filing:

1. ~~Submit Petition for Zoning Map Change and Conditional Use Permit as well as any supporting documentation by the posted deadline date to the Department of Planning & Zoning as shown on the Conditional Use Rezoning Schedule. The Rezoning Application Packet provides a detailed list of all application submittal requirements. [Amended Resolution #08-10]~~
2. ~~The Department of Planning & Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the petition will be~~

~~placed in the next available review cycle after the information is submitted and the petition is deemed complete.~~

- ~~3. The Department of Planning & Zoning will notify Petitioner after determination of complete submittal, the date and time of the Developer Conference to review Staff's Comments as well as the anticipated review schedule and Public Hearing information. [Amended Resolution #15-26]~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the specific review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition prior to the Developer Conference.~~
- ~~3. Developer Conference Please see Section 1.02 of this Manual for specific information regarding this meeting.~~
- ~~4. Revised plans and any requested information must be submitted for staff review in accordance with the Conditional Use Rezoning Schedule to remain in the review cycle. If plans are submitted after the deadline date, they will be processed in the next available review cycle.~~

Determination of Official Action:

- ~~1. Staff shall then prepare a report to the Planning Board including discussion of all plans and policies relevant to the proposed petition along with a recommendation by the Staff to approve or deny the proposed Petition for Zoning Map Change and Conditional Use Permit.~~
- ~~2. Staff and the Petitioner shall attend the Planning Board meeting. The Planning Board will review the submitted petition as follows:~~
 - ~~a. Staff shall be given a reasonable time by the Planning Board to introduce the matter being considered and for the presentation of evidence, statements regarding the matter being considered, and to provide a recommendation on the Petition.~~
 - ~~b. Petitioners shall be allotted a total of fifteen (15) minutes to present evidence, statements and arguments in support of the matter being considered.~~

~~At the conclusion of remarks by any party, the Planning Board shall have the right to ask questions pertaining to the evidence, statements and argument presented. Time involved in responding to questions by the Planning Board by the Petitioner shall not be considered for purposes of calculating time for presentation.~~

~~After collecting the evidence and the Planning Board has no remaining questions, the Planning Board shall first vote on a written recommendation to the *Town Council* regarding the Petition that addresses plan consistency and other matters deemed appropriate by the *Planning Board*, then shall make a recommendation to the Town Council to either approve or deny the Petition for Zoning Map Change. Then the Planning Board shall make a recommendation to the Town Council to either approve or deny the Petition for the Conditional Use Permit. Only upon request by the Petitioner, shall the recommendation on the Petition be continued to the next regularly scheduled Planning Board meeting so as to be able to provide additional evidence in support of the request. [Amended Resolution #06-16]~~

- ~~3. Staff will forward the Planning Board and final Staff recommendations to the Town Council prior to the Public Hearing. If no written report is received from the Planning Board within 30 days of referral of the Zoning Map Change Petition, the Town Council may proceed in its consideration of the rezoning without the Planning Board Report. [Amended Resolution #06-16]~~

~~4. Staff and the Petitioner shall attend the Public Hearing before the Town Council. The Public Hearing shall be conducted in conformance with the Quasi-Judicial Public Hearing Procedures in Section 1.03 of this Manual. After the Public Hearing, the Town Council may make a final determination to either: approve, deny, or table the petition for Zoning Map Change or refer the proposal back to the Planning Board for further review. Prior to making their final determination, the Town Council shall adopt a statement describing whether its action is consistent with the Comprehensive Plan and explain why the Town Council considers the action taken to be reasonable and in the public interest. A comment by the Planning Board that a proposed amendment is inconsistent with the Comprehensive Plan shall not preclude consideration or approval of the proposal by the Town Council. [Amended Resolution #06-16, #15-26]~~

~~Then the Town Council may make a final determination to either: approve, deny, or table the petition for Conditional Use Permit or refer the proposal back to the Planning Board for further review. If additional use or development standard restrictions are added to the request for Conditional Use Permit by the Owner at the meeting, the determination on the request will not be made until such restrictions are added to the written statement, signed by the owner of the parcel of property, and submitted to the Town Council for consideration.~~

~~5. Upon receiving Approval, the Owner shall submit the final Conditional Use Permit form completed in accordance with the Town Council's final determination on the proposal to the Department of Planning & Zoning within ten (10) business days from Town Council action. The Department of Planning & Zoning shall have the Review Officer sign the Conditional Use Permit and notify the Petitioner that it is ready for recording within ten (10) business days. The Owner shall then have the Conditional Use Permit recorded in the office of the Wake County Recorder of Deeds as specified in UDO Section 9.07. If the Conditional Use Permit is not recorded, a new Conditional Use Permit must be requested and approved prior to receiving approval on any Development Petition other than one for Conditional Use Permit or for Zoning Map Change. For residential projects, the Final Plat will not be released until said copy of the recorded conditions is returned to the Department of Planning & Zoning. For non-residential projects, the UDO Permit with Building Permit will not be released until said copy of the recorded conditions is returned to the Department of Planning & Zoning. [Amended Resolution #05-31, #06-16]~~

~~6. The Department of Planning & Zoning will notify all persons named on the Petition for Zoning Map Change and Conditional Use Permit regarding the Town Council's within ten (10) days of action of denial or after a copy of the approved recorded Conditional Use Permit is returned to the Department of Planning & Zoning. If the Petition request was approved, staff, will also notify Wake County GIS of the change to ensure all property records are updated. Any decision of the Town Council is subject to review by the superior court. Such petitions for review must be submitted to the Clerk of the Superior Court within 30 days of decision or after a written copy is delivered to every aggrieved party who has filed a written request for such copy with the Town Clerk at the time of the hearing of the case, whichever is later in accordance with NCGS 160A-381. [Amended Ordinance #04-06] [Amended Resolution #06-16, #09-16]~~

~~[Removed Resolution #16-08]*~~



SECTION 2.03

Planned Unit Development

Petition for Zoning Map Change to Planned Unit Development District and PUD Master Plan Process

Notes:

- ~~All Petitions for Zoning Map Change to the Planned Unit Development District must be signed by the owner(s) of the parcel(s) of property. The Owner(s) may sign an affidavit allowing another person to submit such petition, documents, and make modifications to such.~~
- ~~The petitioner is required to notify the Department of Planning & Zoning and provide a copy of any deed including deed book/page number as evidence of any change of ownership on the subject property(s) from the petition deadline date to the date of action by the Town Council and provide updated Petitions with signatures from all of the new owners in order to be considered.~~

Submittal Requirements:

~~All petitions for Zoning Map Change to the Planned Unit Development District shall be accompanied with a PUD Master Plan and shall specify the development standards that will apply to the real property that is included in the petition. The Planned Unit Development Application Packet includes a detailed list of the submittal requirements and plans required.~~

~~Approval of a Zoning Map Change to the Planned Unit Development District and PUD Master Plan, creates the zoning district regulations for the project. Any other development petitions that would normally be required for development are still required to be filed prior to any site improvements being made such as Preliminary Plans for subdivision of land, as specified in Section 3 of this Manual, or Development Plans for Multifamily Developments and Non-Residential Developments, as specified in Section 4 of this Manual. The Development Directors may allow for simultaneous review of a Preliminary Plan or Development Plan with the request for Planned Unit Development based upon the information provided at the Concept Plan Review meeting.~~

~~A recommendation may be made to the Petitioner to meet with the Technical Review Committee (TRC) prior to submitting a petition for Zoning Map Change to the Planned Unit Development District. See Section 1.04 Technical Review Committee for more information regarding this meeting. [Amended Resolution #03-25]~~

Prior to Filing Petition:

- ~~1. Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Petition for Zoning Map Change/PUD Master Plan, however, it is recommended that you have this meeting at least thirty (30) days prior to filing. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review and UDO Section 5.03, A. for more information regarding this required meeting. [Amended Resolution 16-08]*~~
- ~~2. If the Zoning Map Change is determined to not be in conformance with the Comprehensive Plan during the Concept Plan Review Meeting, a recommendation may be made to the Petitioner to meet with the Technical Review Committee prior to submitting a Petition for Zoning Map Change and a Petition request for Comprehensive Plan Amendment. [Amended Resolution #03-25, #08-07]~~

Petition Filing:

- ~~1. Submit Petition for Zoning Map Change and Planned Unit Development Master Plan along with any supporting documentation to the Department of Planning & Zoning by the posted deadline date as shown on the Planned Unit Development Review Schedule. The Planned Unit Development Application Packet provides a detailed list of all application submittal requirements. [Amended Resolution #08-10]~~
- ~~2. The Department of Planning & Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the petition will be placed in the next available review cycle after the information is submitted and the petition is deemed complete. However, if information specified on the "Required Submittal Items List" or the "Plan Requirement & Data Checklist" is not included, the Petitioner will be notified of the missing information and will not be included in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available review cycle to deem the petition complete to be included in that review cycle. [Amended Resolution #08-10]~~
- ~~3. The Department of Planning & Zoning will notify Petitioner after determination of complete submittal, the date and time of the Developer's Conference to review Staff's Comments. At the Developer's Conference, Staff will present the anticipated review schedule and Public Hearing information for the proposed project. Staff will advertise the public hearing notice, notify the adjacent property owners, and post the property in accordance with the Town's Public Hearing procedures as specified in Section 1.03 of this Development Procedures Manual.~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the specific review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition prior to the Developer Conference.~~
- ~~3. Developer Conference Please see Section 1.02 of this Manual for specific information regarding this meeting.~~
- ~~4. Revised plans and any requested information must be submitted for staff review in accordance with the Planned Unit Development Review Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available 2nd (or 3rd) review cycle to deem the Petition complete to be included in that review cycle. [Amended Resolution #08-10]~~
- ~~5. Staff will review the revised plans and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition in accordance with the Planned Unit Development Review Schedule.~~
- ~~6. Revised plans and any requested information must be submitted for staff review in accordance with the Planned Unit Development Review Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available 2nd (or 3rd) review cycle to deem the Petition complete to be included in that review cycle. [Amended Resolution #08-10]~~

- ~~7. Staff will review the revised plans and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition in accordance with the Planned Unit Development Review Schedule.~~

Determination of Official Action:

- ~~1. The PUD plans for official action must be submitted in accordance with the Planned Unit Development Review Schedule. Staff shall then prepare a Public Hearing Information Report to the Town Council and the Planning Board for the Joint Public Hearing including basic information regarding the proposed petition.~~
- ~~2. Plans for Official Action and any requested information must be submitted in accordance with the Planned Unit Development Review Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available Official Action review cycle to deem the Petition complete to be included in that review cycle. [Added Resolution #08-10]~~
- ~~3. Staff and the Petitioner shall attend the Joint Public Hearing before the Town Council and Planning Board. The Public Hearing shall be conducted in conformance with the Legislative Public Hearing Procedures in Section 1.03 of this Manual. [Amended Resolution #15-26]*~~
- ~~4. After collecting the evidence and the Town Council and Planning Board has no remaining questions, the Town Council shall forward the request to the Planning Board for review and recommendation in accordance with the PUD Review Schedule unless otherwise specified by the Town Council.~~
- ~~5. The Petitioner may chose to submit a revised set of plans and any additional information based upon the comments received at the Public Hearing. If such plans are requested to be submitted by the petitioner, staff, or the Boards, the review schedule for the continued determination of official action will deviate from the published Planned Unit Development Review Schedule.~~
- ~~6. Staff shall then prepare a report to the Planning Board including discussion of all plans and policies relevant to the proposed petition along with a recommendation by the Staff to approve, approve with conditions, or deny the proposed Petition for Zoning Map Change and PUD Master Plan.~~
- ~~7. Staff and the Petitioner shall attend the Planning Board meeting. The Planning Board will review the submitted petition as follows:
 - ~~a. Staff shall be given a reasonable time by the Planning Board to introduce the matter being considered and for the presentation of evidence, statements regarding the matter being considered, and to provide a recommendation on the Petition.~~
 - ~~b. Petitioners shall be allotted a total of fifteen (15) minutes to present evidence, statements and arguments in support of the matter being considered.~~~~

~~At the conclusion of remarks by any party, the Planning Board shall have the right to ask questions pertaining to the evidence, statements and argument presented. Time involved in responding to questions by the Planning Board by the Petitioner shall not be considered for purposes of calculating time for presentation.~~

~~After collecting the evidence and the Planning Board has no remaining questions, the Planning Board shall first vote on a written recommendation to the *Town Council* regarding the Petition that addresses plan consistency and other matters deemed appropriate by the *Planning Board*,~~

~~then shall make a recommendation to the Town Council to either approve, approve with conditions, or deny the Petition for Zoning Map Change and the PUD Master Plan. Only upon request by the Petitioner, shall the recommendation on the Petition be continued to the next regularly scheduled Planning Board meeting so as to be able to provide additional evidence in support of the request. [Amended Resolution #06-16]~~

~~8. Staff will forward the Planning Board and final Staff recommendations to the Town Council prior to the Meeting. If no written report is received from the Planning Board within 30 days of referral of the Zoning Map Change Petition, the Town Council may proceed in its consideration of the rezoning without the Planning Board Report. [Amended Resolution #06-16]~~

~~9. Staff and the Petitioner shall attend the meeting before the Town Council. The Town Council may make a final determination to either: approve, approve with conditions, deny, table the petition request or refer the proposal back to the Planning Board for further review. Prior to making their final determination, the Town Council shall adopt a statement describing whether its action is consistent with the Comprehensive Plan and explain why the Town Council considers the action taken to be reasonable and in the public interest. A comment by the Planning Board that a proposed amendment is inconsistent with the Comprehensive Plan shall not preclude consideration or approval of the proposal by the Town Council. [Amended Resolution #06-16]~~

~~10. The Department of Planning & Zoning will notify all persons named on the Petition for Zoning Map Change and PUD Master Plan regarding the Town Council's decision within ten (10) days of their action. If the Petition request was approved, staff, will also notify Wake County GIS of the change to ensure all property records are updated. [Amended Ordinance #04-06] [Amended Resolution #06-16, #09-16]~~

~~If modifications were made to the PUD Master Plan after the last plan submittal to the Department of Planning & Zoning, revised plans must be submitted to the Department of Planning & Zoning for review to determine conformance with the approved modifications. Once the modified plans have been approved by staff, stamped "Approved" copies will be sent to all named on the Petition and all Property Owners.~~

~~[Removed Resolution #16-08]*~~

NEXT STEPS:

~~1. A Preliminary Plan must be filed for the detailed subdivision approval for the residential components of the Planned Unit Development in accordance with the procedures in Section 3.02 of this Manual.~~

~~2. A Development Plan must be filed for the detailed site plan review for the multifamily or non-residential components of the Planned Unit Development in accordance with Section 4 of this Manual.~~

MODIFICATION OF PUD MASTER PLAN:

~~The procedures for making modifications to an approved PUD Master Plan are outlined in UDO Section 5.04. Minor Amendments may be approved by the Director of Planning & Zoning after consulting with the Director of Engineering and Director of Parks & Recreation. Major Amendments are required to follow the review process for a PUD Master Plan Approval as specified above. Appeal of the Director's decision may be made in accordance with the provision of UDO Section 5.04.~~



SECTION 2.04

Planned Unit Development Amendment

PLANNED UNIT DEVELOPMENT AMENDMENT PROCEDURES

What you will need to file a Petition for an Amendment to a Planned Unit Development:

- ~~Planned Unit Development Application Packet~~
- ~~Town of Holly Springs Unified Development Ordinance~~
- ~~Copy of Approved Planned Unit Development Master Plan~~

SUBSTANTIAL AMENDMENT PROCEDURES

~~Substantial Amendments~~ as described in UDO Section 5.04, B, involve: (a) ~~an increase in height, area, bulk, gross density or intensity of land uses;~~ (b) ~~the designation of additional land uses;~~ (c) ~~the reduction in the depth of perimeter yards or reduction in the Planned Unit Value of landscape buffers or screening;~~ (d) ~~the addition of driveways or access points to the proposed PUD; or,~~ (e) ~~reduction in the amount of parking spaces for any use below the minimum number required by this UDO.~~

~~Substantial Amendments shall be subject to the procedures set forth as applicable, for the initial Planned Unit Development Master Plan.~~

AMENDMENT SUBMITTAL & REVIEW REQUIREMENTS

- ~~Submit plan coversheet including the description of amendment(s) requested and date.~~
- ~~Only submit the cover sheet and any sheets that may change as a result of the amendment. Full plan set is not required if each sheet is not affected.~~
- ~~All amendments are to be clouded and noted with a delta.~~
- ~~Only noted amendments on the sheet will be approved by staff.~~
- ~~Amendments not clouded and noted will not be approved and will be required to refer to the original approved plans.~~

MINOR AMENDMENT PROCEDURES

Prior to Filing Petition:

1. ~~Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Minor Amendment Petition, however, it is recommended that you have this meeting at least two (2) weeks prior to filing. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review for more information regarding this required meeting.~~

Petition Filing:

- ~~1. Submit Petitions for Minor Planned Unit Development Amendment along with any supporting documentation by the posted deadline time to the Department of Planning & Zoning on Monday. The Planned Unit Development Packet provides a detailed list of all application submittal requirements. Petitions received after Monday will be placed in the next week's review cycle. [Amended Resolution #08-10]~~
- ~~2. The Department of Planning & Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the petition will be placed in the next available review cycle after the information is submitted and the petition is deemed complete.~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the specific review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition within fifteen (15) business days after the submittal date.~~
- ~~3. Revised plans and any requested information must be submitted for staff review in accordance with the date specified on the Staff Comments to remain in the review cycle. If plans are submitted after the deadline date, they will be processed in the next available review cycle.~~
- ~~4. Staff will review the revised plans and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition.~~

~~*Note:* If at any time during the Amendment Review process, there is no written correspondence to the Department of Planning & Zoning for a period exceeding thirty (30) days, the Petition will be deemed withdrawn and a new Petition and review process will be required to consider the request.~~

Determination of Final Action:

- ~~1. The third and final set of revised drawings must be submitted in accordance with the staff review comments~~
- ~~2. Within five (5) business days after the submittal deadline date, the Director, shall make a final determination to either: approve, approve with conditions, or deny the petition request based upon confirmation from the other Department Directors involved in the review process.~~
- ~~3. The Department of Planning & Zoning will notify all persons named on the Planned Unit Development Petition regarding the Director's decision within ten (10) days of their action. [Amended Ordinance #04-06][Amended Resolution #09-16]*~~

~~[Added Resolution #05-45]~~



SECTION 2.05

Comprehensive Plan Amendment

~~A Comprehensive Plan Amendment is required to be submitted if a proposed zoning map change petition or planned unit development petition is not consistent with the Town of Holly Springs Comprehensive Plan. [Amended Resolution #08-07]~~

~~Petition for Comprehensive Plan Amendment Procedures~~ [Amended Resolution # 08-07]

~~Prior to Filing Petition:~~

- ~~1. Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of ten (10) business days prior to the submittal of the Petition for Comprehensive Plan Amendment, however, it is recommended that you have this meeting at least ten (10) days prior to filing. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review for more information regarding this required meeting. [Added Resolution #11-10], [Amended Resolution #18-37]*~~

~~Petition Filing:~~

~~The filing procedures and review process will follow the same schedule as the associated Zoning Map Change Petition or Planned Unit Development Petition.~~

~~Neighborhood Meeting:~~ [Added Resolution 13-24]*

~~Before a public hearing is held on the Development Petition, the Petitioner must hold at least one (1) neighborhood meeting and submit to the Department of Planning & Zoning a written report of the neighborhood meeting. The neighborhood meeting shall comply with the following:~~

~~Purpose of Meeting~~

~~The purpose of the neighborhood meeting is to educate neighbors about the proposed Development Petition, to receive neighborhood comments, and to address concerns about the Development Petition. At least one neighborhood meeting shall be scheduled and held by the Petitioner or Petitioner's Agent.~~

~~Time and Place of Meeting~~

~~The neighborhood meeting shall be held at a place and time that is generally accessible to those property owners who will be notified of the Public Hearing as specified in Section 1.02 of this Manual. The neighborhood meeting shall not be held prior to the Concept Meeting for the submittal of the Development Petition or less than 15 days prior to the Public Hearing.~~

~~Notification of Meeting~~

- ~~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 Development Petition, owner of land abutting that parcel(s) of land, and any~~

~~homeowners association or property owners association that represents any parcels within that area as shown on the county tax listings and to the Town of Holly Springs Department of Planning & Zoning.~~

- ~~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.~~

Conduct of Meeting

~~At the Neighborhood Meeting, the Petitioner shall explain the development 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.~~

Neighborhood Meeting Report

~~A minimum of fourteen (14) days prior to the scheduled Public Hearing on the Development Petition, the Petitioner shall submit a report about the Neighborhood Meeting(s) to the Department of Planning & Zoning. The report will be forwarded by the Department of Planning & Zoning to the Town Council as part of the agenda item.~~

~~The report shall include, among other things:~~

- ~~1. A listing of those persons and organizations that were send Notification about the Neighborhood Meeting.~~
- ~~2. The date, time, and location of the meeting.~~
- ~~3. A copy of the signed attendance list that includes names and addresses of those in attendance.~~
- ~~4. A summary of the issues discussed at the meeting.~~
- ~~5. A description of any changes made to the Development Petition by the Petitioner as a result of the meeting.~~



SECTION 2.06

Zoning Vested Rights

~~Zoning Vested Rights may be requested at time of submittal of a development petition. The granting of Zoning Vested Rights will authorize a project to be completed under the zoning regulations in place at time of the approval of the original development petition date of official action if the regulations have changed since that date. [Amended Resolution #15-26]*~~

Petition for Zoning Vested Rights Procedures

Prior to Filing Petition:

- ~~1. Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Petition for Zoning Vested Rights. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review for more information regarding this required meeting.~~

Petition Filing:

- ~~1. Submit Petition for Zoning Vested Rights as well as any supporting documentation to the Department of Planning & Zoning. The Zoning Vested Rights Packet provides a detailed list of all submittal requirements.~~
- ~~2. The Department of Planning & Zoning will notify applicant of an incomplete Petition or any missing information within two (2) business days after the submittal date. This information must be completed and submitted prior to processing of Petition request. If the missing information is not submitted within one (1) week of notification, the petition will be marked incomplete and returned to the Petitioner. All fees paid will not be refundable.~~
- ~~3. The Department of Planning & Zoning will notify Petitioner after determination of complete submittal of the anticipated review schedule and Public Hearing date and information. Staff will advertise the public hearing notice, notify the adjacent property owners, and post the property in accordance with the Town's Public Hearing procedures as specified in this Development Procedures Manual.~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition if additional information or clarification of petition is needed.~~
- ~~3. Revised maps and any requested information must be submitted for staff review a minimum of ten (10) days prior to the Town Council Public Hearing. [Amended Ordinance #04-06]~~
- ~~4. The Town Clerk's Office will place the Petition Request on the next available Town Council Agenda for a Public Hearing subject to the NCGS requirements for advertisement of the Public Hearing. [Amended Ordinance #04-06]~~

Determination of Official Action:

- ~~1. Staff shall then prepare a report to the Town Council including discussion of all plans and policies relevant to the proposed petition. [Amended Ordinance #04-06]~~
- ~~2. Staff and the Petitioner shall attend the Public Hearing before the Town Council. The Public Hearing shall be conducted in conformance with the Legislative Public Hearing Procedures in Section 1.03 of this Manual. After the Public Hearing, the Town Council will make a final determination on the Petition. The Town Council must grant the Zoning Vested Rights for a minimum of 2 years unless any of the "Termination" standards are applicable at the time of the request as specified in UDO Section 9.08 Zoning Vested Rights. The Town Council may allow Zoning Vested Rights up to a maximum of 5 years. If less than 5 years is granted, the Town Council may at a later date extend the Zoning Vested Rights up to and not exceeding a total of 5 years. [Amended Resolution #15-26]*~~
- ~~3. Staff will notify all persons named on the Petition for Zoning Vested Rights regarding the Town Council's decision and expiration date of the Zoning Vested Rights within ten (10) days of their action. [Amended Ordinance #04-06], [Amended Resolution #09-16]~~

~~[Added Resolution #04-14]~~



SECTION 3.00

Subdivisions

~~A subdivision of property involves the division of property into one or more lots or parcels of land. Subdivisions involve not only Residential property, but Commercial and Industrial property as well. Two types of subdivisions are: Major Subdivisions, which may be requested through either the Master Plan or Preliminary Plan process and requires approval from the Town Council, and Minor Subdivisions, which require approval from Staff. [Amended Ordinance #04-06]~~

MASTER PLAN

~~**Expected Review Time:** Approximately 116–138 days [Amended Resolution #15-26, 16-08, 19-02]*~~

~~**Primary Processing Department:** Planning & Zoning~~

~~**Departments involved in Master Plan review process:** Planning & Zoning, Engineering, Parks & Recreation, Fire & Rescue, Public Works, and Water Quality [Amended Resolution #07-31]~~

~~Master Plans are required for all non-residential incremental subdivisions. They are also required for residential developments which contain a minimum of ninety (90) lots and are in compliance with the development standards of the specific zoning district, and will be developed in multiple phases, with a build-out over several years. If a residential development is proposed to utilize the Development Options in UDO Section 2.00, then a Petition for Development Plan must be requested in accordance with the procedures in Section 4 of this manual. A Master Plan shall ensure compliance with all development standards as specified for the zoning district as well as all other Town development requirements. The master plan document shall be submitted as either a “schematic” or “detailed” master plan. At a minimum a “schematic” design will not involve specific details such as lot by lot dimensions/sizes, specific roadway design, public place design, and other design criteria may not be specified at a detailed engineered level. Once the Master Plan is approved, if a “detailed” plan was not approved, each phase must be submitted for detailed administrative plan review prior to construction drawing review. This process is intended to provide a developer with an opportunity to have a large scale project reviewed and approved with the Town Council and have assurances that as the development is constructed the overall concept and scheme will not be modified or subject to further review. [Amended Ordinance #04-06, Amended Resolution #07-31]~~

PRELIMINARY PLAN

~~**Expected Review Time:** Approximately 116–138 days [Amended Resolution #15-26, 16-08, 19-02]*~~

~~**Primary Processing Department:** Planning & Zoning~~

~~**Departments involved in Preliminary Plan review process:** Planning & Zoning, Engineering, Parks & Recreation, Fire & Rescue, Public Works, and Water Quality [Amended Resolution #07-31]~~

~~Preliminary Plans are required for all Major Subdivisions that have not received Master Plan Approval and are required to provide specific information such as lot by lot dimensions/sizes, specific right of way design, public place design, and other design criteria at a specified engineered level. If the subdivision is part of a project that has obtained approval of a Development Plan for Development Options or a Planned Unit Development, a Preliminary Plan must be approved prior to filing for Final Plat. The Development Directors may allow for simultaneous review of a Preliminary Plan with a Development Plan for Development Options or a Planned Unit Development based upon the information provided at the Concept Plan Review meeting. [Amended Resolution #07-31]~~

MINOR SUBDIVISION

~~Expected Review Time:~~ See Section 9.00, **~~Platting Procedures~~** ~~[Amended Resolution 16-08, 19-02]*~~

~~Primary Processing Department:~~ Planning & Zoning

~~Departments involved in Minor Subdivision review process:~~ Planning & Zoning, Engineering, Parks & Recreation

~~A Minor Subdivision may be submitted for any subdivision that contains four (4) or less lots and does not involve new public streets, extensions of public streets, the extension of public utilities, or request for Waivers as specified in UDO Section 9.05, B., 12. After the petition and plans have been submitted and reviewed by staff, a Staff Determination will be made. Minor Subdivision shall follow the Final Plat Procedures in Section 9.001 of this manual.~~

AMENDMENT TO APPROVED SUBDIVISION ~~[Amended Resolution #15-26]~~

~~If a change to an approved Subdivision Plan is requested, it is considered to be an Amendment. The extent of the changes involved will determine the required review process. The two types of amendments are: Minor Amendments and Substantial Amendments.~~

~~**Minor Amendments** are alterations that do not substantially deviate from or alter the approved plans. Minor amendments may be approved at an administrative level.~~

~~Expected Review Time:~~ Approximately ~~67-74 days~~ ~~[Amended Resolution #15-26, 16-08, 19-02]*~~

~~Primary Processing Department:~~ Planning & Zoning

~~Departments involved in Amendment review process:~~ Planning & Zoning, Engineering, Parks & Recreation

~~**Substantial Amendments** as described in UDO Section 9.05, B., 6., e., include the following: (a) substantially alter any street layout, lot line, or utility easements shown on the master plan or preliminary plan; (b) increase the total number of lots/units within the overall original approved master plan or preliminary plan by more than ten (10) percent, or ten (10) lots/units, whichever is less; (c) reduce the open space within the overall project or subdivision by more than ten (10) percent; (d) increase the master plan or preliminary plan acreage by more than ten (10) percent or five (5) acres whichever is less (except for PUDs); (e) reduce a perimeter yard; or (f) increase the total number of freestanding signs, increase the total sign surface area for any type of sign (building sign or freestanding sign) or the height of a freestanding sign that requires a waiver of sign regulation in accordance with the provisions of Section 7.03, H. Waiver of Sign Regulations. ~~[Amended Resolution #15-26]~~~~

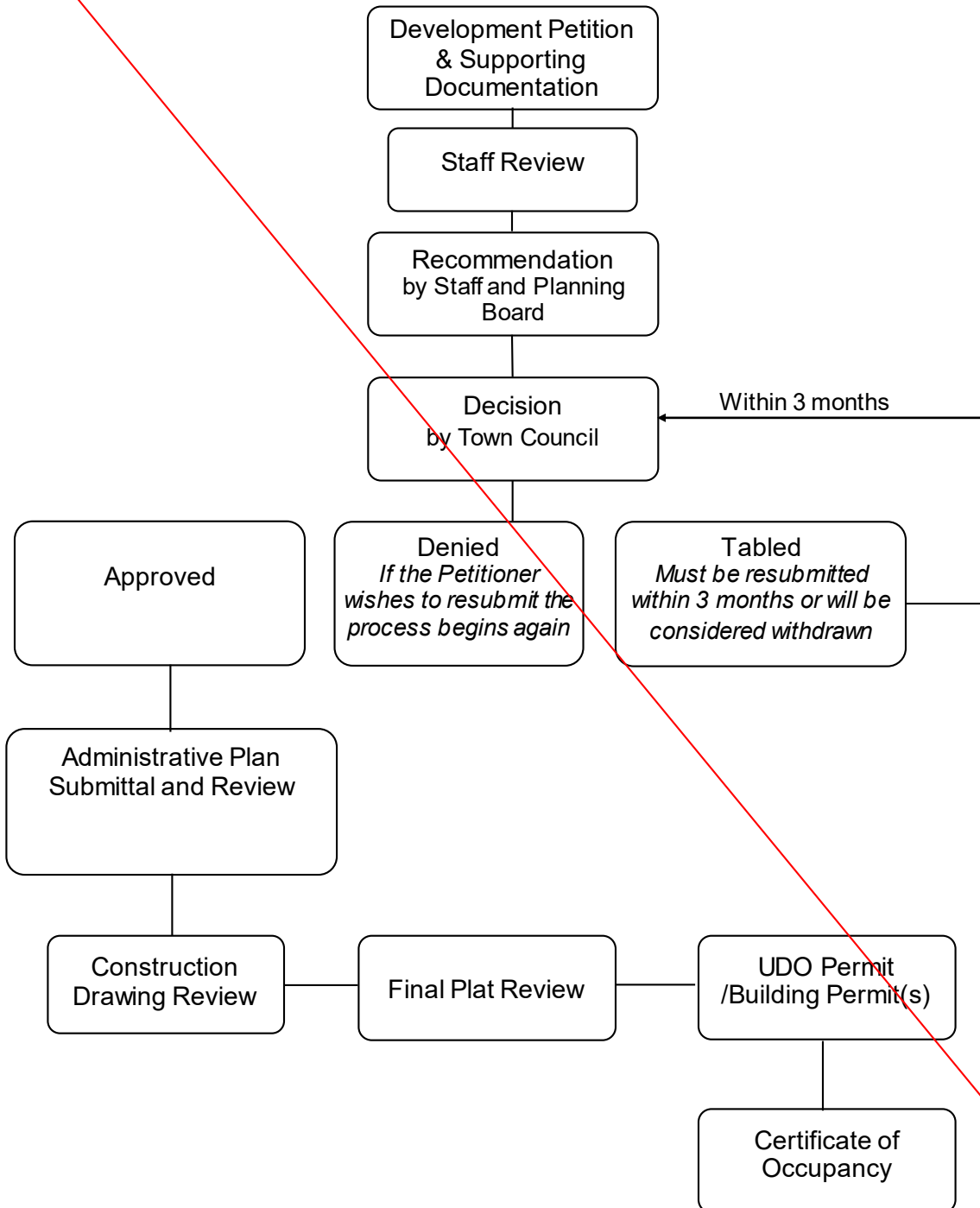
~~Substantial Amendments shall be approved using the same procedures used for Master Plan, Preliminary Plan, or Minor Subdivision review and approval.~~



SECTION 3.01

Master Plan

MASTER PLAN PROCEDURES



Prior to Filing Petition:

- ~~1. Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Master Plan, however, it is recommended that you have this meeting at least thirty (30) days prior to filing. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review for more information regarding this required meeting. [Added Resolution #11-10]~~

Petition Filing:

- ~~1. Submit Petition for Master Plan along with any supporting documentation by the posted deadline date to the Department of Planning & Zoning as specified on the Town Council Review Schedule. The Subdivision Packet provides a detailed list of all application submittal requirements. [Amended Ordinance #04-06], [Amended Resolution #08-10]~~
- ~~2. The Department of Planning & Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the petition will be placed in the next available review cycle after the information is submitted and the petition is deemed complete. However, if information specified on the "Required Submittal Items List" or the "Plan Requirement & Data Checklist" is not included, the Petitioner will be notified of the missing information and will not be included in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available review cycle to deem the petition complete to be included in that review cycle. [Amended Resolution #08-10]~~
- ~~3. The Department of Planning & Zoning will notify Petitioner after determination of complete submittal, the date and time of the Developer Conference to review Staff's Comments as well as the anticipated review schedule.~~
- ~~4. If the development petition is for property located outside of the Town's corporate limits a complete Petition for Voluntary Annexation must be submitted simultaneously with the development petition to the Department of Planning & Zoning (see section 6.04 of this manual for Voluntary Annexation procedures). Failure to submit for voluntary annexation may deem your development petition incomplete and be removed from the review cycle. The Voluntary Annexation Packet provides a detailed list of all submittal requirements. [Added Resolution #05-32]~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the specific review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition prior to the Developer Conference.~~
- ~~3. Developer Conference Please see Section 1.02 of this Manual for specific information regarding this meeting.~~
- ~~4. Revised plans and any requested information must be submitted for staff review in accordance with the Town Council Review Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition~~

~~will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available 2nd (or 3rd) review cycle to deem the Petition complete to be included in that review cycle. [Amended Ordinance #04-06], [Amended Resolution #08-10], [Supplement #6 corrected typographical error]~~

~~Staff will review the revised plans and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition in accordance with the Town Council Review Schedule. [Amended Ordinance #04-06]~~

Determination of Official Action:

~~The plans for official action must be submitted in accordance with the Town Council Review Schedule. [Amended Ordinance #04-06]~~

~~Plans for Official Action and any requested information must be submitted in accordance with the Town Council Review Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available Official Action review cycle to deem the Petition complete to be included in that review cycle. [Added Resolution #08-10]~~

~~Staff shall then prepare a report to the Planning Board including discussion of all plans and policies relevant to the proposed petition along with a recommendation by the Staff to approve, approve with conditions, or deny the proposed Master Plan.~~

~~Staff and the Petitioner shall attend the Planning Board meeting. The Planning Board will review the submitted petition as follows:~~

~~Staff shall be given a reasonable time by the Planning Board to introduce the matter being considered and for the presentation of evidence, statements regarding the matter being considered, and to provide a recommendation on the Petition.~~

~~Petitioners shall be allotted a total of fifteen (15) minutes to present evidence, statements and arguments in support of the matter being considered.~~

~~At the conclusion of remarks by any party, the Planning Board shall have the right to ask questions pertaining to the evidence, statements and argument presented. Time involved in responding to questions by the Planning Board by the Petitioner shall not be considered for purposes of calculating time for presentation.~~

~~After collecting the evidence and the Planning Board has no remaining questions, the Planning Board shall make a recommendation to the Town Council to either: approve, approve with conditions, or deny the Master Plan Petition. Only upon request by the Petitioner, shall the recommendation on the Petition be continued to the next regularly scheduled Planning Board meeting so as to be able to provide additional evidence in support of the request. [Amended Ordinance #04-06]~~

~~Staff will forward the Planning Board and final Staff recommendation to the Town Council prior to the Meeting. [Amended Ordinance #04-06]~~

~~Staff and the Petitioner shall attend the Meeting before the Town Council. The Town Council may make a final determination to either: approve, approve with conditions, deny, or table the petition request or refer the proposal back to the Planning Board for further review. [Amended Ordinance #04-06]~~

~~The Department of Planning & Zoning will notify all persons named on the Subdivision Petition regarding the Town Council's decision within ten (10) days of their action. [Amended Ordinance #04-06], [Amended Resolution #00-16].*~~

Next Steps:

- ~~1. If a detailed master plan was approved by the Town Council, Construction Drawings may be submitted to the Department of Engineering the second Monday after receiving approval by the Town Council for the main infrastructure of the subdivision. The Construction Drawing Review Procedures can be found in Section 8.01 of this Manual. [Amended Ordinance #04-06], [Amended Resolution #00-16].*~~
- ~~2. If a schematic Master Plan was approved by the Town Council a detailed Administrative Plan must submitted for Administrative Review for each phase. This review must be completed prior to submitting Construction Drawings. [Amended Ordinance #04-06]~~
- ~~3. A Final Plat must be requested and approved by the Town, recorded by the Petitioner, and returned to the Department of Planning & Zoning prior to issuance of a UDO Permit. The Final Plat Procedures can be found in Section 9.01 of this Manual.~~

~~A Development Plan must be filed for the detailed site plan review for any multifamily or non-residential use. The Development Plan Petition Procedures can be found in Section 4 of this Manual.~~

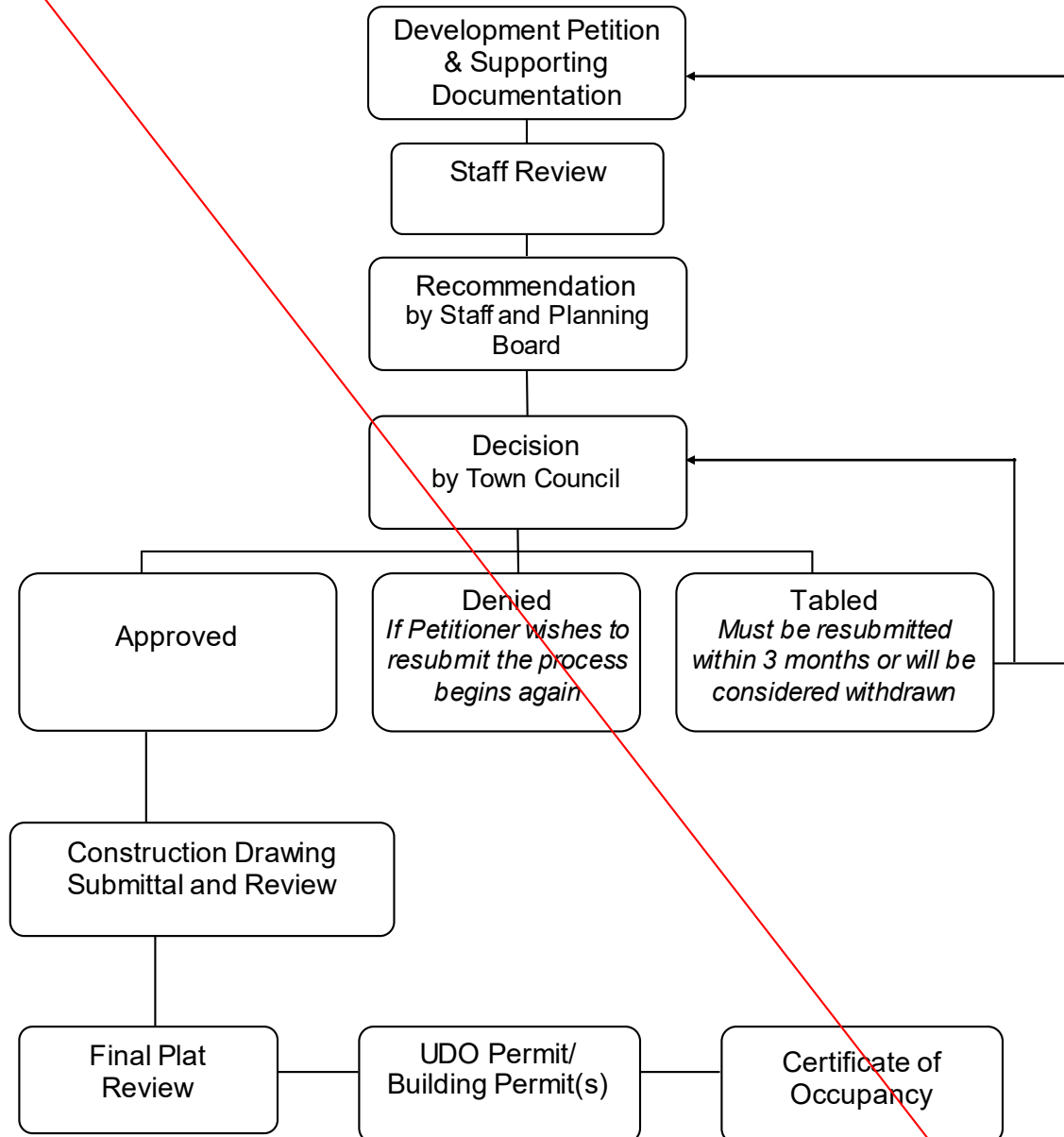
~~A request for a UDO Permit must be submitted to and issued by the Department of Planning & Zoning prior to obtaining a Building Permit, and all necessary procedures must be followed to obtain a Certificate of Occupancy. The procedures for the building process may be found in Section 10.05 of this Manual.~~



SECTION 3.02

Preliminary Plan

PRELIMINARY PLAN PROCEDURES



[Amended Ordinance #04-06]*

Prior to Filing Petition:

- ~~1. Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Preliminary Plan, however, it is recommended that you have this meeting at least thirty (30) days prior to filing. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review for more information regarding this required meeting. [Added Resolution #11-19]*~~

Petition Filing:

- ~~1. Submit Petition for Preliminary Plan along with any supporting documentation by the posted deadline date to the Department of Planning & Zoning as specified on the Town Council Review Schedule. The Subdivision Packet provides a detailed list of all application submittal requirements. [Amended Ordinance #04-06], [Amended Resolution #08-10]~~
- ~~2. The Department of Planning & Zoning will notify Petitioner of an incomplete application or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the petition will be placed in the next available review cycle after the information is submitted and the petition is deemed complete. However, if information specified on the "Required Submittal Items List" or the "Plan Requirement & Data Checklist" is not included, the Petitioner will be notified of the missing information and will not be included in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available review cycle to deem the petition complete to be included in that review cycle. [Amended Resolution #08-10]~~
- ~~3. The Department of Planning & Zoning will notify Petitioner after determination of complete submittal, the date and time of the Developer Conference to review Staff's Comments as well as the anticipated review schedule.~~
- ~~4. If the development petition is for property located outside of the Town's corporate limits a complete Petition for Voluntary Annexation must be submitted simultaneously with the development petition to the Department of Planning & Zoning (see section 6.04 of this manual for Voluntary Annexation procedures). Failure to submit for voluntary annexation may deem your development petition incomplete and be removed from the review cycle. The Voluntary Annexation Packet provides a detailed list of all submittal requirements. [Added Resolution #05-32]~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the specific review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition prior to the Developer Conference.~~
- ~~3. Developer Conference Please see Section 1.02 of this Manual for specific information regarding this meeting.~~
- ~~4. Revised plans and any requested information must be submitted for staff review in accordance with the Town Council Review Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available 2nd (or 3rd) review cycle to deem the Petition complete to be included in that review cycle. [Amended Ordinance #04-06], [Amended Resolution #08-10]~~

- ~~5. Staff will review the revised plans and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition in accordance with the Town Council Review Schedule. [Amended Ordinance #04-06]~~

Determination of Official Action:

- ~~1. The plans for official action must be submitted in accordance with the Town Council Review Schedule. [Amended Ordinance #04-06]~~
- ~~2. Plans for Official Action and any requested information must be submitted in accordance with the Town Council Review Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available Official Action review cycle to deem the Petition complete to be included in that review cycle. [Added Resolution #08-10]~~
- ~~3. Staff shall then prepare a report to the Planning Board including discussion of all plans and policies relevant to the proposed petition along with a recommendation by the Staff to approve, approve with conditions, or deny the proposed Preliminary Plan.~~
- ~~4. Staff and the Petitioner shall attend the Planning Board meeting. The Planning Board will review the submitted petition as follows:
 - ~~a. Staff shall be given a reasonable time by the Planning Board to introduce the matter being considered and for the presentation of evidence, statements regarding the matter being considered, and to provide a recommendation on the Petition.~~
 - ~~b. Petitioners shall be allotted a total of fifteen (15) minutes to present evidence, statements and arguments in support of the matter being considered.~~~~

~~At the conclusion of remarks by any party, the Planning Board shall have the right to ask questions pertaining to the evidence, statements and argument presented. Time involved in responding to questions by the Planning Board by the Petitioner shall not be considered for purposes of calculating time for presentation.~~

~~After collecting the evidence and the Planning Board has no remaining questions, the Planning Board shall make a recommendation to the Town Council to either: approve, approve with conditions, or deny the Petition for Preliminary Plan. Only upon request by the Petitioner, shall the recommendation on the Petition be continued to the next regularly scheduled Planning Board meeting so as to be able to provide additional evidence in support of the request. [Amended Ordinance #04-06]~~

- ~~5. Staff will forward the Planning Board and final Staff recommendations to the Town Council prior to the Meeting. [Amended Ordinance #04-06]~~
- ~~6. Staff and the Petitioner shall attend the Meeting before the Town Council. The Town Council may make a final determination to either: approve, approve with conditions, deny, or table the petition request or refer the proposal back to the Planning Board for further review. [Amended Ordinance #04-06]~~
- ~~7. The Department of Planning & Zoning will notify all persons named on the Preliminary Plan Petition regarding the Town Council's decision within ten (10) days of their action. [Amended Ordinance #04-06], [Amended Resolution #09-16]*~~

Next Steps:

- ~~1. A Development Plan must be filed for the detailed site plan review for any multifamily or non-residential use prior to issuance of any UDO Permit for the construction of any structure as required by the UDO. The Development Plan Petition Procedures can be found in Section 4 of this Manual.~~
- ~~2. Construction Drawings may be submitted to the Department of Engineering the second Monday after receiving approval by the Town Council. The Construction Drawing Review Procedures can be found in Section 8 of this Manual. [Amended Ordinance #04-06], [Amended Resolution #09-16]*~~
- ~~3. A Final Plat must be submitted to and approved by the Town, recorded by the Petitioner, and returned to the Department of Planning & Zoning prior to issuance of a UDO Permit. The Final Plat Procedures can be found in Section 9 of this Manual.~~

~~A request for a UDO Permit must be submitted to and issued by the Department of Planning & Zoning prior to obtaining a Building Permit, and all necessary procedures must be followed to obtain a Certificate of Occupancy. The procedures for the building process may be found in Section 10 of this Manual.~~



SECTION 3.03

Minor Subdivision

MINOR SUBDIVISION PROCEDURES

Prior to Filing Petition:

- ~~1. Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Minor Subdivision. See Section 1.01 Concept Plan Review for more information regarding this required meeting.~~

Petition Filing:

- ~~1. Minor Subdivisions are not required to obtain Master Plan or Preliminary Plan approval prior to filing for Final Plat approval, therefore, Minor Subdivisions shall be processed in accordance with the Final Plat procedures in Section 9 of this Manual.~~
- ~~2. If the development petition is for property located outside of the Town's corporate limits a complete Petition for Voluntary Annexation must be submitted simultaneously with the development petition to the Department of Planning & Zoning (see section 6.04 of this manual for Voluntary Annexation procedures). Failure to submit for voluntary annexation may deem your development petition incomplete and be removed from the review cycle. The Voluntary Annexation Packet provides a detailed list of all submittal requirements.~~
~~[Added Resolution #05-32]~~



SECTION 3.04

Subdivision Amendment

SUBDIVISION AMENDMENT PROCEDURES

What you will need to file a Petition for an Amendment to a Master Plan, Preliminary Plan, or Minor Subdivision:

- Subdivision Application Packet
- Town of Holly Springs Unified Development Ordinance
- Copy of Approved Master Plan, Preliminary Plan or Minor Subdivision Plan

SUBSTANTIAL AMENDMENT PROCEDURES [Amended Resolution #15-26]*

~~Substantial Amendments~~ as described in UDO Section 9.05, B., 6., e., include the following: (a) substantially alter any street layout, lot line, or utility easements shown on the master plan or preliminary plan; (b) increase the total number of lots/units within the overall original approved master plan or preliminary plan by more than ten (10) percent, or ten (10) lots/units, whichever is less; (c) reduce the open space within the overall project or subdivision by more than ten (10) percent; (d) increase the master plan or preliminary plan acreage by more than ten (10) percent or five (5) acres whichever is less (except for PUDs); (e) reduce a perimeter yard; or (f) increase the total number of freestanding signs, increase the total sign surface area for any type of sign (building sign or freestanding sign) or the height of a freestanding sign that requires a waiver of sign regulation in accordance with the provisions of Section 7.03, H. Waiver of Sign Regulations.

~~Substantial Amendments shall be subject to the procedures set forth as applicable, for the initial Master Plan or Preliminary Plans.~~

AMENDMENT SUBMITTAL & REVIEW REQUIREMENTS

- Submit plan coversheet including the description of amendment(s) requested and date.
- Only submit the cover sheet and any sheets that may change as a result of the amendment. Full plan set is not required if each sheet is not affected.
- All amendments are to be clouded and noted with a delta.
- Only noted amendments on the sheet will be approved by staff.
- Amendments not clouded and noted will not be approved and will be required to refer to the original approved plans.

[Amended Resolution #05-33]

MINOR AMENDMENT PROCEDURES

Prior to Filing Petition:

1. Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Minor Amendment Petition, however, it is recommended that you have this meeting at least two (2)

~~weeks prior to filing. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review for more information regarding this required meeting.~~

Petition Filing:

- ~~1. Submit Petitions for Minor Subdivision Amendment along with any supporting documentation by the posted deadline time to the Department of Planning & Zoning on Monday. The Subdivision Packet provides a detailed list of all application submittal requirements. Petitions received after Monday will be placed in the next week's review cycle. [Amended Resolution #08-10]~~
- ~~2. The Department of Planning & Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the petition will be placed in the next available review cycle after the information is submitted and the petition is deemed complete. However, if information specified on the "Required Submittal Items List" or the "Plan Requirement & Data Checklist" is not included, the Petitioner will be notified of the missing information and will not be included in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available review cycle to deem the petition complete to be included in that review cycle. [Amended Resolution #08-10]~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the specific review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition within fifteen (15) business days after the submittal date.~~
- ~~3. Revised plans and any requested information must be submitted for staff review in accordance with the submittal requirements as stated above to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available 2nd (or 3rd) review cycle to deem the Petition complete to be included in that review cycle. [Amended Resolution #08-10]~~
- ~~4. Staff will review the revised plans and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition.~~

~~Note: If at any time during the Amendment Review process, there is no written correspondence to the Department of Planning & Zoning for a period exceeding thirty (30) days, the Petition will be deemed withdrawn and a new Petition and review process will be required to consider the request.~~

Determination of Final Action:

- ~~1. The third and final set of revised drawings must be submitted in accordance with the staff review comments.~~
- ~~2. Plans for Official Action and any requested information must be submitted in accordance with the submittal requirements as stated above to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the~~

~~Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available Official Action review cycle to deem the Petition complete to be included in that review cycle. [Added Resolution #08-10]~~

- ~~3. Within five (5) business days after the submittal deadline date, the Director, shall make a final determination to either: approve, approve with conditions, or deny the petition request based upon confirmation from the other Department Directors involved in the review process.~~

~~The Department of Planning & Zoning will notify all persons named on the Subdivision Petition regarding the Director's decision within ten (10) days of their action. [Amended Resolution #09-16]~~



SECTION 4.00

Development Plans

Development Plans are required for projects utilizing Development Options and for Architectural and Site Design Review for Multifamily Residential, Commercial/Mixed Use, or Industrial Development. [Amended Resolution #07-31, #18-37]*

DEVELOPMENT OPTIONS FOR RESIDENTIAL DISTRICTS

Expected Review Time: Approximately 99-106 days [Amended Resolution #15-26, 16-08]

Primary Processing Department: Planning & Zoning

Departments involved in Development Options for Residential Districts Review Process:
Planning & Zoning, Engineering, Parks & Recreation, Fire & Rescue, Public Works, and Water Quality. [Amended Resolution #07-31]

The UDO provides an opportunity for flexibility in the design of residential/mixed use developments through the utilization of the Development Options for Residential Districts as specified in UDO Sections 2.09 and 2.10. The options allow for a specified reduction in the minimum development standards for the zoning district provided that certain additional development requirements and design features are provided. Such development allows for a mixture of single family, multifamily, and non-residential uses through the Development Plan review process. After obtaining Development Plan approval for Development Options, Preliminary Plan for the subdivision of land must be completed and Development Plan for Architectural and Site Design Review may also be required for the multifamily residential and/or non-residential components within the project. [Amended Resolution #07-31, #18-37]*

MULTIFAMILY DEVELOPMENT ARCHITECTURAL AND SITE DESIGN REVIEW

Expected Review Time: Approximately 85-92 days [Amended Resolution #15-26, 16-08]

Primary Processing Department: Planning & Zoning

Departments involved in Multifamily Development Review Process: Planning & Zoning, Engineering, Parks & Recreation, Fire & Rescue, Public Works, and Water Quality. [Amended Resolution #07-31]

The UDO contains two multifamily residential zoning districts, R-MF-8 and R-MF-15. The Architectural and Site Design Requirements increase with the level of gross density proposed for development as specified in UDO Sections 2.06 and 2.07. Multifamily Residential Development, by nature, can have a significant impact on its surroundings therefore, this type of development requires a more intensive review process than Single Family residential. Obtaining approval of a Multifamily Residential development requires a Public Hearing and approval by the Town Council. [Amended Ordinance #04-06]

NON-GATEWAY CORRIDOR ARCHITECTURAL AND SITE DESIGN REVIEW

Expected Review Time: Approximately 57 days [Amended Resolution #15-26]

Primary Processing Department: Planning & Zoning

Departments involved in Non-Gateway Corridor Review Process: Planning & Zoning, Engineering, Parks & Recreation, Fire & Rescue, Public Works, and Water Quality.

Any commercial/mixed use or industrial development that is subject to the architectural and site design review procedures and the property is not located within 300' of the right-of-way of NC-540, US-1, NC-55 Bypass, or a Thoroughfare as specified on the Town of Holly Springs Thoroughfare Plan, or is not located on either side of a collector street developed as a part of an overall

subdivision or project that is intended to provide access to a residential neighborhood, the project may be submitted under the non-gateway corridor review procedures. [Amended Resolution #07-31, #15-26]

GATEWAY CORRIDOR AND RESIDENTIAL GATEWAY ARCHITECTURAL AND SITE DESIGN REVIEW

Expected Review Time if building 20,000 sq. ft. or greater: Approximately 71-78 days [Amended Resolution #15-26, 16-08]*

Expected Review Time if building less than 20,000 sq. ft.: Approximately 57 days [Added Resolution 16-08]*

Primary Processing Department: Planning & Zoning

Departments involved in Gateway Corridor Review Process: Planning & Zoning, Engineering, Parks & Recreation, Fire & Rescue, Public Works, and Water Quality. [Amended Resolution #07-31]

Development that is located within a Gateway Corridor, which is any property within 300' of NC 540, US 1, NC 55 Bypass, or any Thoroughfare within the Town of Holly Springs Planning Jurisdiction or ETJ, or is in a Residential Gateway, which is any property located on either side of a collector street developed as a part of an overall subdivision or project that is intended to provide access to a residential neighborhood will have enhanced Architectural and Site Design Requirements. These standards can be found in UDO Section 3.08 for commercial/mixed use districts and Section 4.05 for industrial districts. This review process is more intensive than the non-gateway corridor procedures due to the potential impacts on the appearance and overall image of the Town and adjacent residential neighborhoods. [Amended Resolution #15-26]

DEVELOPMENT PLAN AMENDMENT

Expected Review Time: Approximately 57 days [Amended Resolution 16-08]*

Primary Processing Department: Planning & Zoning

Departments involved in Development Plan Amendment Review Process: Planning & Zoning, Engineering, Parks & Recreation, Fire & Rescue, Public Works, and Water Quality. [Amended Resolution #07-31, #15-26]

Minor Amendments as described in UDO Section 9.05, D., 5., c., (1.), do not involve the following: (a) expansion of building footprint area by more than twenty-five (25) percent; (b) increase in building height by more than fifteen (15) percent; (c) expansion or reduction in the amount of off-street parking areas by more than ten (10) percent (expansion above 110% of the minimum requires a Town Council approved waiver if the building footprint is greater than 20,000 sq. ft.); (d) increase in the total number of lots/units within the overall original development plan approval by more than ten (10) percent, or ten (10) lots/units, whichever is less; (e) reduction of open space within the overall project or subdivision by more than ten (10) percent; (f) increase in project acreage by more than ten (10) percent or five (5) acres whichever is less (except for PUDs); (g) the designation of additional land uses; (h) the reduction in perimeter yards; (i) the addition of driveways or access points; (j) a substantial change in building design, building material selection, or percentage of various building materials utilized; (k) an increase in the total number of freestanding signs, an increase in the total sign surface area for any type of sign (building sign or freestanding sign) or the height of a freestanding sign that requires a waiver of sign regulations in accordance with provisions of Section 7.03, H. Waiver of Sign Regulations; or (l) a modification that would conflict with specific conditions of approval of the original development plan or findings of fact made in conjunction for a Special Exception Use in the project. Minor amendments may be approved at an administrative level using the procedures in this Section.

Unacceptable Amendments as described in UDO Section 9.05, D., 5., c., 2. include modifications to previously approved plans that adversely impact the purpose and intent of the overall development. Any such amendment is required to file a new petition for the appropriate review process.



SECTION 4.01

Development Options for Residential Districts

Amended Resolution #07-31

DEVELOPMENT PLAN FOR DEVELOPMENT OPTIONS FOR RESIDENTIAL DISTRICTS PROCEDURES [Amended Resolution #07-31]

General Information: [Amended Resolution #16-26]

- ~~The property being developed must meet the guidelines listed in Section 2.09, B. or 2.10, B. of the UDO. [Amended Resolution 16-08]*~~
- ~~The additional development regulations/design features that must be provided are described in UDO Section 2.09, C. or 2.10, C.. [Amended Resolution 16-08]*~~
- ~~The Development Directors may allow for simultaneous review of a Preliminary Plan with the request for Development Plan based upon the information provided at the Concept Plan Review meeting. [Amended Ordinance #04-06, Amended Resolution #07-31]~~

Prior to Filing Petition:

1. ~~Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Development Plan for Development Options Petition, however, it is recommended that you have this meeting at least thirty (30) days prior to filing. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review Meeting for more information regarding this required meeting. [Amended Resolution #07-31, #11-10, #16-08]*~~
2. ~~A recommendation may be made to the Petitioner to meet with the Technical Review Committee (TRC) prior to submitting a petition for Development Plan review. See Section 1.04 Technical Review Committee for more information regarding this meeting, and consult the Town Council Public Hearing Review Schedule in the Appendices. [Amended Ordinance #04-06]~~

Petition Filing:

1. ~~Submit Petition for Development Plan for Development Options Petition along with any supporting documentation by the posted deadline date to the Department of Planning & Zoning as specified on the Development Options Review Schedule. The Development Plan Packet provides a detailed list of all application submittal requirements. [Amended Resolution #07-31, #08-10]~~
2. ~~The Department of Planning & Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the petition will be placed in the next available review cycle after the information is submitted and the petition is deemed complete. However, if information specified on the "Required Submittal Items List" or the "Plan Requirement & Data Checklist" is not included, the Petitioner will be notified of the missing information and will not be included in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available review cycle to deem the petition complete to be included in that review cycle. [Amended Resolution #08-10]~~
3. ~~The Department of Planning & Zoning will notify Petitioner after determination of complete submittal, the date and time of the Developer Conference to review Staff's Comments as well as~~

~~the anticipated review schedule and Public Hearing information. Staff will advertise the public hearing notice, notify the adjacent property owners, and post the property in accordance with the Town's Public Hearing procedures as specified in this Development Procedures Manual.~~

- ~~4. If the development petition is for property located outside of the Town's corporate limits a complete Petition for Voluntary Annexation must be submitted simultaneously with the development petition to the Department of Planning & Zoning (see section 6.04 of this manual for Voluntary Annexation procedures). Failure to submit for voluntary annexation may deem your development petition incomplete and be removed from the review cycle. The Voluntary Annexation Packet provides a detailed list of all submittal requirements. [Added Resolution #05-32]~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the specific review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition prior to the Developer Conference.~~
- ~~3. Developer Conference Please see Section 1.02 of this Manual for specific information regarding this meeting.~~
- ~~4. Revised plans and any requested information must be submitted for staff review in accordance with the Development Options Review Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available 2nd (or 3rd) review cycle to deem the Petition complete to be included in that review cycle. [Amended Resolution #07-31, #08-10]~~
- ~~5. Staff will review the revised plans and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition in accordance with the Development Options Review Schedule. [Amended Resolution #07-31]~~
- ~~6. Revised plans and any requested information must be submitted for staff review in accordance with the Development Options Review Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available 2nd (or 3rd) review cycle to deem the Petition complete to be included in that review cycle. [Amended Resolution #07-31, #08-10]~~
- ~~7. Staff will review the revised plans and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition in accordance with the Development Options Review Schedule. [Amended Resolution #07-31]~~

Determination of Official Action:

- ~~1. The plans for official action must be submitted in accordance with the Development Options Review Schedule. [Amended Resolution #07-31]~~

~~Plans for Official Action and any requested information must be submitted in accordance with the Development Options Review Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted~~

~~deadline date for the next available Official Action review cycle to deem the Petition complete to be included in that review cycle. [Added Resolution #08-10]~~

- ~~2. Staff shall then prepare a report to the Planning Board including discussion of all plans and policies relevant to the proposed petition along with a recommendation by the Staff to approve, approve with conditions, or deny the proposed Development Plan for Development Options Petition. [Amended Resolution #07-31]~~
- ~~3. Staff and the Petitioner shall attend the Planning Board meeting. The Planning Board will review the submitted petition as follows:~~
 - ~~a. Staff shall be given a reasonable time by the Planning Board to introduce the matter being considered and for the presentation of evidence, statements regarding the matter being considered, and to provide a recommendation on the Petitions.~~
 - ~~b. Petitioners shall be allotted a total of fifteen (15) minutes to present evidence, statements and arguments in support of the matter being considered.~~

~~At the conclusion of remarks by any party, the Planning Board shall have the right to ask questions pertaining to the evidence, statements and argument presented. Time involved in responding to questions by the Planning Board by the Petitioner shall not be considered for purposes of calculating time for presentation.~~

~~After collecting the evidence and the Planning Board has no remaining questions, the Planning Board shall make a recommendation to the Town Council to either approve, approve with conditions or deny the Petition for Development Options. Only upon request by the Petitioner, shall the recommendation on the Petition be continued to the next regularly scheduled Planning Board meeting so as to be able to provide additional evidence in support of the request. [Amended Ordinance #04-06, Amended Resolution #07-31]~~

- ~~4. Staff will forward the Planning Board and final Staff recommendations to the Town Council prior to the Public Hearing. [Amended Ordinance #04-06]~~
- ~~5. Staff and the Petitioner shall attend the Public Hearing before the Town Council. After the Public Hearing, the Town Council may make a final determination to either: approve, approve with conditions, deny, table the petition request or refer the proposal back to the Planning Board for further review. [Amended Ordinance #04-06]~~
- ~~6. The Department of Planning & Zoning will notify all persons named on the Development Plan for Development Options Petition regarding the Town Council's decision within ten (10) days of their action. [Amended Ordinance #04-06, Amended Resolution #07-31, #09-16]~~

Next Steps:

- ~~1. All single family residential neighborhoods, or other subdivisions of land associated with the project, must gain subsequent approval of a Preliminary Plan for subdivision prior to submitting for Construction Drawing review.~~
- ~~2. All multifamily sections must gain subsequent approval of a Development Plan for Architectural and Site Design Review if a detailed plan for that portion of the project was not submitted as a part of the Development Plan for Development Options petition. This Development Plan for Architectural and Site Design Review will be subject to all requirements of the R-MF-15 District. [Amended Resolution #07-31]~~
- ~~3. All non-residential components of the Development Plan must gain approval of a Development Plan for Architectural and Site Design Review if a detailed plan for that portion of the project was not submitted as a part of the Development Plan for Development Options petition. This~~

~~Development Plan for Architectural and Site Design Review will be subject to all review requirements for either a Gateway Corridor/Residential Gateway or Non-Gateway Corridor based upon its location. [Amended Resolution #07-31]~~

- ~~4. If detailed plans were provided for the multifamily and/or non-residential components, no further zoning approval is required, and Construction Drawings may be submitted to the Department of Engineering the second Monday after receiving Town Council approval. [Amended Ordinance #04-06]
[Amended Resolution #09-16]~~

~~A request for a UDO Permit must be submitted to and issued by the Department of Planning & Zoning prior to obtaining a Building Permit, and all necessary procedures must be followed to obtain a Certificate of Occupancy. The procedures for the building process and certificate of occupancy may be found in Section 10 of this Manual.~~



SECTION 4.02

Multifamily Development

MULTIFAMILY RESIDENTIAL DEVELOPMENT PLAN PROCEDURES

General Information

Multifamily Development in the R-MF-8 or R-MF-15 District

The UDO provides two types of multi-family residential zoning districts, R-MF-8 and R-MF-15 in which the Architectural and Site Design Requirements increase with the level of gross density proposed for development. The detailed requirements can be found in UDO Section 2.06 and 2.07.

When considering Multi-Family Residential Development the following should be considered:

- Multi-Family Residential Development is reviewed through the Development Plan process since no subdivision of property is required and because there are specific Architectural and Site Design Requirements.
- Appearance Requirements (Use of building materials and façade modulation)
- Development Waivers, may be considered by the Town Council if the project complies with the findings listed in UDO Sections 2.06, C., 4. and 2.07, D., 4. for development waivers.
- R-MF-15 allows for increases in building height or project gross density based upon the inclusion of additional design features as specified in UDO Section 2.07, C. [Amended Ordinance #04-06]

Multi-Family Residential Development obtained through options [Amended Resolution #07-25]

Multifamily Development that was approved as a part of a Development Plan for Development Options for Residential Districts, may be required to submit an additional Development Plan for the multifamily residential portion if the specific architectural and site design criteria for the project were not included in sufficient detail at the time of the Development Option Review. The review procedures will be that of the R-MF-15 District. [Amended Resolution #07-25]

UDO Section 2.09, C., 3. lists the design features that must be provided for multi-family development within a project that utilizes design incentives.

Prior to Filing Petition:

1. Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Development Plan Petition, however, it is recommended that you have this meeting at least thirty (30) days prior to filing. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review for more information regarding this required meeting.

Petition Filing:

1. Submit Petitions for Multifamily Development Plan along with any supporting documentation by the posted deadline date to the Department of Planning & Zoning as specified on the Town Council Public Hearing Schedule. The Development Plan Packet provides a detailed list of all application submittal requirements. [Amended Ordinance #04-06], [Amended Resolution #08-10]

- ~~2. The Department of Planning & Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the petition will be placed in the next available review cycle after the information is submitted and the petition is deemed complete. However, if information specified on the "Required Submittal Items List" or the "Plan Requirement & Data Checklist" is not included, the Petitioner will be notified of the missing information and will not be included in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available review cycle to deem the petition complete to be included in that review cycle. [Amended Resolution #08-10]~~
- ~~3. The Department of Planning & Zoning will notify Petitioner after determination of complete submittal, the date and time of the Developer Conference to review Staff's Comments as well as the anticipated review schedule and Public Hearing information. [Amended Resolution #15-26]~~
- ~~4. If the development petition is for property located outside of the Town's corporate limits a complete Petition for Voluntary Annexation must be submitted simultaneously with the development petition to the Department of Planning & Zoning (see section 6.04 of this manual for Voluntary Annexation procedures). Failure to submit for voluntary annexation may deem your development petition incomplete and be removed from the review cycle. The Voluntary Annexation Packet provides a detailed list of all submittal requirements. [Added Resolution #05-32]~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the specific review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition prior to the Developer Conference.~~
- ~~3. Developer Conference Please see Section 1.02 of this Manual for specific information regarding this meeting.~~
- ~~4. Revised plans and any requested information must be submitted for staff review in accordance with the Town Council Public Hearing Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available 2nd (or 3rd) review cycle to deem the Petition complete to be included in that review cycle. [Amended Ordinance #04-06], [Amended Resolution #08-10]~~
- ~~5. Staff will review the revised plans and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition in accordance with the Town Council Public Hearing Schedule. [Amended Ordinance #04-06]~~

Determination of Official Action:

- ~~1. The plans for official action must be submitted in accordance with the Town Council Public Hearing Schedule. [Amended Ordinance #04-06]~~
- ~~2. Plans for Official Action and any requested information must be submitted in accordance with the Town Council Public Hearing Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available Official Action review cycle to deem the Petition complete to be included in that review cycle. [Added Resolution #08-10]~~

- ~~3. Staff shall then prepare a report to the Planning Board including discussion of all plans and policies relevant to the proposed petition along with a recommendation by the Staff to approve, approve with conditions, or deny the proposed Multifamily Development Plan Petition.~~
- ~~4. Staff and the Petitioner shall attend the Planning Board meeting. The Planning Board will review the submitted petition as follows:~~
 - ~~a. Staff shall be given a reasonable time by the Planning Board to introduce the matter being considered and for the presentation of evidence, statements regarding the matter being considered, and to provide a recommendation on the Petitions.~~
 - ~~b. Petitioners shall be allotted a total of fifteen (15) minutes to present evidence, statements and arguments in support of the matter being considered.~~

~~At the conclusion of remarks by any party, the Planning Board shall have the right to ask questions pertaining to the evidence, statements and argument presented. Time involved in responding to questions by the Planning Board by the Petitioner shall not be considered for purposes of calculating time for presentation.~~

~~After collecting the evidence and the Planning Board has no remaining questions, the Planning Board shall make a recommendation to the Town Council to either approve, approve with conditions, or deny the Petition for Multifamily Development. Only upon request by the Petitioner, shall the recommendation on the Petition be continued to the next regularly scheduled Planning Board meeting so as to be able to provide additional evidence in support of the request.~~
~~[Amended Ordinance #04-06]~~

- ~~5. Staff will forward the Planning Board and final Staff recommendation to the Town Council prior to the Public Hearing. [Amended Ordinance #04-06]~~
- ~~6. Staff and the Petitioner shall attend the Public Hearing before the Town Council. The Public Hearing shall be conducted in conformance with the Legislative Public Hearing Procedures in Section 1.03 of this Manual. After the Public Hearing, the Town Council may make a final determination to either: approve, approve with conditions, deny, table the petition request or refer the proposal back to the Planning Board for further review. [Amended Ordinance #04-06] [Amended Resolution #16-26]*~~
- ~~7. The Department of Planning & Zoning will notify all persons named on the Multifamily Development Plan Petition regarding the Town Council's decision within ten (10) days of their action. [Amended Ordinance #04-06] [Amended Resolution #00-16]~~

Next Steps:

- ~~1. Construction Drawings may be submitted to the Department of Engineering the second Monday after receiving approval by the Town Council. The Construction Drawing Review Procedures can be found in Section 8 of this Manual. [Amended Ordinance #04-06] [Amended Resolution #00-16]~~

~~A request for a UDO Permit must be submitted to and issued by the Department of Planning & Zoning prior to obtaining a Building Permit, and all necessary procedures must be followed to obtain a Certificate of Occupancy. The procedures for the building process and certificate of occupancy may be found in Section 10 of this Manual.~~



SECTION 4.03

Non-Gateway Development

NON-GATEWAY DEVELOPMENT PLAN FOR ARCHITECTURAL AND SITE DESIGN REVIEW PROCEDURES

General Information

- ~~Development Plan approval for non-gateway development is granted by the Technical Review Committee.~~
- ~~Architectural and Site Design Waivers can only be requested if submitted at time of Filing of Development Plan Petition. Request must comply with the findings listed in UDO Sections 3.08, C., or Section 4.05, C., to be considered.~~
- ~~See Development Plan Application for detailed submittal requirements.~~

Prior to Filing Petition:

1. ~~Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Development Plan Petition, however, it is recommended that you have this meeting at least thirty (30) days prior to filing. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review for more information regarding this required meeting.~~

Petition Filing:

1. ~~Submit Petitions for Development Plan along with any supporting documentation by the posted deadline date to the Department of Planning & Zoning as specified on the TRC Review Schedule. The Development Plan Packet provides a detailed list of all application submittal requirements. [Amended Resolution #08-10]*~~
2. ~~The Department of Planning & Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the petition will be placed in the next available review cycle after the information is submitted and the petition is deemed complete. However, if information specified on the "Required Submittal Items List" or the "Plan Requirement & Data Checklist" is not included, the Petitioner will be notified of the missing information and will not be included in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available review cycle to deem the petition complete to be included in that review cycle. [Amended Resolution #08-10]*~~
3. ~~The Department of Planning & Zoning will notify Petitioner after determination of complete submittal, the date and time of the Developer Conference to review Staff's Comments as well as the anticipated review schedule.~~

- ~~4. If the development petition is for property located outside of the Town's corporate limits a complete Petition for Voluntary Annexation must be submitted simultaneously with the development petition to the Department of Planning & Zoning (see section 6.04 of this manual for Voluntary Annexation procedures). Failure to submit for voluntary annexation may deem your development petition incomplete and be removed from the review cycle. The Voluntary Annexation Packet provides a detailed list of all submittal requirements. [Added Resolution #06-32]~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the specific review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition prior to the Developer Conference.~~
- ~~3. The Department of Planning & Zoning will notify all persons named on the Development Plan Petition regarding the Director's decision within ten (10) business days of their action. If the Development Plan requires a Waiver to UDO Section 7.06, 7.07, or 7.08, the Director will not make a final determination of official action until such Waiver has been determined by the Town Council.~~
- ~~4. Appeals of the Director's decision shall be subject to review by the Town of Holly Springs Town Council. Any appeal to the Town Council shall be taken within thirty (30) days after the decision of the Director is filed in the Department of Planning & Zoning, or after a written copy of thereof is delivered to the petitioner. Such appeal shall follow the procedures of Section 7.01, however, the Determination of Official Action shall be by the Town Council. [Amended Resolution #09-10]~~
- ~~5. Staff will review the revised plans and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition in accordance with the TRC Review Schedule.~~

Director Determination of Official Action: [Added Resolution #00-43]*

- ~~1. The plans for official action must be submitted in accordance with the Administrative Development Plan Review Schedule. [Added Resolution #00-43]*~~
- ~~2. Plans for Official Action and any requested information must be submitted in accordance with the Administrative Development Plan Review Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available Official Action review cycle to deem the Petition complete to be included in that review cycle. [Added Resolution #00-43]*~~
- ~~3. The Department of Planning & Zoning will notify all persons named on the Development Plan Petition regarding the Director's decision within ten (10) business days of their action. If the Development Plan requires a Waiver to UDO Section 7.06, 7.07, or 7.08, the Director will not make a final determination of official action until such Waiver has been determined by the Town Council. [Added Resolution #00-43]*~~
- ~~4. Appeals of the Director's decision shall be subject to review by the Town of Holly Springs Town~~

~~Council. Any appeal to the Town Council shall be taken within thirty (30) days after the decision of the Director is filed in the Department of Planning & Zoning, or after a written copy of thereof is delivered to the petitioner. Such appeal shall follow the procedures of Section 7.01, however, the Determination of Official Action shall be by the Town Council. [Added Resolution #00-43]*~~

Determination of Official Action:

- ~~1. The plans for official action must be submitted in accordance with the TRC Review Schedule.~~
- ~~2. Plans for Official Action and any requested information must be submitted in accordance with the TRC Review Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available Official Action review cycle to deem the Petition complete to be included in that review cycle. [Added Resolution #08-10]~~
- ~~3. Staff shall then prepare a report to the Technical Review Committee including discussion of all plans and policies relevant to the proposed petition along with a recommendation by the Staff to approve, approve with conditions, or deny the proposed Development Plan Petition.~~
- ~~4. Staff shall attend the Technical Review Committee Meeting. The Petitioner is not required to attend the Technical Review Committee Meeting, but is encouraged to do so. The Committee shall make a final determination to either: approve, approve with conditions, deny, or table the petition request.~~
- ~~5. The Department of Planning & Zoning will notify all persons named on the Development Plan Petition regarding the Technical Review Committee's decision within ten (10) days of their action. [Amended Resolution #00-16]~~

Next Steps:

- ~~1. Construction Drawings may be submitted to the Department of Engineering the second Monday after receiving approval by the Town Council. The Construction Drawing Review Procedures can be found in Section 8 of this Manual. [Amended Ordinance #04-06] [Amended Ordinance #09-16]*~~

~~A request for a UDO Permit must be submitted to and issued by the Department of Planning & Zoning prior to obtaining a Building Permit, and all necessary procedures must be followed to obtain a Certificate of Occupancy. The procedures for the building process may be found in Section 10 of this Manual.~~



SECTION 4.04

Gateway Development

GATEWAY DEVELOPMENT PLAN FOR ARCHITECTURAL AND SITE DESIGN REVIEW PROCEDURES

General Information

- ~~Development Plan approval for development located within a Gateway Corridor or Residential Gateway is granted by the Town Council.~~
- ~~Architectural and Site Design Waivers can only be requested if submitted at time of Filing of Development Plan Petition. Request must comply with the findings listed in UDO Section 3.08, C., or Section 4.05, C., to be considered.~~
- ~~See Development Plan Application for detailed submittal requirements.~~
[Amended Ordinance #04-06]*

Prior to Filing Petition:

1. ~~Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Development Plan Petition, however, it is recommended that you have this meeting at least thirty (30) days prior to filing. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review for more information regarding this required meeting.~~

Petition Filing:

1. ~~Submit Development Plan Petition along with any supporting documentation by the posted deadline date to the Department of Planning & Zoning as specified on the Town Council Review Schedule. The Development Plan Packet provides a detailed list of all application submittal requirements. [Amended Ordinance #04-06], [Amended Resolution #08-10]*~~
2. ~~The Department of Planning & Zoning will notify Petitioner of an incomplete application or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the petition will be placed in the next available review cycle after the information is submitted and the petition is deemed complete. However, if information specified on the "Required Submittal Items List" or the "Plan Requirement & Data Checklist" is not included, the Petitioner will be notified of the missing information and will not be included in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available review cycle to deem the petition complete to be included in that review cycle. [Amended Resolution #08-10]*~~
3. ~~The Department of Planning & Zoning will notify Petitioner after determination of complete submittal, the date and time of the Developer Conference to review Staff's Comments as well as the anticipated review schedule.~~
4. ~~If the development petition is for property located outside of the Town's corporate limits a complete Petition for Voluntary Annexation must be submitted simultaneously with the~~

development petition to the Department of Planning & Zoning (see section 6.04 of this manual for Voluntary Annexation procedures). Failure to submit for voluntary annexation may deem your development petition incomplete and be removed from the review cycle. The Voluntary Annexation Packet provides a detailed list of all submittal requirements. ~~[Added Resolution #05-32]~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the specific review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition prior to the Developer Conference.~~
- ~~3. Developer Conference Please see Section 1.02 of this Manual for specific information regarding this meeting.~~
- ~~4. Revised plans and any requested information must be submitted for staff review in accordance with the Town Council Review Schedule to remain in the review cycle. If plans are submitted after the deadline date, or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available 2nd (or 3rd) review cycle to deem the Petition complete to be included in that review cycle. [Amended Ordinance #04-06], [Amended Resolution #08-10]~~
- ~~5. Staff will review the revised plans and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition in accordance with the Town Council Review Schedule. [Amended Ordinance #04-06]~~

Director Determination of Official Action:

- ~~1. The plans for official action must be submitted in accordance with the Administrative Development Plan Review Schedule. [Amended Ordinance #04-06], [Added Resolution #00-43]*~~
- ~~2. Plans for Official Action and any requested information must be submitted in accordance with the Administrative Development Plan Review Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available Official Action review cycle to deem the Petition complete to be included in that review cycle. [Added Resolution #08-10], [Added Resolution #00-43]*~~
- ~~3. The Department of Planning & Zoning will notify all persons named on the Development Plan Petition regarding the Director's decision within ten (10) business days of their action. If the Development Plan requires a Waiver to UDO Section 7.06, 7.07, or 7.08, the Director will not make a final determination of official action until such Waiver has been determined by the Town Council. [Added Resolution #00-43]*~~
- ~~4. Appeals of the Director's decision shall be subject to review by the Town of Holly Springs Town Council. Any appeal to the Town Council shall be taken within ninety (90) days after the decision of the Director is filed in the Department of Planning & Zoning, or after a written copy of thereof is delivered to the petitioner. Such appeal shall follow the procedures of Section 7.01, however, the Determination of Official Action shall be by the Town Council. [Amended Ordinance #04-06], [Supplement #6 corrected typographical error], [Amended Resolution #00-43]*~~

Determination of Official Action:

- ~~1. The plans for official action must be submitted in accordance with the Town Council Review Schedule. [Amended Ordinance #04-06]*~~
- ~~2. Plans for Official Action and any requested information must be submitted in accordance with the Town Council Review Schedule to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available Official Action review cycle to deem the Petition complete to be included in that review cycle. [Added Resolution #08-10]*~~
- ~~3. Staff shall then prepare a report to the Planning Board including discussion of all plans and policies relevant to the proposed petition along with a recommendation by the Staff to approve, approve with conditions, or deny the proposed Development Plan.~~
- ~~4. Staff and the Petitioner shall attend the Planning Board meeting. The Planning Board will review the submitted petitions as follows:
 - ~~a. Staff shall be given a reasonable time by the Planning Board to introduce the matter being considered and for the presentation of evidence, statements regarding the matter being considered, and to provide a recommendation on the Petitions.~~
 - ~~b. Petitioners shall be allotted a total of fifteen (15) minutes to present evidence, statements and arguments in support of the matter being considered.~~~~

~~At the conclusion of remarks by any party, the Planning Board shall have the right to ask questions pertaining to the evidence, statements and argument presented. Time involved in responding to questions by the Planning Board by the Petitioner shall not be considered for purposes of calculating time for presentation.~~

~~After collecting the evidence and the Planning Board has no remaining questions, the Planning Board shall make a recommendation to the Town Council to either approve or deny the Petition for the Development Plan. Only upon request by the Petitioner, shall the recommendation on the Petition be continued to the next regularly scheduled Planning Board meeting so as to be able to provide additional evidence in support of the request. [Amended Ordinance #04-06] [Supplement #6 corrected typographical error]~~

- ~~5. Staff will forward the Planning Board and final Staff recommendations to the Town Council prior to the Meeting. [Amended Ordinance #04-06]~~
- ~~6. Staff and the Petitioner shall attend the Meeting before the Town Council. The Town Council may make a final determination to either: approve, approve with conditions, deny, or table the petition request or refer the proposal back to the Planning Board for further review. [Amended Ordinance #04-06]~~
- ~~7. The Department of Planning & Zoning will notify all persons named on the Development Plan Petition regarding the Town Council's decision within ten (10) days of their action. [Amended Ordinance #04-06] [Amended Resolution #09-16]*~~

Next Steps:

- ~~1. Construction Drawings may be submitted to the Department of Engineering the second Monday after receiving approval by the Town Council. The Construction Drawing Review Procedures can be found in Section 8 of this Manual. [Amended Ordinance #04-06], [Amended Resolution #09-16]~~

~~A request for a UDO Permit must be submitted to and issued by the Department of Planning & Zoning prior to obtaining a Building Permit, and all necessary procedures must be followed to obtain a Certificate of Occupancy. The procedures for the building process may be found in Section 10 of this Manual.~~



SECTION 4.05

Development Plan Amendment

DEVELOPMENT PLAN AMENDMENT PROCEDURES

What you will need to file a Petition for an Amendment to a Development Plan:

- Development Plan Application Packet
- Town of Holly Springs Unified Development Ordinance
- Copy of Approved Development Plan

UNACCEPTABLE AMENDMENT PROCEDURES

Unacceptable Amendments as described in UDO Section 9.05, D., 5., c., (2.) include modifications to previously approved plans that adversely impact the purpose and intent of the overall development. Any such amendment is required to file a new petition for the appropriate review process.

MINOR AMENDMENT PROCEDURES

Minor Amendments as described in UDO Section 9.05, D., 5., c., (1.), do not involve the following: (a) expansion of building footprint area by more than twenty five (25) percent; (b) increase in building height by more than fifteen (15) percent; (c) expansion or reduction in the amount of off-street parking areas by more than ten (10) percent (expansion above 110% of the minimum requires a Town Council approved waiver if the building footprint is greater than 20,000 sq. ft.); (d) increase in the total number of lots/units within the overall original development plan approval by more than ten (10) percent, or ten (10) lots/units, whichever is less; (e) reduction of open space within the overall project or subdivision by more than ten (10) percent; (f) increase in project acreage by more than ten (10) percent or five (5) acres whichever is less (except for PUDs); (g) the designation of additional land uses; (h) the reduction in perimeter yards; (i) the addition of driveways or access points; (j) a substantial change in building design, building material selection, or percentage of various building materials utilized; (k) an increase in the total number of freestanding signs, an increase in the total sign surface area for any type of sign (building sign or freestanding sign) or the height of a freestanding sign that requires a waiver of sign regulations in accordance with provisions of Section 7.03, H. Waiver of Sign Regulations; or (l) a modification that would conflict with specific conditions of approval of the original development plan or findings of fact made in conjunction for a Special Exception Use in the project. Minor amendments may be approved at an administrative level using the procedures in this section. [Amended Resolution #15-26]*

AMENDMENT SUBMITTAL & REVIEW REQUIREMENTS

- Submit plan coversheet including the description of amendment(s) requested and date.
- Only submit the cover sheet and any sheets that may change as a result of the amendment. Full plan set is not required if each sheet is not affected.
- All amendments are to be clouded and noted with a delta.
- Only noted amendments on the sheet will be approved by staff.

- ◆ ~~Amendments not clouded and noted will not be approved and will be required to refer to the original approved plans.~~

~~[Amended Resolution #05-33]~~

Prior to Filing Petition:

- ~~1. Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Minor Amendment Petition, however, it is recommended that you have this meeting at least two (2) weeks prior to filing. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review for more information regarding this required meeting.~~

Petition Filing:

- ~~1. Submit Petitions for Minor Development Plan Amendment along with any supporting documentation by the posted deadline time to the Department of Planning & Zoning on Monday. The Development Plan Packet provides a detailed list of all application submittal requirements. Petitions received after Monday will be placed in the next week's review cycle.~~
- ~~2. The Department of Planning & Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the petition will be placed in the next available review cycle after the information is submitted and the petition is deemed complete. However, if information specified on the "Required Submittal Items List" or the "Plan Requirement & Data Checklist" is not included, the Petitioner will be notified of the missing information and will not be included in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available review cycle to deem the petition complete to be included in that review cycle. [Amended Resolution #08-10]~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the specific review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition within fifteen (15) business days after the submittal date.~~
- ~~3. Revised plans and any requested information must be submitted for staff review in accordance with the submittal requirements as stated above to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available 2nd (or 3rd) review cycle to deem the Petition complete to be included in that review cycle. [Amended Resolution #08-10]~~
- ~~4. Staff will review the revised plans and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition.~~

~~**Note:** If at any time during the Amendment Review process, there is no written correspondence to the Department of Planning & Zoning for a period exceeding thirty (30) days, the Petition will be deemed withdrawn and a new Petition and review process will be required to consider the request.~~

Determination of Official Action:

- ~~1. The third and final set of revised drawings (if needed) for determination of official action must be submitted in accordance with the staff review comments.~~
- ~~2. Plans for Official Action and any requested information must be submitted in accordance with the submittal requirements as stated above to remain in the review cycle. If plans are submitted after the deadline date or do not include all items requested in the Staff Review Comments, the Petitioner will be notified of the missing information and the Petition will be not be continued in the current review cycle. The information must be completed and submitted by the posted deadline date for the next available Official Action review cycle to deem the Petition complete to be included in that review cycle. [Added Resolution #08-10]~~
- ~~3. Within five (5) business days after the submittal deadline date, the Director, shall make a final determination to either: approve, approve with conditions, or deny the petition request based upon confirmation from the other Department Directors in the review process.~~
- ~~4. The Department of Planning & Zoning will notify all persons named on the Development Plan Amendment Petition regarding the Director's decision within ten (10) days of their action. [Amended Resolution #09-16]~~



SECTION 5.00

UDO Permits

~~A UDO Permit is a permit stating that the proposed erection, construction, enlargement or moving of a building or structure, and uses thereof, complies with the provisions of the Unified Development Ordinance. It is required to be obtained prior to the alteration, change, placement, erection, or location of any building, structure, improvement, sign, or use.~~

~~Please refer to UDO Section 9.05, C. for information on UDO Permit conditions of issuance, requirements, and exemptions.~~



SECTION 5.01

UDO Permit with Building Permit

~~A UDO Permit must be issued by the Department of Planning and Zoning in accordance with UDO Section 9.05, C, before beginning specific types of construction. UDO Permits shall only be issued after Construction Drawings have been approved and Final Plats have been recorded. UDO Permits for new non-residential or residential structures are processed through the Building Permit application process.~~

UDO PERMIT

~~**Expected Review Time:** Approximately 5-10 days~~

~~**Primary Processing Department:** Building Codes Enforcement~~

~~**Departments involved in review process:** Building Codes Enforcement, Planning & Zoning, and Engineering~~

Prior to Issuing a UDO Permit:

- ~~1. The Department of Planning & Zoning will notify all persons named on the Subdivision Petition and/or Development Plan Petition regarding the decision made by either the Town Council or the Technical Review Committee within ten (10) business days of their action by Certified Mail. [Amended Ordinance #04-06]*~~
- ~~2. Construction Drawings may be submitted to the Department of Engineering the Monday after receiving approval by the Town Council or the Technical Review Committee, whichever is applicable. The Construction Drawing Review Procedures can be found in Section 8.00 of this Manual. [Amended Ordinance #04-06]*~~
- ~~3. A Final Plat, if required, must be submitted and approved by the Town, recorded by the Petitioner, and returned to the Department of Planning & Zoning prior to issuance of a UDO Permit/Building Permit. The Final Plat Procedures can be found in Section 9.00 of this Manual.~~

Filing for a UDO Permit:

- ~~1. Submit application for Building Permit/UDO Permit as well as any supporting documentation to the Building Codes Enforcement Department. The Building Permit Application provides a detailed list of all application submittal requirements.~~
- ~~2. The Building Codes Enforcement Department will forward a copy of the completed application to all Staff involved in the building permit review process.~~

Next Steps:

~~Complete Building Permit process.~~

- ~~1. Request a Certificate of UDO Compliance from the Department of Planning & Zoning prior to seeking a Certificate of Occupancy. The Certificate of Occupancy will not be issued without a Certificate of UDO Compliance.~~
- ~~2. Follow all necessary procedures to obtain a Certificate of Occupancy. The procedures for the building process may be found in Section 10.05 of this Manual.~~



SECTION 5.02

UDO Permit: Accessory/ Temporary Use, Building, or Structure

In order to protect, promote and maintain compatibility with adjacent development certain Accessory and Temporary Uses, Buildings and Structures require a UDO Permit prior to installation or beginning of use. Some examples of those requiring a UDO Permit are: Accessory Sheds, Detached Garages, Fences (meeting criteria in UDO section 9.05, C.), Pools, Patios, Driveway Expansions, Porches, Decks, Gazebos, Seasonal Retail Sales, Equipment Sheds, Swimming Pools, Satellite Dish Antennas (exceeding 39.37 inches), Game Courts, Trash Containers, Temporary Construction Trailers, Temporary Sales Offices, and Retail Sales Lots. Temporary uses are limited in the duration of use. Accessory uses are normally permanent structures. [Amended Resolution #15-26]*

UDO Permit For Accessory or Temporary Use, Building or Structure:

Expected Review Time: Approximately 5-10 business days

Primary Processing Department: Planning & Zoning

Departments involved in Accessory Use, Building, or Structure Permit review process:

Planning & Zoning, Engineering, Building Codes Enforcement

UDO Permit For Accessory or Temporary Use, Building or Structure Petition Procedures:

NOTES:

- UDO permits are not required for the following Accessory Uses: [Amended Resolution #15-26]*
 - Certain Fences (See UDO Section 9.05, C.) but a preliminary staff review is encouraged
 - Underground facilities
 - Cement patio extensions [Added Resolution #11-19]
- UDO Permits are not required for the following Temporary Uses:
 - Garage/Yard Sales
- Accessory or Temporary Uses, Buildings, or Structures may require approval from a Property Owners Association in addition to receiving all Town required permits.
- Additional Regulations for Accessory and Temporary Uses, Buildings and Structures can be found in UDO Sections 2.08, A. and B.; 3.07, A. and B.; 4.04, A. and B.

Prior to Filing Petition:

Schedule a preliminary consultation through the Department of Planning & Zoning if you have questions regarding whether a permit is required or for UDO interpretation. This consultation is not required but is recommended to shorten staff review time. It may be held on the same day, prior to the submittal of the UDO Permit for Accessory/Temporary Use, Building, or Structure Permit Petition.

Petition Filing:

1. Submit UDO Permit for Accessory/Temporary Use, Building, or Structure Permit Petition, along with all supporting documentation to the Department of Planning & Zoning. The Accessory/Temporary Use, Building, or Structure Packet provides a detailed list of all application submittal requirements.
2. Department of Planning and Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal. This information must be completed and submitted within five (5) business days, or the petition will be considered incomplete, marked as such and petition returned to the petitioner marked as incomplete.

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all staff in the specific review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition if additional information, clarification, or modifications are needed.~~

Determination of Official Action:

- ~~1. Within five (5) business days after the submittal or re-submittal date, the Director shall make a final determination to either: approve, approve with conditions, or deny the petition request based upon confirmation from the other Department Directors involved in the review procedure.~~
~~The Department of Planning & Zoning will notify all persons named on the UDO Permit for Accessory/Temporary Use, Building or Structure Petition within five (5) business days regarding the Director's decision.~~

Next Steps:

- ~~1. Obtain the necessary permits (if applicable) from the Building Codes Enforcement Department. Request a Certificate of UDO Compliance from the Department of Planning & Zoning after installation and before beginning use of the structure or use.~~



SECTION 5.03

UDO Permit: Manufactured Homes

~~Manufactured Homes may be utilized in three of the seven residential zoning districts provided that the requirements for appearance and dimensions as specified in UDO Section 2.08, I. have been met or exceeded. Appearance requirements include, but are not limited to such items as roof pitch and design, siding material, foundation construction, and entrance design, among other things. The review for a Manufactured Home whether as a Permitted Use or Special Exception Use will require a site plan and building elevations.~~

Manufactured Home: Permitted Use

Expected Review Time: ~~Approximately 5-10 business days~~

Primary Processing Department: ~~Building Codes Enforcement~~

Departments involved in Preliminary review process: ~~Building Codes Enforcement, Planning & Zoning, and Engineering~~

~~Manufactured Homes are a permitted use in the R-30 zoning district. Homes within the R-30 Residential Zoning District have a faster review process than those located in either the R-20 or R-15 districts because as a permitted use the only review procedure required is to obtain a UDO Permit with the request for a Building Permit, provided that all District regulations are met. See Section 10.01 of this manual for Building Permit procedures.~~

Manufactured Home: Special Exception Use

Expected Review Time: ~~Approximately 78-85 days~~

Primary Processing Department: ~~Planning & Zoning~~

Departments involved in Preliminary review process: ~~Planning & Zoning, and Engineering~~

~~Manufactured Homes are permitted as a Special Exception Use in the R-20 and R-15 Residential Zoning Districts. Manufactured Homes that are within the R-20 and R-15 districts shall be required to follow the procedures listed in this manual for Special Exception Use Petitions, and must meet the Manufactured Home requirements of the UDO. See Section 6.01 of this manual for Special Exception Use procedures.~~

Existing Manufactured Homes

~~Existing Manufactured Homes that are located in a Zoning District other than those mentioned above are classified as Existing Non-Conformities and must follow UDO Section 1.21.~~

~~If an existing Manufactured Home is being replaced by a new Manufactured Home then the new home must meet the design criteria mentioned in UDO Section 2.08 (I).~~



SECTION 5.04

UDO Permit: Change of Use/Interior Fit-Up

~~A Change of Use or Interior Fit-Up may affect various existing conditions of a site. The extent of these changes could cause the need for site modifications to accommodate the new use. For example, all change of uses or interior fit-ups must meet the minimum parking requirements, drive-thru stacking, etc. See UDO Section 9.05, C, to verify what types of use changes or fit-ups require a UDO Permit.~~

General Information on Change of Use/Interior Fit-Up Procedures:

~~Expected Review Time:~~ Approximately 5–10 business days

~~Primary Processing Department:~~ Building Codes Enforcement

~~Departments involved in Preliminary review process:~~ Building Codes Enforcement, Planning & Zoning, and Engineering

- ~~For information regarding parking requirements see UDO Section 7.04~~
- ~~All changes of use or interior fit-ups will require information regarding compliance with the sewer use ordinance to be reviewed by the Department of Engineering before Building Permit can be obtained. Amended Resolution #07-25]~~
- ~~A Change of Use may require approval of a Special Exception Use (Section 6.01) if the proposed new use is designated as such in the UDO for the zoning district in which it is located. [Added Resolution #15-26]*~~
- ~~A Change of Use that requires an expansion of the existing structure may be required to go through the Development Plan and/or the Special Exception Use (Section 6.01) approval process depending on the size of the expansion and the zoning district in which it is located as specified in the Architectural and Site Design Requirements for the particular zoning district in the UDO. See Section 4.00 of this manual for more information on the Development Plan approval process. [Amended Resolution #15-26]*~~
- ~~UDO Permits for a Change of Use or Interior Fit-up are applied for through the Building Permit procedure. See Section 10.01 of this manual for more information.~~

Change of Use from Non-Residential to Non-Residential/Interior Fit-Up Procedures:

~~Expected Review Time:~~ Approximately 5–10 business days

~~Primary Processing Department:~~ Building Codes Enforcement

~~Departments involved in Preliminary review process:~~ Building Codes Enforcement, Planning & Zoning, and Engineering

~~A Change of Use from a non-residential use to another non-residential use, or an interior Fit-up will be reviewed administratively following the procedures for a UDO Permit with Building Permit. See Section 5.01 for more information. If alterations are being made to the building façade, or any building addition that either individually or in the aggregate exceeds 20% of the gross floor area of the building in accordance with the UDO, a Development Plan Petition may be required to be submitted for consideration as specified in the UDO. (See Section 4.00 of this manual for more information.) If the proposed new use is allowed in the specific zoning district through the grant of a special exception, then a Special Exception Use Petition must be submitted for consideration as specified in the UDO. (See Section 6.01 of this manual for more information.) [Amended Resolution #03-25, #07-34]~~

Change of Use from Residential to Non-Residential Procedures:

~~**Expected Review Time:** Contingent upon the type of Petition required~~

~~**Primary Processing Department:** Planning & Zoning~~

~~**Departments involved in Preliminary review process:** Planning & Zoning, Engineering, Parks & Recreation, Fire & Rescue, Public Works, and Water Quality. [Amended Resolution #07-34]~~

~~A Change of Use from a residential use to a non-residential use will be reviewed using either the Development Plan procedures, or the Special Exception Use procedures depending on the type of use proposed and the zoning district of the property. See Section 4.00 in this manual for more information on Development Plan Review, or Section 6.01 for Special Exception Review. [Amended Resolution #03-25]~~



SECTION 5.05

UDO Permit: Wireless Telecommunications Facilities

~~All Wireless Telecommunications Facilities will require a UDO Permit. However, certain facilities may also require Special Exception Use approval before obtaining a UDO Permit. UDO Section 8.01 provides strict policy information regarding new Wireless Telecommunication Facilities, new Small Wireless Telecommunication Facilities, and co-location on existing towers or structures.~~

- ~~▪ Adverse effects must be kept to a minimum on any type of Wireless Telecommunications Facility, whether it involves a new facility or co-location with an existing tower and facility. [Amended Resolution #10-02]*~~

~~**New Wireless Telecommunications Facilities: Special Exception Use (Located outside of the Public Right of Way):** [Amended Resolution #10-02]*~~

~~**Expected Review Time:** Approximately 116-138 days [Amended Resolution #16-26, 10-02]*~~

~~**Primary Processing Department:** Planning & Zoning~~

~~**Departments involved in Preliminary review process:** Planning & Zoning and Engineering~~

~~New towers and facilities are required to obtain a Special Exception Use Permit, and must follow the Special Exception Use Procedures found in Section 6.01 of this manual and shall include the following additional information: [Amended Resolution #10-02]*~~

- ~~1. A map of the Town of Holly Springs and its extra-territorial jurisdiction identifying the following:
 - ~~a. all existing telecommunications towers; and,~~
 - ~~b. all structures or buildings within a one (1) mile radius of the proposed site that have a height equal to or greater than the height of the proposed telecommunications tower minus thirty (30) feet.~~~~

~~In the event that a telecommunications tower is proposed within one (1) mile of the boundary of the Town of Holly Springs and its extra-territorial jurisdiction, such map shall include the information required above for all areas within one (1) mile of the proposed telecommunications tower.~~

- ~~2. A certification, in a manner acceptable to the Town, from the owner of the telecommunications tower or the property on which the telecommunications tower is located, that the telecommunications tower is available for use by another wireless telecommunications provider on a reasonable and non-discriminatory basis and at a cost not exceeding the Fair Market Value for the use of the facilities.~~
- ~~3. A designation by the owner of the telecommunications tower or the property on which such telecommunications tower is located of an area which is set aside for the equipment of future users of the telecommunications tower and is located:
 - ~~a. within the proposed compound area; or,~~~~

~~b. within a separate compound area located on the same lot and located no further from the telecommunications tower than the distance from the telecommunications tower to the proposed compound area plus fifty (50) feet.~~

~~4. Color photo simulations showing the site of the proposed telecommunications tower with a photo realistic representation of the proposed telecommunications tower as it would appear viewed from the closest residential district and from adjacent public right of way, and photographs of the same views as in the photo simulations showing the current appearance of the site without the proposed telecommunications tower. Development Standards.~~

~~[Added Resolution #10-02]*~~

Next Steps: ~~[Added Resolution #10-02]*~~

- ~~1. Obtain all necessary permits from Building Codes Enforcement.~~
- ~~2. Establish a cash security fund, irrevocable letter of credit, or a bond for the removal of telecommunications towers, antenna rays, associated equipment and buildings as specified in UDO Section 8.01 E: Abandonment and Removal of Telecommunications Towers, Antenna Arrays, Associated Equipment and Buildings.~~
- ~~3. Request a Certificate of UDO Compliance from the Department of Planning & Zoning prior to seeking a Certificate of Occupancy. The Certificate of Occupancy will not be issued without a Certificate of UDO Compliance.~~
- ~~4. Follow all necessary procedures to obtain a Certificate of Occupancy. The procedures for the building process may be found in Section 10.05 of this Manual.~~

New or Co-Located Small Wireless Telecommunications Facility (Located within the Public Right of Way): ~~[Added Resolution #10-02]*~~

~~Expected Review Time: Approximately 10-45 days~~

~~Primary Processing Department: Code Enforcement~~

~~Departments involved in Preliminary review process: Planning & Zoning, Engineering, & Code Enforcement~~

Prior to Filing Petition:

- ~~1. A Concept Plan Review Meeting is encouraged prior to submitting a UDO Permit: Small Wireless Telecommunication Facility through the Department of Planning & Zoning for the. See Section 4.01 Concept Plan Review for more information regarding this required meeting.~~

Petition Filing:

- ~~1. Submit petition for UDO Permit for a new or co-located Small Wireless Telecommunication Facility as well as any supporting documentation to the Code Enforcement Department. All applications for small wireless telecommunication facilities shall include the following supporting documentation:
 - ~~a. A map completed by a registered surveyor of the proposed site identifying:
 - ~~i. The proposed utility pole or wireless support structure location and the location of any utilities or easements;~~
 - ~~ii. All existing wireless telecommunication facilities and coverage areas within a one (1) mile radius of the proposed site, if available; and,~~
 - ~~iii. All structures or buildings within a one quarter (1/4) mile of the proposed site that have a height equal to or greater than the height of the proposed small wireless telecommunication facility.~~~~~~

- ~~b. A certification, in a manner acceptable to the Town, from the owner of the existing utility poles, light pole fixtures, or wireless support structures on which the small wireless telecommunication facility is to be located, or from the government body with jurisdiction of the right of way in which a new utility pole or wireless support structure is to be located.~~
- ~~c. Construction drawing specifications for installation of the proposed small wireless telecommunication facility.~~
- ~~d. Color photo simulations showing the site of the proposed small wireless telecommunication facility, including any new utility poles or wireless support structures, with a photo realistic representation of the proposed small wireless telecommunication facility as it would appear viewed from the adjacent street, and photographs of the same views as in the photo simulations showing the current appearance of the site without the proposed small wireless telecommunication facility.~~

Petition Review Process:

- ~~1. The Code Enforcement Department will notify Petitioner of an incomplete petition or any missing information within ten (10) business days. The notice will state every deficiency in the application. This information must be completed and resubmitted. If a subsequent submission is still incomplete, then the Code Enforcement Department will notify Petitioner of an incomplete petition notify the applicant within ten (10) days.~~
- ~~2. The Code Enforcement Department will forward a copy of the completed application to all Staff in the specific review process.~~

Determination of Final Action:

- ~~1. Staff will review the submitted application and will determine whether to approve or deny the application within forty five (45) days:

 - ~~a. If the application is denied, the denial shall state the reasons for the denial.~~
 - ~~b. The applicant may resubmit the application in an attempt to cure the deficiencies stated in the denial.~~
 - ~~c. Staff will review the resubmitted application and will determine whether to approve or deny the application within thirty (30) days. Such review will be limited to the deficiencies cited in the prior denial.~~~~
- ~~2. Once the application is approved, the Code Enforcement Department will notify Petitioner.~~

Next Steps:

- ~~1. Obtain all necessary permits from the Code Enforcement Department~~

Town Next Steps:

- ~~1. Staff will map all approved small wireless telecommunication facilities and, if applicable, their new utility pole or support structure on a GIS map that can be linked to and displayed on the Town website for public disclosure.~~

Wireless Telecommunications Facilities: Co-Location Permitted Use [Amended Resolution #10-02]*

Expected Review Time: Approximately 5-10 business days

Primary Processing Department: Planning & Zoning

Departments involved in Preliminary review process: Planning & Zoning and Engineering

~~All co-locations or new antennas on existing towers, and the associated additional equipment in the compound area, are permitted in all districts and must follow the procedures listed below.~~

Prior to Filing Petition:

- ~~1. A Concept Plan Review Meeting is encouraged prior to submitting a UDO Permit: Small Wireless Telecommunication Facility through the Department of Planning & Zoning. See Section 1.04 Concept Plan Review for more information regarding this required meeting. [Amended Resolution #10-02]*~~

Petition Filing:

- ~~1. Submit petition for UDO Permit for Wireless Co-Location/New Antenna as well as any supporting documentation to by the posted deadline date and time to the Department of Planning & Zoning. The Wireless Co-Location/New Antenna Packet provides a detailed list of all petition submittal requirements. Petitions received after Monday will be placed in the next week's review cycle. [Added Resolution #11-19]~~
- ~~2. The Department of Planning & Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the petition will be placed in the next available review cycle after the information is submitted and the petition is deemed complete.~~

Petition Review Process:

- ~~3. The Department of Planning & Zoning will forward a copy of the completed application to all Staff in the specific review process.~~
- ~~4. Staff will review the submitted application and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition within fourteen (14) business days after the submittal date.~~
- ~~5. Revised plans and any requested information must be submitted for staff review in accordance with the date specified on the Staff Comments to remain in the review cycle. If plans are submitted after the deadline date, they will be processed in the next available review cycle.~~
- ~~6. Staff will review the revised plans and the Department of Planning & Zoning will forward all Staff comments to those named on the Application.~~

~~**Note:** If at any time during the Review process, revised plans are not re-submitted to the Department of Planning & Zoning within thirty (30) days, the Application will be deemed withdrawn and a new Application and review process will be required to consider the request.~~

Determination of Final Action:

- ~~1. The final set of revised drawings must be submitted in accordance with the staff review comments.~~
- ~~2. Within five (5) business days after the submittal deadline date, the Director, shall make a final determination to either: approve, approve with conditions, or deny the application request.~~

- ~~3. The Department of Planning & Zoning will notify all persons named on the application for Wireless Co Location/New Antenna regarding the Director's decision within ten (10) days of the action. [Amended Resolution #09-16]~~

Next Steps:

- ~~5. Obtain all necessary permits from Building Codes Enforcement.~~
- ~~6. Establish a cash security fund, irrevocable letter of credit, or a bond for the removal of telecommunications towers, antenna rays, associated equipment and buildings as specified in UDO Section 8.01 E: Abandonment and Removal of Telecommunications Towers, Antenna Arrays, Associated Equipment and Buildings. [Added Resolution #15-26]~~
- ~~7. Request a Certificate of UDO Compliance from the Department of Planning & Zoning prior to seeking a Certificate of Occupancy. The Certificate of Occupancy will not be issued without a Certificate of UDO Compliance.~~
- ~~8. Follow all necessary procedures to obtain a Certificate of Occupancy. The procedures for the building process may be found in Section 10.05 of this Manual.~~



SECTION 5.06

Forestry Activity, Timbering Operations and Site Clearing

~~A Timbering Plan must be submitted for any proposed timbering or clearing operations in the Town's corporate and extraterritorial jurisdiction. This plan shall be submitted when timbering is desired on a tract of land prior to the issuance of a Land Disturbance Permit by the Town. Forestry activities with Forestry Management Plans prepared or approved by a registered forester may be exempt from obtaining a Timbering Plan provided that it meets the criteria outlined below.~~

~~UDO Permit for: Forestry Activity, Timbering Operations and Site Clearing:~~

~~**Expected Review Time:** Approximately 6 weeks, depending upon completeness of plans submitted, thoroughness of response to comments, and turn around time by petitioner back to staff between subsequent staff reviews. The review process can generally be completed in three review cycles for most plans.~~

~~**Primary Processing Department:** Department of Engineering~~

~~**Departments involved in Timbering Plan review processes:** Department of Engineering, Department of Planning & Zoning, Department of Parks & Recreation.~~

~~Submittal Requirements & Procedures:~~

- ~~1. Timbering plans (for First Review), along with an application packet, including affidavits from the landowner indicating the intent and scope of the timbering activity shall be submitted to the Department of Engineering by 12:00 p.m. any Monday subsequent to site or subdivision approval for the project. A receipt shall be provided to the individual delivering the package to Engineering. The timbering packet contained within this manual provides a detailed list of the application package submittal requirements. [Amended Resolution #03-25]~~
- ~~2. The Department of Engineering will review the information submitted and determine whether or not it constitutes a complete package. The review shall include documentation that the correct applications, plans, studies, calculations, fees, and any other requirements per plan approval conditions are included in the package submitted for review. Engineering staff will notify both the owner and the applicant (in most cases the engineer) via fax or email of an incomplete application or of any missing information within two (2) business days after the submittal deadline date. Any missing information must be supplied to the Town by the next Monday (at noon) following the fax or email notification, or the application package shall be deemed incomplete and returned to the applicant via first class mail. [Amended Resolution #11-18]*~~
- ~~3. Re-submittals (i.e. Second Review or subsequent reviews) shall be submitted to the Department of Engineering by 12:00 p.m. any Monday following receipt of review comments. [Amended Resolution #03-25]~~
- ~~4. Plans which enter the Timbering Plan review process and are not re-submitted within 90 days after comments are sent out shall become invalid, shall be removed from the Timbering Plan review process, and shall be required to make a brand new re-submittal into the review process (i.e. a First Review).~~

Review Process:

- ~~1. For any plans that are more complex, that require special studies, that are time sensitive, that are unusual in any way, or that are particularly large, it is recommended that the engineering consultant meet with Engineering staff before finalizing plans for submittal. Engineering staff is available for such consultation in an effort to streamline the process for approval of Timbering plans.~~
- ~~2. For the First Review, Department of Engineering staff will review the package submitted in accordance with the latest version of the Town of *Holly Springs Engineering Design and Construction Standards*, and with other Town policies, ordinances, checklists, and standards. In some instances, a consultant or other departments' staff may be utilized to review certain components of the plan or related studies or calculations, with comments being generated and distributed under the direction of the staff engineer. [Amended Resolution #11-18]*~~
- ~~3. First Review Comments will be generated and distributed to both the applicant and the owner, via fax or email, on the second Monday following the submittal (i.e. within two weeks). [Amended Resolution #11-18]*~~
- ~~4. Developer Conference—It is recommended that for plans that are more complex, that require special studies such as drainage or traffic analysis, that are time sensitive, that include unusual components, or that are particularly large, the engineering consultant meet with Engineering staff to discuss the First Review Comments. The developer or engineering consultant shall call the Department of Engineering to staff to schedule the meeting. Engineering staff will coordinate the scheduling of all Town staff involved in the review process. [Amended Resolution #11-18]*~~
- ~~5. Subsequent Reviews—Subsequent Review Comments shall be generated based upon an evaluation of the changes or modifications made to address previous comments, and a review of the written responses to previous comments. It shall be the goal of Engineering staff not to make "new" comments at subsequent review, except when such information was not available for review previously.~~
- ~~6. The plan remains in the review cycle (2 week review times) until such time as all comments and conditions have been addressed.~~

Approval Process:

- ~~1. Once all comments have been addressed, the Director of Engineering shall approve the UDO Permit based upon confirmation from other departments involved in the review process. The Engineering staff shall notify applicant that they may schedule the pre timbering conference with the staff at this time and provide 6 sets of the Timbering Plan for approval stamping prior to the pre timbering conference.~~
- ~~2. Both the owner and their construction representatives (engineer, contractors, and other applicable representatives) shall attend the pre timbering conference with Town staff. The owner shall bring 6 sets of the complete Timbering Plan and corresponding fees to the meeting. The attached outline shall be used for the pre timbering conference. The owner will receive the approved Timbering Plan, and a Certificate of Timbering Plan approval at the meeting. [Amended Resolution #11-18]*~~
- ~~3. Tree protection measures can be installed after Timbering Plan approval and the pre timbering conference. Once all of the required measures are installed, the owner or contractor may call the Environmental Inspector for a Certificate of Compliance inspection. If all tree protection measures are installed per the approved Timbering Plan, a Certificate of Compliance for~~

~~installation of tree protection measures will be issued for the site. The Engineering staff shall notify the Department of Planning & Zoning and the Department of Parks & Recreation once Timbering Plans are approved and a Certificate of Compliance has been issued by the Environmental Inspector. Once the Certificate of Compliance is obtained, the landowner will be able to harvest the timber from the unprotected areas of the site as per the approved plan.~~

- ~~4. Once timbering has been completed on site, the owner or contractor must call the Environmental Inspector for a Certificate of Completion. [Amended Resolution #11-18]*~~

Additional Requirements:

- ~~• Construction and/or land disturbance activities that are not necessary for timbering the site are not approved as part of a Timbering Plan. No grading or utility installation of any kind is allowed without Construction Drawing and Erosion and Sedimentation Control Plan approvals. Initiating any land disturbing activity that is not for timbering operations and approved on the Timbering Plan will result in a violation of the Town's ordinances.~~
- ~~• A copy of the Certificate of Timbering Plan Approval and the approved Timbering Plan must be on site throughout the timbering process.~~
- ~~• If buffer requirements are not met throughout the timbering activity, it will be considered in violation of Town ordinances; an application or petition for development may not be submitted to the Town for review for a period of up to 5 years after the timbering activity is concluded. This shall apply to the property regardless of ownership. [Amended Resolution #11-18]*~~

Exemptions:

- ~~1. An exemption from the Timbering Plan requirement may be obtained if the forestry activity is conducted pursuant to a Forestry Management Plan or approved by a registered forester pursuant to Chapter 89B of the NC General Statutes. A copy of the Forestry Management Plan prepared or approved by a registered forester shall be submitted to the Town prior to or at the time of initiation of timber harvesting for the site. The landowner shall be required to provide affidavits indicating the intent and scope of the timbering activity. The Town shall review all of the information provided by the landowner in the review process stated above. Upon completion of the review if all criteria to receive an exemption are met the Town will provide a letter of exemption to the landowner.~~



SECTION 5.07

UDO Permit: Sign Installation

A UDO Permit for Sign Installation is required for certain permanent and temporary signs located on private property as specified in UDO Section 7.03.

UDO Permit For Sign Installation:

~~**Expected Review Time:** Approximately 5-10 business days.~~

~~**Primary Processing Department:** Planning & Zoning~~

~~**Departments involved in UDO Permit for Sign Installation review process:** Planning & Zoning, Engineering, Building Code Enforcement~~

UDO Permit For Sign Installation Petition Procedures:

~~NOTES: Sign Regulations can be found in UDO Section 7.03~~

~~• UDO Permits are not required for the following Permanent Signs:~~

~~• Window signs;~~

~~• UDO Permits are not required for the following Temporary Signs: (Amended Resolution #15-26)*~~

~~• Window signs;~~

~~• A frame, T frame, menu board, and sandwich board signs displayed during working hours;~~

~~• Sign in right of way (See Town Code Section 4-1011 for additional information).~~

Prior to Filing Petition:

- ~~1. Schedule a preliminary consultation through the Department of Planning & Zoning if you have questions regarding whether a permit is required or for UDO interpretation. This consultation is not required, but is suggested to reduce the staff review time.~~

Petition Filing:

- ~~1. Submit a UDO Permit for Sign Installation Petition, along with all supporting documentation to the Department of Planning & Zoning. The Sign Installation Packet provides a detailed list of all petition submittal requirements.~~
- ~~2. The Department of Planning and Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal. This information must be completed and submitted within five (5) business days, or the application will be considered incomplete, marked as such and the Petition will be returned to the Petitioner.~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all staff in the specific review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition if additional information, clarification, or modifications are needed.~~

Determination of Official Action Temporary Signs:

- ~~1. If the determination is for approval or approval with conditions, the Department of Planning & Zoning will issue a UDO Permit for Temporary Sign Installation to the Petitioner named on the UDO Permit for Sign Installation Petition. The UDO Permit for Temporary Sign Permit Approval notice shall be~~

accompanied by a Town of Holly Springs Temporary Sign Permit sticker which shall be placed by the petitioner in the lower left hand corner of the front side of the sign. The display of this decal is your proof that you have received approval to display such temporary sign. ~~[Amended Resolution #15-26]*~~

Determination of Official Action Permanent Signs: ~~[Amended Resolution #15-26]*~~

- ~~1. With the exception of median signs, within five (5) business days after the submittal or re-submittal date, the Director shall make a final determination to either: approve, approve with conditions, or deny the petition request based upon confirmation from the other Department Directors involved in the review procedure:
 - ~~a) At the conclusion of five (5) business days, completed sign petitions will be considered approved unless the petitioner is otherwise notified by the Department of Planning and Zoning;~~
 - ~~b) Median signs require official Town Council approval (see UDO Section 7.03, B., 1., b.). For median signs, the Department of Planning & Zoning will notify all persons named on the UDO Permit for Sign Installation Petition regarding the Director's decision within five (5) business days. If the determination is for approval or approval with conditions, the Owner as specified on the UDO Permit for Sign Installation Petition will be notified to submit the required insurance and indemnification forms. Once this information is received, the Department of Planning & Zoning will present this information to the Town Council for acceptance at the next available Town Council meeting. ~~[Amended Ordinance #04-06]*~~~~~~
- ~~2. If the determination is for approval or approval with conditions, the Department of Planning & Zoning will issue an Authorization of Sign Installation to the petitioner named on the UDO Permit for Sign Installation Petition. *(This is not the official sign permit.)*~~

Next Steps:

- ~~1. Obtain a Building and/or Electrical Permit (if applicable) from the Building Code Enforcement Department.~~
- ~~2. The Petitioner must notify the Department of Planning & Zoning within two (2) business days of installation of the sign to request a Certificate of UDO Compliance. See Section 10.03 of this manual for more information.~~
- ~~3.1. The Department of Planning & Zoning will notify all persons named on the UDO Permit for Sign Installation Petition by the issuance of a UDO Permit for Sign Installation Approval notice. In the case of ground signs, the UDO Permit for Sign Installation Approval notice shall act as the final documentation for sign approval. ~~[Amended Resolution #15-26]*~~~~



SECTION 6.01

Special Exception Use

~~A Special Exception Use is a use beyond the primary uses of a zoning district. If such a use is proposed the following review procedures must be followed. (See Section 9.10 of the UDO for more detailed information.)~~

SPECIAL EXCEPTION USE REVIEW

~~**Expected Review Time:** Approximately 116-138 days [Amended Resolution #15-26, #18-07, 19-02]*~~

~~**Primary Processing Department:** Planning & Zoning~~

~~**Departments involved in Special Exception Use Review Process:** Planning & Zoning, Engineering, Parks & Recreation, Fire & Rescue, Public Works, and Water Quality. [Amended Resolution #07-34]~~

~~**Notes:**~~

- ~~■ Special Exception Use Petitions may only be approved upon the presentation of sufficient evidence. This is achieved by providing written responses to the questions included in the Special Exception Use Petition.~~
- ~~■ Special Exception Use involves a Public Hearing with final approval being granted by the Town Council. [Amended Ordinance #04-06]~~
- ~~■ Waivers can only be requested if submitted at time of Filing of Special Exception Use Petition. See Section 6.06 of this manual for specific information regarding waivers. [Amended Resolution #03-25]~~
- ~~■ If the Special Exception Use includes the construction of new structures or buildings or exterior modifications to existing structures or buildings a Development Plan Petition in accordance with Section 4 of this document shall also be submitted. [Added Resolution #15-26]~~
- ~~■ See the Special Exception Use Packet for detailed submittal requirements.~~

Prior to Filing Petition:

- ~~1. Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Special Exception Use Petition, however, it is recommended that you have this meeting at least thirty (30) days prior to filing. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review for more information regarding this required meeting.~~

Petition Filing:

- ~~1. Submit Petition for Special Exception Use along with any supporting documentation by the posted deadline date and time to the Department of Planning & Zoning as specified on the General and Conditional Use Rezoning and Special Exception Use w/o Development Plan Schedule or Town Council Public Hearing Schedule as specified at the Concept Plan Review Meeting. The Special Exception Use Packet provides a detailed list of all application submittal requirements. [Amended Resolution #09-16, #18-07]*~~
- ~~2. The Department of Planning & Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the petition will be placed in the next available review cycle after the information is submitted and the petition is deemed complete.~~

- ~~3. The Department of Planning & Zoning will notify Petitioner after determination of complete submittal, the date and time of the Developer Conference to review Staff's Comments as well as the anticipated review schedule and Public Hearing information. [Amended Resolution #15-26]*~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the specific review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition prior to the Developer Conference.~~
- ~~3. Developer Conference Please see Section 1.02 of this Manual for specific information regarding this meeting.~~
- ~~4. Revised plans and any requested information must be submitted for staff review in accordance with the Town Council Public Hearing Schedule to remain in the review cycle. If plans are submitted after the deadline date, they will be processed in the next available review cycle.~~
- ~~5. Staff will review the revised plans and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition in accordance with the Town Council Public Hearing Schedule. [Amended Ordinance #04-06]~~

Determination of Official Action:

- ~~1. The Plans for Official Action must be submitted in accordance with the Town Council Public Hearing Schedule. [Amended Ordinance #04-06]~~
- ~~2. Staff shall then prepare a report to the Planning Board including discussion of all plans and policies relevant to the proposed petition along with a recommendation by the Staff to approve, approve with conditions, or deny the proposed Special Exception Use Petition.~~
- ~~3. Staff and the Petitioner shall attend the Planning Board meeting. The Planning Board will review the submitted petition as follows:
 - ~~a. Staff shall be given a reasonable time by the Planning Board to introduce the matter being considered and for the presentation of evidence, statements regarding the matter being considered, and to provide a recommendation on the Petition.~~
 - ~~b. Petitioners shall be allotted a total of fifteen (15) minutes to present evidence, statements and arguments in support of the matter being considered.~~~~

~~At the conclusion of remarks by any party, the Planning Board shall have the right to ask questions pertaining to the evidence, statements and argument presented. Time involved in responding to questions by the Planning Board by the Petitioner shall not be considered for purposes of calculating time for presentation.~~

~~After collecting the evidence and the Planning Board has no remaining questions, the Planning Board shall make a recommendation to the Town Council to either: approve, approve with conditions, or deny the Petition for Special Exception Use. Only upon request by the Petitioner, shall the recommendation on the Petition be continued to the next regularly scheduled Planning Board meeting so as to be able to provide additional evidence in support of the request. [Amended Ordinance #04-06]~~

- ~~4. Staff will forward the final staff recommendation, and the Planning Board recommendation to the Town Council prior to the Public Hearing. [Amended Ordinance #04-06]~~

- ~~5. Staff and the Petitioner shall attend the Public Hearing before the Town Council. The Public Hearing shall be conducted in conformance with the Quasi-Judicial Public Hearing Procedures in Section 1.03 of this Manual. After the Public Hearing, the Town Council may make a final determination to either: approve, approve with conditions, deny, or table the petition request or refer the proposal back to the Planning Board for further review. [Amended Ordinance #04-06][Amended Resolution #15-26]*~~
- ~~6. The Department of Planning & Zoning will notify all persons named on the Special Exception Use Petition regarding the Town Council's decision within ten (10) days of their action. [Amended Ordinance #04-06, #09-16]~~

Next Steps:

~~[Removed Resolution #15-26]*~~

- ~~1. A Final Plat, if applicable, must be requested and approved by the Town, recorded by the Petitioner, and returned to the Department of Planning & Zoning prior to issuance of a UDO Permit. The Final Plat Procedures can be found in Section 9.00 of this Manual.~~
- ~~2. A request for a UDO Permit must be submitted to and issued by the Department of Planning & Zoning prior to obtaining a Building Permit, and all necessary procedures must be followed to obtain a Certificate of Occupancy. The procedures for the building process may be found in Section 10.00 of this Manual.~~



SECTION 6.02

Temporary Lighting

If Temporary Lighting for a special or civic event is being considered, a Temporary Light Permit may be required to protect against objectionable glare and unnecessary spillover onto abutting properties.

Temporary Light Permit:

~~Expected Review Time:~~ Approximately 5—10 business days

~~Primary Processing Department:~~ Planning & Zoning

~~Departments involved in Temporary Light Permit review process:~~ Planning & Zoning, Engineering, Building Codes Enforcement, Parks and Recreation

Temporary Light Permit Review Procedures:

Notes:

- ~~Must obtain Permit Approval prior to placement or use of the light.~~
- ~~The permit for light fixtures for Civic or Special events may require building inspections or engineering review prior to placement.~~
- ~~Exempt Lights that do not require a permit are specified in UDO Section 7.02.C. These include Holiday Decorations with time restrictions, Public Lighting, Fossil Fuel lights, Construction/Emergency Lighting, Internal Illumination Signs, single family or two family dwelling light fixtures subject to glare restrictions in Section 2.08, D., 7.~~

Prior to Completing Application:

1. ~~Schedule a preliminary consultation through the Department of Planning & Zoning if you have questions regarding permit requirements or UDO interpretation. This consultation may be held prior to the submittal of the application on the same day.~~

Application Filing:

1. ~~Submit Temporary Light Permit Application, along with any supporting documentation to the Department of Planning & Zoning. The Temporary Light Packet provides a detailed list of all application submittal requirements.~~
2. ~~The Department of Planning and Zoning will notify Applicant of an incomplete application or any missing information within two (2) business days after submittal. This information must be completed and submitted within five (5) business days, or the application will be considered incomplete, marked as such and returned to the applicant marked incomplete.~~
[Amended Resolution 03-25]

Application Review Process:

1. ~~The Department of Planning & Zoning will forward a copy of the completed application to all staff in the specific review process.~~
2. ~~Staff will review the submitted application and the Department of Planning & Zoning will forward all Staff comments to those named on the application if additional information, clarification, or modifications are needed.~~

Determination of Official Action:

- ~~1. Within five (5) business days after the submittal or re-submittal date, the Director shall make a final determination to either approve, approve with conditions, or deny the application request based upon confirmation from the other Department Directors involved in the review procedure.~~
- ~~2. The Department of Planning & Zoning will notify all persons named on the Temporary Light Permit Application regarding the Director's decision within five (5) business days.~~

Next Steps:

- ~~1. Obtain a Building or Electrical Permit (if applicable) from the Building Codes Enforcement Department.~~

~~Request a Certificate of UDO Compliance from the Department of Planning & Zoning after installation and before beginning use of the temporary lights.~~



SECTION 6.03

Registration of Home Occupation

The Intent of regulations governing Home Occupations is to insure compatibility of home occupations with other permitted uses and with the residential character of the district and neighborhood in which the home occupation is located as well as clearly establishing the secondary or incidental status of home occupations in relation to the primary use of the lot for residential purposes.

Registration of Home Occupation:

Expected Review Time: Approximately 5-10 business days or less

Primary Processing Department: Planning & Zoning

Departments involved in Home Occupation Registration review process: Planning & Zoning, Building Codes Enforcement, Water Quality and Engineering

REGISTRATION OF HOME OCCUPATION APPLICATION REVIEW PROCESS

[Amended Resolution #03-25]

Prior to Filing Application:

1. Schedule a preliminary consultation through the Department of Planning & Zoning if you have questions regarding whether a Home Occupation is permitted or for UDO interpretation. This consultation may be held the same day as the submittal of the Application for Registration of Home Occupation.

Application Filing:

1. Submit Application for Home Occupation Registration along with all supporting documentation to the Department of Planning & Zoning. The Home Occupation Packet provides a detailed list of all application submittal requirements.
2. Department of Planning & Zoning will notify Applicant of an incomplete application or any missing information within two (2) business days after the submittal date. This information must be completed and submitted within five (5) business days, or the application will be considered incomplete, marked as such and the application will be returned to the applicant.

Application Review Process:

1. The Department of Planning & Zoning will forward a copy of the completed petition to all staff in the specific review process.
2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition if additional information, clarification, or modifications are needed.

Determination of Official Action:

- ~~1. Within five (5) business days after the submittal or re-submittal date, the Director shall make a final determination to either approve, approve with conditions, or deny the petition request based upon confirmation from the other Department Directors involved in the review procedure.~~
- ~~2. The Department of Planning & Zoning will notify all persons named on the UDO Permit for Accessory/Temporary Use, Building or Structure Petition regarding the Director's decision within five (5) business days.~~

Next Steps:

- ~~1. Apply for and obtain a Privilege License from the Finance Department.~~
- ~~2. Report any changes or modifications to the Home Occupation to the Department of Planning & Zoning.~~



SECTION 6.04

Voluntary Annexation

~~For more information about requests for waivers of voluntary annexation, see Section 1.00 Introduction and Section 6.06 Development Waivers. [Added Resolution #18-37]*~~

VOLUNTARY ANNEXATION PETITION

~~**Expected Review Time:** Approximately 60-75 days [Amended Resolution 19-02]*~~

~~**Primary Processing Department:** Planning & Zoning and Town Clerk's Office~~

~~**Departments involved in Voluntary Annexation review process:** Planning & Zoning, Town Clerk, Engineering~~

Voluntary Annexation Procedures

Notes:

- ~~• Voluntary Annexations can only be considered when submitted by the Property Owner(s) of the land being requested to be annexed.~~
- ~~• The property must meet the NC General Statute requirements for annexation by the Town of Holly Springs regarding location and contiguity to the Corporate Limits of the Town.~~

Prior to Filing Petition:

- ~~1. A Scoping Meeting may be scheduled through the Department of Planning & Zoning to receive additional information regarding the petition filing requirements and the process. [Amended Resolution 18-37]*~~

Petition Filing:

- ~~1. Submit Petition for Voluntary Annexation as well as any supporting documentation to the Department of Planning & Zoning. The Voluntary Annexation Packet provides a detailed list of all submittal requirements.~~
- ~~2. The Department of Planning & Zoning will notify Applicant of an incomplete application or any missing information within two (2) business days after the submittal date. This information must be completed and submitted prior to processing of the Petition request. If the missing information is not submitted within one (1) week of notification, the petition will be marked incomplete and returned to the Petitioner.~~

Petition Review Process: [Renumbered Resolution 18-37]*

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the specific review process.~~
- ~~2. Staff will review the submitted petition and associated maps and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition.~~
- ~~3. The Town Clerk's Office will place the Petition Request on the next available Town Council's Agenda to request consideration of the request and to direct Staff to determine the sufficiency of the Petition and to schedule the date and time of the Public Hearing. [Amended Ordinance #04-06]~~
- ~~4. The Town Clerk's Office will advertise the public hearing notice and mail notice of public hearing to the Petitioner(s).~~

~~5. Revised maps and any requested information must be submitted for staff review a minimum of ten (10) days prior to the Town Council Public Hearing. [Amended Ordinance #04-06]~~

Determination of Official Action:

~~1. The Town Council shall direct staff to determine sufficiency of the Voluntary Annexation Petition and set a date for the Public Hearing and determination. [Amended Ordinance #04-06]~~

~~2. The Town Clerk's Office shall prepare a report and Ordinance and forward them to the Town Council's prior to the Public Hearing. [Amended Ordinance #04-06]~~

~~3. Staff and the Petitioner shall attend the Public Hearing before the Town Council. The Public Hearing shall be conducted in conformance with the Legislative Public Hearing Procedures in Section 1.03 of this Manual. After the Public Hearing, the Town Council may make a final determination to either: approve, deny, or table the Petition. [Amended Resolution #15-26]*~~

~~4. The Town Clerk's Office will notify all persons named on the Petition for Voluntary Annexation regarding the Town Council's decision within ten (10) business days of their action by first class U.S. Mail. [Amended Ordinance #04-06]~~

~~5. The Town Clerk's Office will record all maps and ordinances with the Wake County Register of Deeds Office and the N.C. Secretary of State.~~

~~6. The Town Clerk's Office will notify all taxing, utility, emergency response, and elections officials of approved annexations.~~



SECTION 6.05

Modification & Waivers of Riparian Buffer

Modifications and waivers of Riparian Buffer Regulations may be requested to propose a change of the specific use allowable in Town-mandated zones of the riparian buffer (Zones CFB 1, CFB 2, and NRB 3) due to specific conditions of the property or other practical difficulties or hardships. Modifications are issued by the Director of Engineering and waivers are issued by the Town Council. [Amended Ordinance #04-06]*

Modification & Waivers of Riparian Buffer Regulations:

Expected Review Time: Approximately 36 days

Primary Processing Department: Department of Engineering

Departments involved in Waiver of Riparian Buffer Regulations review process: Department of Engineering

Modification & Waiver of Riparian Buffer Regulations:

Notes:

- The Petition for Waiver of Riparian Buffer Regulations may be withdrawn for consideration at any point in the review process and prior to the Town Council's decision. However, the fees and cost associated with the filing will not be refunded. [Amended Ordinance #04-06]*

Petition Filing:

1. Submit Petition for Modification or Waiver of Riparian Buffer Regulations (Two complete sets for First Review), along with an application packet and any required studies, calculations, NG Division of Water Quality Permits, fees, etc. (in a bound document) to the Department of Engineering by 12:00 p.m. any Monday. A receipt shall be provided to the individual delivering the package to Engineering. The Riparian Buffer Modification & Waiver Packets contained within this manual each provide a detailed list of the application package submittal requirements.
2. The Department of Engineering will review the information submitted and determine whether or not it constitutes a complete package. The review shall include documentation that the correct applications, plans, studies, calculations, fees, and any other requirements per plan approval conditions are included in the package submitted for review. Engineering staff will notify the Petitioner via fax of an incomplete application or of any missing information within two (2) business days after the submittal deadline date. Any missing information must be supplied to the Town by the next Monday (at noon) following the fax notification, or the application package shall be deemed incomplete and returned to the applicant via first class mail. Once the Town has a complete package, it will then go into the following Monday's review cycle.
3. Re-submittals (i.e. Second Review or subsequent reviews) shall be submitted to the Department of Engineering by 12:00 p.m. any Monday following receipt of review comments.

Petition Review Process:

1. Revised plans and any requested information must be submitted for Engineering Staff review in accordance with the schedule provided by Staff to remain in the review cycle. If the requested information is submitted after the date provided, the Petition will be processed in the next available review cycle.

- ~~2. For the first review, Engineering Department staff will review the components of the package submitted in accordance with the latest version of the *Holly Springs Engineering Design and Construction Standards*, and with other Town policies, ordinances, checklists, and standards~~
- ~~3. First review comments will be generated and distributed to both the applicant and the owner, via fax, on the second Monday following the submittal (i.e. within two weeks).~~
- ~~4. Developer Conference—It is recommended that for waivers, the engineering consultant should meet with engineering staff to discuss the First Review Comments.~~
- ~~5. Subsequent Reviews—Subsequent review comments shall be generated based upon an evaluation of the changes or modifications made to address previous comments, and a review of the written responses to previous comments. It shall be the goal of Engineering staff not to make “new” comments at subsequent review, except when such information was not available for review previously.~~
- ~~6. The plan remains in the review cycle (2 week review times) until such time as all comments and conditions have been addressed.~~

Determination of Official Action for Modifications: Issued by the Director of Engineering

- ~~1. Engineering Staff shall then prepare a report to the Director of Engineering including discussion of all plans and policies relevant to the proposed Petition.~~
- ~~2. The Director of Engineering will issue modifications to the buffer regulations in accordance with Section 7.06, D., 4., e., (2) Neuse River Basin Riparian Buffer Protection c., (i) and Section 7.06, D., 4., e., (2) Cape Fear River Basin Riparian Buffer Protection c., (i) and (ii).~~
- ~~3. The Department of Engineering will notify all persons named on the petition regarding the Director of Engineering’s decision with Construction Drawing Approval.~~

Determination of Official Action for Waivers: Issued by the Town Council

~~[Amended Ordinance #04-06]*~~

- ~~1. Engineering Staff shall then prepare a report to the Town Council including discussion of all plans and policies relevant to the proposed Petition. [Amended Ordinance #04-06]*~~
- ~~2. Twelve (12) 11” x 17” sets of plans shall be submitted two weeks prior to the Public Hearing.
The Department of Engineering will notify all persons named on the petition regarding the Town Council’s decision with Construction Drawing Approval. [Amended Ordinance #04-06]*~~



SECTION 6.06

Development Waivers/ Alternate Compliance

A Development Waiver/ Alternate Compliance is permission granted in connection with either the approval of a zoning map change, development plan, master plan, preliminary plan, or special exception, to allow a deviation from specific development standards or development requirements of the UDO. A waiver/alternate compliance is different from a variance since the Town Council makes the determination, not the Board of Adjustment. Please note that the Department of Engineering must be contacted prior to pursuing a waiver of UDO Sections 7.06, 7.07, and/or 7.08. ~~{Amended Ordinance #04-06} {Amended Resolution #11-10, #15-26}~~

DEVELOPMENT WAIVERS/ALTERNATE COMPLIANCE

Expected Review Time: ~~Simultaneous with Development~~

Primary Processing Department: Planning & Zoning

Departments involved in Waiver Review Process: Same as type of Development Petition Submitted

Notes:

- ~~Waivers/Alternate Compliance can be submitted at any time during the review process. However, failure to submit waivers with initial submittal may result in delays or additional reviews. {Amended Resolution #18-37}*~~
- ~~Waiver/Alternate Compliance requests must comply with the Findings of Fact that correspond with the specific waiver. {Amended Resolution #11-10, #15-26}~~

General Information

☐ **Waiver of Voluntary Annexation**

Waivers of DPM Section 1 may be submitted and considered in connection with a petition for a Planned Unit Development Master Plan; a Master Plan or Preliminary Plan for a subdivision; a Development Plan for Architectural and Site Design Review; a Final Plat; or a Minor Subdivision.

Primary Review Department: Planning & Zoning ~~{Amended Resolution #18-37}*~~

☐ **UDO Section 2.06 or 2.07 Architectural and Site Design Waivers in R-MF-8 & R-MF-15**

Waivers of UDO Section 2.06 or 2.07 may only be submitted and considered in connection with the approval of a Development Plan for Architectural and Site Design Review.

Primary Review Department: Planning & Zoning

☐ **UDO Section 2.09 Development Options for Residential Districts**

UDO Section 2.09 may only be submitted and considered in connection with a property that has a single-family residential zoning. See Section 4.01 of this Manual for more information.

Primary Review Department: Planning & Zoning ~~{Amended Resolution #07-31, 18-37}*~~

☐ **UDO Section 2.10 Waiver of Development Requirements for Infill Development Options in the R-8 District** ~~{Added Resolution 10-02}*~~

Waivers of UDO Section 2.10 may only be submitted and considered in connection with the approval of a Development Plan which incorporates Infill Development Options.

Primary Review Department: Planning & Zoning

- ☐ ~~**UDO Section 3.03—Alternate Compliance with Architectural and Site Design in TV**~~
Requests for alternate compliance with UDO Section 3.03 may only be submitted and considered in connection with either a petition for zoning map change or as part of a Development Plan for Architectural and Site Design Review. [Amended Resolution #11-10, #15-26, 18-37]*
Primary Review Department: Planning & Zoning
- ☐ ~~**UDO Section 3.03—Waivers of Development Standards in TV**~~
Waivers of UDO Section 3.03 may only be submitted and considered in connection with either a petition for zoning map change or as part of a Development Plan for Architectural and Site Design Review. [Amended Resolution #11-10, #15-26]*
Primary Review Department: Planning & Zoning
- ☐ ~~**UDO Section 3.08—Architectural and Site Design Waivers in LB, CB, OR, GB**~~
Waivers of UDO Section 3.08 may only be submitted and considered in connection with either a petition for zoning map change or as part of a Development Plan for Architectural and Site Design Review.
Primary Review Department: Planning & Zoning
- ☐ ~~**UDO Section 4.05—Architectural and Site Design Waivers in BT, RT, IT**~~ [Amended Resolution #15-26]*
Waivers of UDO Section 4.05 may only be submitted and considered in connection with either a petition for zoning map change or as part of a Development Plan for Architectural and Site Design Review.
Primary Review Department: Planning & Zoning
- ☐ ~~**UDO Section 7.01—Alternate Landscape Plan Approval**~~ [Added Resolution #18-37]*
Request for alternate landscape plan approval per UDO Section 7.01.P may only be submitted and considered in connection with a petition for a Development Plan for Architectural and Site Design Review, or in connection with a Master Plan or Preliminary Plan review of a subdivision.
Primary Review Department: Planning & Zoning
- ☐ ~~**UDO Section 7.01—Waiver of Required Tree Preservation Requirements**~~ [Added Resolution #18-37]*
Waivers of UDO Section 7.01.J may only be submitted and considered in connection with a petition for a Development Plan for Architectural and Site Design Review, as part of a Development Plan for Development Options, as part of a Master Plan or Preliminary Plan for a subdivision.
Primary Review Department: Planning & Zoning
- ☐ ~~**UDO Section 7.03—Waiver of Sign Regulations**~~
Waivers of UDO Section 7.03 may only be submitted and considered in connection with either a petition for zoning map change, as part of a Development Plan for Architectural and Site Design Review, as part of a Development Plan for Development Options, or as part of a Master Plan or Preliminary Plan for a subdivision.
Primary Review Department: Planning & Zoning [Amended Resolution #07-31]
- ☐ ~~**UDO Section 7.04, E., 2.—Reduction in the number of Required Off-Street Parking Spaces (parking reduction)**~~ [Amended Resolution 18-37]*
A reduction in the number of required off-street parking spaces as specified in UDO Section 7.04 may only be submitted and considered in connection with either a petition for zoning map change; as part of a development plan for Architectural and Site Design Review or, in connection with a Master Plan or Preliminary Plan review of a subdivision.
Primary Review Department: Planning & Zoning [Amended Resolution #07-31, #11-10, #15-26]*

☐ ~~**UDO Section 7.04, H. Waiver of Off Street Parking Regulations** (parking increase)~~

~~Waivers of UDO Section 7.04 may only be submitted and considered in connection with either a petition for zoning map change; as part of a development plan for Architectural and Site Design Review or, in connection with a Master Plan or Preliminary Plan review of a subdivision.~~

~~**Primary Review Department:** Planning & Zoning [Amended Resolution #11-10, #15-26]~~

☐ ~~**UDO Section 7.05, Waiver of Off Street Loading Regulations**~~

~~Waivers of UDO Section 7.05 may only be submitted and considered in connection with either a petition for zoning map change; as part of a development plan for Architectural and Site Design Review or, in connection with a Master Plan or Preliminary Plan review of a subdivision.~~

~~**Primary Review Department:** Planning & Zoning [Added Resolution #15-26]~~

☐ ~~**UDO Sections 7.06, 7.07, or 7.08 Waiver of Lot Design, Street Design, or Utility Design**~~

~~Waivers of UDO Section 7.06, 7.07, or 7.08 may only be submitted and considered in connection with either a Development Plan for Architectural and Site Design Review, as part of a Development Plan for Development Options, as part of a Master Plan or Preliminary Plan for a subdivision, or as part of a Special Exception Use.~~

~~**Primary Review Department:** Engineering [Amended Resolution #07-31]~~

☐ ~~**UDO Section 7.09, C. Waiver of Pedestrian Circulation & Vehicle Area Design Regulations**~~

~~Waivers of UDO Section 7.09 may only be submitted and considered in connection with either a petition for zoning map change; as part of a development plan for Architectural and Site Design Review or, in connection with a Master Plan or Preliminary Plan review of a subdivision.~~

~~**Primary Review Department:** Planning & Zoning [Amended Resolution #11-10, 15-26]~~

☐ ~~**UDO Section 9.05, B., Waiver of Platting, Project Construction Drawing Approval, and Recombination and Vacation Procedures**~~

~~Waivers of UDO Section 9.05, B., 12. may only be submitted and considered in connection with either a Development Plan for Architectural and Site Design Review, as part of a Development Plan for Development Options, as part of a Master Plan or Preliminary Plan for a subdivision, or as part of a Special Exception Use.~~

~~**Primary Review Department:** Planning & Zoning and Engineering [Amended Resolution #07-31]~~

~~**Prior to Filing Petition:** [Amended Resolution #00-43, #15-26]~~

- ~~1. Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of fourteen (14) days prior to the submittal of the same as required for specific Development Petition, however, it is recommended that you have this meeting at least thirty (30) days prior to filing. This meeting must not be held more than eight (8) weeks prior to filing the petition. See Section 1.01 Concept Plan Review for more information regarding this required meeting.~~

~~**Petition Filing:**~~

- ~~1. Submit Waiver Request and Findings of Fact along with any supporting documentation by the posted deadline date and time to the Department of Planning & Zoning as specified on the applicable Review Schedule. The appendix provides a detailed list of all application submittal requirements. [Amended Resolution #00-43]~~
- ~~2. The Department of Planning & Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the petition will be placed in the next available review cycle after the information is submitted and the petition is deemed complete.~~

~~3. The Department of Planning & Zoning will notify Petitioner after determination of complete submittal, the date and time of the Developer Conference to review Staff's Comments as well as the anticipated review schedule. When applicable staff will advertise the public hearing notice, notify the adjacent property owners, and post the property in accordance with the Town's Public Hearing procedures as specified in this Development Procedures Manual.~~

Petition Review Process:

~~Review of the Waiver Request will commence according to the schedule and procedures of the applicable Petition submitted, with the exception of Waivers of Voluntary Annexation. Waivers of Voluntary Annexation may require up to six (6) weeks for staff and Town Manager initial review.~~
~~[Amended Resolution 18-37]²~~



SECTION 6.07

[Added Resolution #15-26]*

Zoning Verification Letter

~~A Zoning Verification Letter may be requested for any property within the Town of Holly Springs or Town of Holly Springs Extra Territorial Jurisdiction. A Zoning Verification Letter is a verification that a property is in compliance with all UDO regulations and that there are no outstanding zoning violations on the property. This verification will be based on review of the current zoning of the property as well as a site inspection performed by the Department of Planning & Zoning which will include as applicable an inspection of the bufferyards, landscape requirements, signage, parking, building architectural requirements, and any other site specific requirements specified on the approved Preliminary Plan, Development Plan, or UDO Permit. Compliance with any conditions of site plan approval will also be included in the content of the letter.~~

Zoning Verification Letter Procedures:

Expected Review Time: ~~Approximately 3-5 business days~~

Primary Processing Department: ~~Planning & Zoning~~

Departments involved in Zoning Verification review process: ~~Planning & Zoning~~

Requesting a Zoning Verification Letter:

- ~~1. Submit Application for Zoning Verification Letter. The Zoning Verification Letter application provides a detailed list of all application submittal requirements.~~
- ~~2. Department of Planning and Zoning will notify Petitioner of an incomplete petition or any missing information within two (2) business days after the submittal. This information must be completed and submitted within five (5) business days, or the petition will be considered incomplete, marked as such and petition returned to the petitioner marked as incomplete.~~

Zoning Verification Letter Process:

- ~~1. A Site Inspection will be performed to verify that all UDO requirements and development commitments have been satisfied.~~
- ~~2. The Department of Planning & Zoning will compose the Zoning Verification Letter within three to five (3-5) business days of the request. The Zoning Verification Letter will include the current zoning of the property, a list of allowed uses in the applicable zoning district, verification of approved and valid development petitions, and the results of the site inspection.~~



SECTION 7.01

Administrative Appeal

An Administrative Appeal may be requested to review any order, requirement, decision, or determination made by the Director of Planning & Zoning, Staff or other administrative official in relation to the enforcement of the UDO.

Administrative Appeal Petition:

Expected Review Time: Approximately 46 days [Amended Resolution 19-02]*

Primary Processing Department: Planning & Zoning

Departments involved in Administrative Appeal review process: Planning & Zoning

Administrative Appeal Petition Review Procedures:

Prior to Filing Petition:

1. Schedule an Administrative Appeal Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Administrative Appeal Petition. All appeals must be submitted within thirty (30) days of the order, requirement, decision, or determination made by the Director of Planning & Zoning, Staff or other administrative official in relation to the enforcement of the UDO.

Petition Filing:

1. Submit Administrative Appeal as well as any supporting documentation by the posted deadline date and time to the Department of Planning & Zoning as shown on the Board of Adjustment Schedule. The Administrative Appeal Packet provides a detailed list of all petition submittal requirements. [Amended Ordinance #09-16]*
2. The Department of Planning & Zoning will notify the Petitioner of an incomplete Petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the Petition will be placed in the next available review cycle after the information is submitted and the Petition is deemed complete.
3. The Department of Planning & Zoning will notify Petitioner after determination of complete submittal, of anticipated review schedule and Public Hearing information. Staff will advertise the public hearing notice, notify the adjacent property owners, and post the property in accordance with the Town's Public Hearing procedures as specified in this Development Procedures Manual.

Administrative Appeal Review Process:

1. The Department of Planning & Zoning will forward a copy of the completed Petition to all Staff in the specific review process.
2. Staff will review the submitted Petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition if additional information or clarification is needed.
3. Revised plans and any requested information must be submitted for staff review in accordance with the deadline included with the staff comments to remain in the review cycle. If the

~~information is submitted after the deadline date, the Petition will be processed in the next available review cycle.~~

~~Determination of Official Action:~~

- ~~1. Staff shall then prepare a report to the Board of Adjustment including discussion of all plans and policies relevant to the proposed Petition.~~
- ~~2. Staff and the Petitioner shall attend the Public Hearing before the Board of Adjustment. The Public Hearing shall be conducted in conformance with the Quasi-Judicial Public Hearing Procedures in Section 1.03 of this Manual. After the Public Hearing, the Board of Adjustment may make a final determination to either: approve, deny, or table the Petition.~~
- ~~3. The Department of Planning & Zoning will notify all persons named on the Petition regarding the Board of Adjustment's decision within ten (10) days of action. If the petition request is denied by the Board of Adjustment notices will be sent via personal service, register mail, or certified mail in accordance with NCGS 160A-388. [Amended Ordinance #09-16] [Amended Ordinance #11-10]~~



SECTION 7.02

Variance of Development Standards

A Variance of Development Standards may be requested to propose a change of the specific Zoning District Development Standards due to specific conditions of the property or other practical difficulties or hardships.

Variance of Development Standards:

Expected Review Time: Approximately 46 days [Amended Resolution 10-02]*

Primary Processing Department: Planning & Zoning

Departments involved in Variance of Development Standards review process: Planning & Zoning, Engineering, Parks and Recreation, Fire & Rescue, Public Works and Water Quality [Amended Resolution #07-34]

Variance of Development Standards Procedures:

[Amended Resolution #03-25]

Prior to Filing Petition:

1. Schedule a Concept Plan Review Meeting through the Department of Planning & Zoning. This meeting must be held a minimum of five (5) business days prior to the submittal of the Petition for Variance of Development Standards, it is recommended that you have this meeting at least thirty (30) days prior to filing to ensure that the responses to the required findings will be accurate and acceptable for consideration. This meeting must not be held more than eight (8) weeks prior to filing the Petition.

Petition Filing:

1. Submit Petition for Variance of Development Standards as well as any supporting documentation by the posted deadline date and time to the Department of Planning & Zoning as shown on the Board of Adjustment Schedule. The Variance of Development Standards Packet provides a detailed list of all application submittal requirements. [Amended Ordinance #00-16]
2. The Department of Planning & Zoning will notify the Petitioner of an incomplete Petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the Petition will be placed in the next available review cycle after the information is submitted and the Petition is deemed complete.
3. The Department of Planning & Zoning will notify Petitioner after determination of complete submittal of the anticipated review schedule and Public Hearing information. Staff will advertise the public hearing notice, notify the adjacent property owners, and post the property in accordance with the Town's Public Hearing procedures as specified in this Development Procedures Manual.

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed Petition to all Staff in the specific review process.~~
- ~~2. Staff will review the submitted Petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition if additional information or clarification of a Petition is needed.~~
- ~~3. Revised plans and any requested information must be submitted for staff review in accordance with the schedule provided by Staff to remain in the review cycle. If the requested information is submitted after the date provided, the Petition will be processed in the next available review cycle.~~

Determination of Official Action:

- ~~1. Staff shall then prepare a report to the Board of Adjustment including discussion of all plans and policies relevant to the proposed Petition.~~
- ~~2. Staff and the Petitioner(s) shall attend the Public Hearing before the Board of Adjustment. The Public Hearing shall be conducted in conformance with the Quasi-Judicial Public Hearing Procedures in Section 1.03 of this Manual. After the Public Hearing, the Board of Adjustment may make a final determination to either: approve, approve with conditions, deny, or table the Appeal.~~
- ~~3. The Department of Planning & Zoning will notify all persons named on the petition regarding the Board of Adjustment's decision within ten (10) days of their action. If the petition request is denied by the Board of Adjustment notices will be sent via personal service, register mail, or certified mail in accordance with NCGS 160A-388. [Amended Ordinances #00-16, 11-10]~~



SECTION 7.03

Environmental Appeals & Variances

~~Either an Environmental Appeal or a Variance may be requested to regulations, orders, violations and penalties stipulated or promulgated by one of the Town's environmental ordinances found in Chapter 8 of the Town Code. These include, but are not limited to the following: Erosion & Sedimentation Control, Flood Damage Prevention, Forestry, NPDES Phase II Post Construction Stormwater, and NPDES Phase II Illicit Discharge Detection & Elimination Regulations. Appeals or variances may be requested due to specific conditions of the property or other practical difficulties or hardships.~~

Environmental Appeal and Varinace:

Expected Review Time: Approximately 45 days

Primary Processing Department: Engineering Department

Departments involved in Variance of Development Standards review process: Planning & Zoning, Engineering Department, Parks and Recreation, Fire & Rescue, Public Works and Water Quality

Environmental Appeal and Varinace Procedures:

General Notes:

~~It will be the responsibility of the Petitioner(s) filing the petition to provide information to support an appeal to the Environmental Appeal Committee (EAC), by such deadlines as established by the Town for distribution of materials by the Clerk of the EAC prior to the meeting. This information shall be considered by the EAC (and subsequently the Board of Adjustment (BOA), if so requested by the petitioner). Both the EAC and the Board of Adjustment shall only consider the information provided in the original petition for variance or appeal.~~

Petition Filing for an Appeal or Variance to the Environmental Appeal Committee:

- ~~1. Submit Petition for Variance of Development Standards as well as any supporting documentation within thirty (30) days from receipt of determination, notice, order, violation, or penalty issued by the Engineering Department unless otherwise noted in the specific ordinance. Submit information to the attention of the Clerk of the EAC in the Engineering Department. The Environmental Variance and Appeal Packet provides a detailed list of all application submittal requirements.~~
- ~~2. The Clerk of the EAC will notify the Petitioner of an incomplete Petition or any missing information within two (2) business days after the submittal date. This information must be completed and submitted within one (1) business day. Upon receipt of a complete Petition Packet the Petition will be forward to the EAC and applicable Town Staff. If a complete petition packet has not been received within one (1) business day from the Clerk of the EAC's request for additional information, then the Petition will be rejected and will need to be resubmitted with applicable fees prior to the thirty (30) days from receipt of determination, notice, order, violation or penalty issued by the Engineering Department unless otherwise noted in the specific ordinance.~~

- ~~3. The Clerk of the EAC will notify Petitioner (after determination of complete submittal) of the anticipated EAC Hearing date and time.~~

Determination of Official Action:

- ~~1. Engineering Staff shall then prepare a report to the EAC including discussion of all plans, policies, and/or past actions to be relevant to the proposed Petition.~~
- ~~2. Staff and the Petitioner(s) shall attend the Environmental Appeal Hearing before the EAC as described in Chapter 8, Article VII of the Town Code.~~
- ~~3. The Clerk of the EAC will notify all persons named on the Petition regarding the EAC's decision within ten (10) days of their action.~~

Petition Filing for an appeal of a determination made by the Environmental Appeal Committee:

- ~~1. Submit Petition for appeal to a determination of the EAC as well as any supporting documentation within the thirty (30) days from receipt of determination of the EAC to the Department of Planning & Zoning as shown on the BOA Schedule. The Environmental Variance and Appeal Packet provides a detailed list of all application submittal requirements.~~
- ~~2. The Department of Planning & Zoning will notify the Petitioner of an incomplete Petition or any missing information within two (2) business days after the submittal deadline date. This information must be completed and submitted within one (1) business day, or the Petition will be placed in the next available review cycle after the information is submitted and the Petition is deemed complete.~~
- ~~3. The Department of Planning & Zoning will notify Petitioner after determination of complete submittal of the anticipated review schedule and Public Hearing information. Staff will advertise the public hearing notice, notify the adjacent property owners, and post the property in accordance with the Town's Public Hearing procedures as specified in this Development Procedures Manual (DPM).~~

Petition Review Process:

- ~~1. The Department of Planning & Zoning will forward a copy of the completed Petition to all Staff in the specific review process.~~
- ~~2. Staff will review the submitted Petition and the Department of Planning & Zoning will forward all Staff comments to those named on the Petition if additional information or clarification of a Petition is needed.~~
- ~~3. Revised plans and any requested information must be submitted for Staff review in accordance with the schedule provided by Staff to remain in the review cycle. If the requested information is submitted after the date provided, the Petition will be processed in the next available review cycle.~~

Determination of Official Action:

- ~~1. Staff shall then prepare a report to the BOA including discussion of all plans and policies relevant to the proposed Petition and relevant history.~~
- ~~2. Staff and the Petitioner(s) shall attend the Public Hearing before the BOA. The Public Hearing shall be conducted in conformance with the Quasi-Judicial Public Hearing Procedures in Section 1.03 of this Manual. After the Public Hearing, the BOA may make a final determination to either approve, approve with conditions, deny, or table the Appeal.~~

~~3. The Department of Planning & Zoning will notify all persons named on the petition regarding the BOA's decision within ten (10) days of their action.~~



SECTION 8.01

Construction Drawing and Erosion & Sedimentation Control Plan Approvals

Construction Drawing review and approval is required prior to initiating construction on any site, including receiving a UDO or building permit for the site. In addition, for sites which propose to disturb by grading an area greater than 20,000 square feet, an Erosion & Sedimentation Control Plan approval is also required. Construction Drawings and Erosion & Sedimentation Control Plans are separate plans, but should be combined into one set of project documents for submittal to the Town.

~~Expected Review Time:~~ Approximately 6 weeks, depending upon completeness of plans submitted, thoroughness of response to comments, and turn around time by petitioner back to staff between subsequent staff reviews. The review process can generally be completed in three review cycles for most plans. If there is no submittal received or other next step in the approval process completed by the Petitioner/Applicant for a period exceeding twelve (12) months from the last written comments from Engineering staff, the petition/application will be deemed withdrawn. See section 1.00 of this manual. ~~[Amended Resolution #04-12, #09-17, #11-18]~~

~~Primary Processing Department:~~ Department of Engineering
~~Departments involved in Construction Drawing and Erosion & Sedimentation Control Plan review processes:~~ Department of Engineering

Prior to Submitting Construction Drawings or Erosion & Sedimentation Control Drawings:

- ~~1. The Development or Preliminary Plan must be approved by the entity (Town Council or Technical Review Committee or other) designated with approval authority in the UDO. If the approval by the entity requires any revisions or information which needs to be incorporated into the approved plan, then revised documents must be submitted to the Department of Planning & Zoning immediately to avoid any delay in reviewing the Construction Drawings or Erosion & Sedimentation Control Plans. [Amended Ordinance #04-06] [Supplement #6 corrected typographical error]~~

Submittal Requirements & Procedures:

- ~~1. New Construction Plans and/or Erosion & Sedimentation Control Plans (Three complete sets for First Review), along with an application packet and any required studies, calculations, (in a bound document) and/or other applicable requirements per plan approval conditions shall be submitted to the Department of Engineering by 12:00 p.m. any Monday subsequent to site or subdivision approval for the project. A receipt shall be provided to the individual delivering the package to Engineering. The Construction Drawing and Erosion & Sedimentation Control Plan Application Packets contained within this manual each provide a detailed list of the application package submittal requirements. [Amended Resolution #11-18]*~~
- ~~2. The Department of Engineering will review the information submitted and determine whether or not it constitutes a complete package. The review shall include documentation that the correct applications, plans, studies, calculations, fees, and any other requirements per plan approval conditions are included in the package submitted for review. The Completeness Application Sheet shall be used for this purpose. Engineering staff will notify both the owner and the~~

applicant (in most cases the engineer) via fax or email of an incomplete application or of any missing information within two (2) business days after the submittal deadline date. Any missing information must be supplied to the Town by the next Monday (at noon) following the fax or email notification, or the application package shall be deemed incomplete and returned to the applicant via first class mail. Once the Town has a complete package then it will go in the next Monday review cycle. [Amended Resolution #11-18]

3. ~~Re-submittals (i.e. Second Review or subsequent reviews) shall be submitted to the Department of Engineering by 12:00 p.m. any Monday following receipt of review comments.~~
4. ~~Plans which enter the Construction and/or Erosion & Sedimentation Control Plan review processes, and are not re-submitted for a period exceeding twelve (12) months from the last written comments from Engineering staff, the petition/application will be deemed withdrawn as outlined in section 1.00 of this manual. [Amended Resolution #04-12, #09-17, #11-18]~~

Review Process:

1. ~~For any plans that are more complex, that require special studies, that are time sensitive, that are unusual in any way, or that are particularly large, it is recommended that the engineering consultant meet with Engineering staff before finalizing plans for submittal. Engineering staff is available for such consultation in an effort to streamline the process for approval of construction and/or sedimentation and erosion control plans.~~
2. ~~For the first review, Engineering Department staff will review construction and/or erosion and sedimentation erosion control components of the package submitted in accordance with the latest version of the *Town of Holly Springs Engineering Design and Construction Standards*, and with other Town policies, ordinances, checklists, and standards. In some instances, a consultant or other departments' staff may be utilized to review certain components of the plan or related studies or calculations, with comments being generated and distributed under the direction of the staff engineer. [Amended Resolution #11-18]~~
3. ~~First Review Comments will be generated and distributed to both the applicant and the owner, via fax or email, on the second Monday following the submittal (i.e. within two weeks). [Amended Resolution #11-18]~~
4. ~~Developer Conference—It is recommended that for plans that are more complex, that require special studies such as drainage or traffic analysis, that are time sensitive, that include unusual components, or that are particular large, the engineering consultant meet with Engineering staff to discuss the First Review Comments. [Amended Resolution #11-18]~~
5. ~~Subsequent Reviews—Subsequent Review Comments shall be generated based upon an evaluation of the changes or modifications made to address previous comments, and a review of the written responses to previous comments. It shall be the goal of Engineering staff not to make “new” comments at subsequent review, except when such information was not available for review previously.~~
6. ~~The plan remains in the review cycle (2 week review times) until such time as all comments and conditions have been addressed.~~

Approval Process

1. ~~Once all comments have been addressed, staff shall notify applicant that they may bring in any permits for signature, shall notify the applicant of development fees that will be due for the project, and shall request that the applicant bring in 6 sets of complete construction and/or erosion and sediment control plans for approval stamping prior to the meeting. The applicant may schedule the Preconstruction Conference with staff at this time.~~

- ~~2. Both the owner and their construction representatives (engineer, contractors, and other applicable/required representatives) shall attend the Preconstruction Conference with Town Staff. The owner shall be required to bring development fees and erosion control fees to the meeting. Upon receipt of the erosion control fees the owner will be given two copies of the Environmental Development Permit. The attached outline shall be used for the preconstruction conference. [Amended Resolution #11-18, 15-26]*~~
- ~~3. Once the Environmental Development Permit is obtained, construction and/or erosion control fees are paid and the Preconstruction Conference has been held, tree protection and erosion control measures shall be installed on site as per the approved Erosion and Sediment Control Plan. Only land disturbance activities that are necessary for installation of the erosion control measures are permitted prior to issuance of the Certificate of Compliance. [Amended Resolution #15-26]*~~
- ~~4. Upon the completion of installation of the erosion control measures the owner or contractor shall call the Erosion Control Inspector for a Certificate of Compliance Inspection. If all tree protection and erosion control measures are installed per the approved Erosion and Sedimentation Control Plan a Certificate of Compliance will be issued for the site. [Amended Resolution #11-18, 15-26]*~~
- ~~5. Construction and/or land disturbance activities shall be initiated in accordance with the approved plans and there specific conditions once the Certificate of Compliance is issued.~~
- ~~6. Engineering staff shall notify Inspections staff once construction drawings are approved and a Certificate of Compliance with the Erosion & Sedimentation Control ordinance (if applicable) is issued so that a building permit may be issued.~~

Additional Requirements:

- ~~• Approved construction and/or erosion and sediment control plans must remain on site at all times during construction.~~
- ~~• A copy of the Environmental Development Permit, if required, must be on site at all times during construction. [Amended Resolution #15-26]*~~
- ~~• All sites with five acres or more of disturbed area or after March 10, 2003 all sites with one acre or more disturbed area is required to comply with the NPDES Stormwater Discharge Permit for Construction Activities. This is a free permit which will be given to the owner at the Preconstruction Conference.~~

Next Steps:

- ~~1. Obtain a UDO Permit from the Department of Planning & Zoning~~
- ~~2. Obtain all necessary Building Permits from Building Codes Enforcement
Complete Certificate of Occupancy procedures as outlined by Building Codes Enforcement in section 10.02 of this manual.~~



SECTION 8.02

Stormwater Management Plan

[Amended Resolution #15-26]*

The Stormwater Management Plan Procedure is involved in three parts of a Project's development approval process. Please note that the stages of development used in this procedure are to allow the process to be "relatable" to the Town's Stormwater Design Manual, Post construction Stormwater Ordinance and the North Carolina Department of Natural Resources, NPDES Phase II Stormwater regulations that are mandated by the Clean Water Act. The Concept Stage includes the Town's Concept Plan Review and Preliminary Plan Review. Construction Stage includes the Town's Construction Drawing, Erosion & Sedimentation Control Plan Review, and Stormwater Management Plan Review. Post Construction Stage includes the final acceptance of the Stormwater Best Management Practices (BMPs). Stormwater Management Plan review takes place during the Concept and Construction Stages. Final Stormwater Management Plan approval and issuance of the Environmental Development Permit occurs during the Construction Stage, and is required prior to initiating construction on any stormwater infrastructure or BMPs on site. Stormwater Management Plan approval is required for all sites which propose to disturb by grading an area greater than 1 acre. Stormwater Management Plans shall be combined into one set of project documents for submittal to the Town with the Construction Drawings and Erosion & Sedimentation Control Plans. [Amended Resolution #11-18, 15-26]*

Expected Review Time: Approximately 18 weeks, starting at the Concept Plan Review Meeting with the submittal of the Natural Resource Inventory (NRI) and ending with final Construction Drawing Approval described in section 8.01 of this manual. This review time also depends upon completeness of plans submitted, thoroughness of response to comments, turn around time by petitioner back to staff, and the type of review for the particular development project. All reviews can generally be completed in already existing required review steps, as outlined below.

Primary Processing Department: Department of Engineering

Departments involved in Stormwater Management Plan review processes: Department of Engineering [Amended Resolution #15-26]*

Prior to Submitting Preliminary Stormwater Management Plans (Concept Stage): [Amended Resolution #15-26]*

1. Attend the Scoping Meeting if applicable. (Note that the Scoping Meeting is an optional project development meeting that is recommended for all applicants to set up and attend prior to the required Concept Plan Review Meeting to discuss submittals and general project information.)
2. Applicants shall be required to attend a Concept Plan Review Meeting (Note that the Concept Plan Review Meeting is a required project development meeting for all applicants.) At this meeting applicants must present a sketch plan and submit a NRI form with supporting documentation. The completed NRI (Appendix A-1 of the Section 8.00 of the Engineering Design and Construction Standards) lists specific environmental documentation to determine stormwater, floodplain, and other environmental regulations that will be required with the first Preliminary Stormwater Management Plan Submittal. Please note that additional meetings with Engineering staff may be required between the Concept Plan Review Meeting and the first Preliminary Stormwater Management Plan Submittal, for Engineering staff to make a final

determination on the NRI and identify all of the environmental regulations applicable to the development. [Amended Resolution #15-26]*

Preliminary Stormwater Management Plan Submittal Requirements & Procedures (Concept Stage): [Amended Resolution #15-26]*

1. Preliminary Stormwater Management Plan submittals will follow the applicable development plan review processes outlined in this manual in Sections 2.03: Planned Unit Development (PUD) Master Plan; 3.0: Major Residential Subdivision Plan & Master Plan; 4.0: Development Plan; 6.01: Special Exception Use. [Amended Resolution #15-26]*
2. The Preliminary Stormwater Submittal Check List (Appendix B of Section 8.00 of the Engineering Design and Construction Standards) shall be filled out and submitted with the following required Preliminary Stormwater Management Plan submittal documents: Preliminary Stormwater Infrastructure Plans, Stormwater Management Report and Calculations, Preliminary Flood Study, Draft Preconstruction Notification (PCN), wetland and stream determinations, and any other applicable requirements. Failure to submit the required checklist and supporting documentation shall result in determination of the preliminary plan submittal as incomplete resulting in rejection of the preliminary plan submittal as outlined in plan review sections of this manual. [Amended Resolution #11-18, 15-26]*

Prior to Submitting Stormwater Management Plan (Construction Stage): [Amended Resolution #15-26]*

1. The Development or Preliminary Plan must be approved by the entity (Town Board, Technical Review Committee, or other) designated with approval authority in the UDO. If the approval by the entity requires any revisions or information which needs to be incorporated into the approved plan, then revised documents must be submitted and approved by the Planning and Zoning Department immediately to avoid any delay in reviewing the Stormwater Management Plan. [Amended Resolution #15-26]*

Submittal Requirements & Procedures (Construction Stage):

1. Three complete sets of the Stormwater Infrastructure Plan are to be included in the Construction Drawing project documents for submittal to the Town, along with an application packet and any required studies, calculations, or other applicable requirements in a bound document as outlined in the Stormwater Checklist (Appendix C of Section 8.00 of the Engineering Design and Construction Standards), in a bound document, shall be submitted to the Department of Engineering by 12:00 p.m. any Monday, subsequent to site or subdivision approval for the project. A receipt shall be provided to the individual delivering the package to the Department of Engineering. [Amended Resolution #11-18]
2. The Department of Engineering will review the information submitted and determine whether or not it constitutes a complete package. The review shall include documentation that the correct applications, plans, studies, calculations, fees, and any other requirements per plan approval conditions are included in the package submitted for review. The Completeness Application Sheet shall be used for this purpose. Engineering staff will notify both the owner and the applicant (in most cases the engineer) via fax or email of an incomplete application or of any missing information within two (2) business days after the submittal deadline date. Any missing information must be supplied to the Town by the next Monday (at noon) following the fax notification, or the application package shall be deemed incomplete and returned to the applicant via first class mail. Once the Town has a complete package, it will be included in the next Monday review cycle. [Amended Resolution #11-18]

- ~~3. Re-submittals (i.e. Second Review or subsequent reviews) shall be submitted to the Department of Engineering by 12:00 p.m. any Monday following receipt of review comments.~~
- ~~4. Plans which enter the Stormwater Management Plan review process and are not re-submitted within 90 days after comments are sent out, shall become invalid, shall be removed from the Stormwater review process, and shall be required to make a new re-submittal into the review process (i.e. a First Review). [Amended Resolution #15-26]*~~

Review Process:

- ~~1. For any plans that are more complex, that require special studies, that are time sensitive, that are particularly large, or that are unusual in any way, it is recommended that the engineering consultant meet with Engineering staff before finalizing plans for first submittal. Engineering staff is available for such consultation in an effort to streamline the process for approval of Stormwater Management Plans. [Amended Resolution #15-26]*~~
- ~~2. For the first review, Engineering Department staff will review stormwater components of the package submitted in accordance with the latest version of the Town of Holly Springs Engineering Design and Construction Standards, and with other Town policies, ordinances, checklists, and standards. In some instances, a consultant or other departments' staff may be utilized to review certain components of the plan, related studies, or calculations, with comments being generated and distributed under the direction of the staff engineer. [Amended Resolution #11-18]~~
- ~~3. First Review Comments will be generated and distributed to both the applicant and the owner, via fax or email, on the second Monday following the submittal (i.e. within two weeks). [Amended Resolution #11-18]~~
- ~~4. Developer Conference—It is recommended that for plans that are more complex, that require special studies such as drainage or traffic analysis, that are time sensitive, that include unusual components, or that are particularly large, the engineering consultant meet with Engineering staff to discuss the First Review Comments. [Amended Resolution #11-18]~~
- ~~5. Subsequent Reviews—Subsequent Review Comments shall be generated based upon an evaluation of the changes or modifications made to address previous comments, and a review of the written responses to previous comments. It shall be the goal of Engineering staff not to make “new” comments at subsequent review, except when such information was not available for review previously.~~
- ~~6. The plan remains in the review cycle (2 week review times) until all comments and conditions have been addressed.~~

Approval Process:

- ~~1. Once all comments have been addressed, staff shall notify the applicant of development fees that will be due for the project, and shall request that the applicant bring in 6 sets of complete construction documents containing the Stormwater Management Plans for approval and stamping prior to the meeting. The applicant may schedule the Preconstruction Conference with staff at this time. [Amended Resolution #15-26]*~~
- ~~2. Both the owner and their construction representatives (engineer, contractors, and other applicable/required representatives) shall attend the Preconstruction Conference with Town Staff. The owner shall be required to bring Stormwater Fees to the meeting. Upon receipt of the all of the applicable development fees, the owner will be given two copies of the Environmental Development Permit which includes the Stormwater Management Plan Approval. [Amended Resolution #11-18, 15-26]*~~

- ~~3. Once the permit is obtained, stormwater and other applicable fees are paid, and the Preconstruction Conference has been held, stormwater infrastructure can not be installed until a Certificate of Compliance of Erosion & Sediment Control Plan has been issued. Stormwater BMPs can not be installed until removal of the Erosion & Sediment Control devices has been approved by the project's Development Inspector. Stormwater Performance Surety (Stormwater Surety) for installation of Stormwater BMPs may be required prior to issuance of the permit, due to the specific sequence of construction for the development project; all other performance sureties must be in place prior to plat recordation. The appropriate timeframe for establishing the Stormwater Performance Surety will be determined during the Construction Stage of plan review and is outlined in section 8.03 of this manual. [Amended Resolution #11-18]~~
- ~~4. Upon the completion of installation of the Stormwater BMPs, the Developer/Owner or his/her authorized agent will contact the project's Development Inspector for a punch list inspection and finalize all Post Construction Stormwater documents for the project outlined in Section 8.0 of the Town of Holly Springs Engineering Design and Construction Standards and section 8.03 of this manual. This shall include but is not limited to: both digital and Mylar as-builts of the stormwater system, recorded Operation and Maintenance Agreement, easements, covenants, and establishment of Performance and Maintenance Sureties for the Stormwater BMPs. [Amended Resolution #11-18]~~
- ~~5. The Post Construction portion of the Stormwater Permit will be kept open for the life of the Stormwater BMP(s) and system. Quarterly Maintenance Inspections, annual Engineer Certification, and regular and annual maintenance reporting to the Town will be a requirement of the property owner or Home Owners Association, as outlined specifically in the project's recorded Operations and Maintenance Agreement.~~

Additional Requirements:

- ~~• Approved Stormwater Management Plans must remain on site at all times during construction. [Amended Resolution #15-26]*~~
- ~~• A copy of the Environmental Development Permit, if required, must be on site at all times during construction.~~
- Engineer Certifications, as-builts and recorded Operation and Maintenance agreements are required prior to Town acceptance of the Stormwater BMPs.



SECTION 8.03

Stormwater Surety Procedure

~~{Added Resolution #08-10} {Added Resolution #08-34}
{Added Resolution 11-18} {Added Resolution #11-47}~~

~~The Town of Holly Springs requires the establishment of financial sureties in the amount of 150% estimated construction cost (Performance Surety) & 35% actual cost of construction (Maintenance Surety) for the purpose of ensuring the completion of construction and the operation and maintenance of structural Stormwater Best Management Practices (BMPs). Performance Sureties are required prior to the preconstruction meeting for sites and prior to platting for subdivisions. Maintenance sureties are required at the end of the performance monitoring period after construction plus one year or performance of the stormwater BMP. Following are the steps involved in obtaining stormwater performance and maintenance sureties. Please refer to Section 8.03 of the Engineering Design and Construction Standards and the Post Construction Stormwater Ordinance for additional information. {Amended Resolution #09-34} {Amended Resolutions #11-18} {Amended Resolutions #11-47}*~~

~~**Expected Review Time:** Review time is approximately 1-2 weeks, depending on completeness of checklist items submitted, thoroughness of response to comments, turn-around time by petitioner back to staff between subsequent staff reviews, type of review for the particular development project, and stage of actual project development in the field.~~

~~**Primary Processing Department:** Department of Engineering~~

~~**Departments involved in Stormwater Surety review processes:** Department of Engineering
{Amended Resolution #09-34}~~

~~**Prior to Submitting for the Performance Surety (for completion):** {Amended Resolution #09-34}~~

- ~~1. Draft estimates and post construction stormwater surety requirements outlined in the Stormwater Surety Checklist (Appendix D of Section 8.0 of the Engineering Design and Construction Standards) shall be submitted for Engineering Staff review and approval during the Construction Stage of the Stormwater Permit Process outlined in section 8.02 of this manual. {Amended Resolution #09-34}*~~

~~**Application Submission Requirements:**~~

- ~~1. Finalization of the Stormwater Surety Checklist. {Amended Resolution #09-34}~~
- ~~2. Payment of Stormwater Surety Administration Fees. {Amended Resolution #09-34}~~

~~**Review Process:**~~

- ~~1. The Applicant will submit applicable items outlined in the Stormwater Surety Checklist during the appropriate time of development. The Performance Surety for sites will be required to be in place prior to/or at the time of the Pre Construction Meeting and the Performance Surety for subdivisions must be in place prior to recording of the first plat, at the beginning of the infrastructure 1 year warranty. {Amended Resolution #09-34} {Amended Resolution #11-47}~~
- ~~2. Engineering Staff will notify the Applicant of an incomplete application or any missing information. This information must be completed and submitted in order to continue the surety process. {Amended Resolution #09-34}~~

- ~~3. Once the sealed PE itemized estimate has been approved, Engineering Staff will contact the Applicant and advise them of the approval.~~
- ~~4. The Applicant shall obtain and use the most current versions of the Town of Holly Springs Model Irrevocable Standby Letter of Credit for Stormwater / Development Projects Improvement Agreement (S/DPIA) and/or Model Performance Bond Language for S/DPIA to obtain the appropriate surety. [Amended Resolution #12-32]*~~
- ~~5. The applicant shall provide the surety in the form of a Bond/LOC/Cash to the Town for approval. [Amended Resolution #12-32]*~~

Approval Process:

- ~~1. Once the surety fees have been paid and the surety has been received, the S/DPIA will be mailed to the Applicant for approval and signature, and then the Applicant submits the remaining required documentation according to the Stormwater Surety Checklist, as items are completed. [Amended Resolution #09-34]*~~
- ~~2. Once the SDPIA has been received along with all items from the Stormwater Surety Checklist, Engineering Staff will sign off on the Stormwater Surety Checklist and the SDPIA giving approval of the Stormwater Performance Surety. [Amended Resolution #09-34]~~

Release Request:

- ~~1. Once the construction of the stormwater BMPs for the development project have been constructed and performed as designed for a one year period, the Applicant shall arrange a site inspection with the Engineering Department's Environmental Technician and request a release of the Performance Surety. A site stormwater punch list inspection will be conducted with Engineering Staff, where the applicant will be notified of the results of the inspection and of any corrective actions that are required. Once all, if any, corrective actions have been addressed by the Applicant and all applicable Post Construction Stormwater requirements have been approved by Engineering Staff, the Performance Surety will be released upon establishment of the Maintenance Surety for the project and the end of the Stormwater Performance Monitoring Period (SPMP) is complete. [Amended Resolution #09-34] [Amended Resolutions #11-47]~~

Prior to Submitting for the Maintenance Surety (for perpetual maintenance): [Amended Resolution #09-34]*

- ~~1. Applicant starts the release process for the Performance Surety after completion of construction of the BMPs and the end of the SPMP. The Applicant will submit applicable items outlined in the Stormwater Surety Checklist and the Maintenance Surety (in the form of cash only). [Amended Resolution #09-34]~~

Application Submission Requirements:

- ~~1. Finalization of the Stormwater Surety Checklist. [Amended Resolution #09-34]~~
- ~~2. Payment of Stormwater Surety Administration Fees. [Amended Resolution #09-34]~~

Review Process:

- ~~1. The Applicant will submit applicable items outlined in the Stormwater Surety Checklist during the appropriate time of development, typically with the release request of the Performance Surety. [Amended Resolution #09-34]~~

- ~~2. The Engineering Staff will notify Applicant if application is incomplete or missing any information. This information must be completed and submitted in order to continue the surety process. [Amended Resolution #00-34]~~
- ~~3. Once the actual cost sealed by a PE has been approved, Engineering Staff will contact the Applicant and advise them of the approval, so that the cash escrow account may be established. [Amended Resolution #00-34][Amended Resolutions #11-47]~~

Approval Process:

- ~~1. Once the surety fees have been paid the Stormwater Maintenance Agreement (SMA) will be mailed to the Applicant for approval and signature. Applicant will submit the remaining required documentation according to the Stormwater Surety Checklist, as items are completed. This includes, but is not limited to Manual, PE Certifications, and receipt of digital and Mylar as-built drawings. [Amended Resolution #00-34][Amended Resolutions #11-47]~~
- ~~2. Once the SMA has been received along with all items from the Stormwater Surety Checklist, Engineering Staff will sign off on the Stormwater Surety Checklist and the SMA, giving approval of the Stormwater Maintenance Surety. [Amended Resolution #00-34]~~
- ~~3. A cash escrow account will be established as a Maintenance Surety that will last for the life of the BMP. [Amended Resolution #00-34]~~
- ~~4. The process for utilizing the funds in the Maintenance Surety is outlined in the Town's Stormwater Ordinance and Engineering Design & Construction Standards. [Amended Resolution #00-34]~~



SECTION 8.04

Infrastructure Surety Procedure

[Added Resolution 11-18][Added Resolution 12-32]

For Development Projects that contain public infrastructure, the Town of Holly Springs requires the establishment of a financial surety in the amount of 125% estimated construction cost (Completion Surety) for the purpose of ensuring the completion of construction, plus a financial surety in the amount of 10% of actual construction cost (Warranty Surety) for the purpose of ensuring warranty of construction. These are required prior to platting for subdivisions and obtaining a Certificate of Occupancy for non residential projects. Following are the steps involved in obtaining Completion and Warranty Sureties. Please refer to Section 2.09 of the Town of Holly Springs Engineering Design and Construction Standards for additional information and UDO Reference 9.05.b.5.

Expected Review Time: Review time is approximately 1-2 weeks, depending on completeness of checklist items submitted, thoroughness of response to comments, turn around time by petitioner back to staff between subsequent staff reviews, type of review for the particular development project, and stage of actual project development in the field.

Primary Processing Department: Department of Engineering

Departments involved in Infrastructure Surety review process: Department of Engineering

Review Process:

1. The Applicant will submit applicable items as outlined in the Infrastructure Surety Checklist (located in the Final Plat Application) during the appropriate time of development.
2. Engineering staff will notify the applicant of an incomplete checklist or any missing information. This information must be completed and submitted in order to complete the surety process.
3. The Applicant shall obtain and use the most current versions of the Town of Holly Springs Model Irrevocable Standby Letter of Credit for Infrastructure / Development Projects Improvement Agreement (DPIA) and/or Model Performance Bond Language for DPIA to obtain the appropriate surety. [Amended Resolution 12-32]*
4. The Applicant shall provide the surety in the form of a Bond/LOC/Cash to the Town for approval. [Amended Resolution 12-32]*

Approval Process:

1. Once the Infrastructure Surety Checklist is completed and approved, Engineering staff will contact the applicant and advise them of the approval. For Site Developments this must be completed prior to receiving a Certificate of Occupancy. For Subdivision Developments this must be completed prior to the plat being recorded.

Release Request:

1. Once the development project has been constructed and near the end of the appropriate warranty period completed, the applicant shall arrange an inspection of the public infrastructure with the Engineering Department Development Inspector and request acceptance of the public infrastructure for the project. A punch list inspection is conducted by the Development Inspector

~~and the applicant notified of required corrective actions. Once corrective actions have been addressed by the applicant, and all applicable requirements have been met, the public infrastructure shall be accepted by the Town and the Infrastructure Sureties will be released.~~



SECTION 9.00

Platting Procedures Final Plats, Recombination Plats, & Plat Amendments [Amended Resolution #18-37]*

~~A Plat is a drawing, map, plan or other graphic representation of a subdivision of a tract of land, or a replat of such a tract of land, into lots of record and which is submitted to the Town of Holly Springs for final approval and signature prior to filing with the Office of the Registrar of Deeds of Wake County, North Carolina. No person shall create a subdivision or transfer or sell land by reference to, exhibition of, or any other use of a plat showing a subdivision or recombination unless the subdivision or recombination has been approved, created, and recorded as provided in the Town of Holly Springs, Unified Development Ordinance, Section 9.05, B., 6.~~

~~(Note: The total review time for final plats is dependent on the quality, completeness, and accuracy of the initial draft plat and the subsequent submittals.)~~ [Amended Resolution #16-42]

FINAL PLAT

~~**Expected Review Time:** Approximately 10-15 business days~~ [Amended Resolution #18-37]*

~~**Primary Processing Department:** Planning & Zoning~~

~~**Departments involved in Major Subdivision review process:** Planning & Zoning, Engineering, Parks & Recreation~~

~~A Final Plat may be requested for an approved Master Plan or Preliminary Plan or a Minor Subdivision that contains four (4) or less lots and does not involve new public streets, extensions of public streets, the extension of public utilities, or request for Waivers as specified in UDO Section 9.05, B., 12 may be submitted for review and approval in accordance with the Final Plat Procedures. The review staff shall review the application, determine whether the record plat complies with all applicable regulations, identify any noncompliant features of the plat, and, whenever feasible, suggest modifications to correct the noncompliant features. The applicant will be notified of the identified noncompliant features and suggested modifications, and invite the applicant to discuss the review staff comments.~~

RECOMBINATIONS

~~**Expected Review Time:** Approximately 10-15 business days~~ [Amended Resolution #18-37]*

~~**Primary Processing Department:** Planning & Zoning~~

~~**Departments involved in Recombination review process:** Planning & Zoning, Engineering, Parks & Recreation~~

~~A Recombination or Combination of land involves the alteration of property lines. A Recombination may change shape and/or size of a parcel of land, but does not generate additional lots. See requirements listed in UDO Section 9.05, B., 9. for further information.~~

RE-PLAT/AMENDMENT TO RECORDED PLAT

~~**Expected Review Time:** Approximately 10-15 business days~~ [Amended Resolution #18-37]*

~~**Primary Processing Department:** Planning & Zoning~~

~~**Departments involved in Re-Plat/Amendment to Recorded Plat review process:** Planning & Zoning, Engineering, Parks & Recreation~~

~~A Re-Plat or Amendment to a recorded plat has two types of classifications. The Amendment is either considered to be Substantial or Minor. Substantial Amendments, which are described in UDO~~

~~Section 9.05(B)(6e), include the following: (a) substantially alter any street layout shown on the master plan or preliminary plan; (b) substantially alter any lot line shown on the master plan or preliminary plan; (c) increase the number of lots shown on the master plan or preliminary plan; (d) substantially alter any recreational or open space shown on the master plan or preliminary plan; (e) substantially alter any utility easements shown on the master plan or preliminary plan. [Amended Resolution #18-37]*~~

~~Substantial amendments shall be subject to the procedures set forth as applicable, for the initial Master Plan or Preliminary Plans. Minor Amendments are subject to the procedures listed in Section 9.03 of this manual. [Amended Resolution #18-37]*~~

~~[Removed Resolution #15-26]~~

~~[Removed Resolution #16-42]*~~

PROCEDURES FOR FINAL PLAT, RECOMBINATIONS, AND MINOR RE-PLAT/RECORDED PLAT AMENDMENTS: [Added Resolution #18-37]*

- ~~• Final Plats may be submitted for the next review cycle after receiving Construction Drawing approval. This will allow for the submittal of Mylars for signature as soon as all Engineering Checklist items have been completed. (See *Final Plat Application for Checklist*). Recombination and Minor Re-Plats may be submitted for any review cycle.~~
- ~~• If your plan does not conform with the approved Master Plan /Preliminary Plan an Amendment to the Preliminary Plan must be submitted for review and approval. No further review of the Final Plat will take place until the amendment is approved. **This will cause a delay in the approval of your Final Subdivision Plat.**~~

Prior to Filing Petition: [Added Resolution #18-37]*

- ~~1. A Concept Plan Review Meeting is not required, but can be scheduled through the Department of Planning & Zoning if it is desired.~~
- ~~2. A draft plat may be submitted for addressing prior to submitting a Final Plat Petition. This may decrease the number of reviews needed before mylars may be submitted for approval and signature.~~

Submitting Plat for Review: [Added Resolution #18-37]*

- ~~1. Submit Final Plat Petition along with any supporting documentation by Monday at 12:00 Noon to the Department of Planning & Zoning. The Final Plat Packet provides a detailed list of all application submittal requirements. [Amended Ordinance #00-16]*~~
- ~~2. The Department of Planning & Zoning will notify Petitioner of an incomplete petition or any missing information within twenty four (24) hours of the submittal deadline. This information must be completed and submitted within one (1) business day, or the plat will be placed in the next available review cycle after the information is submitted and petition is deemed complete.~~

Petition Review Process: [Added Resolution #18-37]*

- ~~1. The Department of Planning & Zoning will forward a copy of the completed petition to all Staff in the plat review process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the petition within 10 business days of the Monday application deadline.~~

~~3. A revised plat and any requested information must be submitted for staff review by Monday at 12:00 Noon. Staff comments will be provided within 10 business days after the Monday application deadline. This cycle continues until all Staff comments and requirements are addressed accordingly.~~

~~4. ADDITIONAL REVIEW FEES WILL BE INCURRED IF:~~

- ~~• Plats require more than two review cycles before they are deemed "mylar ready"~~

Determination of Official Action: ~~[Added Resolution #18-37]*~~

- ~~1. Once all staff comments and concerns have been satisfied, the applicant will be notified to submit 3 mylar copies for signature.~~
- ~~2. Allow three business days for mylars to be signed. The applicant will be notified when the plat is ready for recordation.~~
- ~~3. After recordation, the Applicant will be required to submit a recorded mylar copy to the Department of Planning & Zoning. (*Building Permits will not be issued until the recorded mylar copy has been received.*)~~

Next Steps: ~~[Added Resolution #18-37]*~~

~~(These steps are applicable to anyone seeking to build on the newly created Lot(s).)~~

- ~~1. UDO Permit/Building Permit~~
- ~~2. Certificate of Occupancy Procedures~~



SECTION ~~9.01~~

RESERVED

~~[Amended Resolution #18-37]~~



SECTION 9.02

RESERVED



SECTION ~~9.03~~

RESERVED



SECTION 10.01

Certificate of Compliance

All development projects that receive Timbering Plan approval or Erosion and Sedimentation Control Plan approval are required to obtain a Certificate of Compliance for installation of tree protection and erosion control measures specified in the approved plan prior to being permitted to actively begin timbering or clearing of the site.

Expected Review Time: Approximately 1-3 business days

Primary Processing Department: Engineering Department

Certificate of Compliance for Installation of Tree Protection Measures:

1. ~~Timbering Plan approval has been obtained.~~
2. ~~Pre Timbering conference has been held.~~
3. ~~Tree protection measures shall be installed on site; only hand cutting of the vegetation shall be used to install tree protection fence.~~
4. ~~Landowner or Contractor shall call the Erosion Control Inspector (1) business day in advance for a Certificate of Compliance inspection. [Amended Resolution 15-26]*~~
5. ~~If all tree protection measures are determined to be installed per the approved Timbering Plan a Certificate of Compliance will be issued within (1) business day of the inspection and faxed to the landowner and dropped off in the construction box. If tree protection measures do not correspond with the approved plan, the Erosion Control Inspector will instruct the landowner or contractor of the necessary changes. After making the necessary changes, the landowner or contractor will then have to call for a re-inspection of the site. [Amended Resolution 15-26]*~~
6. ~~Once the Certificate of Compliance is obtained, timber harvesting may be initiated on site.~~
7. ~~Certificate of Compliance will be copied to the Department of Planning and Zoning, and the Department of Parks and Recreation.~~

Certificate of Compliance for Preliminary Soil Erosion and Sediment Control:

1. ~~Erosion and Sedimentation Control Plan approval has been obtained.~~
2. ~~Preconstruction conference has been held.~~
3. ~~Construction drawing and/or land disturbance fees have been paid.~~
4. ~~Erosion and sediment control measures shall be installed as per the approved Erosion and Sedimentation Control Plan. Only hand cutting of the vegetation shall be used to install tree protection fence.~~
5. ~~Landowner or Contractor shall call the Erosion Control Inspector (1) business day in advance for a Certificate of Compliance inspection. [Amended Resolution 15-26]*~~
6. ~~If all erosion and sedimentation control measures are determined to be installed per the approved Erosion and Sedimentation Control Plan, a Certificate of Compliance will be issued within (1) business day of the inspection and faxed to the landowner and dropped off in the construction box. If erosion control measures are not constructed as per the approved plan, the Erosion Control Inspector will instruct the landowner or contractor of the necessary changes. After making the necessary changes the landowner or contractor will then have to call for a re-inspection. [Amended Resolution 15-26]*~~

~~7. Once the Certificate of Compliance is obtained, construction and land disturbance activities can be initiated on site.
Certificate of Compliance will be copied to the Department of Inspections.~~



SECTION 10.02

Building Permit Procedures

New construction or renovations to a residence or business may need a Building Permit before proceeding with any type of work:-

Building Permit Procedures:

Expected Review Time: Approximately 5-10 business days

Primary Processing Department: Building Codes Enforcement

Departments Involved in Building Permit review process: Building Codes Enforcement, Planning & Zoning, Engineering

Notes:

- Residential applications must be accompanied by two (2) Engineered sets of complete drawings (min. 3/16 scale) with current engineer seal, appendix J: Prescriptive Compliance Worksheet, and site plan.
- Non-residential applications must be accompanied by three (3) Engineered sets of complete drawings along with building code summary sheet, and energy data sheet.
- If applications are signed by anyone other than the subcontractors a letter of authorization must be submitted from the subcontractor.
- A current copy of workers' compensation policy must be on file.
- All questions regarding Building Permit and Application procedures can be answered at 557-3914.

Application Process:

1. All applications must be filled out in full, including the subcontractor's state and current local license numbers, the total square footage (**including porches and decks**) of the proposed structure(s), and total cost of construction, and submitted to the Department of Building Codes Enforcement. (**Incomplete applications will not be accepted**)
2. All required fees must be paid prior to any inspections, if there are any changes to the permit or application after the permit has been processed.
3. Water meter will be installed within one to two days after permit is issued.
4. **Erosion & Sedimentation Control Requirements:**
 - Erosion control devices are required on all lots regardless of the amount of disturbed area.
 - Clearing and grubbing of lots shall not be permitted until after the building permit is issued.
 - If land disturbance exceeds 20,000 square feet, a separate Environmental Development Permit will be required. The total disturbed area can be based on multiple lots in one phase of a subdivision that are owned by the same builder. (Amended Resolution 15-26)*
5. Receipt of a Certificate of Compliance for preliminary soil erosion and sediment control from the Engineering Department is required prior to issuance of any building permits; *see section 10.01 for more information regarding the Certificate of Compliance.*

Scheduling Building Codes Enforcement Inspections:

~~Contact Building Inspection:~~ Phone: 919-557-3915 Fax: 919-557-7554

- ~~1. All inspections are to be scheduled one (1) day in advance; the inspection will then be scheduled for the earliest available date.~~
- ~~2. Inspections may be called in or faxed.~~
- ~~3. When scheduling an inspection, give the Permit Number, lot number and type of inspection requested. All scheduling must be done through the clerk's office.~~
- ~~4. All cancellations must be done before 9 am on date of the inspection.~~
- ~~5. All power and gas inspections are faxed in at 4 PM each day to the proper utility.~~
- ~~6. All inspections will be scheduled separately.~~
- ~~7. Before the framing inspection can be scheduled, all other trades must be completed and signed off.~~
- ~~8. When scheduling an inspection, be sure inspection is ready at the time of request.~~
- ~~9. Foundation survey must be on file prior to scheduling a floor system inspection, or any rough ins for slab homes. Surveys must be in the office by 5 PM at least two days prior to scheduled inspection.~~
- ~~10. A Certificate of UDO Compliance must be obtained from the Department of Planning & Zoning before a Certificate of Occupancy is issued. Please Section 10.03 of this manual for more information.~~
- ~~11. Fire Prevention Inspections for non-residential occupancies must be scheduled within thirty (30) days after certificate of occupancy is issued.~~

Inspection Procedures:

~~The following must be provided on the site at the time of inspection.~~

- ~~1. Inspection box and card must be located at the street, with the correct lot number posted.~~
- ~~2. Approved stamped set of plans must be in the box, along with truss and TJI documents if used.~~
- ~~3. Any requested engineer letters must be provided at the time of inspection. Engineer letters must have the correct lot number and subdivision stated on the letter, with engineer seal and signature. (**Generic Letters will not be accepted.**)~~
- ~~4. Appropriate erosion and sediment control measures (residential construction entrance and silt fence on the low side of the lot, installed to the *Holly Springs Engineering Design and Construction Standards*) must be installed prior to the footing inspection.~~
- ~~5. Port-a-johns must be provided by the time of the foundation inspection.~~
- ~~6. Handrails and guardrails must be provided on stairs and balconies during rough ins.~~
- ~~7. Safe entry must be provided into structure. (No ramps)~~
- ~~8. All firestopping will be inspected at the framing stage.~~

Re-inspection Fees:

~~A reinspection fee will be charged in accordance with the Town's Fee Schedule on all of the following but not limited to:~~

- ~~1. Job not ready for inspection. (Seven (7) or more violations)~~

- ~~2. Any of the above policies violated.~~
- ~~3. For building code violations that will not be seen at next inspection~~

Residential Lots with Environmental Concerns:

~~Lots with environmental concerns will be identified during the Construction Drawing and Erosion and Sedimentation Control Plan review process. Once identified, Engineering Department staff shall notify the Department of Inspections with a description of the environmental concern located on the lot. These lots may include, but are not limited to, having any of the following items present: Neuse River Riparian Buffer, Town designated riparian buffers, 100-year flood plain, 100-year backwater or steep slopes.~~

- ~~1. All lots flagged with environmental concerns shall be provided with **Yellow** inspection cards to identify their special designation.~~
- ~~2. Engineering Department staff shall review and approve (by signature) both the site plan and foundation survey for all identified lots to comply with Town ordinances and the *Holly Springs Engineering Design and Construction Standards*.~~
- ~~3. Environmental Inspection: At site plan approval, Engineering Department staff may also request additional environmental inspections needed for the site depending on the environmental features present on the site.~~
- ~~4. Homeowner Educational Packets: Subdivision developers are required to provide educational packets to all landowners in the subdivision with Stream Buffers are present on their property or Stormwater Best Management Practices that require long term Operation & Maintenance from the property owner or Homeowners Association. [Amended Resolution 15-26]*~~

Next Step:

~~Obtain Certificate of Occupancy~~

~~(Please see Section 10.05 of the Manual for information on obtaining the Certificate of Occupancy.)~~



SECTION 10.03

Certificate of UDO Compliance Procedures

Any type of development that has received a UDO Permit must also acquire a Certificate of UDO Compliance. A Certificate of UDO Compliance is a certification that all UDO regulations have been met prior to a structure or use being utilized by the applicant. This certification will be based on a Site Inspection performed by the Department of Planning & Zoning and will include as applicable, an inspection of the bufferyards, landscaping, signage, parking, building architectural requirements, and any other site specific requirements specified on the approved Preliminary Plan, Development Plan, or UDO Permit.

Certificate of UDO Compliance Procedures:

Expected Review Time: Approximately 3-5 business days

Primary Processing Department: Planning & Zoning

Departments involved in Certificate of UDO Compliance review process: Planning & Zoning

Prior to Requesting Certificate of UDO Compliance:

1. Verify that all work authorized by the UDO Permit has been performed. Changes to the information approved by the UDO Permit may result in the need for an amended UDO Permit. *(See UDO Section 9.05, C., 9., Amended UDO Permit for more information.)*
2. Any Landscape Bond or other acceptable surety requests must be made prior to the Request for the Certificate of UDO Compliance. *(See Section 10.04 and UDO Section 7.01, L., for more information.) (Amended Resolution #03-25)*

Requesting Certificate of UDO Compliance:

1. Contact the Department of Planning & Zoning to request a Certificate of UDO Compliance. Requests must be made a minimum of three (3) business days in advance. Requests received after 12:00 p.m. may be placed in the next available inspection cycle. (Ex. If a Certificate of UDO Compliance is requested at 4:30 p.m. the earliest inspection of the property may be two (2) business days following the request.)

UDO Compliance Process:

1. A Site Inspection will be performed to verify that all UDO requirements and development commitments have been satisfied.
2. The Department of Planning & Zoning will notify Applicant of any incomplete or missing site work within three to five (3-5) business days of the inspection request. This work must be completed and a new request made before the certification will be issued. For each re-inspection that the Staff conducts, a re-inspection fee will be charged in accordance with the Town Fee Schedule. The re-inspection fee must be paid prior to additional inspections being conducted.

Certification Process:

1. The Department of Planning & Zoning will either leave a Certificate of UDO Compliance in the inspection box on site, or notify the contact person on the Petition or Application of the site inspection results.

A copy of the Certificate of UDO Compliance will be forwarded to Building Codes Enforcement, which will provide notification to either proceed or withhold the Certificate of Occupancy.



SECTION 10.04

~~UDO Compliance Surety~~ ~~Resolution #11-19~~^{*}

~~The Town of Holly Springs allows the posting of financial assurances until the development requirements of the UDO can be fulfilled. The following are the steps involved in obtaining any UDO Compliance Sureties, and the steps involved with the release of any such surety once all requirements have been satisfied. Please refer to UDO Sections 7.01, L., and 9.05, B., F. for additional information.~~^{[Amended Resolution #11-19]*}

~~UDO Compliance Surety Procedures:~~^{[Amended Resolution #11-19]*}

~~**Expected Review Time:** Approximately 5-15~~

~~**Primary Processing Department:** Planning & Zoning~~

~~**Departments involved in UDO Compliance Surety Process:** Planning & Zoning, Engineering, and Parks & Recreation~~

~~Prior to Filing Surety Request:~~^{[Amended Resolution #11-19]*}

- ~~1. Arrange a site inspection with the Department of Planning & Zoning. The Planning Department will determine what items are needed for the site to pass inspection.~~
- ~~2. An original itemized cost estimate must be approved by the Department of Planning & Zoning with regard to the missing items.~~

~~Application Submission Requirements:~~

~~(An original and one copy of all documents must be submitted.)~~

- ~~■ Approved cost estimate (including labor and materials)~~^{[Amended Resolution #11-19]*}
- ~~■ An 8 1/2" x 11" plan showing the bonded improvements~~
- ~~■ An estimated date of completion~~
- ~~■ UDO Compliance Surety Application~~
- ~~■ A check in the amount of 150% of the approved estimate must be submitted at this time.~~

~~Petition Review Process:~~

- ~~1. The Department of Planning & Zoning will notify Applicant of an incomplete application or any missing information within two (2) business days of the submittal. This information must be completed and submitted in order to continue the surety process.~~
- ~~2. Staff will review the submitted petition and the Department of Planning & Zoning will forward all Staff comments to those named on the petition by noon the Friday following the Monday application deadline.~~

~~Processing:~~

- ~~1. The Department of Planning & Zoning will forward a copy of the completed application to all Staff in the UDO Compliance Surety review process.~~
- ~~2. Staff will review the submitted application and the Department of Planning & Zoning will forward all Staff comments to those named on the application.~~
- ~~3. Once all staff comments have been addressed an approval notice will be sent to the Applicant.~~

Release Request:

- ~~1. Arrange a site inspection with the Department of Planning & Zoning, and request a surety release. [Amended Resolution #11-19]*~~
- ~~2. Applicant will be notified of the results of the inspection and if additional improvements are needed.~~
- ~~3. If approved, allow 10 business days for check to be processed.~~
- ~~4. Applicant will be notified when check is available for pick up.~~



SECTION 10.05

Certificate of Occupancy Procedures

Certificate of Occupancy:

Expected Review Time: Approximately 1-2 business days

Primary Processing Department: Building Codes Enforcement

Departments involved in Certificate of Occupancy review process: Building Codes Enforcement

~~A Certificate of Occupancy will be issued when all of the following are completed:~~

~~1. All re-inspection fees have been paid.~~

~~2. All building, plumbing, electrical, and HVAC finals have passed.~~

~~— Engineering Department has approved as noted below:~~

~~— For single family residential lots: Engineering signs off on Lot Inspection Reports.~~

~~— For sites: Engineering signs off on Site Inspections Reports.~~

~~— For single family residential lots and sites: Engineering signs off on any **Holds** that have been placed by them.~~

~~[Amended Resolution #03-25]~~

~~— Planning & Zoning has issued a Certificate of UDO Compliance. See Section 10.05 of this manual for more information.~~

~~[Amended Resolution #03-25]~~

~~3. Allow one (1) to two (2) days for the processing of the Certificate of Occupancy.~~

~~4. All Certificates of Occupancy will be issued from the Building Codes Enforcement Office.~~

~~Note: Non-residential site inspection by Planning & Zoning and Engineering must be completed prior to Certificate of Occupancy being issued. These inspections must be scheduled by contacting these departments directly.~~

Prior to Certificate of Occupancy:

Notes:

~~— Lots using Development Incentiveptions, and Multifamily residential development must have a Certificate of UDO Compliance from Planning & Zoning prior to a Certificate of Occupancy being issued. This must be arranged by contacting this department Planning & Zoning directly.~~

~~[Amended Resolution 07-31]*~~

~~— Non-residential site inspections by Planning & Zoning and Engineering must be completed prior to a Certificate of Occupancy being issued. These inspections must be scheduled by contacting these departments directly.~~

~~[Amended Resolution #03-25]~~



SECTION 11.00

Gateway Design Guidelines [Amended Ordinance #11-19]

Policy Purpose:

~~In accordance with the comprehensive plan, the following Town Gateway Design Guidelines provide specifications on the required installation of public amenities or landmarks for the Town's gateways. These features are designed to distinguish the Town's entrance points to define the Town's "Village" atmosphere. [Amended Ordinance #11-19]*~~

Scope/Coverage:

~~These design features shall be applicable to all properties that contain a Primary Gateway or Secondary Gateway designation, as indicated in the Town of Holly Springs Comprehensive Plan Village Streetscape Masterplan. These Design Guidelines shall remain in effect until such time that it is altered, modified, or rescinded by the Town Council. [Amended Ordinance #04-06, Resolution 18-37]*~~

Policy Statement:

~~If a property contains a Primary Gateway or Secondary Gateway designation, as indicated in the Town of Holly Springs Comprehensive Plan Village Streetscape Masterplan which is covered by this adopted policy for design guidelines, and a Development Petition for new development is submitted, the owner/developer of that portion of such property shall install the design features as specified on the attached drawings and record an easement to allow for the Town to provide maintenance for the feature. Such design feature shall be installed and accepted by the Town for maintenance prior to issuance of a Certificate of Occupancy for the proposed development. [Amended Resolution #18-37]*~~

Design Guidelines:

~~The following sheets provide detailed drawings of the required design features for Primary Gateways or Secondary Gateways. Full size drawing sheets to a measurable scale and construction drawings are available from the Department of Planning & Zoning. [Amended Resolution #18-37]*~~

~~[Removed Resolution #18-37]*~~



SECTION 11.01

Secondary Gateway Design Guidelines

~~This design feature shall be applicable to all properties designated as a location for a Secondary Gateway as specified in the Town of Holly Springs Comprehensive Plan Village Streetscape Masterplan. These Design Guidelines shall remain in effect until such time that it is altered, modified, or rescinded by the Town Council. [Amended Resolution #15-26, #18-37]*~~

~~Design Guidelines:~~

~~The following sheet provides a detailed drawing of the required design feature for a Secondary Gateway. The design of the feature may have to be modified in certain locations due to site constraints. Such modifications shall be reviewed and approved by the Director. [Amended Resolution #15-26]*~~

CONFIRMATION DRAWING

Qty. TBD : Single-Sided Internally Illuminated Secondary Gateway

FRONT VIEW

SIDE VIEW

BACK VIEW

TOP VIEW

Materials/Colors:

M1	.1875" Thick Aluminum
M2	.177" Clear Polycarbonate
M3	Fabricated Aluminum Cabinet; 4" deep (suspended between posts)
M4	Fabricated Aluminum 6" deep background panel
M5	Fabricated Aluminum 2" deep cabinet cut through copy
M6	.188" White Acrylic
M7	.25mm (.1") PVC
M8	.375" thick acrylic; flush mount
M9	4" diameter fluted post
M10	Brick - Williamsburg #60
M11	Precast - Wheat

ORIGINAL LOGO ORIENTATION

Delivery/Installation

☒ Install ☐ Delv ☐ P U ☐ Ship

Illumination: Pure White LED Illumination (green panels and text on sign panel)
100v - 277v Variable 12V IP68 - Waterproof - Power Supplies

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Client Approval: Name: _____ Date: _____

Landlord Approval: Name: _____ Date: _____

Department Distribution:

☐ ADA-req ☐ ADA ☐ Channel ☐ CNC ☐ INSTALL ☐ METAL ☐ PAINT ☐ PRINT ☐ SANDING ☐ WOOD

File Name: HS_Gateway_Signs_VZKS.fs Date: 5/23/18 Sales: JM DWG: KS



SECTION 11.02

Primary Gateway Design Guidelines [Amended Resolution #18-37]*

This design feature shall be applicable to all properties designated as a location for a Primary Gateway as specified in the Town of Holly Springs Comprehensive Plan Village Streetscape Masterplan. These Design Guidelines shall remain in effect until such time that it is altered, modified, or rescinded by the Town Council. [Amended Ordinance #04-06, #11-10, Resolution 18-37]*

Design Guidelines:

The following sheets provide detailed drawings of the required design features for this Primary Gateway. Full size drawing sheets to a measurable scale and construction drawings are available from the Department of Planning & Zoning. [Amended Ordinance #11-10]

Department: ☐ ADA ☐ ADA ☐ Channel ☐ CNC ☐ INSTALL ☐ METAL ☐ PAINT ☐ PRINT ☐ SANDING ☐ WOOD

Distribution: ☐ ADA ☐ ADA ☐ Channel ☐ CNC ☐ INSTALL ☐ METAL ☐ PAINT ☐ PRINT ☐ SANDING ☐ WOOD

Client Name: Town of Holly Springs
Project Name: Gateway
Project Address: Holly Springs Rd & Sunset Lake Rd

Client Approval: Name: _____ Date: _____

Landlord Approval: Name: _____ Date: _____

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SIGN# 1
9801 Holly Springs Road (HS sign easement)
PIN# 0659978417 / ID 0056879
Zoning: LB

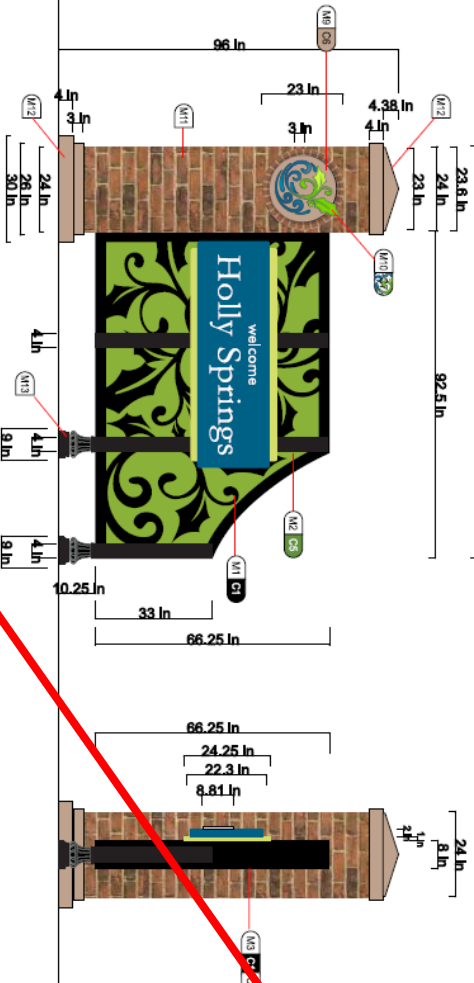
SIGN# 2
5153 Sunset Lake Rd (HS sign easement)
PIN# 0659986291 / ID 0042308
Zoning: LB

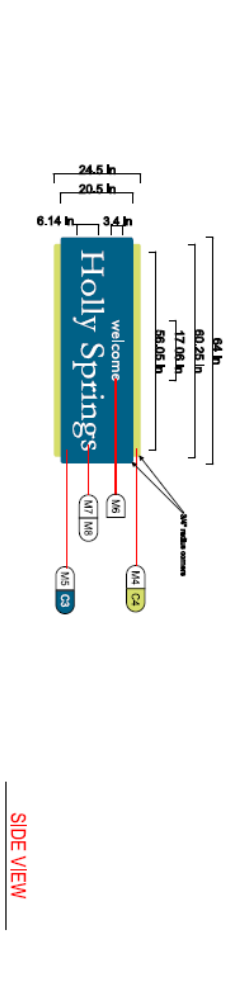


ORIGINAL LOGO ORIENTATION

Delivery/Installation
☒ Install ☐ Delv ☐ P U ☐ Ship

Illumination: Pure White LED Illumination (green panels and text on sign panel)
 100v - 277v Variable 12v IP68 - Waterproof - Power Supplies





Materials/Colors:

M1	.1875" Thick Aluminum
M2	.177" Clear Polycarbonate
M3	Fabricated Aluminum Capbox, 8" deep
M4	Fabricated Aluminum deep background panel
M5	Fabricated Aluminum 2" deep cabinet, cut through copy
M6	.188" White Acrylic
M7	.5" Clear Acrylic
M8	.125" opaque white acrylic
M9	25mm (1") pvc
M10	.375" thick aluminum, spacers (depth too)
M11	Brick - Williamsburg #60
M12	Precast - Wheat
M13	10.25" Cast Mini Americana Base

Colors:

C1	Paint - Black; semi-gloss
C2	Paint - Anti Graffiti Clear Coat; back of cabinet only
C3	Paint - Blue PMS 7489C; semi-gloss
C4	Paint - Gold PMS 585C; semi-gloss
C5	Paint - Translucent Green PMS 7490C; subsurface
C6	Paint - faux finish to match precast capbase



SECTION 12.01

Preferred Landscape Material

The Intent of the Preferred Plant Material section is to provide a list of landscape materials that can be used in residential, commercial and industrial development. This will insure compatibility of the material being used, the proposed location of the plant material and the type of planting required per the Unified Development Ordinance. Section 7.01, Landscape Regulations of the Unified Development Ordinance specifies the percentage of evergreens versus deciduous plantings that need to be installed, the size of the plant material and the intensity of the plant material to be installed.

Departments involved: Planning & Zoning, Engineering and Parks & Recreation

Preferred Landscape Material:

The purpose of the Preferred Landscape Material is to give developers, design professionals, and homeowners information on the correct plant material to be used within the USDA Plant Hardiness Zone for Holly Springs, Zone 7. The chart should be used as a tool to promote good landscape design consisting of cultivars and hybrids of native plant species due to their ability to work better in landscaped environments.

Unified Development Ordinance Plant Material Categories:

To be consistent with the Unified Development Ordinance: Section 7.01 Landscape Regulations, Section 12.01 Preferred Landscape Material has been categorized in the following seven categories:

1. **Large Evergreen Trees:** a large evergreen tree is specified at the time of planting to be 6' to 12' and can grow to a mature height of 25' to 75'+
2. **Small Evergreen Trees:** a small evergreen tree is 4' to 6' tall at the time of planting and can mature to a max of 25'
3. **Large Deciduous Trees:** a large deciduous tree is specified at the time of planting to be 2" to 2.5" caliper at the time of planting and can mature to a height of 25' to 75'+
4. **Small Deciduous Trees:** a small deciduous tree is 1" to 1.5" caliper at the time of planting and can mature to a max of 25'
5. **Large Shrubs:** a large shrub is typically planted at a height of 36" but has the ability to mature to a height of 10' or larger.
6. **Medium Shrubs:** a medium shrub is typically planted at a height of 36" and can mature to a height of 4' to 10'.
7. **Small Shrubs:** a small shrub is typically planted at a height of 18" to 24" and will mature to a height of 4' or less.

Chart Headings:

Within each of the charts the headings specify the information included within the specified column relating to the Species of plant that is located in the far left hand column of the chart. The column headings are as follows:

1. **Common Name:** The familiar term used to name a plant species.
2. **Scientific Name:** The method of a name given to plant species/material scientifically.

- ~~3. Height and Spread at Maturity (trees) and Height (shrubs): The height and/or spread of plant material at full maturity.~~
- ~~4. Landscape Value: The location on site where the plant material will thrive.~~
- ~~5. Light: The amount of sunlight required for plant material to thrive.~~
- ~~6. Soil Type: The type of soil and moisture that is needed for the plant species to thrive.~~
- ~~7. Growth Rate: The rate at which the plant material grows.~~
- ~~8. Flowering: The type of flower produced on a specified plant.~~
- ~~9. Fall Color: The color in which the plant species color seasonally changes.~~
- ~~10. Fruit/Berries/Seeds/Nuts: The fruits, berries, seeds or nuts the plant material produces that is visually seen over the course of a year.~~
- ~~11. Interesting Growth Patterns: The plant species has bark with unusual characteristics such as texture, color or growth pattern.~~
- ~~12. Native plant material: The plant material is native (from) to this area.~~
- ~~13. Drought tolerant: The species with stand long periods without water.~~

Landscape Value:

The charts in Section 12.01 includes a list of the landscape value; the location in which the plant material should be placed. It is imperative to place the correct size and variety of plant material to promote good landscape practices.

Landscape Values:

- ST: Street Tree
- DT: Downtown or Village District Area
- PL: Power Line
- PK: Parking Lot
- BF: Buffer/Natural Area
- TC: Tree Canopy
- RB: Riparian Buffer
- ACT: Accent Plant

Invasive Species Material:

An additional Landscape Material Chart regarding Invasive Species that may become a problem if incorporated into the landscape is provided. The Town of Holly Springs strongly discourages the use of the materials the chart specifies:

- ~~1. Severe Threat: Exotic plant species that have invasive characteristics and spread readily into native plant communities, displacing native vegetation.~~
- ~~2. Significant Threat: Exotic plant species that display some invasive characteristics, but do not appear to present as great a threat native communities in NC as the species listed in Rank 1.~~
- ~~3. Lesser Threat: Exotic plant species that spread into or around disturbed areas, and are presently considered a low threat to native plant communities in NC.~~
- ~~4. Watch List A: Exotic plants that naturalize and may become a problem in the future; includes species that are or could become widespread in North Carolina. At this time, more information is needed.~~
- ~~5. Watch List B: Exotic plant species that cause problems in adjacent states but have not yet been reported to cause problems in NC.~~

Notes and Preferences:

~~The Town of Holly Springs would like to promote the use of plant material to meet Stormwater Best Management Practice (BMP) Criteria. If BMPs are located within required landscaping areas of the UDO you may be able to count the BMP Landscaping towards the requirements of UDO Section 7.01, Landscape Regulations. For BMP approved Landscaping materials please refer to North Carolina Division of Water Quality Stormwater Best Management Practices Manual.~~

- ~~1. All Riparian Buffers will need to be planted with Native non-evasive species.~~
- ~~2. The Town of Holly Springs would like to promote and request the use of drought tolerant plant material.~~
- ~~3. The use of Loblolly Pines and other Evergreens that drop their lower limbs in Type B and C Perimeter Landscape Yards or Thoroughfare Buffers (Refer to UDO Section 7.01, Landscape Regulations) shall not be permitted.~~
- ~~4. All plant material planted in medians needs to be able to withstand full sun.~~

References:

- ~~1. North Carolina State Horticulture Website:
<http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/>~~
- ~~2. International Society of Arboriculture 2005:
http://www.treesaregood.com/treecare/tree_selection.aspx~~
- ~~3. Progress Energy Permitted Vegetation: <http://www.progress-energy.com/environment/vegetation/index.asp#b5>~~
- ~~4. United States Department of Agriculture: <http://plants.usda.gov/>~~
- ~~5. University of Virginia Tech Horticulture Website: <http://www.hort.vt.edu/>~~
- ~~6. North Carolina Division of Water Quality: <http://h2o.enr.nc.us>~~

Category 1: Large Evergreen Trees

Large Evergreen Trees											
Common Name	Scientific Name	Landscape Value	Light	Soil Type	Growth Rate	Height & Spread at Maturity	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Native to North Carolina	Drought Tolerant
Deodar cedar	<i>Cedrus deodara</i>	BF	Sun or part shade	Mesic, sub-xeric	Rapid	Height: 70'; Spread: 20-40'	Bluish-green	Needs space; excellent specimen tree	Green seeds	Yes	No
Japanese cedar	<i>Cryptomeria japonica</i>	BF	Sun to part shade	Mesic	Moderate	Height: 50-60'; Spread: 25-30'	Green to bronze	Needs space, screening material	Cones 1/2-1"	No	No
 American holly	<i>Ilex opaca</i>	BF, TC, RB, PL	Full-sun, shade	Medium, semi-dry	Slow	Height: 50'; Spread: 18-40'	Green	Small white flowers in the spring	Red Mature fruit in fall lasting into winter	Yes	No
 Eastern red cedar	<i>Juniperus virginiana</i>	PL, BF, TC, RB	Sun or part shade	Dry	Moderate	Height: 40-50'; Spread: 8-15'	Green	Doesn't tolerate wet sites; needs full sun. White flowers	Gray brown with red seeds	Yes	Yes
Cucumber magnolia	<i>Magnolia acuminata</i>	RB	Part-Sun, Shade	Mesic, sub-xeric	Moderate to Rapid	Height: 50-80'; Spread: 40'	Red to yellow	Needs space, greenish yellow flowers in spring	Knobby Fruit	No	Yes
Southern magnolia	<i>Magnolia grandiflora</i>	BF, TC	Sun, part shade	Mesic	Moderate	Height: 40-80'; Spread: 30-40'	Dark green	Most varieties need space; White flowers	Gray with red seeds	Yes	Yes
Sweetbay magnolia	<i>Magnolia virginiana</i>	BF, TC, RB	Full Sun	Tolerate Acidic	Moderate	Height: 40-50'; Spread: 15-25'	Green	Prefers wetter sites	2" long red fruit	Yes	No
Red spruce	<i>Picea rubens</i>	RB, BF	Full-sun, shade	Mesic, Sub-xeric, Moist	Slow to moderate	Height: 60-70'; Spread: 30-40'	Green	No	Cones	No	Yes

Attracts:





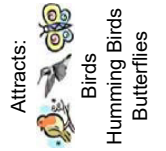
Birds
Humming Birds
Butterflies

Landscape Value

Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 1: Large Evergreen Trees

Common Name	Scientific Name	Landscape Value	Light	Soil Type	Growth Rate	Height & Spread at Maturity	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Native to North Carolina	Drought Tolerant
White Pine	<i>Pinus strobus</i>	BF, TC, RB	Sun to part shade	Fertile, moist, well drained soil	Slow	Height: 50-80'; Spread: 20-40'	Green	Tends to die out in zones 7b and 8 due to stress	6 to 8" cones	Yes	No
Laurel Oak	<i>Quercus laurifolia</i>	ST	Sun to part shade	Medium Drainage	Slow to moderate	Height: 60'; Spread: 30-40'	Green	No	5/8" acorn	Yes	No
Live Oak	<i>Quercus virginiana</i>	TC, BF	Sun to part shade	Drainage	Slow	Height: 30-50'; Spread:	Green to bronze	Long life span	acorns	Yes	No
Carolina hemlock	<i>Tsuga caroliniana</i>	RB	Part Shade	Mesic	Moderate	Height: 40-70'; Spread: 20-25'	Green	Red, brown with tinged orange bark. Needs space	Brown acorns	Yes	No



Landscape Value
 Street Tree: ST; Accent: ACT; VDAP: DT
 Power Line: PL; Parking Lot: PK
 Buffer/Natural: BF; Tree Canopy: TC
 Riparian Buffer: RB

Category 2: Small Evergreen Trees

Small Evergreen Trees											
Common Name	Scientific Name	Landscape Value	Light	Soil Type	Growth Rate	Height & Spread at Maturity	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Native to North Carolina	Drought Tolerant
Burford holly	<i>Ilex cornuta</i>	BF, TC	Full-sun, shade	Moist, Semi-dry	Moderate	Height: 15-25'; Spread: 15-25'	Green	Can trim into tree; white flowers in the spring	Red fruit in fall lasting into winter	No	Yes
Yaupon holly	<i>Ilex vomitoria</i>	BF	Full-sun, shade	Moist, Semi-dry	Moderate	Height: 15-25'; Spread: 15-20'	Green	Upright or weeping. Small white flowers in the spring	Red fruit in fall lasting into winter	Yes	Yes
Nellie Stevens holly	<i>Ilex x 'Nellie R. Stevens'</i>	PL, BF, TC	Full-sun, shade	Moist, Semi-dry	Rapid	Height: 15-25'; Spread: 7-12'	Green	Small white flowers in the spring	Red fruit in fall lasting into winter	Yes	Yes
Hybrid hollies	<i>Ilex x attenuata</i> hybrids	PL, BF, TC	Full-sun, shade	Moist, Semi-dry	Moderate	Height: 20-30'; Spread: 7-10'	Green	Small white flowers in the spring	Red fruit in fall lasting into winter	Yes	No
Umbrella tree	<i>Magnolia tripetala</i>	RB	Sun, part shade	Moist	Slow to Moderate	Height: 30'; Spread: 30'	Green	Vigorous, unkempt. Cream to white flowers	Rosy-red berries	Yes	No
Saucer magnolia	<i>Magnolia x soulangiana</i>	BF, TC	Sun, part shade	Moist	Moderate	Height: 20-30'; Spread: 25'	Green	Gray brown bark; Can be used in Parking lots. Purple to white flowers	4" fruit	No	Yes
Wax myrtle	<i>Myrica cerifera</i>	PL, BF, TC, RB	Sun, part shade	Moist	Rapid	Height: 20-40'; Spread: 20'	Yellow green	Can be trained to tree form	Gray-green fruit	Yes	Yes
Carolina cherry laurel	<i>Prunus caroliniana</i>	PL, BF, TC, RB	Sun, part shade	Dry	Moderate	Height: 20-40'; Spread: 15-20'	Green	Tree form only. White flowers	Black berries	Yes	Yes



Landscape Value
 Street Tree: ST; Accent: ACT; VDAP: DT
 Power Line: PL; Parking Lot: PK
 Buffer/Natural: BF; Tree Canopy: TC
 Riparian Buffer: RB

Category 3: Large Deciduous Trees

Large Deciduous Trees											
Common Name	Scientific Name	Landscape Value	Light	Soil Type	Growth Rate and Life Expectancy	Height & Spread at Maturity	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Native to North Carolina	Drought Tolerant
Sugar maple	<i>Acer barbatum</i>	ST, BF, TC, RB	Full Sun, Shade	Wet to Dry	Slow	Height: 50-75 ft; Spread: 30-45 ft.	Yellow to orange red	Legacy is more narrow than other species and works well in Paving lots and Downtown Areas	Seed Containers	Yes	Yes
Trident Maple	<i>Acer buergeranum</i>	ST, DT	Sun	Moist Drainage	Slow to Moderate	Height: 25-35 ft; Spread: 20-30 ft.	Red Orange	Exfoliating Bark; greenish white flowers	Brown red	Yes	Yes
Hedge maple	<i>Acer campestre</i>	PK, BF, TC	Full Sun, Shade	Wet, Dry	Slow	Height: 25-30 ft; Spread 25-30 ft.	Yellow to green fall color	Often multi-stemmed	Seed Containers	Yes	No
Paperbark maple	<i>Acer griseum</i>	PK, BF	Full Sun, Shade	Wet to Dry	Slow	Height: 20-30 ft; Spread 15-25 ft.	Bright scarlet and orange	Cinnamon Brown Peeling Bark; Upright and narrow shape	Seed Containers	Yes	No
Chalkbark or whitebark maple	<i>Acer leucoderme</i>	BF, TC	Full Sun, Shade	Wet, Dry	Slow	Height: 25-30 ft; Spread 25 ft.	Brilliant yellow-orange to cardinal crimson fall color	Gray to chalky white bark on upper part of trunk; Often multi-stemmed	Seed Containers	Yes	Yes
Japanese maple	<i>Acer palmatum</i>	BF, PK	Full Sun, Shade	Wet, Dry	Slow to Moderate	Height and Width varies	Scarlet	Often a specimen	Red	Yes	No
 Red maple	<i>Acer rubrum</i>	DT, ST, PK, BF, TC	Full-sun, shade	Wet to dry	Moderate to Rapid	Height: 40-60 ft; Spread: 25-45 ft.	Red or yellow	Cultivars preferred for consistency. Red Sunset Maple is smaller than other red maples	Red	Yes	No

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Attracts:
Birds
Humming Birds
Butterflies

Section 12.01 Preferred Landscape Material

Category 3: Large Deciduous Trees

Common Name	Scientific Name	Landscape Value	Light	Soil Type	Growth Rate and Life Expectancy	Height & Spread at Maturity	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Native to North Carolina	Drought Tolerant
 Purple Blownut	<i>Acer truncatum</i>	ST, BF, TC	Full-sun, shade	Wet to Moist	Moderate	Height: 20-25 ft; Spread: 20-25 ft.	Yellow, orange, red fall color	Yellow flowers in spring	Seed Containers	No	No
 Yellow Buckeye	<i>Aesculus flava</i>	TC	Part-sun, shade	Moist to semi-dry	Moderate	Height: 50-70 ft; Spread: 30-40 ft.	Yellow Orange	6" pinnacle of creamy yellow flowers in late spring	Seed Containers	Yes	Yes
 Yellow Birch	<i>Betula alleghaniensis</i>	TC, BF	Full-sun, part-sun	Moist to semi-dry	Moderate	Height: 60-75 ft; Spread: 35-45 ft.	Yellow	Catkins	Cones	Yes	No
 Sweet Birch	<i>Betula lenta</i>	BF, PK	Full-sun, shade	Moist to semi-dry	Moderate	Height: 40-55 ft; Spread: 35-45 ft.	Yellow	Catkins	Seed Containers	Yes	Yes
 River Birch	<i>Betula nigra</i>	BF, TC	Full-sun, part-sun	Wet, semi-dry	Moderate to Rapid	Height: 40-70 ft; Spread: 40-60 ft.	Yellow	Catkins	Seed Containers	Yes	Yes
 Bitternut hickory	<i>Carya cordiformis</i>	BF, RB	Full-sun, shade	Moist to Semi-dry	Rapid	Height: 50-70 ft; Spread: 30-40 ft.	Yellow	Yellow Buds	Seed containers	Yes	No
 Bitternut hickory	<i>Carya cordiformis</i>	RB	Full-sun, shade	Moist, Semi-dry	Rapid	Height: 50-70 ft; Spread 30-45ft.	Fall color is yellow to golden	Needs Space; Yellow Buds	Seed Containers	Yes	No
 Pignut hickory	<i>Carya glabra</i>	RB	Full Sun, Shade	Moist	Rapid	Height: 50-60 ft; Spread: 25-35 ft.	Golden yellow fall color	Needs space	Bitter Nuts	Yes	Yes

Attracts:

Category 3: page 5 of 50
[Added Supplement #5]

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Birds
Humming Birds
Butterflies

Section 12.01 Preferred Landscape Material

Category 3: Large Deciduous Trees

Common Name	Scientific Name	Landscape Value	Light	Soil Type	Growth Rate and Life Expectancy	Height & Spread at Maturity	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Native to North Carolina	Drought Tolerant
Shagbark hickory	<i>Carya ovata</i>	RB	Full-sun, shade	Moist to Semi-dry	Slow	Height: 70-90 ft; Spread: 30-40 ft.	Yellow to golden brown fall color	Yellow Green Flowers; needs space	Nuts that squirrels eat	Yes	No
 Mockernut hickory	<i>Carya tomentosa</i>	RB	Full Sun, Shade	Moist to Dry	Moderate	Height: 60-80 ft; Spread: 45-60 ft.	Yellow	Needs space	Nuts	Yes	Yes
 Sugar hackberry	<i>Celtis laevigata</i>	BF, TC, RB	Sun	Moist to Semi-dry	Moderate to Rapid	Height: 60-80 ft; Spread: 60-80 ft.	Dull Yellow	Needs space	Orange to dark purple	Yes	Yes
 Prairie Pride hackberry	<i>Celtis occidentalis</i>	BF, TC	Sun	Moist, Semi-dry	Rapid	Height: 60ft; Spread: 40-50ft.	Dull Yellow	More compact than species in youth	Orange to dark purple	No	Yes
Yellowwood	<i>Cladrastis kentuckea</i>	TC	Full-sun, part-sun	Moist to semi-dry	Moderate	Height: 30-45 ft; Spread: 40-45 ft.	Yellow	Winter Bark; White fragrant flowers in early summer	Seed Containers	Yes	No
Smoke tree	<i>Cotinus coggia</i>	PK,	Sun	Moist	Moderate to Rapid	Height: 10-15 ft; Spread: 8-14 ft.	Red, orange, and yellow	Multi-stemmed; shrubby	Light pink to gray		Yes
 American Beech	<i>Fagus grandiflora</i>	BF, TC, RB	Sun	Wet	Slow; long lived	Height: 60-80 ft; Spread: 40-80 ft.	Golden-brown	Needs space; shades out all others; needs irrigation	Small three winged nut	Yes	No
Green ash cultivars	<i>Fraxinus pennsylvanica</i>	BF, RB	Sun	Moist	Rapid	Height: 50-60 ft; Spread 25-30 ft.	Yellow	Green to reddish purple flowers in panicles. Borers seem to be a problem, even with the cultivar.	Samaras are 1" to 2" long and narrow	Yes	Yes

Attracts:

Category 3: page 6 of 50
[Added Supplement #5]

Birds
Humming Birds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 3: Large Deciduous Trees

Common Name	Scientific Name	Landscape Value	Light	Soil Type	Growth Rate and Life Expectancy	Height & Spread at Maturity	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Native to North Carolina	Drought Tolerant
Pumpkin ash	<i>Fraxinus profunda</i>	RB	Full Sun	Wet	Rapid	Height: 80 ft; Spread: 30-50 ft.	Yellow	Flowers April to May. Needs space; prefers moist sites; some diseases.	Dangling clusters of fruits.	Yes	No
Ginkgo cultivars (male only)	<i>Ginkgo biloba</i>	DT, ST, PK, TC	Sun	Wet	Slow	Height: 40-70 ft; Spread 20-40 ft.	Yellow	Female: Plum shaped, foul smelling fruit	Tan-orange oval fruits are pendulous from the spur shoots	No	Yes
Thornless honeylocust varieties	<i>Gleditsia triacanthos</i> var. <i>inermis</i>	TC	Sun	Moist	Rapid	Height: 30-70 ft; Spread: 30-40 ft.	Yellow	Many insect and disease problems	Yellow	Yes	Yes
 Fruitless sweetgum	<i>Liquidambar styraciflua</i>	BF, RB	Sun to part shade	Moist	Moderate to Rapid	Height: 60-100 ft; Spread 50-75 ft.	Scarlet to purple	Needs space	Brown Acorns	Yes	Yes
 Tulip poplar	<i>Liriodendron tulipifera</i>	BF, RB	Full, part Sun	Moist to semi-dry	Rapid	Height: 40-100 ft; Spread: 20-40 ft.	Yellow Green	Yellowish Green and Orange Cup Shaped fragrant flowers in later spring. Too large for most sites.	Cone shaped aggregate fruit	Yes	No
Dawn redwood	<i>Metasequoia glyptostroboides</i>	ST	Sun	Dry	Rapid	Height: 50-90 ft; Spread 15-25 ft.	Orange to brown	Needs Space; Red-brown becoming gray with age	Dark brown	No	No
 Black gum	<i>Nyssa sylvatica</i>	BF, TC, RB	Sun to partial shade	Wet, Moist	Slow to Moderate	Height: 40-60 ft; Spread 20-30 ft.	Yellow, orange, red to purple fall color	Too large for most sites, swamp gum prefers a moist site	1/2" bluish black fruit in fall	Yes	No
Black tupelo	<i>Nyssa sylvatica</i>	TC	Full-sun, shade	Moist to dry	Slow to Moderate	Height: 40-60 ft; Spread: 20-30 ft.	Red to Maroon	White flowers in Spring	Yellowish fruit that turns black in fall	Yes	No

Attracts:

Birds
Humming Birds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 3: Large Deciduous Trees

Common Name	Scientific Name	Landscape Value	Light	Soil Type	Growth Rate and Life Expectancy	Height & Spread at Maturity	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Native to North Carolina	Drought Tolerant
Persian parrotia	<i>Parrotia persica</i>	BF, TC	Sun to light shade	Dry	Moderate	Height: 20-40 ft; Spread: 15-30 ft.	Yellow-gold, pumpkin orange, crimson)	Bark peels to reveal silver, green, white, and cinnamon colors; Modest maroon flowers; Single stem preferred as street trees.	1/2" light brown fruit	No	Yes
Chinese pistachio	<i>Pistacia chinensis</i>	TC	Sun	Wet	Medium to Rapid	Height: 25-40 ft; Spread: 25-35 ft.	Red, yellow, or orange fall color	Modest exfoliating bark; Small green flowers	Blue/red fruit on female trees	No	Yes
Sycamore	<i>Platanus occidentalis</i>	TC	Full-sun, part-sun	Moist to Wet	Moderate to Rapid	Height: 70-100 ft; Spread: 60-80 ft.	Brown	No	Globes fruit	Yes	Yes
Eastern cottonwood	<i>Populus deltoides</i>	RB	Sun	Moist	Rapid	Height: 75-100 ft; Spread: 50-75 ft.	Modest Fall Color	Flowers; cottony mass. Needs space; prefers wetter sites.	Seeds	Yes	No
 Black cherry	<i>Prunus serotina</i>	TC	Full-sun, part-sun	Moist to Dry	Rapid	Height: 50-80 ft; Spread: 30-40 ft.	Yellow to Red	White flowers in Spring	Black berries in summer	Yes	Yes
White oak	<i>Quercus alba</i>	RB	Sun to part shade	Wet to Medium	Moderate	Height: 60-100 ft; Spread: 50-90 ft.	Dark red	Pale yellow flowers. Needs space. Swamp Oaks needs irrigation; prefers wetter sites	Brown Acorns	Yes	Yes
Scarlet oak	<i>Quercus coccinea</i>	BF, TC, RB	Sun	Wet to Moist	Rapid	Height: 50-80 ft; Spread: 40-50 ft.	Red	Pale yellow flowers; needs space	Brown Acorns	Yes	Yes
Overcup oak	<i>Quercus lyrata</i>	BF, TC, RB	Sun	Wet	Moderate	Height: 35-45 ft; Spread: 35-40 ft.	Brown	Needs space, irrigation	Acorns are 1/2 to 1 inch long	Yes	Yes
Swamp Chestnut Oak	<i>Quercus michauxii</i>	RB	Sun	Wet to Medium	Moderate	Height: 60-80 ft; Spread: 50-70 ft.	Bronze red fall color	Needs space, irrigation	Acorns	Yes	No

Attracts:

Category 3: page 8 of 50

[Added Supplement #5]

Birds
Humming Birds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 3: Large Deciduous Trees

Common Name	Scientific Name	Landscape Value	Light	Soil Type	Growth Rate and Life Expectancy	Height & Spread at Maturity	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Native to North Carolina	Drought Tolerant
 Chestnut oak	<i>Quercus montana</i>	TC, BF	Full-sun, part-sun	Moist to dry	Moderate to Rapid	Height: 60-70 ft; Spread: 40-60 ft.	Yellow to Red	White flowers in spring	Red berries in summer	Yes	No
Water oak	<i>Quercus nigra</i>	BF, RB	Sun to part shade	Moist to Wet	Moderate to Rapid	Height: 50-75 ft; Spread: 30-40 ft.	Yellow	Needs space, irrigation; has problems with untreatable decay	Brown Acorns	Yes	No
Willow oak	<i>Quercus phellos</i>	ST, BF, TC, RB	Sun	Wet	Moderate to Rapid	Height: 60-80 ft; Spread: 30-40 ft.	Light yellow	Needs space; variable form	Brown Acorns	Yes	No
Chestnut oak <i>Quercus prinus</i>		RB	Sun	Dry	Medium to Rapid	Height: 60-70 ft	Orange yellow to yellow brown fall color	Needs space	Acorns	Yes	Yes
Red oak <i>Quercus rubra</i>		BF, TC, RB	Sun to part shade	Moist	Rapid	Height: 60-70 ft; Spread: 60-70 ft.	Red	Needs space, prefers sandy loam	Brown Acorns	Yes	No
Post oak <i>Quercus stellata</i>		TC, RB	Sun	Moist	Slow	Height: 40-50 ft; Spread: 35-50 ft.	Brown to dull yellow	Needs space, prefers sandy loam	Acorns	Yes	Yes
Black oak <i>Quercus velutina</i>		RB	Sun to part shade	Moist	Slow to Moderate; long lived	Height: 60-80 ft; Spread: 30-60 ft.	Dull red	Needs space	Brown Acorns	Yes	Yes
Black locust <i>Robinia pseudoacacia</i>		RB	Sun	Moist	Moderate	Height: 30-50 ft; Spread 20-25ft.	Yellow brown fall color	White flowers in spring; very fragrant; flat brown black pods; Many diseases; should be used sparingly since it may take over.	Legume two-valved, smooth 3 to 4" long	Yes	Yes

Attracts:

Category 3: page 9 of 50
[Added Supplement #5]

Birds
Humming Birds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 3: Large Deciduous Trees

Common Name	Scientific Name	Landscape Value	Light	Soil Type	Growth Rate and Life Expectancy	Height & Spread at Maturity	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Native to North Carolina	Drought Tolerant
Princeton Upright pagoda tree	<i>Sophora japonica</i>	ST	Sun or shade	Moist	Moderate to Rapid	Height: 50-70 ft; Spread: 50 ft.	Yellow-brown	Black trunk; Yellowish white flowers. Can be messy	Yellow turning brown	No	Yes
Japanese snowbell	<i>Styrax japonicus</i>	BF, TC	Sun to partial shade	Moist	Moderate	Height: 20-30 ft; Spread 20-30 ft.	Modest yellowish to reddish fall color	Cluster of large white mildly fragrant flowers in May & June; best in partial shade	1/2" gray fruit in fall	No	No
Horse-sugar, sweetleaf	<i>Symplocos tinctoria</i>	RB	Sun to partial shade	Dry to Moist	Moderate	Height: 15-30 ft; Spread 15-20 ft.	Shiny green above, yellow-green below.	Compact cluster of yellow to cream fluffy flowers in early spring. Suckering; semi-evergreen.	Orange to brown fruit	Yes	Yes
Bald cypress	<i>Taxodium distichum</i>	ST, PK, BF, TC, RB	Sun or part shade	Moist	Slow	Height: 50-100 ft; Spread 20-30 ft.	Reddish-brown	Needs space; Deciduous conifer.	Seed cones green turning brown	Yes	Yes
Little leaf linden	<i>Tilia cordata</i>	DT, ST, BF, TC	Sun to part shade	Wet to Moist	Slow to Moderate	Height: 30-50 ft; Spread 25-40 ft.	Yellow	Ivory to cream flowers	Buff or mustard color	No	No
 Chinese elm	<i>Ulmus parvifolia</i>	ST, BF, TC	Sun to part shade	Moist	Medium to Rapid	Height: 40-50 ft; Spread 40-50 ft.	Yellow, brown	Gray green and orange bark; Needs space Allee is larger than the other varieties.	By seed	No	Yes
Japanese zelkova	<i>Zelkova serrata</i>	ST, PK, TC	Sun to part shade	Moist	Moderate to Rapid	Height: 50-80 ft; Spread 40-50 ft.	Yellow to reddish brown	Needs space	A small drupe	No	Yes

Attracts:

Birds
Humming Birds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 4: Small Deciduous Trees

Small Deciduous Trees											
Common Name	Scientific Name	Landscape Value	Light	Soil Type	Growth Rate	Height & Spread at Maturity	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Native to North Carolina	Drought Tolerant
Painted buckeye	<i>Aesculus sylvatica</i>	RB	Shade	Moist well drained soil	Moderate	Height: 20 ft; Spread: 30 ft.	Yellow	No	No	No	No
 Service-berry cultivars	<i>Amelanchier</i> spp.	PL, BF, TC, RB	Full, Part-Sun	Moist to semi-dry	Moderate	Height: 6-15ft; Spread: 15-20 ft.	Yellow orange	Multi-stemmed, shrubby. small white flowers in the spring	Berries turn magenta to purple black	Yes	No
*Devil's-walkingstick	<i>Aralia spinosa</i>	PL	Full, part-sun	Wet, Dry	Rapid	Height: 14 ft; Spread: 11 ft.	Yellow to red-orange	3-4" cluster of creamy white flowers in summer	Compact clusters of purple black berries	Yes	No
 Pawpaw	<i>Asimina tribloba</i>	BF, TC, RB, PL	Part-Sun, Shade	Moist to semi-dry	Moderate	Height: 15-20ft; Spread: 15-20 ft.	Yellow	Prefers moist sites; edible fruit. Maroon Flowers in early Spring	yellowish green fruit ripens to dark brown	Yes	Yes
River birch	<i>Betula nigra</i>	BF, TC, RB, PL	Full, Part-Sun	Wet, semi-dry	Rapid	Height: 6-15ft; Spread: 15-20 ft.	Yellow	Multi-stemmed or single, Heritage prefers some shade and is a good street and parking lot tree	Seed containers	Yes	No
 European hornbeam	<i>Carpinus betulus</i>	BF, TC, PL	Part-Sun, Shade	Moist to semi-dry	Slow to Moderate	Height: 50ft; Spread: 35ft.	Orange Yellow	Species needs more space than cultivars	Black berries	No	Yes
 American hornbeam	<i>Carpinus caroliniana</i>	PL, BF, TC, RB	Part-Sun, Shade	Moist to semi-dry	Slow	Height: 50ft; Spread: 40ft.	Orange Yellow	Difficult to transplant	Black berries	Yes	Yes
Chinquapin	<i>Castanea pumila</i>	BF, PL	Full-sun, shade	Semi-dry to Dry	Moderate	Height: 40-50 ft; Spread: 40-50 ft.	Yellow	Slender spikes of strongly scented staminate flowers	Dark brown sweet nut	Yes	No

Attracts:





Birds
Humming Birds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 4: Small Deciduous Trees

Common Name	Scientific Name	Landscape Value	Light	Soil Type	Growth Rate	Height & Spread at Maturity	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Native to North Carolina	Drought Tolerant
 Forest Pansy redbud	<i>Cercis canadensis</i>	PL, BF, TC, RB	Full-sun, shade	Moist to dry	Rapid	Height: 20-30 ft; Spread: 15-20 ft.	Purple	Avondale is different than the other varieties because it is a good downtown tree and power line tree. rosy pink pea like flowers	No	Yes	No
 Eastern redbud	<i>Cercis canadensis</i>	PL, BF, RB	Full-sun, shade	Moist to dry	Rapid	Height: 20-30 ft; Spread: 30ft.	Yellow green	Cultivars more disease resistant. rosy pink pea like flowers	No	Yes	No
 Texas redbud	<i>Cercis reniformis</i>	PL, BF	Full-sun, shade	Moist to dry	Rapid	Height: 25-30 ft; Spread: 15-25 ft.	Yellow green	'Oklahoma' 'Texas White'; two common varieties	No	Yes	Yes
 Fringetree	<i>Chionanthus virginicus</i>	BF, TC, RB, PL	Full to partial shade	Moist to dry	Slow to Moderate	Height: 25-30 ft; Spread: 15-25 ft.	No	Tree form only. creamy white fragrant flowers	Dark blue fruit	Yes	No
 Flowering dogwood	<i>Cornus florida</i>	BF, RB, PL	Sun, shade	Moist to dry	Moderate	Height: 10-40 ft; Spread: 15-30 ft.	Yes	Cultivars more disease resistant	Glossy red fruit	Yes	No
 Kousa or Japanese	<i>Cornus kousa</i>	BF, TC, PL	Sun, shade	Moist to dry	Slow	Height: 20-25 ft; Spread: 15-30 ft.	Yes	Milky Way Select' best as single stem	Glossy red fruit	No	Yes
Washington hawthorn	<i>Crataegus phaenopyrum</i>	BF, PL	Full-sun, part-sun	Moist to semi-dry	Rapid	Height: 25-30 ft; Spread: 25 ft.	Yellow	2" cluster of small white flowers in Spring.	1/4" orange red berries persists into winter	Yes	No
 Persimmon	<i>Diospyros virginiana</i>	BF, RB, PL	Sun	Moist	Moderate	Height: 30-50 ft; Spread: 20-30 ft.	Orange	Needs space; some leaf spot problems	Yellow to orange, marked with purple	Yes	Yes

Attracts:
 Birds
 Humming Birds
 Butterflies

Landscape Value
 Street Tree: ST; Accent: ACT; VDAP: DT
 Power Line: PL; Parking Lot: PK
 Buffer/Natural: BF; Tree Canopy: TC
 Riparian Buffer: RB

Category 4: Small Deciduous Trees

Common Name	Scientific Name	Landscape Value	Light	Soil Type	Growth Rate	Height & Spread at Maturity	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Native to North Carolina	Drought Tolerant
Chinese Parasol	<i>Firmiana simplex</i>	ST, DT	Sun	Moist Drainage	Rapid	Height: 30-60 ft; Spread: 30-40 ft.	Bright Yellow	Lemon yellow flowers	Light Brown	Yes	No
 Carolina silverbell, snowdrop tree	<i>Halesia carolina</i>	BF, TC, RB, PL	Full-sun, shade	Moist to semi-dry	Moderate	Height: 20-40 ft; Spread: 15-30 ft.	Yellow	White bell shaped flowers in April to early May	1-1 1/2" fruit in fall	Yes	Yes
Common witch-hazel	<i>Hamamelis virginiana</i>	BF, PK, ST, PL	Full-sun, shade	Moist to Semi-dry	Slow to Moderate	Height: 15-30 ft; Spread: 15-25 ft.	Yellow	Yellow flowers in Fall	No	Yes	No
Goldenrain tree	<i>Koeleruteria paniculata</i>	PL, BF, TC	Sun to part shade	Dry	Rapid	Height: 30-40 ft; Spread: 20-30 ft.	Green	No	Light brown	No	Yes
 Fantasy Crape myrtle	<i>Lagerstroemia faurei</i>	PL, PK, TC	Sun, shade	Moist to semi-dry	Rapid	Height: 10-30 ft; Spread: 15-25 ft.	Yes	Tree form only; may not be used for street trees on suburban sites. Pink, White and Purple Flowers	Seed Pods	No	Yes
 Crape myrtle cultivars	<i>Lagerstroemia indica</i>	DT, PL, TC	Sun, shade	Moist to semi-dry	Moderate	Height: 6-22 ft; Spread: 10-15 ft.	Yes	Tree form only; may not be used for street trees. Pink, White and Purple Flowers	Seed Pods	No	Yes
Umbrella tree	<i>Magnolia tripetala</i>	BF, RB, PL	Full-sun, part-sun	Moist to semi-dry	Moderate	Height: 30 ft; Spread: 18 ft.	Greenish Yellow	6-8" creamy white flowers in mid spring	Rosy red fruit in fall	Yes	No
Flowering crab apple hybrids	<i>Malus</i> spp.	PL	Sun	Wet to Moist	Slow to Moderate	Height: 18-20 ft; Spread: 18-20 ft.	Yellow	Do not plant with junipers. White to rose flowers	Red to yellow	No	No

Attracts:





Birds
Humming Birds
Butterflies

Landscape Value

Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 4: Small Deciduous Trees

Common Name	Scientific Name	Landscape Value	Light	Soil Type	Growth Rate	Height & Spread at Maturity	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Native to North Carolina	Drought Tolerant
 Eastern hophornbeam, ironwood	<i>Ostrya virginiana</i>	PK, BF, TC, RB, PL	Sun to partial shade	Wet	Slow	Height: 25-40 ft; Spread: 20-30 ft.	Yellow, orange, and scarlet fall color	Tolerates city conditions	Small pods that look like hops	Yes	No
 Sourwood	<i>Oxydendron aboreum</i>	BF, TC, RB, PL	Sun to partial shade	Moist	Slow	Height: 20-30 ft; Spread: 10-15 ft.	Variable fall color - yellow, red, purple	Fragrant, lily-of-the valley like flowers in summer	Greenish yellow seed pods that last into fall	Yes	Yes
Pistachio	<i>Pistacia chinensis</i>	ST, DT	Sun	Good Drainage	Moderate to Rapid	Height: 25-30 ft; Spread: 25-30 ft.	Orange Red	Gray, inner layers salmon-rapid	Red to Purple	No	Yes
American plum	<i>Prunus americana</i>	PL, BF	Full-sun, part-sun	Semi-dry	Rapid	Height: 12-20 ft; Spread: 12-20 ft.	Yes	White fragrant flowers in early spring	Purple, red or yellow fruit in mid summer	Yes	Yes
 Japanese apricot	<i>Prunus mume</i>	PL, BF, TC	Full Sun	Clay loamy sand acidic and well drained	Rapid	Height: 20 ft; Spread: 20 ft.	No Fall Color Change	Best in groupings, medium growth rate and has pink flowers	1-3" fleshy yellow round fruit	No	No
 Sargent cherry	<i>Prunus sargentii</i>	BF, TC, PL	Sun	Moist	Moderate	Height: 30 ft; Spread: 30 ft.	Orange and red	Shiny black bark, Bright pink flowers	Black	No	Yes
 Higan cherry	<i>Prunus subhirtella</i>	BF, TC, PL	Sun	Wet	Rapid	Height: 20-30 ft; Spread: 15-25 ft.	Yellow Fall color	Best in groupings. .5" white to pinkish flowers in early spring	Oval Red	No	No
Akebono cherry	<i>Prunus x yedoensis</i>	BF, TC, PL	Sun	Wet	Moderate	Height: 25-30 ft; Spread: 15-20 ft.	Brown to red	White to pink flowers	Purplish black	No	Yes

Attracts:





Birds
Hummingbirds
Butterflies

Landscape Value

Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 4: Small Deciduous Trees

Common Name	Scientific Name	Landscape Value	Light	Soil Type	Growth Rate	Height & Spread at Maturity	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Native to North Carolina	Drought Tolerant
Hoptree	<i>Ptelea trifoliata</i>	PK, PL	Full-sun, shade	Moist to semi-dry	Moderate	Height: 15 ft; Spread: 10-15 ft.	Yellow Green	Greenish white fragrant flowers	No	Yes	Yes
 *Silky (weeping) willow	<i>Salix babylonica</i>	BF, PL	Full-sun, shade	Wet to Semi-dry	Rapid	Height: 30-50 ft; Spread: 30-50 ft.	Greenish yellow	Yellow, borne on short catkins blooming from April-May; Spring; Invasive roots; avoid planting near sewer and water lines.	Fruit 1/4 inch in diameter	Yes	No
 Sassafras	<i>Sassafras albidum</i>	BF, TC, RB, PL	Full, part sun	Moist to semi-dry	Moderate	Height: 30-60 ft; Spread: 25-40 ft.	Clear yellow orange pink to scarlet	Tends to sprout from roots and form extensive thickets. yellow fragrant flowers in spring	Dark Blue drapes on female plants	Yes	Yes
Blackhaw Viburnum	<i>Viburnum rufidulum</i>	BF, PL	Full-sun, shade	Moist to Dry	Moderate	Height: 12-15 ft; Spread: 6-12 ft.	Red Maroon	White flowers 2-4" clusters in early spring	Large yellowish fruit turns blue black in fall	Yes	Yes

Attracts:





Birds
Humming Birds
Butterflies

Landscape Value

Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 5: Large Shrubs

Large Shrubs												
Common Name	Scientific Name	Height at Maturity	Landscape Value	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Drought Tolerant	Native to North Carolina
 *Tag alder	<i>Alnus serrulata</i>	15-20'	Perimeter landscape	Full-sun part-sun	Wet to Medium	Rapid	Yellow catkins in spring	Yellow and orange	No	Cone shaped fruit	No	No
Shadblow serviceberry, thicket serviceberry	<i>Amelanchier canadensis</i>	6-20'	BF, RB	Sun, partial shade	Moist, yet well drained	Moderate	White, light pink	Yellow orange	Upright, suckering, tightly multi-stemmed. Native to swamps, along streams, and on hillsides. Not very pollution tolerant.	Purple to black berries	No	Yes
Japanese camellia	<i>Camellia japonica</i>	8-15'	BF, ACT	Partial shade	Acidic moist drains well high organic matter	Slow to moderate	White, pink and rose	Green yellow	Numerous cultivars. Cultivars may be hardier.	No	No	No
 Allegheny chinkapin	<i>Castanea pumila</i>	10-20'	Bf, RB	Sun to shade	Wet to Medium	Moderate	Strong Scented Flowers	Yellow or purple	Provides food for wildlife	Dark brown sweet nut	No	Yes
'Snow Sprite', 'Compacta'	<i>Cedrus deodara</i> (dwarf cultivars)	10-20'	BF, ACT	Sun	Wet to Medium	Moderate	No Flowers	Green	Graceful, pendulous habit.	Cones	Yes	No

Attracts:





Birds
Hummingbirds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 5: Large Shrubs

Common Name	Scientific Name	Height at Maturity	Landscape Value	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Drought Tolerant	Native to North Carolina
Fragrant wintersweet	<i>Chimonanthus praecox</i>	10-15'	BF, ACT	Sun, partial shade	Soil types with good drainage	Slow	Yellow and white flowers with purple centers	Green yellow	Shrub borders; best along walks and entrances to buildings where fragrance can be appreciated; multi-stemmed shrub becoming leggy with age.	Non-showy fruit	No	No
 Fringe tree	<i>Chionanthus virginicus</i>	12-20'	BF, ACT, RB	Sun, partial shade	Moist well drained	Native	White	Yellow, green and brown	Prefers stream banks; pollution tolerant; good in borders, groups, as accent or near large buildings.	Dark blue	No	Yes
Fragrant winterhazel	<i>Corylopsis glabrescens</i>	8-15'	BF	Sun, partial shade	Well drained soils	Slow to moderate	Yellow	Green yellow	Dense, best against an evergreen background; need winter protection.	Non-showy fruit	No	No
American filbert	<i>Corylus americana</i>	12-20'	RB	Partial shade, shade	Wet to Medium	Rapid	Yellow brown male catkins	Orange, rose, purplish red, yellow and green	Many diseases, none serious; should be limited in number because squirrels love the nuts.	Nuts	No	Yes
 Willowleaf cotoneaster	<i>Cotoneaster salicifolia</i>	10-15'	BF, Act	Sun, partial shade	Well drained	Moderate	White	Green	Spreading, arching habit; purplish tinge in winter	No	Yes	Yes

Attracts:





Birds
Hummingbirds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 5: Large Shrubs

Common Name	Scientific Name	Height at Maturity	Landscape Value	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Drought Tolerant	Native to North Carolina
Red-vein Enkianthus	<i>Enkianthus campanulatus</i>	12 -30'	BF, ACT	Sun, partial shade	Moist, well drained soil, does well in clay	Slow	White clusters	Yellow, orange, red	May be marginally hardy; good flower and fall color; needs acidic soils.	No	No	No
Pearlbush	<i>Exochorda racemosa</i>	9-15'	BF	Sun, partial shade	Well drained acidic soils	Moderate	White	No	Heat and drought tolerant; shrub border best; floppy and unkempt with age.	No	Yes	No
Border forsythia	<i>Forsythia x intermedia</i>	8-10'	BF, ACT	Sun, partial shade	Medium, semi-dry	Rapid	Large pale to deep yellow flowers in early spring	Green to yellowish green fall color, sometimes purplish	Size varies with cultivars; valued for early spring flowers; arching stems root and sucker. Withstands city conditions. Many diseases, none troubling.	No	Yes	No
Large fothergilla	<i>Fothergilla major</i>	6-10'	BF, ACT	Partial shade	Moist to Dry	Slow to moderate	White	Red, yellow, orange	Leathery foliage; acid soils a must.	Yellow	Yes	Yes
Chinese witchhazel	<i>Hamamelis mollis</i>	10-15'	BF	Sun, partial shade	Moist fertile acidic soil	Slow	Yellow and fragrant	Yellow to yellow orange	Prefers acidic, moist, well-drained, organic soils. Least hardy <i>Hamamelis</i>	A capsule	Yes	No

Attracts:



Birds
Humming Birds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 5: Large Shrubs

Common Name	Scientific Name	Height at Maturity	Landscape Value	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Drought Tolerant	Native to North Carolina
Common witchhazel	<i>Hamamelis virginiana</i>	20-30'	BF	Sun to shade	Prefers a moist, cool, acidic soil	Slow to moderate	Spider-like with 4 narrow, crinkled petals	Clear yellow	Naturalized areas, mass plantings, shrub borders in shady areas. Avoid extremely dry situations.	0.5" long capsule	Yes	Native
Witch hazel	<i>Hamamelis x intermedia</i>	8-20'	BF, ACT	Sun to shade	Well drained	Slow to moderate	Yellow, orange, red	Yellow, orange	Many cultivars with red or yellow flowers, with similar fall colors.	No	Yes	No
Pee Gee hydrangea	<i>Hydrangea paniculata</i>	8-20'	BF, ACT	Sun, partial shade	Moist well drained does well in Clay soil	Rapid	White	Green yellow	Extremely coarse texture, unattractive in late fall and winter; shrub borders best	No	Yes	No
'Little Red', 'Robin', 'Festive', 'Cardinal', 'Oak Leaf'	<i>Ilex 'Red Hollies'</i>	10-15'	BF, ACT	Sun to light shade	Wet to Medium	Moderate	Small white flowers	Green	New foliage usually reddish in color.	0.2 to 0.3" red fruit	Yes	Yes
English holly	<i>Ilex aquifolium</i>	15-50'	BF	Sun, partial shade	Well drained soils	Slow	No	Green	Need male and females for red berries; good hedges	Red, yellow orange berries	No	No

Attracts:



Birds
Humming Birds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 5: Large Shrubs

Common Name	Scientific Name	Height at Maturity	Landscape Value	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Drought Tolerant	Native to North Carolina
Possumhaw holly	<i>Ilex decidua</i>	7-30'	BF, ACT	Sun, partial shade	Moist to dry soils	Moderate	White	Yellow	May be large shrub or small tree; more tolerant of alkaline soils than <i>I. verticillata</i> .	Orange and red fruit	Yes	Yes
Mountain winterberry	<i>Ilex montana</i>	15-40'	BF, ACT	Part-sun	Medium, semi-dry	Moderate	No	Yellow red	No	Red Berries on Female Plant	No	Yes
Yaupon holly	<i>Ilex vomitoria</i>	10-20'	BF, ACT, RB	Sun to shade	Tolerates a range of soil types (dry, moist)	Moderate to Rapid	Small white flowers in spring;	Green	Use for background or naturalizing; 'Pendula' weeping form.	Red-orange berries clustered along the stems of female plants that	Yes	Yes
Shadow's Female yaupon	<i>Ilex vomitoria</i> 'Shadow's Female	10-12'	BF, ACT, RB	Sun	All types of soils	Moderate to rapid	White	Green	Richer, thicker foliage than most yaupons, good accent plant, can be topiary	Red orange berries	Yes	Yes
Aquipern holly	<i>Ilex x aquipermyi</i>	10-25'	BF, ACT	Sun, partial shade	Wet to Medium	Slow to moderate	No	Green	Tall, showy shrub; 'Brilliant', 'San Jose' female clones. 'Aquipern' is a male clone. Deer Resistant	Red, yellow or orange berries	No	No

Attracts:



Birds
Humming Birds
Butterflies

Landscape Value

Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 5: Large Shrubs

Common Name	Scientific Name	Height at Maturity	Landscape Value	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Drought Tolerant	Native to North Carolina
Japanese anise-tree	<i>Illicium anisatum</i>	8-20'	BF, ACT	Partial shade	Well drained organic soil	Moderate	Yellow and white	Green	Often confused with <i>I. parviflorum</i> .	No	No	No
 Virginia sweetspire	<i>Itea virginica</i>	3-10'	BF, ACT, RB	Sun to shade	Dry to moist soils	Moderate	White	No	Prefers moist, fertile soils, wet places. More dense under cultivation.	No	Yes	Yes
Japanese spice bush	<i>Lindera obtusifolium</i>	15-20'	ACT	Sun, partial shade	Moist well drained	Moderate	Green, yellow	Yellow	There are no serious disease or insect problems.	Red and black berries	Yes	Yes
Burgundy loropetalum	<i>Loropetalum chinense</i> var. <i>rubrum</i> 'Burgundy'	15-20'	BF, ACT	Sun, partial shade	Prefers acidic, moist, well-drained, does well in clay	Moderate	Cluster of 0.7" fragrant cream to white flowers in spring	No	A JC Raulston Arboretum selection	No	Yes	No
 Star magnolia	<i>Magnolia stellata</i>	10-20'	BF, ACT	Sun	All types of soils	Slow	White	Yellow bronze	Recommended cultivars: Royal Star, Waterlily, Centennial, rosea	Fruit non-showy	Yes	No
Star magnolia	<i>Magnolia stellata</i>	15-20'	PL, BF, TC	Sun	Well-drained, light, Acidic	Moderate	Avoid southern exposure. White Flowers	Bronze	No	Rosy-red berries	Yes	Yes
Southern wax myrtle	<i>Myrica cerifera</i>	10-15'	BF, ACT, RB	Sun, partial shade	Sand or clay soils	Rapid	Non-showy flower	Green	Native to coast; deer tolerant; may be tree-form	Gray globose fruit	Yes	No

Attracts:



Birds
Humming Birds
Butterflies

Landscape Value

Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 5: Large Shrubs

Common Name	Scientific Name	Height at Maturity	Landscape Value	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Drought Tolerant	Native to North Carolina
 Fragrant tea olive	<i>Osmanthus fragrans</i>	10-30'	BF, ACT	Sun, partial shade	Well drained acidic soils	Moderate	White fragrant	Green	Marginally hardy here; winter protection needed.	No	No	No
Japanese photinia	<i>Photinia glabra</i>	10-12'	ACT	Sun	Well drained	Rapid	White	Green	Smallest of photinias.	No	Yes	No
Chinese photinia	<i>Photinia serrulata</i>	20-30'	BF, ACT	Sun, partial shade	Well drained soils	Moderate to rapid	White	Green	Offensive odor in spring. May have some disease problems and affected by colder winters.	Red fruit in late summer lasting into early fall	Yes	No
Fraser photinia	<i>Photinia x fraseri</i>	10-20'	BF, ACT	Sun, partial shade	Well drained	Rapid	White	Green	"Red tip" photinias, have been affected by coldet winters, diseases.	Red Berries	Yes	No
Dwarf Alberta spruce	<i>Picea glauca</i> (dwarf cultivars) 'Conica', etc.	3-10'	ACT	Sun	Well drained	Slow	No	Green	Very slow growing; some mite problems.	No	Yes	No
English laurel	<i>Prunus laurocerasus</i>	10-18'	BF, ACT	Sun, partial shade	Well drained soils	Moderate	Small white flowers	Green	Many diseases affect the <i>Prunus</i> species.	Purple to black berries	Yes	No
Pomegranate	<i>Punica granatum</i>	12-20'	BF, ACT	Sun, partial shade	Range of soils, will tolerate sandy loamy soils	Moderate	Orange, red, purple, yellow or white	Yellow green	Large shrub to small tree; good in borders, groups; not good in hedges.	Edible fruit	Yes	No

Attracts:
  
 Butterflies
 Birds
 Hummingbirds

Landscape Value
 Street Tree: ST; Accent: ACT; VDAP: DT
 Power Line: PL; Parking Lot: PK
 Buffer/Natural: BF; Tree Canopy: TC
 Riparian Buffer: RB

Category 5: Large Shrubs

Common Name	Scientific Name	Height at Maturity	Landscape Value	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Drought Tolerant	Native to North Carolina
 Rosebay Rhododendron	<i>Rhododendron maximum</i>	4-15'	perimeter landscape	Part-sun, shade	Medium to Semi-dry	Moderate	5" rose purplish pink to white flowers in early summer	Green	Requires cool, moist, well-drained soils; not suited to normal landscape situations.	Seed containers	Yes	Yes
 Flameleaf (shining) sumac	<i>Rhus copallina</i>	20-30'	RB	Sun,	All types of soils	Moderate	White	Maroon	Use with discretion since it tends to form large colonies	Dark red berries	Yes	Yes
 *Smooth sumac	<i>Rhus glabra</i>	10-15'	BF, RB	Full-sun part-sun	Drains well yet retains some water	Moderate to Rapid	Greenish yellow flowers on 6-10" pinnacles	Yellow scarlet and red velvet	No	Red fruit in summer on female plants	Yes	Yes
Mountain stewartia	<i>Stewartia ovata</i>	10-15'	BF, ACT, RB	Partial Shade	Moist acidic	Slow	White	Scarlet white	Needs some shade here during hottest periods; should be planted when small; acid soils best.	Wood brown fruit	Yes	Yes
Bigleaf snowbell	<i>Syrax grandifolius</i>	8-12'	RB	Partial shade, shade	Medium	Slow	0.7 to 1" white flowers	No	Naturalized along stream banks	No	No	Yes
Le Ann™ Ternstroemia	<i>Ternstroemia gymnanthera</i> 'Contherann'	10-12'	BF, ACT	Partial shade, shade	Moist well drained	Slow to moderate	White yellow	Purple red bronze	Good sound attenuation plant if grown as hedge; more hardy than species	Red speckled fruit	No	No

Attracts:
 Birds
 Humming Birds
 Butterflies

Landscape Value
 Street Tree: ST; Accent: ACT; VDAP: DT
 Power Line: PL; Parking Lot: PK
 Buffer/Natural: BF; Tree Canopy: TC
 Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 5: Large Shrubs

Common Name	Scientific Name	Height at Maturity	Landscape Value	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Drought Tolerant	Native to North Carolina
 Sparkleberry; farkleberry	<i>Vaccinium arboreum</i>	15-20'	RB	Partial shade, shade	Dry to moist soils	Slow	White	Red	Naturalized in rather dry woods	Gritty non-juicy berries	Yes	No
Chindo sweet viburnum	<i>Viburnum awabuki</i> 'Chindo'	10-15'	BF, ACT	Sun, partial shade	Range of all soils except wet	Rapid	White	Green	Moisture tolerant; great for hedges; a JC Raulston Arboretum selection; fast grower to 8' wide	Red Cluster fruit	Yes	No
Emerald luster viburnum	<i>Viburnum bracteatum</i> 'Emerald Luster'	10-12'	BF, ACT	Sun, partial shade	All soil types except wet soils	Moderate	White	Bronze and yellow	Wide as tall; good background plant for border; year-round interest.	Blue and purple berries into later summer	Yes	No
 Arrowwood	<i>Viburnum dentatum</i>	6-10'	Border screen parking lots	Full-sun/partial sun	Medium to Semi-Dry	Moderate	Creamy white flowers in 2-4" flat top clusters	Yellow crimson purplish red	No	Blue to black berries in late summer to fall	Yes	Yes
 Northern Burgundy Viburnum	<i>Viburnum dentatum</i> 'Morton', 'Synnesvedt'	10-12'	BF, ACT, RB	Sun to shade	Moist to dry soils	Moderate	White	Yellow crimson purplish red	Excellent for borders, screens and mass plantings.	Black and blue berries	Yes	No

Attracts:
 Birds
 Humming Birds
 Butterflies

Landscape Value
 Street Tree: ST; Accent: ACT; VDAP: DT
 Power Line: PL; Parking Lot: PK
 Buffer/Natural: BF; Tree Canopy: TC
 Riparian Buffer: RB

Category 5: Large Shrubs

Common Name	Scientific Name	Height at Maturity	Landscape Value	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Drought Tolerant	Native to North Carolina
Nannyberry viburnum, sheepberry	<i>Viburnum lentago</i>	Height: 12-30'; Spread: 6' to 10'	BF, ACT	Sun to shade	Range of soil types	Moderate to rapid	White	purple red	Some mildew problems in shade; suckers to form thickets; good for naturalizing, shrub borders, as screen or background; use with discretion.	Blue/black drupe	Yes	No
 Smooth viburnum cultivars	<i>Viburnum nudum</i> cultivars 'Earth Shade', 'Winterthur'	10-15'	BF, ACT, RB	Sun, partial shade	Moist, yet well drained	Moderate	White	Red purple	'Winterthur' more compact, narrower; both good for shrub borders, screens, mass plantings. Deer Resistant	Green, pink, red, purple, black	Yes	Yes
Red Tip viburnum	<i>Viburnum odoratissimum</i> 'Red lip'	10-15'	BF, ACT	Sun, partial shade	Average to moist.	Rapid	Tiny white fragrant flowers inside panicles in spring	Green	Fast, vigorous growth; good hedge, background plant; It's beautiful, versatile and rarely bothered by pests or disease.	Drupes that turn from red to black	Yes	No
Eastern snowball	<i>Viburnum opulus</i> 'Sterile'	12'	BF, ACT	Sun, partial shade	Range of soil types	Moderate	Flat topped white flowers	Yellow, red to purple	Specimen, hedge or border, windbreak; deer resistant	Red berries in Fall lasting into winter	Yes	No

Attracts:
 Birds
 Humming Birds
 Butterflies

Landscape Value
 Street Tree: ST; Accent: ACT; VDAP: DT
 Power Line: PL; Parking Lot: PK
 Buffer/Natural: BF; Tree Canopy: TC
 Riparian Buffer: RB

Category 5: Large Shrubs

Common Name	Scientific Name	Height at Maturity	Landscape Value	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Drought Tolerant	Native to North Carolina
 Doublefile viburnum	<i>Viburnum plicatum</i> var. <i>tomentosum</i>	8-10'	BF, ACT	Sun, partial shade	Well drained light weight soils	Moderate	Yellow	Red purple	Excellent specimen, hedge, border.	Red to black fruit	Yes	No
Blackhaw viburnum, blackhaw stagbrush	<i>Viburnum prunifolium</i>	12-15'	BF, RB	Sun to shade	Semi-dry	Moderate	White flowers in 2" to 4" clusters in early spring	Red to maroon fall foliage	Excellent tall screen, hedge or background plant; songbird food source	Large yellowish fruit turns blue black in fall	Yes	Yes
Leatherleaf viburnum	<i>Viburnum rhytidophyllum</i>	10-15'	BF, ACT	Shade	Moist well drained	Moderate	White yellow	Green	*Protect from wind, winter sun; coarse in all seasons; massing or background plant.	Red drupe turn black	No	No
 Rusty blackhaw viburnum	<i>Viburnum rufidulum</i>	10-20'	ACT, RB	Sun to shade	Well drained soils	Moderate	White	Burgandy	More dense in full sun, more open in shade	Dark blue drupe	Yes	No
 Chastetree	<i>Vitex agnus castus</i>	15-20'	BF	Sun	Range of soil types	Rapid	Lilac, pale violet, white flowers on 6" to 10" racemes in summer	No	'Alba' (white), 'Rosea' (pink)	No	Yes very drought tolerant	No

Attracts:
 Birds
 Humming Birds
 Butterflies

Landscape Value
 Street Tree: ST; Accent: ACT; VDAP: DT
 Power Line: PL; Parking Lot: PK
 Buffer/Natural: BF; Tree Canopy: TC
 Riparian Buffer: RB

Category 5: Large Shrubs

Common Name	Scientific Name	Height at Maturity	Landscape Value	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seed	Drought Tolerant	Native to North Carolina
Chastetree	<i>Vitex negundo</i>	10-15'	BF	Sun	Loose, well-moist, well-drained soil	Rapid	Small blue-purple, lilac, or lavender flowers on 5" to 8" panicles	No	Does best in hot weather	No	Yes	No

Attracts:

 Birds
 Humming Birds
 Butterflies

Landscape Value

Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 6: Medium Shrubs

Medium Shrubs												
Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Drought Tolerant	Native to North Carolina
Chinese Abelia	<i>Abelia chinensis</i>	5-7'	BF, ACT	Sun, Partial Shade	Prefers moist, well-drained site	Slow to Moderate	White, fragrant flowers in small clusters from July to Sep.	Lighter green beneath; serrated margins	Attracts butterflies; flowers on new growth	Upright; spreading, rounded, loose	Yes	No
 Abelia	<i>Abelia</i> hybrids	Varies	BF, ACT	Sun, partial shade	Moist preferred; well drained	Moderate to Rapid	White, Pink, lilac	Varies	'Edward Goucher' (4'- 6'); 'Prostrata' and 'Sherwood' (3' - 4')	No	Yes	No
Aucuba	<i>Acuba Japonica</i>	6-10'	BF, ACT	Partial shade	Moist well drained	Slow	Purple male flowers	Green	Prefers warmer temperatures, tolerates pollution	Scarlet fruit	Yes	No
 Bottlebrush Buckeye	<i>Aesculus parviflora</i>	8-12'	BF	Sun, partial shade	Moist soil	Moderate	white flowers	Golden yellow	Suckering, multi-stem, wide-spreading shrub.	No	Yes	Yes
 Red Chokeberry	<i>Aronia arbutifolia</i>	6-10'	BF, ACT, RB	Sun, partial shade	Range of soil types	Slow	White to pinkish	Salmon, red, purple to scarlet	'Brilliantissima' (6'-8'), excellent fall color. Suckering, forming colonies over time, leggy. Tolerates both wet and dry soils	round red berries	Yes	Yes
 Black Chokeberry	<i>Aronia melanocarpa</i>	3-5'	BF, RB	Full-sun, shade	Semi-dry, Moist	Slow	Small off white to pink flowers in spring	Wine red	No	Shiny blackish colored fruit	No	No
Groundsel-bush	<i>Baccharis halimifolia</i>	5-12'	RB	Sun	Range of soil types	Moderate	No	Gray green	Salt tolerant	Cottony fruit	Yes	Yes

Attracts:





Birds
Hummingbirds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 6: Medium Shrubs

Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Drought Tolerant	Native to North Carolina
Alternative leaf butterfly bush	<i>Berberis x mentorensis</i>	5'	BF, ACT	Sun to part shade	Wet to Moist	Moderate to Rapid	Yellow flowers in spring	Yellow orange red fall color	Very hardy and first to flower; prefers loose, loamy soils. Can be used as a small tree.	Red fruit	Yes	No
Bodiner Beautyberry	<i>Callicarpa bodinieri</i>	6-10'	BF	Sun, partial shade	Dry to Moist	Rapid	Lilac to pink	Purplish	May be difficult to find in America	Bluish lilac fruit	Yes	No
American Beautyberry	<i>Callicarpa Carolinas</i>	3-8'	BF, RB	Sun, partial shade	Dry to Moist	Rapid	White to pink	Yellow green	Coarse, open habit, good for naturalizing.	Pink to purple berries	Yes	Yes
 Common sweetshrub, Carolina Allspice, Strawberry Shrub	<i>Calycanthus floridus</i>	6-9'	BF, ACT, RB	Sun to shade	Range of soil types	Moderate	Maroon to dark rust brown	Yellow	Dense, bushy, rounded in cultivation; easily adaptable; trouble-free; not as tall in sun.	No	Yes	Yes
Sasanqua Camellia	<i>Camellia sasanqua</i>	6-10'	BF, ACT	Sun, partial shade	Acidic Moist Well drained	Rapid	White, red, pink	Dark green	Numerous cultivars available. Blooms in fall. Less hardy than <i>C. japonica</i> .	No	Yes	No
Buttonbush	<i>Cephalanthus occidentalis</i>	3-15'	BF, RB	Partial shade	Moist to Wet	Moderate	White	Yellow	Prefers wet conditions and will grow in water; will not tolerate dryness; looks dead until mid-May; naturalized, wet areas best	No	No	Yes
Cinnamon-bark	<i>Clethra acuminata</i>	15-20'	BF, RB	Full-sun, shade	Semi-dry, Dry	Slow to Moderate	White lily of the valley like fragrant flowers in early summer	Gold	Gold to cinnamon red trunk	No	No	Yes

Attracts:



Birds
Humming Birds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 6: Medium Shrubs

Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Drought Tolerant	Native to North Carolina
Clethra, Pepperbush, Summer-sweet	<i>Clethra</i> spp. <i>Cleyera</i> (see <i>ternstroemia</i>)	3-8'	BF, ACT	Sun to shade	Moist to Wet	Moderate	White	Yellow	Prefers moist soil, tolerates wetness, and heavy shade, acidic soils.	No	No	Yes
Silky Dogwood	<i>Cornus amomum</i>	6-10'	BF, RB	Sun, partial shade	Wet to dry	Moderate to Rapid	White	Red	Maroon twigs in winter. Native to low woods, streams and swamps; becoming more straggly, unkempt with age;	Red berries	No	Yes
Spike Winterhazel	<i>Corylopsis spicata</i>	4-8'	BF	Sun, partial shade	Light moist well drained	Moderate	Yellow	Dark purple	Twice as wide as high; early flowering	No	Yes	No
Spreading Cotoneaster	<i>Cotoneaster divaricatus</i>	5-6'	BF, ACT	Sun	Range of soils	Moderate to Rapid	Small rosy	Yellow red	Spreading to 6-8 feet; multi-stemmed shrub.	Red to dark red pome	Yes	No
Parney's Red Clusterberry Cotoneaster	<i>Cotoneaster lacteus</i>	6-10'	BF, ACT	Sun, partial shade	Prefers moist well drained	Moderate	White	Dark green	Once established needs only occasional water	Red pome	Yes	No
Fuzzy deutzia	<i>Deutzia scabra</i>	6-10'	BF	Sun, partial shade	Well drained	Moderate	White to pink	Not significant	Brown peeling bark. 'Pride of Rochester' popular old cultivar	No	Yes	No
Southern bush-honeysuckle	<i>Diervilla sessilifolia</i>	3-5'	BF, RB	Full-sun, shade	Moist, Dry	Moderate	Small Yellow Flowers in summer	Red	No	Seed containers	Yes	Yes

Attracts:



Birds
Humming Birds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 6: Medium Shrubs

Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Drought Tolerant	Native to North Carolina
Hearts-a-bustin	<i>Euonymus americanus</i>	4-6'	BF, ACT	Part-sun, shade	Moist, Semi-dry	Slow to Moderate	Small White flowers in early summer	Green to yellow	No	Warty scarlet capsules with raspberry-orange berries	No	Yes
Spreading euonymus	<i>Euonymus kiautschovicus</i>	5-10'	BF, ACT	Sun, partial shade	Range of soils except wet	Rapid	Greenish white	Discolors in winter	Not as susceptible to scale as other euonymus. Not good near patios, decks, etc. – draws flies in flower. Foliage usually “burns” in winter and looks unkempt.	Pink fruit capsules with orange seeds	Yes	No
 Gardenia	<i>Gardenia augusta</i> (G. <i>jasminoides</i>)	4-6'	BF, ACT	Sun, partial shade	Acidic Moist Well drained	Moderate	White waxy	Dark green	Marginally hardy	No	Yes	No
Vernal witchhazel	<i>Hamamelis vernalis</i>	6-10'	BF	Sun, partial shade	Range of soils	Moderate	Yellow orange red	Yellow	Multi-stemmed, dense, rounded; best in moist situations; pH adaptable.	No	Yes	Yes
Rose of Sharon, Althea	<i>Hibiscus syriacus</i>	8-12'	ACT	Sun, partial shade	Moist well drained	Moderate to Rapid	Red white violet	Yellow	Grows in any soils except those extremely wet or dry; prefers hot weather.	No	Yes	No
Annabelle hydrangea	<i>Hydrangea arborescens</i> ‘Annabelle’	3-6'	BF, ACT	Sun, partial shade	Moist well drained	Rapid	White	Not showy	Suckers freely and will cover large area; many diseases. Shrub borders best.	No	No	Yes
Bigleaf hydrangea	<i>Hydrangea macrophylla</i>	3-6'	BF, ACT	Partial shade, shade	Moist well drained	Rapid	Pink, white violet blue	Not showy	Best for shrub borders.	No	No	No

Attracts:





Birds
Hummingbirds
Butterflies

Landscape Value

Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 6: Medium Shrubs

Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Drought Tolerant	Native to North Carolina
Oakleaf hydrangea	<i>Hydrangea quercifolia</i>	4-8'	BF, ACT	Sun, partial shade	Moist well drained	Rapid	White fades to pink	Wine orange	Exfoliating bark; leaf blight may be a problem	Seeds	Yes	No
Needlepoint holly	<i>Ilex cornuta</i> 'Needlepoint'	10'	BF, ACT	Sun, partial shade	Range of soils	Moderate	White	Green	Upright shrub or small tree.	Red fruit	Yes	No
Tall Japanese hollies	<i>Ilex crenata</i> cultivars: 'Hetzl', 'Rotundifolia', 'Soft Touch'	4-10'	BF, ACT	Sun, partial shade	Moist well drained	Moderate	White	Green	No	Varies red purple	Yes	No
Inkberry holly, Nigra inkberry	<i>Ilex glabra</i> , <i>I. glabra</i> 'Nigra'	6-8'	BF, ACT	Sun, partial shade	Moist acidic	Slow to Moderate	Not showy white	Dark green	Excellent foundation or naturalistic plantings. Spreads by underground stems (suckering); becomes leggy with age.	Black berry	Yes	No
Lusterleaf holly	<i>Ilex latifolia</i>	8-12'	BF, ACT	Partial shade	Well drained	Rapid	Not showy	Green	'Mary Nell' has heavy fruit; excellent specimen or hedge; needs well-drained soils.	Dull red fruit	Yes	No
Perny holly	<i>Ilex pernyi</i>	9-12'	ACT	Sun, partial shade	Well drained	Slow	Small yellow	Green	Upright habit, open outline	Red fruit	Yes	No
Common winterberry	<i>Ilex verticillata</i>	6-15'	BF, RB	Full-sun, shade	Wet	Slow to Moderate	Small creamy white flowers	Purple green	No	Bright red berry like drupes on the female	No	Yes
Common winterberry, black alder	<i>Ilex verticillata</i>	6-10'	ACT, RB	Sun, partial shade	Perfers moist organic	Slow to Moderate	Small white	Purplish green	Native to swamps; will grow in water; suckering to form large, multi-stemmed clumps; best for shrub borders	Bright red on female	No	Yes



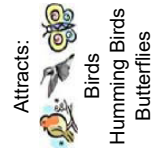
Attracts:

Birds
Humming Birds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 6: Medium Shrubs

Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Drought Tolerant	Native to North Carolina
Hardy anise shrub	<i>Illicium parviflorum</i>	7-10'	BF, ACT	Sun, partial shade	Moist to dry heavy soil	Moderate	Yellow green in summer	Green	May be marginally hardy in North Carolina	No	Yes	No
Pfizer juniper	<i>Juniperus chinensis</i> 'Pfizeriana'	5-10'	BF, ACT	Sun	Well drained	Slow to Moderate	No	Variety of colors	Also some smaller cultivars such as 'Pfizeriana Compacta' and 'Pfizeriana Compacta Nicks'	No	Yes	No
Holger juniper	<i>Juniperus squamata</i> 'Holger'	6'	BF, ACT	Sun	Well drained	Slow to Moderate	No	Blue gray	Susceptible to bagworms; flat topped, spreading; new growth yellowish on blue-green older growth	No	Yes	Yes
'Blue Arrow', 'Blue cloud'	<i>Juniperus virginiana</i> cultivars	Varies	BF, ACT	Sun	Well drained	Slow to Moderate	No	Silver bronze purple brown	Cedar apple rust and bagworms are problematic	No	Yes	Yes
Mountain laurel	<i>Kalmia latifolia</i>	4-8'	BF, ACT, RB	Sun, partial shade	Moist well drained dry	Moderate	White to pink	Yellow	Cinnamon Bark: Shady borders best, natural areas; toxic to live stock	No	Yes	Yes
Japanese kerria	<i>Kerria japonica</i>	3-9'	BF	Partial shade, shade	Range of soils	Moderate	Yellow	Yellow	Tough; best in borders, masses	No	Yes	No
Beautybush	<i>Kolkwitzia amabilis</i>	6-15'	ACT	Sun	Well drained	Rapid	Pink	Yellow to red	Difficult plant to find location for	No	Yes	No
Crapemyrtles 'New Orleans', 'Centennial' 'Chica', 'Tonto', 'Acoma', etc.	<i>Lagerstroemia indica</i> and hybrids	5-15'	BF, ACT	Sun	Moist well drained	Rapid	White pink purple red	Yellow orange red	Smooth to exfoliating bark; Mildew resistant hybrids best	Seed pods	Yes	No



Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 6: Medium Shrubs

Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Drought Tolerant	Native to North Carolina
Thunberg lespedeza	<i>Lespedeza thunbergii</i>	4-8'	ACT	Sun	Moist well drained	Moderate to Rapid	Rose to purple	Not showy	Semi-woody and often killed back to ground in winter; accent plant	No	Yes	No
Sweetbells leucothoe	<i>Leucothoe racemosa</i>	6-12'	RB	Shade	Moist to Wet	Moderate	White	Red	Leaf spot is a major problem for this species; tends to sucker; use sparingly	No	No	Yes
 Spice bush	<i>Lindera benzoin</i>	6-12'	BF, ACT, RB	Sun, partial shade	Moist to dry alkaline ph	Moderate	Yellow	Yellow	Multi-trunked. Difficult to transplant; moist, well-drained soils best but tolerates dryness once established.	Scarlet red spray fruit	Yes	Yes
Boxleaf honeysuckle	<i>Lonicera nitida</i>	6-8'	BF, ACT	Sun, partial shade	Moist well drained	Moderate	White	Dark green	No	Bluish purple fruit	Yes	No
'Plum Delight', 'Ruby', 'Fire Dance', etc.	<i>Loropetalum</i> hybrids	4-10'	BF, ACT	Sun, partial shade	Moist well drained	Rapid	Pink to red	Maroon	No	No	Yes	No
Sweetbay magnolia	<i>Magnolia virginiana</i>	10-15'	BF, ACT	Sun, partial shade	Moist to Wet	Moderate to Rapid	Creamy white	Green	Smooth bark. Native coastal plant, somewhat hardy in NC.	Bright red seeds	Yes	Yes
Banana shrub	<i>Michelia figo</i>	6-15'	ACT	Sun, Partial	Moist well drained acidic	Slow	Yellow green	Yellow green	Marginally hardy in North Carolina	No	Yes	No
Northern bayberry	<i>Myrica pensylvanica</i>	5-12'	BF, ACT	Sun, partial shade	Range of soil	Moderate	Not showy	Not showy	Suckers to form large colonies.	Gray drupe	Yes	No

Attracts:




Birds
Hummingbirds
Butterflies

Landscape Value

Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 6: Medium Shrubs

Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Drought Tolerant	Native to North Carolina
Holly osmanthus	<i>Osmanthus heterophyllus</i>	6-20'	BF, ACT	Sun, partial shade	Moist well drained acidic	Slow to Moderate	White	Dark green	Several cultivars available.	Blue black drupes	Yes	No
Osmanthus, Fortune's tea olive	<i>Osmanthus x fortunei</i>	9-12'	BF, ACT	Sun	Moist well drained	Moderate	White	Dark green	Preferred over <i>O. heterophyllus</i> by Dirr.	No	Yes	No
Mock orange	<i>Philadelphus inodorus</i>	6'	BF	Full-sun, part-sun	Moist to Semi-dry	Rapid	Fragrant White flowers in Spring	Yellow green	Smells like orange blossoms	No	No	Yes
Common (eastern) ninebark	<i>Physocarpus opulifolius</i>	5-10'	ACT	Sun, partial shade	Dry to wet	Moderate	White to pink	Not showy	Peeling bark; Easily transplanted, adaptable; ragged in winter	Red seeds	Yes	Yes
Japanese pieris (andromeda)	<i>Pieris japonica</i> cultivars ('Christmas Cheer', Mountain Fire')	9-12'	BF, ACT	Partial shade, shade	Moist well drained acidic	Slow	White	Green	Needs some shelter from wind; good in shrub borders; slow growing	Seed pods	No	No
Low-dense pyracantha	<i>Pyracantha koidzumii</i>	4-6'	ACT, RB	Sun	Well drained	Rapid	White	Green	Good for hot, dry areas; mounded habit.	Red berries	Yes	No
Yeddo hawthorn	<i>Rhaphiolepis umbellata</i>	4-6'	BF, ACT	Sun	Moist well drained	Slow	White to pink	Purple	Marginally hardy; salt tolerant; leaf spot in moist locations; winter protection needed.	Purple black	Yes	No
P.J.M. Hybrid azaleas	<i>Rhododendron</i> 'P.J.M.' Hybrids	3-6'	BF, ACT	Partial shade	Moist acidic	Moderate	Lavender pink	Purple	Good for foundation, low hedge; tolerates heat.	No	No	Yes
Sweet Azalea	<i>Rhododendron aborescens</i>	3-6'	BF, ACT	Full-sun, shade	Wet	Rapid	White, pink with red stamens	Orange and crimson	No	Seed containers	No	Yes

Attracts:



Birds
Humming Birds
Butterflies

Landscape Value

Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 6: Medium Shrubs

Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Drought Tolerant	Native to North Carolina
Florida azalea	<i>Rhododendron austrinum</i>	8-10'	BF, ACT	Partial shade	Moist well drained	Slow to Moderate	Yellow orange red	Yellow to bronze	Loose, multi-stemmed shrub;	No	Yes	Yes
 Flame azalea	<i>Rhododendron calendulaceum</i>	4-8'	BF, ACT	Partial shade	Moist well drained	Slow	Yellow orange pink scarlet salmon	yellow to red	Native to western NC, marginally hardy in North Carolina; excellent for naturalizing; late flowering	No	Yes	Yes
 Carolina Rhododendron	<i>Rhododendron carolinianum</i>	3-6'	BF, RB	Part-sun, shade	Moist, Semi-dry	Slow	3 to 4" flower truss in spring, white, pale rose, or lilac rose	Green with purple tinge	No	Seed containers	No	Yes
Catawba rhododendron	<i>Rhododendron catawbiense</i>	6-8'	BF, ACT	Partial shade	Moist well drained	Moderate	lilac purple pink	Yellow green	Often becomes leggy in unfavorable locations. May be marginally hardy here (too hot).	No	No	Yes
Southern Indica azalea hybrids	<i>Rhododendron indica</i>	6-12'	ACT	Sun to shade	Moist well drained acidic	Moderate	Range of colors	Dark green	Marginally hardy in North Carolina, killed during colder winters.	No	Yes	No
Kaempferi azalea hybrids	<i>Rhododendron kaempferi</i>	4-10'	BF, ACT	Sun, partial shade	Moist well drained	Moderate	Range of colors	Reddish	Easier, less demanding than Kurume azaleas; reddish purple foliage in winter.	No	No	No
 Wild or Pinxter Azalea	<i>Rhododendron periclymenoides</i>	6-10'	BF, ACT	Part-sun, shade	Moist, Semi-dry	Slow	Variable flower color	Dull Yellow	No	Seed containers	Yes	Yes
Pinxterbloom azalea	<i>Rhododendron periclymenoides</i>	5-8'	BF, ACT	Partial Shade	Moist well drained	Moderate	Range of colors	Dull Yellow	Size varies with habitat; fragrant, pale-pink flowers in late spring	No	Yes	Yes

Attracts:



Landscape Value
 Street Tree: ST; Accent: ACT; VDAP: DT
 Power Line: PL; Parking Lot: PK
 Buffer/Natural: BF; Tree Canopy: TC
 Riparian Buffer: RB

Category 6: Medium Shrubs

Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Drought Tolerant	Native to North Carolina
Roseshell azalea	<i>Rhododendron prinophyllum (roseum)</i>	2-8'	BF, ACT	Partial shade	Moist well drained	Moderate	Pink	Green to bronze	Very hardy and tolerant of high pH; numerous spreading branches.	No	Yes	Yes
Plumleaf azalea	<i>Rhododendron prunifolium</i>	8-15'	ACT	Partial shade	Moist well drained	Moderate	Orange to deep red	Red	Cultivars: 'Cherry-Bomb', 'Coral Glow', 'Lewis, Short', 'Peach Glow'	No	Yes	Yes
 Pinkshell azalea	<i>Rhododendron vaseyi</i>	5-10'	BF, ACT	Partial shade	Moist well drained	Moderate	Pink to white	Deep red	Native to NC mountains; irregular, upright habit.	No	No	Yes
Swamp azalea	<i>Rhododendron viscosum</i>	1-8'	BF, ACT	Partial shade	Moist well drained	Moderate	White	Red	Native to swamps, beside ponds	No	Yes	Yes
Black jethead	<i>Rhodotypos scandens</i>	3-6'	BF	Sun, partial shade	Range of soils	Moderate to Rapid	White	Green yellow	Mounded, arching branches, often shabby	Black drupe	Yes	No
Rugosa rose	<i>Rosa rugosa</i>	4-6'	BF, ACT	Sun	Moist well drained	Rapid	Rose to white	Yellow	Many diseases; tolerates salt.	Orange to red hips	Yes	No
Common elderberry	<i>Sambucus canadensis</i>	5-12'	RB	Sun	Moist	Rapid	White	Yellow green	Prefers moist sites; suckers profusely.	Edible purple black fruit	Yes	Yes
Double Reeves spirea	<i>Spiraea cantoniensis 'Lanceata'</i>	4-6'	BF, ACT	Sun, partial shade	Range of soils	Rapid	White	Yellow	Heat tolerant; prune after flowering in spring; fast grower. Prefers regular watering.	No	Yes	No
Persian lilac	<i>Syringa x persica</i>	4-8'	ACT	Sun, partial shade	Well drained	Rapid	Lilac	Yellow	May be more hardy than common lilac in North Carolina	No	Yes	No

Attracts:



Birds
Humming Birds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 6: Medium Shrubs

Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Drought Tolerant	Native to North Carolina
Chinese yew	<i>Taxus chinensis</i>	5-10'	BF	Sun, partial shade	Range of soils	Rapid	No	Green	No	No	Yes	No
Japanese yew	<i>Taxus cuspidata</i>	4-10'	BF, ACT	Partial shade, shade	Range of soils	Slow	No	Dull green	Tolerates urban conditions; variable form; poisonous; some cultivars low growing.	Small red fruit	Yes	No
Deerberry	<i>Vaccinium stamineum</i>	6-15'	BF, RB	Full-sun, shade	Moist, Dry	Moderate	White Bell Shaped Blooms	Red	No	Fruits are green when ripe	Yes	No
 Highbush blueberry	<i>Vaccinium corymbosum</i>	6-12'	BF, ACT, RB	Sun, partial shade	Moist, well drained	Slow	White	Bright Red	Native to swampy soils, likes acidic, sandy soils.	Black blue fruit	Yes	Yes
Witherod Viburnum	<i>Viburnum cassinoides</i>	5- 6'	BF, ACT	Full-sun, shade	Moist, Semi-dry	Moderate	Creamy white flowers	Orange red dull crimson and purple	No	Fruit changes from green to pink to red to blue then to black	No	Yes
Maple-leaf viburnum	<i>Viburnum acerifolium</i>	4-6'	BF, RB	Partial shade, shade	Moist well drained	Moderate	Yellow white	Red purple	Low, sparse shrub reserved for naturalizing	Black fruit	Yes	Yes
Hobblebush	<i>Viburnum alnifolium</i>	6-10'	BF, ACT	Part-sun, shade	Moist	Slow	3-5" flat white flowers	Yellow orange red or maroon	No	Red to black drupe in late summer	No	Yes

Attracts:



Birds
Humming Birds
Butterflies

Landscape Value

Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 6: Medium Shrubs

Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Drought Tolerant	Native to North Carolina
Koreanspice viburnum	<i>Viburnum carlesii</i>	4-8'	BF, ACT	Sun, partial shade	Moist well drained	Moderate	White	Not showy	Very fragrant; plant in shrub borders, behind perennials, foundation planting.	Black blue drupe	Yes	No
Blue Mufin™ arrowwood viburnum	<i>Viburnum dentatum</i> 'Christom'	5-6'	BF, ACT, RB	Sun to shade	Moist well drained	Moderate	White	Orange to purple red	Slow-growing; good low hedge, back of border, woodland or natural areas. More compact than species; resilient and care-free.	Blue berries	Yes	Yes
Mohican viburnum	<i>Viburnum lantana</i> 'Mohican'	6-8'	BF, ACT	Sun	Well drained	Moderate	White	Purple red	Coarse winter shape; good hedge, deciduous screen, massing, shrub border; more compact than species and more disease resistant.	Yellow red black drupe	Yes	No
Dwarf Walter's viburnum	<i>Viburnum obovatum</i> 'Densa'	4-5'	BF, ACT	Sun, partial shade	Well drained	Moderate	White	Red	Half the size of species; compact; good hedge.	Red black	Yes	No
Compact cranberrybush viburnum	<i>Viburnum opulus</i> 'Compactum'	4-5'	BF, ACT	Sun, partial shade	Range of soil	Moderate	White	Yellow red purple	Beautiful specimen or use in informal hedge, border, foundation plant; good for wildlife	Red drupe	Yes	No
Doublefile viburnum cultivars	<i>Viburnum plicatum</i> var. <i>tomentosum</i> cultivars Mariesii', 'Pink Beauty' Shasta'	5-8'	BF, ACT	Sun, partial shade	Moist well drained; no clay	Moderate	White	Red purple	Smaller than species; all make good hedges, specimens, borders, foundation plantings; deer resistant.	Red fruit	Yes	No
Laurustinus	<i>Viburnum tinus</i>	6-12'	BF, ACT	Sun, partial shade	Moist well drained	Moderate	White	Green	Good screen, hedge; insect and disease free; salt tolerant; 'Variegata' clone.	Blue black	Yes	No



Attracts:

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[Added Supplement #5]

Landscape Value
Street Tree: ST; Accent: ACT; VDP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 6: Medium Shrubs

Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Drought Tolerant	Native to North Carolina
Burkwood viburnum	<i>Viburnum x burkwoodii</i>	8-10'	BF, ACT	Sun, partial shade	Range of soil	Slow to Moderate	White	Orange red	'Mohawk' is disease resistant; somewhat straggly with age; tolerates pollution; hedge, screen or accent	Red fruit to black	Yes	No
Pragense viburnum	<i>Viburnum x pragense</i>	8-10'	BF, ACT	Sun, partial shade	Moist well drained	Rapid	White	Green	Similar to <i>V. rhytidophyllum</i> .	No	Yes	No
Lantana phyllium viburnum	<i>Viburnum x rhytidophyloides</i>	8-15'	BF, ACT	Sun, partial shade	Range of soil	Moderate	White	Orange red	Screen, foundation plant, blended with other broadleaf evergreens; needs other viburnums for fruit set. 'Alleghany' good cultivar.	Reddish drupe to black	Yes	No
Weigela	<i>Weigela florida</i>	6-9'	BF	Sun	Well drained	Moderate to Rapid	White pink red	Not showy	Spreading, dense rounded; coarse; best in shrub borders, grouping or massing	No	No	No
Spanish dagger yucca	<i>Yucca gloriosa</i>	6-8'	ACT	Sun	Range of soils	Slow	White tinged red or purple	Green and white	May be somewhat marginal in this area; spine-tipped leaves	No	Yes	No

Attracts:



Birds
Humming Birds
Butterflies

Landscape Value

Street Tree: ST; Accent: ACT; VDP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Category 7: Small Shrubs

Small Shrubs													
Type	Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Native to North Carolina	Drought Tolerant
Evergreen	Glossy abelia	<i>Abelia x grandiflora</i>	3-6'	BF, ACT	Sun, partial shade	Acidic moist well drained	Moderate	Lilac, pink clusters	Bronze	Attracts bees; Deer resistant	N/A	No	Yes
Deciduous	White forsythia	<i>Abeliophyllum distichum</i>	3-5'	BF, ACT	Sun, partial shade	Well drained	Slow to Moderate	White and pink	Purplish	Easily transplanted and adaptable to many soils, wide, arching, ragged	Fruit	No	Yes
Evergreen	Japanese boxwood	<i>Buxus Microphylla</i> var. <i>japonica</i>	3-6'	BF, ACT	Partial shade	Well drained; range	Rapid	4-10" panicles lavender, lilac, white, purple, yellow and pink	Blue green	More heat and nematode resistant than species.	White	No	Yes
Evergreen	English boxwood	<i>Buxus sempervirens</i> 'Suffruticosa'	2-5'	BF, ACT	Partial Shade	Requires excellent drainage	Very Slow	Non-showy in Spring	Green with Orange Cast	Can be kept very low by pruning	N/A	No	Yes
Evergreen	'Green Mountain', 'Green Velvet'	<i>Buxus sempervirens</i> hybrids	2-4'	BF, ACT	Partial shade	Moist Well Drained	Moderate	Creamy Yellow	Green	Supposedly do not discolor much in winter.	N/A	No	Yes
Deciduous	Purple beautyberry	<i>Callicarpa dichotoma</i>	3-4'	ACT	Sun, partial shade	Moist Soil	Rapid	N/A	Green Yellow	Treat as herbaceous perennial. Considered the best of all <i>Callicarpa</i> .	Pink and Lavender Berries in Summer	No	Yes
Evergreen	Amethyst Scotch heather and other cultivars	<i>Calluna vulgaris</i> 'Amethyst', etc.	3-4'	ACT	Sun, partial shade	Moist Well Drained; Prefer acid, sandy, organic soils	Slow to Moderate	Rose, Purple, Pink Flowers in Summer lasting into Fall	Bronze	Do not over-fertilize; mulch and water during dry periods; good in rock gardens, edging, ground cover	No	No	Yes

Attracts:



Birds
Humming Birds
Butterflies

Landscape Value

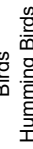
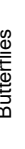
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 7: Small Shrubs

Type	Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Native to North Carolina	Drought Tolerant
Evergreen	Blue mist shrub, blue caryopteris	<i>Caryopteris x clandonensis</i>	2-3'	ACT	Sun	Well Drained Loose Loamy Soil	Moderate	Blue Flowers in Late Summer	No	Prefers loose, loamy soil; treat as herbaceous perennial.	No	No	Yes
 Deciduous	New Jersey tea	<i>Ceanothus americanus</i>	3-4'	BF, PK	Full-sun, part-sun	Moist to dry	Slow to Moderate	Small creamy white to light pink flowers in summer, not fragrant	Yellow to tan	No	Seed containers	Yes	Yes
Evergreen	Feelin' Blue Deodar cedar	<i>Cedrus deodara</i> 'Feelin' Blue'	2'	PK, ACT	Sun	Well Drained Dry Soil	Moderate	N/A	Green	Spreading to 6 feet wide	Cones	No	Yes
Evergreen	Dwarf Hinoki falsecypress, Compact Bronze Hinoki cypress	<i>Chamaecyparis obtusa</i> 'Nana', 'Pygmaea Aurea', 'Minima'	1.5-3'	BF, ACT	Sun	Sun Moist Well Drained	Very Slow	N/A	N/A	Very slow growing, mounded; border, rock gardens, specimen	Cones	No	Yes
Semi-evergreen	Sweetfern	<i>Comptonia peregrina</i>	2-4'	PK	Full-sun/part-sun	Semi-dry to Dry	Slow to Moderate	Yellow and green flowers	Greenish brown	No	Seed containers	No	Yes
Evergreen	Creeping cotoneaster	<i>Cotoneaster adpressus</i>	1-2'	PK, ACT	Sun, partial shade	Moist Well Drained	Slow	White Flowers	No	Spreading to 4-6 feet. 'Little Gem' 'Tom Thumb' (see below) good cultivar.	No	No	Yes

Attracts:

Birds
Hummingbirds
Butterflies

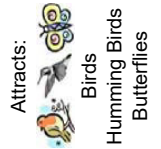
Landscape Value

Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 7: Small Shrubs

Green Type	Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Native to North Carolina	Drought Tolerant
Evergreen	Tom Thumb cranberry cotoneaster	<i>Cotoneaster apiculatus</i> 'Tom Thumb'	1-2'	PK, ACT	Sun	Well drained soil but tolerates a range of site conditions except wet	Slow to Moderate	Small pink flowers	Bronzy red in Fall to purplish in Winter	Spreading 5 feet; more susceptible to mites in dry situations; good on banks, slopes and rock gardens; 'Tom Thumb'; best in cooler climates	Cranberry fruit in Fall	No	Yes
Evergreen	Bearberry cotoneaster	<i>Cotoneaster dammeri</i>	1-2'	PK, ACT	Sun	Perfers Moist	Rapid	Small White Flowers	Red, purple	Spreading to 6 feet+; roots along stems.	Red	No	Yes
Semi-evergreen	Rockspray cotoneaster	<i>Cotoneaster horizontalis</i>	2-3'	PK, ACT	Sun	Perfers Moist; well drained	Moderate	Small pink flowers	Red, purple	Spreading 5-8 feet; horizontal branching.	Red	No	Yes
Evergreen	Little-leaf or thyme rockspray cotoneaster	<i>Cotoneaster microphyllus</i> var. <i>thymifolius</i>	2-3'	PK, ACT	Sun, partial shade	Moist; well drained		Small White Flowers	Green	Dwarf or prostrate. Good groundcover	Red	No	Yes
Evergreen	Winter daphne	<i>Daphne odora</i>	3-4'	BF, ACT	Sun to shade	Moist; well drained	Slow	Rose Purple, Pink Flowers in Spring	Green	May be marginally hardy; maintained areas and winter protection best	Red	No	No
Deciduous	Slender deutzia	<i>Deutzia gracilis</i>	3-6'	BF	Sun, partial shade	Well drained	Slow to Moderate	White	Green	Easily rooted. Best in shrub borders	N/A	No	Yes
Deciduous to Semi-evergreen	Leatherwood	<i>Dirca palustris</i>	3-6'	BF, ACT	Partial shade, shade	Moist to wet acidic soil high organic; doesn't like dry soil	Moderate	3-6" white drupe	Maroon, Yellow, Orange	Thrives in moist, shady areas; prefers deep, organic soils; follows water courses naturally.	Seed containers	No	Yes
Deciduous	Snowhill (Smooth) Hydrangea	<i>Hydrangea aborescens</i>	3-5'	BF, ACT	Part-sun, shade	Moist to Semi dry	Rapid	3 to 6" clusters of white flowers	Yellowish Brown	No	No	Yes	Yes



Attracts:

Category 7: page 43 of 50
[Added Supplement #5]

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 7: Small Shrubs

Type	Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Native to North Carolina	Drought Tolerant
Deciduous	Pia hydrangea	<i>Hydrangea macrophylla</i> 'Pia'	2-3'	BF, ACT	Partial shade, shade	Moist well Drained Organic soils	Rapid	Pink, White, Blue and Purple	Green	No	N/A	No	No
Evergreen	Aaronsbeard St. Johnswort	<i>Hypericum calycinum</i>	1-2'	PK, BF, ACT	Sun, partial shade	Loamy well drained acidic soils	Rapid	3" Yellow flowers	Purple	Spreading to 2'; good for dry, heavy soils.	N/A	No	Yes
 Deciduous	Shrubby St. Johnswort	<i>Hypericum prolificum</i>	1-4'	PK	Sun, partial shade	tolerates dry	Slow	.7-1" yellow flowers	No real Fall Color	Small, dense bush with stiff, upright stems.	Capsules	Yes	Yes
Evergreen	Carissa holly	<i>Ilex cornuta</i> 'Carissa'	3-4'	BF, ACT	Sun, partial shade	Range of soils	Slow	N/A	Green	No	N/A	No	Yes
Evergreen	Rotunda holly	<i>Ilex cornuta</i> 'Rotunda'	3-4'	BF, ACT	Sun, partial shade	Moist well drained; tolerates a range of soils	Slow	Small White Flowers	Green	No	Red	No	Yes
Evergreen	Dwarf Japanese hollies	<i>Ilex crenata</i> cultivars: 'Helleri', 'Tiny Tim', 'Repandens', 'Carefree', 'Hoogendorn', etc	2-4'	PK, BF, ACT	Sun, partial shade	Moist well drained	Moderate	White flowers in Spring	Green	Many of these are slow growing and may eventually need pruning to maintain low height.	Small Black Drupe	No	Yes
Evergreen	Nordic™ inkberry holly	<i>Ilex glabra</i> 'Chamin'	3-4'	BF, ACT	Sun, partial shade	Perfers Moist Acidic Soils	Slow to Moderate	White	Green	Compact, hardy; good hedge plant	Black Drupe	No	Yes

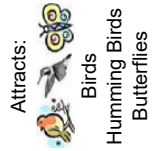
Attracts:   
Birds
Humming Birds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 7: Small Shrubs

Type	Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Native to North Carolina	Drought Tolerant
Evergreen	Dwarf yaupon holly	<i>Ilex vomitoria</i> 'Nana', <i>Cultivars</i> 'Stoke's Dwarf', 'Condeaux'	3-5'	PK, BF, ACT, RB	Sun, partial shade	Range of Soils	Moderate to Rapid	White	Green	Spreading 8-10 ft wide over time; Good for border, some wider than tall	Scarlet Drupe	Yes	Yes
Evergreen	'Pacific', 'Emerald Sea', 'Blue Lagoon', 'Boulevard', 'Parsons juniper', 'Horizontal juniper', 'Blue Vase', 'Blue Chip', 'Wiltonii' (Blue Dwarf)	<i>Juniperus conferta</i> <i>cultivars</i> ; <i>Juniperus davurica</i> 'Expansa' ('Parsoni'); <i>Juniperus horizontalis</i>	1-3'	PK, ACT	Sun	Range of Soils	Rapid	N/A	Blue Green	<i>Juniperus conferta</i> : Spreading 6 to 9 feet wide; Parsons: Spreads to 9 feet across, mounding. <i>Juniperus horizontalis</i> cultivars: Spreading 4 to 8 feet wide	Blue	No	Yes
Evergreen	Japanese garden juniper	<i>Juniperus procumbens</i>	0.5-2'	PK, ACT	Sun	Well Drained; with good air circulation	Moderate	N/A	Green	Spreads 10 to 15 feet (22 feet); 'Nana' is shorter; may be very susceptible to juniper blight, depending upon source	N/A	No	Yes
Evergreen	'Calgary Carpet' juniper	<i>Juniperus sabina</i> <i>cultivars</i>	3'	PK, ACT	Sun	Well Drained	Moderate	N/A	Green	May be very susceptible to juniper blight, depending upon source	N/A	No	Yes
Evergreen	'Blue Star' juniper	<i>Juniperus squamata</i> 'Blue star'	2-3'	PK, BF, ACT	Sun	Well Drained	Slow	N/A	Green	Susceptible to bagworms; slow-growing, grayish-green foliage color.	N/A	No	Yes



Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 7: Small Shrubs

Type	Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Native to North Carolina	Drought Tolerant
Evergreen	Common lavender	<i>Levandula angustifolia</i>	1-2'	ACT	Sun	Well Drained Site doesn't like to be wet	Slow	1.5-2.5" purple spikes with pink flowers	Green Blue	Needs well-drained soil	No	No	Yes
Evergreen	Coastal leucothoe	<i>Leucothoe axillaris</i>	3-4'	Act, RB	Shade; dislikes winter sun	High moisture	Slow to Moderate	White to Pink in Early Spring	Bronze red purple	Needs high moisture; may contract leaf spot.	No	Yes	No
Evergreen	Drooping leucothoe	<i>Leucothoe fontanesiana</i>	6'	BF, ACT	Part-sun, shade	Moist to dry	Slow to Moderate	Creamy White fragrant flowers	Evergreen	Prune to control height	No	Yes	No
Evergreen	Russian sage	<i>Perovskia atriplicifolia</i>	3-5'	ACT	Sun	Well Drained of moderate fertility	Moderate	9-12" violet blue in late summer	Green	Woody, herbaceous plant; prune in early spring	N/A	No	Yes
Evergreen	Dwarf Norway spruce	<i>Picea abies</i> (dwarf cultivars) 'Little Gem', 'Pendula', etc.	Varies	ACT	Sun	Well Drained	Moderate	N/A	Green	Prefers colder climate but adaptable if sufficient moisture when planted.	Globose	No	Yes
Evergreen	Mugo pine, Swiss mountain pine	<i>Pinus mugo</i> (dwarf cultivars) 'Compacta', 'Pumilio', 'Mughus'	Varies, usually <8'	ACT	Sun	Deep Moist loamy soils	Moderate	N/A	Green	Use grafted plants for true dwarf forms. Highly variable size and form even among the same cultivars.	N/A	No	Yes
Evergreen	Dwarf Scotch pine	<i>Pinus sylvestris</i> (dwarf cultivars) 'Nana', 'Hillside Creeper', etc.	Varies	ACT	Sun	Well Drained, but does tolerate dry sites	Rapid	N/A	Yellow Green	May be marginally hardy here (too hot).	Cones	No	Yes

Attracts:



Birds
Humming Birds
Butterflies

Landscape Value

Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 7: Small Shrubs

Type	Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Native to North Carolina	Drought Tolerant
Evergreen	Dwarf Japanese black pine	<i>Pinus thunbergii</i> (dwarf cultivars) 'Nana'	Varies	ACT	Sun	Range of soils; prefers well drained	Slow to Moderate	N/A	Green	Tremendously salt tolerant	Cones	No	Yes
Deciduous	Shrubby potentilla	<i>Potentilla fruticosa</i> and cultivars	1-4'	PK, BF, ACT	Sun, partial shade	Perfers Moist well drained soil but does well in poor sites	Slow	1 to 1.5" Yellow Flowers in the Summer	Yellow Brown	Shrubby borders, edges, mass plantings; spider mites can be a problem; should be pruned regularly.	N/A	No	Yes
Evergreen	Dwarf English laurel	<i>Prunus laurocerasus</i> cultivars	3 to 4	BF, ACT	Sun to shade	Moist Well Drained Organic	Moderate	White Flowers in Spring	Green	'Otto Luyken' * and 'Zabeliana' * common varieties	Black Purple Drupe	No	Yes
Semi-evergreen	'Mohave', 'Navaho', 'Red Elf', 'Tiny Tim'	<i>Pyracantha coccinea</i> hybrids	Varies	ACT, RB	Sun	Well Drained	Moderate to Rapid	.3" white on 1-2" spire	Green	Thorns; more resistant to scab and fireblight than species.	Orange and Red Berries in the Fall	No	Yes
Evergreen	Indian hawthorn	<i>Raphiolepis x delacourii</i>	3-4'	BF, ACT	Sun, partial shade	Perfer moist well drained	Moderate	White, Pink, Rose 2-3" Flowers in Spring	Dark Green	Marginally hardy in North Carolina. More resistant to leaf spot	Purple or Blue to Black fruit	No	Yes
Evergreen	Dwarf indica azalea (Gumpo)	<i>Rhododendron ertocarpum</i>	1-2'	ACT	Partial shade	Well Drained Slightly Acidic Soils	Slow to Moderate	White and pink in spring	Green	Good border plant.	N/A	No	No
Deciduous	Gro-low fragrant sumac	<i>Rhus aromatica</i> 'Gro-Low'	2-3'	PK	Sun, partial shade	Acidic Well Drained	Slow to Moderate	Male Plants will have 1" Yellow Flowers	Red, Purple	Spreads 6 to 8 feet; use with discretion	Female Plants have red drupe in the Summer	No	Yes

Attracts:



Birds
Humming Birds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 7: Small Shrubs

Type	Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Native to North Carolina	Drought Tolerant
 Deciduous	Carolina rose	<i>Rosa carolina</i>	3-6'	BF, ACT	Full-sun, part-sun	Moist to dry	Slow	2" rose pink fragrant flowers	Dull red	Blooms in Summer	Seed containers	Yes	No
 Deciduous	Swamp rose	<i>Rosa palustris</i>	4-6'	BF, ACT	Full-sun/part-sun	Wet to Moist	Moderate	Dark rose pink fragrant flowers in summer	Red	No	Seed containers	Yes	Yes
Evergreen	Rosemary	<i>Rosmarinus officinalis</i>	2-4'	PK, BF, ACT	Sun	Well Drained	Moderate	Pale and Dark Blue Flowers	Green Gray	Salt tolerant; any soil except those permanently wet; can be maintained below 30" tall.	N/A	No	Yes
Evergreen	Santolina; lavender cotton	<i>Santolina chamaecyparissus</i>	1-2'	PK, ACT	Sun	Excellent Drainage required	Moderate	Button like yellow flowers	Silver gray	Mounding, slow-growing, sub-shrub; adaptable; prefers low fertility.	N/A	No	Yes
Evergreen	Himalayan sarcococca	<i>Sarcococca hookeriana humilis</i>	2'	ACT	Partial shade	Well Drained Organic Soil	Slow to Moderate	Cluster white	Green	Suckers to form large colonies; pollution tolerant; spreads to 8 feet; tall ground cover for shady spots.	0.4" round black fruit	No	Yes
Evergreen	Fragrant sarcococca	<i>Sarcococca ruscifolia</i>	3-5'	BF, ACT	Partial shade	Acidic Moist Well Drained	Slow to Moderate	Milky White Flowers in Winter	Dark Green	Slow grower; good for shady spots.	Round red fruit	No	Yes
Evergreen	Japanese skimmia	<i>Skimmia japonica</i>	2-5'	BF, ACT	Partial shade, shade	Perfers Moist well drained	Slow	Glossy red, Maroon buds open into creamy white flowers	Yellows with summer sun	Need both male and female plants for fruit; needs to be moist but not soggy.	Red Berries on Female Plant	No	No

Attracts:   
 Birds
 Humming Birds
 Butterflies

Landscape Value
 Street Tree: ST; Accent: ACT; VDAP: DT
 Power Line: PL; Parking Lot: PK
 Buffer/Natural: BF; Tree Canopy: TC
 Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 7: Small Shrubs

Type	Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Native to North Carolina	Drought Tolerant
Evergreen	Wall germander	<i>Teucrium chamaedrys</i>	1-2'	ACT	Sun	Well Drained prefers dry sandy soil	Moderate	Rose purple 2-5" Flowers	Green	Mounding evergreen sub-shrub; low hedge or edging plant; good for rock gardens.	N/A	No	Yes
Evergreen	Hetz Midget arborvitae	<i>Thuja occidentalis</i> 'Hetz Midget'	3-4'	BF, ACT	Sun, partial shade	Well Drained; protect from strong wind	Very Slow	N/A	Blue green	Slow growing; rounded; many diseases and pest, none serious; good in mixed borders, containers; often brown in winter; prefers moist air and soil.	N/A	No	No
Evergreen	Cranberry	<i>Vaccinium macrocarpon</i>	2-6'	BF, ACT	Full-sun, part-sun	Wet to Moist	Moderate	Small White to pink flowers	Evergreen	No	Scarlet red waxy berries	Yes	No
Deciduous	Lowbush blueberry	<i>Vaccinium pallidum</i>	3-5'	BF, PK	Full-sun, part-sun	Moist to dry	Moderate	Yes	Red	No	Flowers in spring and fruit in July	Yes	Fair
 Deciduous	Maple-leaf Viburnum	<i>Viburnum acerifolium</i>	4-6'	BF, ACT	Full-sun, part-sun	Moist to dry	Moderate	Yellowish white flowers	Reddish purple	No	Black fruit in Fall and winter	Yes	Yes
Evergreen	David viburnum	<i>Viburnum davidii</i>	2 to 3	PK, BF, ACT	Sun to shade	Moist well drained	Moderate	Pink bud opens to white flower	Blue green	Low-mounding; acid-loving; good in borders, as foundation planting.	Berries change green to pink to red to blue to black	No	Yes

Attracts:
 Birds
 Humming Birds
 Butterflies

Landscape Value
 Street Tree: ST; Accent: ACT; VDAP: DT
 Power Line: PL; Parking Lot: PK
 Buffer/Natural: BF; Tree Canopy: TC
 Riparian Buffer: RB

Section 12.01 Preferred Landscape Material

Category 7: Small Shrubs

Type	Common Name	Scientific Name	Height	Landscape Values	Light	Soil Type	Growth Rate	Flower Color	Fall Color	Interesting Growth Patterns	Fruits, Berries, Seeds	Native to North Carolina	Drought Tolerant
Deciduous	Dwarf cranberry-bush viburnum	<i>Viburnum opulus 'Nanum'</i>	2'	BF, ACT	Sun, partial shade	Range of soils	Moderate	2-3" flat top white flowers	Yellow, red, purple fall	Dense, mounding; good low hedge, filler plant.	Red drupe	No	Yes
Deciduous	Dwarf variegated weigela	<i>Weigela florida 'Variegata Nana'</i>	3'	PK, BF	Sun	Perfers well drained, but tolerates a range of soils	Moderate to Rapid	White pink red trumpet shaped flowers	Non-showy fall color	Most dwarf of weigelas; some specimens larger; tolerates air pollution	N/A	No	No
Deciduous	Yellowroot	<i>Xanthorhiza simplicissima</i>	2-3'	PK, RB	Sun, partial shade	Perfers moist Well drained heavy soils	Moderate	Brownish purple flowers in spring	N/A	Freely suckering, spreading, flat-topped ground cover for difficult sites; less invasive in dry soils; prefers moist stream banks	N/A	No	Yes
Evergreen	Adam's needle yucca	<i>Yucca filamentosa</i>	2'	PK, ACT	Sun	Moist to dry soil with good drainage	Moderate	Waxy creamy white bell shaped flowers	Green	Sharp, long, upright, spreading leaves.	N/A	Yes	Yes
Evergreen	Weakleaf yucca	<i>Yucca flaccida</i>	1-2'	PK, ACT	Sun	Range of soils	Slow	N/A	Green	Differs from <i>Y. filamentosa</i> by bend in leaves, thread-like fibers.	N/A	Yes	Yes
Deciduous	Dusty zenobia	<i>Zenobia pulverulenta</i>	2-3'	ACT, RB	Sun to shade	Moist Soils	Moderate	Small Bell Shaped Cream Flowers	Yellow	Requires acid, moist, well-drained soil.	N/A	Yes	No

Attracts:



Birds
Humming Birds
Butterflies

Landscape Value
Street Tree: ST; Accent: ACT; VDAP: DT
Power Line: PL; Parking Lot: PK
Buffer/Natural: BF; Tree Canopy: TC
Riparian Buffer: RB



Invasive Species List

~~Do not utilize the plant materials given on the lists below.~~

Table of Contents

~~Rank 1: Severe Threat~~

~~Exotic Plant species that have invasive characteristics and spread rapidly into native plant communities, displacing native vegetation.~~

~~Rank 2: Significant Threat~~

~~Exotic plant species that display some invasive characteristics, but do not appear to present as great a threat to native communities in North Carolina as the species listed in Rank 1.~~

~~Rank 3: Lesser Threat~~

~~Exotic plant species that spread into or around disturbed areas and are presently considered a low threat to native plant communities in North Carolina.~~

~~Watch List A: Naturalize and may become a problem~~

~~Exotic plant species that naturalize may become a problem in the future; includes species that are or could become widespread in North Carolina. At this time, more information is needed.~~

~~Watch List B: Problems in adjacent states~~

~~Exotic Plant species that cause problems in adjacent states but have not yet been reported to cause problems in North Carolina.~~

Reference:

<http://www.ncwildflower.org/invasives/invasives.htm#Rank%201#Rank%201>

Rank 1—Severe Threat

Exotic plant species that have invasive characteristics and spread readily into native plant communities, displacing native vegetation.

Scientific Name	Common Name
<i>Ailanthus altissima</i> (Mill.) Swingle	Tree of Heaven
<i>Albizia julibrissin</i> Durz.	Mimosa
<i>Alliaria petiolata</i> (Bieb.) Cavara & Grande	Garlic-mustard
<i>Alternanthera philoxeroides</i> (Mart.) Griseb.	Alligatorweed
<i>Celastrus orbiculatus</i> Thunb.	Asian bittersweet
<i>Elaeagnus angustifolia</i> L.	Russian olive
<i>Elaeagnus umbellata</i> Thunb.	Autumn olive
<i>Hedera helix</i> L.	English ivy
<i>Hydrilla verticillata</i> (L.f.) Royle	Hydrilla
<i>Lespedeza bicolor</i>	Bicolor lespedeza
<i>Lespedeza cuneata</i> (Dum.-Cours.) G. Don	Sericea lespedeza
<i>Ligustrum sinense</i> Lour.	Chinese privet
<i>Lonicera fragrantissima</i> Lindl. & Paxton	Fragrant honeysuckle
<i>Lonicera japonica</i> Thunb.	Japanese honeysuckle
<i>Microstegium vimineum</i> (Trin.) A. Camus	Japanese stilt-grass
<i>Murdannia keisak</i> (Hassk.) Hand. Mazz.	Asian spiderwort
<i>Myriophyllum aquaticum</i> (Vell.) Verdc.	Parrotfeather
<i>Paulownia tomentosa</i> (Thunb.) Sieb. & Zucc. ex Steud.	Princess tree
<i>Phragmites australis</i> (Cav.) Trin. ssp. australis	Common reed
<i>Polygonum cuspidatum</i> Seib. & Zucc.	Japanese knotweed
<i>Pueraria montana</i> (Lour.) Merr.	Kudzu
<i>Rosa multiflora</i> Thunb.	Multiflora rose
<i>Salvinia molesta</i> Mitchell	Aquarium water-moss
<i>Vitex rotundifolia</i> L.f.	Beach vitex
<i>Wisteria sinensis</i> (Sims) DC	Chinese wisteria

Rank 2—Significant Threat

Exotic plant species that display some invasive characteristics, but do not appear to present as great a threat native communities in NC as the species listed in Rank 1.

Scientific Name	Common Name
<i>Ampelopsis brevipedunculata</i> (Maxim.) Trautv.	Porcelain-berry
<i>Arthraxon hispidus</i> (Thunb.) Makino	Hairy jointgrass
<i>Bambusa</i> spp.	Exotic bamboo
<i>Berberis thunbergii</i> DC	Japanese barberry
<i>Broussonetia papyrifera</i> (L.) L'Her. ex Vent.	Paper mulberry
<i>Cayratia japonica</i> (Thunb. ex Murray) Gagnep.	Bushkiller
<i>Centaurea biebersteinii</i> DC	Spotted knapweed
<i>Clematis terniflora</i> DC (= <i>C. dioscoreifolia</i>)	Leatherleaf clematis
<i>Conium maculatum</i> L.	Poison hemlock
<i>Coronilla varia</i> L.	Crown vetch
<i>Dioscorea oppositifolia</i> L.	Air-potato
<i>Eichhornia crassipes</i> (Mart.) Solms	Water hyacinth
<i>Euonymus alata</i> (Thunb.) Sieb.	Burning bush
<i>Euonymus fortunei</i> (Turcz.) Hand. – Mazz	Winter creeper
<i>Glechoma hederacea</i> L.	Gill-over-the-ground, ground ivy
<i>Humulus japonicus</i>	Japanese Hops
<i>Lamium purpureum</i> L.	Henbit
<i>Lespedeza bicolor</i> Turcz.	Bicolor lespedeza, shrubby bushclover
<i>Ligustrum japonicum</i> Thunb.	Japanese privet
<i>Ligustrum vulgare</i> L.	Common privet
<i>Lonicera maackii</i> (Rupr.) Maxim.	Amur bush honeysuckle
<i>Lonicera morrowii</i> A. Gray	Morrow's bush honeysuckle
<i>Lonicera standishii</i> Jaques	Standish's Honeysuckle
<i>Lonicera x bella</i> [morrowii x tatarica]	Hybrid Bush Honeysuckle
<i>Ludwigia uruguayensis</i> (Camb.) Hara	Creeping waterprimrose
<i>Lygodium japonicum</i> (Thunb. ex Murr.) Sw.	Japanese climbing fern
<i>Lythrum salicaria</i> L.	Purple loosestrife
<i>Mahonia beali</i> (Fortune) Carriere	Oregon grape
<i>Miscanthus sinensis</i> Andersson	Chinese silver grass
<i>Morus alba</i> L.	White mulberry
<i>Myriophyllum spicatum</i> Komarov	Eurasian watermilfoil
<i>Nandina domestica</i> Thunb.	Nandina
<i>Persicaria longiseta</i> (de Bruijn) Moldenke (= <i>Polygonum caespitosum</i> Blume)	Oriental ladies-thumb
<i>Persicaria maculata</i> (Rafinesque) S.F. Gray (= <i>Polygonum persicaria</i> L.)	Lady's thumb
<i>Phyllostachys</i> spp.	Exotic bamboo

Poncirus trifoliata (L.) Raf.	Hardy Orange
Pseudosasa japonica (Sieb. & Zucc. ex Steud.) Makino ex Nakai	Arrow bamboo
Pyrus calleryana Decne.	Bradford pear
Rhodotypos scandens (Thunb.)	Makino jetbead
Rank 2: Significant Threat Continued...	
Rubus phoenicolasius Maxim.	Wineberry
Solanum viarum Dunal	Tropical soda apple
Sorghum halepense (L.) Pers.	Johnson grass
Spiraea japonica L.f.	Japanese spiraea
Stellaria media (L.) Vill.	Common chickweed
Veronica hederifolia L.	Ivyleaf speedwell
Vinca major L.	Bigleaf periwinkle
Vinca minor L.	Common periwinkle
Wisteria floribunda (Willd.) DC	Japanese wisteria
Xanthium strumarium L.	Common cocklebur
Youngia japonica (L.) DC.	Oriental false hawksbeard

Rank 3—Lesser Threat

Exotic plant species that spread into or around disturbed areas, and are presently considered a low threat to native plant communities in NC.

Scientific Name	Common Name
<i>Ajuga reptans</i> L.	Bugleweed
<i>Allium vineale</i> L.	Field garlic
<i>Artemisia vulgaris</i> L.	Mugwort, common wormwood
<i>Arundo donax</i> L.	Giant reed
<i>Baccharis halimifolia</i> L.*	Silverling, groundsel tree
<i>Bromus catharticus</i> Vahl	Bromegrass, rescue grass
<i>Bromus commutatus</i> Schrad.	Meadow brome
<i>Bromus japonicus</i> Thunb. ex Murray	Japanese bromegrass
<i>Bromus secalinus</i> L.	Rye brome
<i>Bromus tectorum</i> L.	Thatch bromegrass, cheat grass
<i>Buddleia davidii</i> Franch	Butterfly bush
<i>Chicorium intybus</i> L.	Chicory
<i>Chrysanthemum leucanthemum</i> L.	Ox-eye daisy
<i>Cirsium vulgare</i> (Savi) Ten.	Bull thistle
<i>Daucus carota</i> L.	Wild carrot, Queen Anne's lace
<i>Dipsacus fullonum</i> L.	Fuller's teasle
<i>Egeria densa</i> Planch.	Brazilian elodea, Brazilian water weed
<i>Fatoua villosa</i> (Thunb.) Nakai	Hairy crabweed
<i>Festuca pratensis</i> Huds.	Meadow fescue
<i>Ipomoea quamoclit</i> L.	Cypressvine morningglory
<i>Kummerowia stipulacea</i> (Maxim.)	Makino Korean clover
<i>Kummerowia striata</i> (Thunb.) Schindl	Japanese clover
<i>Lysimachia nummularia</i> L.	Moneywort, creeping Jenny
<i>Melilotus albus</i> Medik.	White sweet clover
<i>Melilotus officinalis</i> (L.) Lam.	Yellow sweet clover
<i>Najas minor</i> All.	Brittle naiad
<i>Pastinaca sativa</i> L.	Wild parsnip
<i>Perilla frutescens</i> (L.) Britt.	Beefsteakplant
<i>Populus alba</i> L.	White poplar
<i>Senecio vulgaris</i> L.	Ragwort
<i>Setaria faberi</i> R.A.W. Herm.	Nodding foxtail grass
<i>Triadica sebifera</i> (L.) Small	Chinese tallowtree
<i>Tussilago farfara</i> L.	Coltsfoot
<i>Vicia sativa</i> L.	Garden vetch

* *Baccharis halimifolia* is native to marshes and marsh borders on the outer Coastal Plain in NC, but has spread along road corridors to invade disturbed areas in the Piedmont, which is not considered its native habitat.

Watch List A

Exotic plants that naturalize and may become a problem in the future; includes species that are or could become widespread in North Carolina. At this time, more information is needed.

Scientific Name	Common Name
<i>Arum italicum</i> P. Mill.	Italian lords and ladies
<i>Buglossoides arvensis</i> (L.) I.M. Johnston (L.) I.M.	Corn gromwell
<i>Bupleurum rotundifolium</i> L.	Hound's ear, hare's ear
<i>Centaurea cyanus</i> L.	cornflower
<i>Echium vulgare</i> L.	Viper's bugloss
<i>Elaeagnus pungens</i> Thunb	Thorny olive
<i>Hibiscus syriacus</i> L.	Rose of Sharon
<i>Hypericum perforatum</i> L.	St. John's wort
<i>Ornithogalum umbellatum</i> L.	Star of Bethlehem
<i>Solanum dulcamara</i> L.	Climbing nightshade
<i>Verbascum thapsus</i> L.	Common mullein

Watch List B

Exotic plant species that cause problems in adjacent states but have not yet been reported to cause problems in NC.

Scientific Name	Common Name
Acer platanoides L.	Norway maple
Akebia quinata (Houtt.) Dcne.	Fiveleaf akobia
Bromus inermis Leyss.	Smooth bromegrass
Cardiospermum halicacabum L.	Balloonvine
Carduus nutans L.	Musk thistle
Cirsium arvense (L.) Scop.	Canada thistle
Commelina benghalensis L.	Bengal dayflower
Elaeagnus pungens Thunb.	Thorny olive
Hesperis matronalis L.	Dame's rocket
Iris pseudoacorus L.	Pale yellow iris
Lonicera tatarica L.	Tartarian honeysuckle
Melia azedarach L.	Chinaberry
Persicaria perfoliata (Linnaeus) H. Gross (=Polygonum perfoliatum L.)	Mile-a-minute vine
Pistia stratiotes L.	Water lettuce
Potamogeton crispus L.	Curly pondweed
Quercus acutissima Carruthers	Sawtooth oak
Rhamnus cathartica L.	European buckthorn
Setaria italica (L.) P. Beauv.	Foxtail millet
Setaria verticillata (L.) Beauv.	Bur foxtail
Setaria viridis (L.) P. Beauv.	Green millet
Stachys floridana Shuttlew. ex Benth.	Florida Hedge nettle
Torilis arvensis (Huds.) Link	Spreading hedge-parsley
Tragopogon dubius Scop.	Yellow goat's beard
Trapa natans L.	Water Chestnut
Tribulus terrestris L.	Puncturevine
Xanthium spinosum L.	Spiny cocklebur



Resolution No. 22-03

Date Adopted: March 1, 2022

Effective Date: March 1, 2022

RESOLUTION OF THE TOWN OF HOLLY SPRINGS TOWN COUNCIL

ADOPTING AMENDMENTS TO THE DEVELOPMENT PROCEDURES MANUAL

WHEREAS, the Holly Springs Town Council, by Resolution 02-37 adopted on Nov. 8, 2002, adopted the Town of Holly Springs Development Procedures Manual; and

WHEREAS, Resolution 02-37 provides for periodic amendments to the Development Procedures Manual by resolution and at the discretion of the Holly Springs Town Council; and

WHEREAS, said amendments are as follows:

Part 1: Amend Table of Contents, by removing text in ~~strikethrough~~ and adding text in **bold**, to remove sections that will no longer be contained in the Development Procedures Manual, as follows:

1. INTRODUCTION
 - 1.00 ~~Concept Plan Review Meeting~~
 - 1.01 ~~Developer Conference~~
 - 1.02 ~~Public Hearing Procedures~~
 - 1.04 ~~Technical Review Committee~~
2. ~~ZONING MAP CHANGE~~ **RESERVED FOR FUTURE USE**
 - 2.00 ~~General Use District~~
 - 2.01 ~~Conditional Use District/Conditional Use Permit~~
 - 2.02 ~~Planned Unit Development~~
 - 2.03 ~~Planned Unit Development Amendment~~
 - 2.05 ~~Comprehensive Plan Amendment~~
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3. ~~SUBDIVISIONS~~
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 - 3.02 ~~Minor Subdivision~~
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4.04	Development Plan Amendment
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8.00	Construction Drawing & Erosion and Sedimentation Control Plan Approvals
8.01	Stormwater Permit Procedure
8.02	Stormwater Surety Procedure
9	PLATTING PROCEDURES
9.00	Platting Procedures
10	CONSTRUCTION/BUILDING PROCEDURES
10.00	Certificate of Compliance
10.01	Building Permit/Required Inspections
10.02	Certificate of UDO Compliance
10.03	UDO Compliance Surety
10.04	Certificate of Occupancy Procedures
11	TOWN GATEWAY DESIGN GUIDELINES
11.00	Gateway Design Guidelines
11.01	Secondary Gateways
11.02	Primary Gateway Design Guidelines
12	PREFERRED DESIGN TECHNIQUES
12.00	Preferred Landscape Material
12.01	Invasive Species List

Part 2: Amend Table of Contents, Appendices, by removing text in ~~strikethrough~~ and adding text in **bold**, to change the TRC (Technical Review Committee) to LUAC (Land Use Advisory Committee) as follows:

A.19 **TRC LUAC** Request & Communications Application

Part 3: Amend Chapter 1 Introduction, by removing text in ~~strikethrough~~ and adding text in **bold**, to remove outdated sections and sections that have been moved to the new UDO, as follows:

Introduction

This manual has been adopted by the Holly Springs Town Council to serve as a reference tool for Town Staff, Design Professionals, and anyone who needs to submit a Development Petition or Application for review to obtain a permit or any other development related approval in conjunction with the Town of Holly Springs Unified Development Ordinance (referred to as UDO throughout this Manual). This manual is a compilation of development procedures, policies, and design preferences. It should be used to assist the user with the information regarding the specific review process from submitting a petition/application through obtaining the final determination of your request.

~~Each of the Procedure sections provides specific information for pre-submittal data collection, detailed review procedures as well as next steps after gaining approval of your request. If you have any questions about any of the specific review procedures, you are encouraged to contact the Director of the Department responsible for that particular review procedure as specified.~~

Jurisdiction

Any development within the Corporate Limits of the Town of Holly Springs or its Extraterritorial Jurisdiction (ETJ) is required to comply with the UDO and all adopted ordinances, standards, and policies of the Town and the procedures of this Manual. If a proposed development is not within the corporate limits of the Town of Holly Springs or its ETJ, the property owner must submit a Petition for Voluntary Annexation in order for the Town of Holly Springs to consider the development petition.

Withdrawal of PETITION/APPLICATION due to inactivity

~~Petitioners/Applicants must make a complete re-submittal of application/petition materials within ninety (90) calendar days of issuance of written comments from staff or recommendation from Planning Board or to all the petition/application will be deemed withdrawn by the Petitioner/Applicant. This policy applies to all review procedures unless specified otherwise in this Manual. If the petitioner/applicant cannot make a complete resubmittal within the ninety (90) day window and wishes to keep the application active, they must make a written request to the Department Director of the Primary Processing Department with an explanation of the reason resubmittal will be delayed. If the Director determines sufficient extenuating circumstances exist, a one-time sixty (60) day extension may be authorized.~~

~~If the Petitioner/Applicant wishes for the project to be reconsidered after the petition/application is deemed withdrawn, a brand new Development Petition or Application will be required to be filed and shall follow the entire review procedures as specified for the particular petition/application from the beginning.~~

WITHDRAWAL OF PETITION/ APPLICATION PRIOR TO DETERMINATION OF OFFICIAL ACTION

The Petition or Application may be withdrawn from consideration at any point in the review process prior to the determination of official action. However, the fees and cost associated with the Petition or Application will not be refunded.

Waiver of requirements

~~Where a Petitioner/Applicant determines that conformance with the procedures in this manual would create an unreasonable hardship or burden, a written request for a waiver may be submitted to the Department Director of the Primary Processing Department responsible for the specific review. That Director may grant a waiver of the requirements after consulting with the other Department Directors involved with the specific review procedure.~~

WAIVER OF VOLUNTARY ANNEXATION REQUIREMENTS

~~Where a Property Owner determines that conformance with the voluntary annexation requirements in this manual would create an unreasonable hardship or burden, a request for a waiver may be submitted to the Department of Planning & Zoning by completing the Annexation Waiver Petition. The request will be reviewed by the Town Manager who may grant a waiver of the requirements after considering the following factors:~~

- ~~▪ Parcel is less than 50% contiguous to the Corporate Town Limits~~
- ~~▪ Parcel is not within a reasonable distance to connect to municipal water and/or sewer~~
- ~~▪ Parcel does not gain access from a Town maintained roadway~~

~~See Section 6.06, *Development Waivers* for more information on the waiver process.~~

Amendments

~~This manual may be subject to periodic change. Amendments to the Development Procedures and Policies in Sections 1 through 12 shall require review and consideration by the Town Council through Resolution. Modifications to the Appendices shall be modified by review and consideration by the Director(s) of the Department(s) that are involved with the specific Petition/Application process as specified in this Manual~~ **Administrator of the Unified Development Ordinance.**

~~Registered holders of this Manual will be notified if/when amendments are made.~~

OTHER RELATED DOCUMENTS

This manual is intended to complement the following Town documents that also contain development regulations:

- The Town of Holly Springs Unified Development Ordinance (UDO)
- The Holly Springs Engineering Design and Construction Standards
- Town of Holly Springs Town Code
- Town of Holly Springs Policy Manual

DEFINITIONS OF TERMS USED IN THIS MANUAL

Note: If a term is not defined below, the term shall be defined as specified in the Unified Development Ordinance.

Department Directors: All of the Directors of the Departments involved in the specific review procedure as specified, or their designee.

Director: The Director of the Department of the Primary Processing Department for the specific review procedure or their designee, unless otherwise specified.

Expected Review Time: The typical time required to complete the specific review procedure depending upon the completeness of plans submitted, the thoroughness of responses to staff comments, and timely submittal of each set of plans for review.

Primary Processing Department: The specified Department responsible for the acceptance and processing of the Development Petition or Application for the specific review procedure. This is the

Department from which most of the communication will be handled through regarding distribution of Staff Comments or requests for additional information to complete the review process.

Staff: The staff members in the Departments that are involved in the review of the petition/ application for the specific review procedure as indicated.

Part 4: Remove Section 2 Zoning Map Change and the Subsections 2.00 General Use District; 2.01 Conditional Use District/Conditional Use Permit; 2.02 Planned Unit Development; 2.03 Planned Unit Development Amendment; 2.05 Comprehensive Plan Amendment; and 2.06 Zoning Vested Rights, in their entirety.

Part 5: Remove Section 3 Subdivision and the Subsections 3.00 Master Plan, 3.01 Preliminary Plan; 3.02 Minor Subdivision; and 3.03 Subdivision Amendment, in their entirety.

Part 6: Remove Section 4 Development Plans and the Subsections 4.00 Development Options for Residential Districts; 4.01 Multifamily Development; 4.02 Non-Gateway Development; 4.03 Gateway Development; and 4.04 Development Plan Amendment, in their entirety.

Part 7: Remove Section 5 UDO Permit Procedures and the Subsections 5.00 UDO Permit with Building Permit 5.01 Accessory/Temporary Use, Building, or Structure; 5.02 Manufactured Home; 5.03 UDO Permit: Change of Use/Interior Fit-Up; 5.04 Wireless Telecommunications Facilities; 5.05 Forestry Activity, Timbering Operations and Site Clearing; and 5.06 UDO Permit: Sign Installation, in their entirety.

Part 8: Remove Section 6 Other Permits and Procedures and the Subsections 6.00 Special Exception Use; 6.01 Temporary Lighting; 6.02 Registration of Home Occupation; 6.03 Voluntary Annexation; 6.05 Modification & Waivers of Riparian Buffer; 6.06 Development Waivers/Alternate Compliance; and 6.07 Zoning Verification Letters, in their entirety.

Part 9: Remove Section 7 Board of Adjustment Procedures and the Subsections 7.00 Administrative Appeal; 7.01 Variance of Development Standards; and 7.03 Environmental Appeals and Variances, in their entirety.

Part 10: Remove Section 8 Construction Drawing and Soil and Sedimentation Control Procedures and the Subsections 8.00 Construction Drawing & Erosion and Sedimentation Control Plan Approvals; 8.01 Stormwater Permit Procedure; and 8.02 Stormwater Surety Procedure, in their entirety.

Part 11: Remove Section 9 Platting Procedures and the Subsections 9.00 Platting Procedures, in their entirety.

Part 12: Remove Section 10 Construction/Building Procedures and the Subsections 10.00 Certificate of Compliance; 10.01 Building Permit/Required Inspections; 10.02 Certificate of UDO Compliance; 10.03 UDO Compliance Surety; and 10.04 Certificate of Occupancy Procedures, in their entirety.

Part 13: Remove Section 11 Town Gateway Design Guidelines and the Subsections 11.00 Gateway Design Guidelines; 11.01 Secondary Gateways; and 11.02 Primary Gateway Design Guidelines, in their entirety.

Part 14: Remove Section 12 Preferred Design Techniques and the Subsections 12.00 Preferred Landscape Material and 12.01 Invasive Species List, in their entirety.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF HOLLY SPRINGS, NORTH CAROLINA:

1. That it adopts and enacts the amendments as specified within this resolution to the Town of Holly Springs Development Procedures Manual; and,
2. This resolution shall take effect immediately.

Adopted by the Holly Springs Town Council on this, the 1st day of March, 2022.

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#: 11.

Consent Agenda

Title: Authorize the Town Manager to allocate \$299,730 per Memorandum of Understanding for the Joint Water Treatment Conveyance System from Sanford

Strategic Priority Area: Responsible & Balanced Growth
Safe & Friendly

Economic Prosperity & Diversity

Staff Resource: Rachel Ingham, Utilities and Infrastructure, Seann Byrd, Utilities and Infrastructure, Kendra Parrish, Utilities and Infrastructure

Action(s):

Authorize the Town Manager to allocate \$299,730 for the balance due on the Preliminary Engineering Report (PER) for the Joint Water Treatment Conveyance System as outlined in the Memorandum of Understanding (MOU) approved on June 22, 2021.

Explanation:

- The Town of Holly Springs will not be able to access the water allocated in the Sanford Water Treatment Plant expansion project unless a conveyance pipeline and associated infrastructure are constructed from Sanford to the Holly Springs water distribution system. Holly Springs and Fuquay-Varina, both being in Wake County east of the Sanford Water Treatment Plant, were identified as potential partners in this waterline conveyance project.
- June 22, 2021 - Town Council approved Memorandum of Understanding (MOU) with the Town of Fuquay Varina for cost sharing associated with a Preliminary Engineering Report (PER) to study the feasibility of a shared conveyance system. Fuquay-Varina engaged Hazen & Sawyer to prepare the PER for a total cost of \$1,003,680. Holly Springs initially agreed to pay Fuquay-Varina \$76,650, representing a small portion of the scoping fees.
- February 2022 - The draft PER Technical Memorandum was delivered.
 - Requested capacity in the conveyance pipeline was determined to be 10 million gallons per day (MGD) for Fuquay-Varina and 6 MGD for Holly Springs, or a 62.7% (FV) / 37.5% (HS) split.
 - The total project cost for the required conveyance system was estimated to be \$97,448,700. If Holly Springs and Fuquay-Varina share in the construction costs in percentages outlined above, Holly Springs' portion of conveyance is estimated to be \$33,849,350, in 2022 dollars.
- Based on the above pro-rata cost-share, the remaining balance owed by Holly Springs to Fuquay-Varina to commit to the conveyance project and finalize costs outlined in the MOU dated June 22, 2021 is \$299,730.
- Staff recommendation is continued pursuit of this option because:
 - The town has already committed to partnering in the design of the Sanford Regional Water Treatment Plant expansion.
 - Water line conveyance is a necessary and parallel project.
 - Committing to the conveyance project allows Holly Springs to have continued input on system requirements.

- Regional partnership reduces engineering and construction costs for the town.

Background:

- The Town of Holly Springs holds an agreement to obtain 10 MGD of potable water from the Harnett County Regional Water Treatment Plant. There are four emergency water interconnections in the distribution system with the Town of Apex, Town of Cary, Town of Fuquay-Varina, and Harnett County. Only Harnett County provides a continuous water supply.
- The town also holds a 2 MGD allocation in Jordan Lake, which is currently inaccessible but could be passed through a partnering water provider in the future.
- June 9, 2020 - staff shared updates on future water supply needs.
 - With the newly adopted Future Land Use & Character Plan, the water supply needed for the future build-out of the town was increased to approximately 16 MGD - a 4 MGD increase from the previously anticipated water demand.
 - Additionally, recent economic development efforts drive the need to move expeditiously to obtain an increased water supply.
 - Steps for meeting the increased water supply include continued discussions and the pursuit of relevant projects.
 - Conversations with the Town of Cary and the Town of Apex indicated that these municipalities can only commit to supplying water to Holly Springs on a temporary/mutual aid basis.
 - Conversations with Harnett County Regional Water indicated no firm commitment to provide Holly Springs with more than 10 MGD of water.
- September 1, 2020 - Town Council approved an MOU with the City of Sanford for participation in a PER to study the scope and costs associated with the expansion of the Sanford Regional Water Treatment Plant to serve additional regional partners, including the City of Sanford, the Town of Fuquay-Varina, Chatham County, and the Town of Pittsboro.
- June 2021 - Final technical memorandums resulting from the PER were completed. Findings indicated that an upgrade to the Sanford water treatment plant was feasible and allows Sanford to have available capacity to provide water to the Town of Holly Springs and other regional partners.
- September 14, 2021 - Town Council was briefed on options for meeting future water demand and the findings of the PER. The staff recommendation was to proceed with the partnership of the Sanford Regional Water Treatment Plant expansion design.
- September 21, 2021 - An Interlocal Agreement with the City of Sanford, outlining cost-sharing associated with the design of the Sanford Water Treatment Plant expansion, was approved by the Town of Holly Springs Town Council. Holly Springs' portion of the design cost was estimated to be \$2,497,278, based on 4 MGD capacity in the 18 MGD expansion.
- January 18, 2022 - Interlocal Agreements for all five partners collaborating on the regional water treatment plant expansions were approved by the City of Sanford Town Council.
- February 8, 2022 - The water treatment plant expansion design project kick-off occurred, with representatives from the five municipalities present.

Funding Source(s):

FY 2021-22 Community Investment Plan (CIP)

Attachment(s):

1. Fully Executed FV-HS MOU Water Expansion Conveyance 09.10.2021
2. Progress Meeting 12 - Presentation
3. F-V PER Draft_Feb2022
4. FV + HS MOU - HS Reimbursement Participation 02.2022

STATE OF NORTH CAROLINA
COUNTY OF WAKE

MEMORANDUM OF UNDERSTANDING
FOR A JOINT WATER TREATMENT
PRELIMINARY ENGINEERING REPORT

THIS MEMORANDUM OF UNDERSTANDING (“MOU”), made and entered into this 10 day of September, 2021, by and between the TOWN OF FUQUAY-VARINA, a North Carolina Municipal Corporation, herein referred to as “Fuquay-Varina”, and the TOWN OF HOLLY SPRINGS, a North Carolina Municipal Corporation, herein referred to as “Holly Springs”, each additionally referred to herein as either a “Party”, and collectively as the “Parties”.

W I T N E S S E T H :

WHEREAS, this MOU is undertaken due to the mutual interest of both entities to determine if a collaborative treated water conveyance system from the Sanford Water Treatment Plant is a viable solution for respective future water capacity needs; and

WHEREAS, both entities have previously signed a memorandum of understanding with the City of Sanford to determine if a collaborative water treatment plant expansion is a viable solution for future water treatment needs; and

WHEREAS, the City of Sanford, located in Lee County, currently owns and operates a municipal water treatment plant and has indicated it would be willing to sell treatment capacity as part of its plant expansion to both Fuquay-Varina and Holly Springs; and

WHEREAS, the Fuquay-Varina and Holly Springs desire to explore mutually beneficial options for a treated water conveyance system; and

WHEREAS, a cost sharing arrangement and the utilization of resources and personnel from both entities will maximize the opportunity for a successful program.

WHEREAS, as a result of increasing water demands and projections due to expected population growth, Fuquay-Varina and Holly Springs have determined that additional treated water capacity will be required within the next 25 years. Fuquay-Varina and Holly Springs have agreed in principle to embark on a water treatment preliminary engineering report with the City of Sanford to determine if a joint water treatment facility expansion is a feasible solution to the future water treatment needs and are now agreeing in principle to embark on preliminary engineering report to determine if a joint treated water conveyance system is also feasible

NOW, THEREFORE, the Parties hereto agree as follows:

As a result of increasing water demands and projections due to expected population growth, Fuquay-Varina and Holly Springs have determined that additional treated water capacity will be required within the next 25 years. Fuquay-Varina and Holly Springs have agreed in principle to embark on engaging an expert engineering firm to prepare a water treatment preliminary engineering report with the City of Sanford to determine if a joint water treatment facility expansion is a feasible solution to the future water treatment needs and are now agreeing in principle to embark on engaging an expert engineering firm to perform preliminary engineering

report to determine if a joint treated water conveyance system is also feasible.

1. Program of Work

Through a qualification based selection process, Fuquay-Varina has engaged Hazen and Sawyer, teamed with Freese and Nichols, to conduct a treated water conveyance system preliminary engineering report on behalf of the Parties for a not to exceed amount of \$1,003,680. A copy of the scope and the fee derivation are attached as Exhibit A.

2. Shared Costs

The Parties hereto agree to mutually share in the costs of preparing the joint water conveyance preliminary engineering report. Holly Springs shall contribute \$76,650, representing 1/3 of the fees for Item 1 – Routing and Siting, Item 11– Potential Partner Coordination, and Item 14-Preliminary Engineering report for their portion of the preliminary engineering report costs. The \$76,650 shall be paid to Fuquay-Varina by July 30, 2021.

If Holly Springs determines that a joint water conveyance system is feasible and elects to participate in the project, their portion of the remaining items in Attachment A shall be a pro-rata share of the costs determined by ratio of treated water system conveyance capacity, i.e., if the capacity of the conveyance system is designed for 10 million gallons day (mgd), and Fuquay-Varina has 6 mgd of conveyance capacity and Holly Springs has 4 mgd of conveyance capacity, the Fuquay-Varina would pay 60% of preliminary engineering costs and Holly Springs would pay 40% of preliminary costs. Parties recognize that the decision by Holly Springs may occur after completion of the Preliminary Engineering Report, and that their pro-rata share would be submitted as a reimbursement to the Town of Fuquay—Varina within 60-days of notification that they will participate in the conveyance system. Future project costs would be memorialized in an Agreement that also addresses ownership, operation and maintenance of the system.

3. Areas of Collaboration

The Parties shall mutually agree to work together to do the following:

- a. Participate in the joint report workshops and meetings;
- b. Cooperate in distributing available information to the other party as well as to any third parties as required;
- c. Review infrastructure alternatives;
- d. Develop a Preliminary Engineering Report;
- e. Determine a viable solution.

4. Term of the MOU

This MOU is effective upon full execution by the Parties, and will remain in full force and effect for a period of one year. No later than February 28, 2022, the MOU may be reviewed and renewed for an additional one (1) year period by mutual consent of the Parties in

writing.

5. Termination

Each party reserves the right to terminate this MOU upon thirty (30) days' written notice to the other. In addition, if either party fails to fulfill in timely and proper manner the obligations under this MOU, for any reason, the other party shall have the right to terminate this MOU, by giving written notice, and the termination will be effective upon receipt.

6. Meetings

To accomplish these objectives, the Parties' Staff may meet once per month for the purposes of program planning and monitoring, evaluating outcomes, and to review and ensure that each partner is in compliance with this Memorandum of Understanding. Each Party shall appoint a direct contact to be responsible for the Party under this MOU, as indicated in the Notice provision.

7. Notice

All notices or other communications arising hereunder shall be sent to the following:

Town of Fuquay-Varina
Attn: ~~Jay T. Meyers, Public Utilities Director~~ Jim Seymour
134 N. Main Street
Fuquay-Varina, NC 27526
Phone 919-567-3911
email: jmeyers@fuquay-varina.org

Town of Holly Springs
Attn: Kendra Parrish, Executive Director
of Utilities & Infrastructure Services
128 S. Main Street
Holly Springs, NC 27540
Phone 919-577-3150
email: kendra.parrish@hollyspringsnc.us

8. Amendment

Any amendment to this MOU to be effective, must be in writing, signed by both Parties, and executed with the same formality and approvals as the foregoing MOU.

9. No Waiver of Immunity

Nothing herein shall be construed to mandate purchase of insurance by Holly Springs, or to, in any other way, waive the defense of sovereign or governmental immunity from any cause of action alleged or brought against Holly Springs, for any reason, if otherwise available as a matter of law.

Nothing herein shall be construed to mandate purchase of insurance by the Fuquay-Varina, or to, in any other way, waive the defense of sovereign or governmental immunity from any cause of action alleged or brought against the Fuquay-Varina, for any reason, if otherwise available as a matter of law.

10. Non-Appropriation

Fuquay-Varina and Holly Springs are governmental entities, and the MOU validity is based upon the availability of public funding under the authority of its statutory mandate.

In the event that funds are not available and not appropriated to the program specified in this MOU, the non-appropriating party shall immediately inform the other party in writing, and within thirty (30) days thereof this MOU shall automatically expire without penalty to either party.

In the event of a legal change in either party's statutory authority, mandate, and mandated functions, which adversely affects the authority to continue performing obligations under this MOU, then this MOU shall automatically expire without penalty to either party.

11. No Third-Party Beneficiaries

This MOU is not intended for the benefit of any third party. The rights and obligations contained herein belong exclusively to the Parties hereto, and shall not confer any rights or remedies upon any person or entity other than the Parties hereto.

12. Applicable Law

All matters relating to this MOU shall be governed by the laws of the State of North Carolina, without regard to its choice of law provisions.

13. Relationship of Parties

Fuquay-Varina and Holly Springs are, and shall remain independent contractors, with respect to any service or function performed under this MOU. Except as provided for in this MOU, each party shall select the means, method, and manner of performing their respective services herein. Each party is an independent contractor and shall not represent itself or be deemed as an officer, agent, or employee of the other party, for any purpose. Nothing under this MOU is intended or should be construed in any manner, to create a partnership, joint agency, or venture between the Parties. Each party agrees that it will obey all State and Federal statutes, rules, and regulations which are applicable to any responsibility or duty outlined herein.

14. Applicability of North Carolina Public Records Law

Notwithstanding any other provisions of this MOU, this MOU and all materials submitted by the parties to one another are subject to the public records laws of the State of North Carolina and it is the responsibility of the submitting party to properly designate materials that may be protected from disclosure under North Carolina law as such and in the form required by law prior to the submission of such materials to the other party. The parties understand and agree that the Parties may take any and all actions necessary to comply with federal, state, and local laws and/or judicial orders and such actions will not constitute

a breach of the terms of this MOU. To the extent that any other provisions of this MOU conflict with this paragraph, the provisions of this section shall control.

15. Force Majeure

Except as otherwise provided in any environmental laws, rules, regulations, or ordinances applicable to the parties and the services performed under this MOU, neither party shall be deemed to be in default of its obligations hereunder if and so long as it is prevented from performing such obligations by an act of war, hostile foreign actions, nuclear explosion, earthquake, hurricane, tornado, or other catastrophic natural event or act of God. Either party to the MOU must take reasonable measures and implement reasonable protections when a weather event, otherwise defined as a force majeure event, is forecast to be eligible to be excused from the performance otherwise required under this MOU by this provision.

16. Non-Discrimination

To the extent permitted by North Carolina law, the parties hereto for themselves, their agents, officials, employees and servants agree not to discriminate in any manner on the basis of race, color, creed, national origin, sex, age, handicap, or sexual orientation with reference to the subject matter of this MOU.

17. E-Verify

Any subcontractor employed by the Parties as a part of this MOU shall comply, to the best of the Parties' knowledge, with the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law and in accordance with NCGS §64-25 et. seq.

18. Advertising

The parties shall not use the existence of this MOU, or the name of the other, as part of any advertising without the prior approval of the other party.

19. Miscellaneous

The Parties shall be responsible for the proper custody and care of any property furnished or purchased by the other party for use in connection with the performance of this MOU, and will reimburse the other party for the replacement value of its loss or damage.

20. Severability

If any provision of this MOU shall be determined to be unenforceable by a court of competent jurisdiction, such determination will not affect any other provision of this MOU.

21. Counterparts

This MOU may be executed in several counterparts, each of which shall be deemed an original.

22. Incorporation of Documents/Complete Agreement

This MOU, and any documents incorporated below, represent the entire Agreement between the parties and suspend all prior oral or written statements, or Agreements.

IN WITNESS WHEREOF, being duly authorized, Fuquay-Varina has executed the foregoing with the signature of its Town Manager, attested by its Clerk, with the official seal affixed, and, being duly authorized, Holly Springs has executed with the signature of its Town Manager, attested by its Town Clerk, with the official seal affixed, the day and year first above written.

TOWN OF FUQUAY-VARINA

By: 
Adam Mitchell, Town Manager
2021-Sep-10 16:49

ATTEST:

By: Rose H. Rich
Rose Rich, Town Clerk
(Affix Seal)
2021-Sep-13 08:26

TOWN OF HOLLY SPRINGS

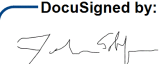
DocuSigned by:
By: Randy Harrington 7/22/2021
Randy Harrington, Town Manager

ATTEST:

DocuSigned by:
By: Linda McKinney 7/23/2021
Linda McKinney, Town Clerk
(Affix Seal)

THIS INSTRUMENT APPROVED AS TO FORM:


James Adcock, Town Attorney
2021-Sep-10 16:06

DocuSigned by:
 7/20/2021
John Schiano, Town Attorney

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

By: JoAnne J. Crabtree
JoAnne Crabtree, Finance Director

DocuSigned by:
By: Antwan Morrison 7/20/2021
Antwan Morrison, Finance Director

This is **EXHIBIT A**, consisting of 2 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated December 20, 2020.

EXHIBIT A

SCOPE OF WORK Town of Fuquay-Varina AND Hazen and Sawyer, D.P.C. Water Conveyance PER

Preliminary Engineering

The Town of Fuquay-Varina selected Hazen and Sawyer to perform preliminary engineering to identify necessary infrastructure to convey treated water from the City of Sanford Water Treatment Plant (WTP) to the Town of Fuquay-Varina. The following details the Scope of Work associated with preliminary engineering phase of this work.

1. Transmission Main Routing and Pump Station Siting - A route along NC Hwy 42 has been previously identified as a possible route for delivery of water from the Sanford WTP to Fuquay-Varina and additional routes are being evaluated as part of the Inter Basin Transfer (IBT) work underway, to include consideration of one or more cross-country routes. Hazen will build upon this work with a more detailed engineering study of the potential routes and make a recommendation for a final route selection. The route assessment will take into account obstacles such as railroad crossings, surface water crossings, switching sides of roads to avoid conflicts with existing utilities, a general estimate of easements required outside of road rights-of-way, property research to determine properties going to the center of road where easements within the road right-of-way are required, and other considerations that would influence the final design of the required facilities. The extents of the pipeline routes will be coordinated with the work for the City of Sanford. The route study will be generally based on publicly available GIS data. The steps to complete the route selection are generally:
 - GIS desktop review of the project area and identification of potential routes. This task will build on previous work provided by Freese and Nichols, Inc. as part of the Water Capacity Analysis Project.
 - Perform a preliminary site review of identified routes.
 - Complete a route comparison assessing impacts, cost, hydraulics and other factors identified during the preliminary route review.
 - Perform a preliminary review of trenchless crossings to determine appropriate trenchless technologies.
 - Perform a preliminary easement review of routes to determine impacts and costs. Review shall be GIS based.

- Preliminary pump station siting will be performed based on hydraulic assessment results. Following the determination of the booster pump station location, a pump station component assessment will be performed to evaluate pump type, pump station layout and pump station ancillary facilities.
 - Perform a secondary site review of the recommended route to further refine the route based on additional reviews.
2. Limited planimetric features survey, utility location, and geotechnical investigation services to support the route study and recommendations are included for strategic locations such as trenchless crossings.

Design level aerial topographic mapping is included for the recommended route. Design level mapping is included in the PER phase to be completed during winter “leaf-off” conditions and to allow for final design to begin immediately upon completion of the preliminary engineering.

Full planimetric and utility location survey, and geotechnical investigation will be included with design phase services.

3. Water Modeling

Update the Town’s water distribution system model shall include

- Updated based on the latest water system GIS.
- Update the existing water system demands in the model based on the geolocated Town’s water meter billing data.
- Update operational controls and perform a verification of the model using the Town’s SCADA data.
- Update the model with existing information for the City of Raleigh water supply to include pump curve information and piping, to be provided by the Town.

Up to three (3) entry point locations/configurations shall be evaluated to determine one (1) recommended connection point for the proposed transmission water line. The entry point location/configuration evaluation will include hydraulic modeling of the three (3) potential entry points/configurations. Modeling scenarios shall be developed in the Town’s water model to assess the impacts on the existing distribution system and previously recommended water distribution system projects. The scenarios will include existing, 2035, and 2060 maximum day demand conditions and up to three (3) flow rates from the Sanford WTP at each potential entry point. Coordination will occur with the Town to determine the operating conditions to be simulated for each scenario. Distribution system improvements will be recommended to convey flow from the transmission water line entry point.

Coordination will occur with the high service pumping and transmission modeling efforts being completed for the City of Sanford under a separate contract with the transmission modeling efforts required for the Town. This assumes a proposed transmission water line and two booster pump stations (one at Sanford WTP and one inline booster pump station) may be evaluated for up to two (2) transmission route alternatives, with up to three (3) transmission main size alternatives. Develop an envelope of system curves for the recommended route and transmission line size. Evaluation of up to three (3) pump configurations in the model is assumed. Evaluation of the

proposed transmission water line under 6.5 MGD and two (2) additional future flow conditions is assumed.

4. Water Quality Impacts and 5. System Future Capabilities:

Up to seven (7) scenarios in the Town's water model will be developed to simulate water age as an indicator of water quality and to define flows that can be reasonably conveyed in a system designed for 6.5 MGD with minimal water quality issues. One of the seven scenarios will be an existing system water age scenario to establish the baseline water age. Impacts on water quality will be assessed against this baseline water age with model results indicating where the Town can expect to see improved or degraded water quality. The water age scenarios will include existing and 2035 average day demand conditions and 1, 2, or 3 MGD of flow from the Sanford WTP at recommended entry point. Coordination with the Town will occur to determine the operating conditions to be simulated for each scenario as well as to establish the initial water age at the beginning of the transmission system. Town provided recent water quality data will be compared with the baseline water age modeling results to confirm that the model aligns with field recorded data. This water age analysis focuses on the existing and proposed 2035 water system and does not assume that the Town is taking the full 6.5 MGD capacity from the Sanford WTP.

6. Preliminary engineering work shall be coordinated with IBT certificate requirements (such as alternative analysis). The pipeline alignments and other considerations of the IBT Project will inform and supplement the work provided in this project.
7. Preliminary costs for reviewed routes will be developed as a part of the route comparison. Upon selection of a recommended route and associated infrastructure, a project cost shall be developed. The project costs for the recommended improvements shall have the accuracy of AACE Class 3 cost estimates.
8. Develop preliminary project packaging and sequencing and associated detailed project schedules for implementation from final design through construction completion.
9. Define the permits and approvals required for the recommended alternative and the anticipated durations required to procure each.
10. Define the stakeholders for the recommended alignment and develop an outreach plan to successfully convey project information to those affected by the project elements.
11. Partner Coordination – Work shall include coordination with potential project partners, including but not limited to the Town of Holly Springs.
12. Analysis of Funding Options – Funding opportunities will be evaluated for the recommended improvements. The evaluation will include a general summary of the requirement, application schedule, and funding limitations for identified funding opportunities. This evaluation will include a financial analysis to identify potential impacts of the various funding options on customer rates.
13. Preliminary Engineering Report – All findings and recommendations will be delivered in a final report. One draft with one set of revisions is anticipated. Present findings and recommendations to Fuquay-Varina Board of Commissioners at one Public Meeting.

14. Project Management and Meetings – Project management shall occur on an ongoing basis. Progress meetings will be held monthly to review and discuss the current status of the project, as well as next steps.

The Final Design and Construction Phase services for this project will be added to this Agreement by Amendment.

Schedule

The tasks defined above shall be completed as indicated in the table below.

Task	Time to Completion	Start Prompt
Route Analysis	200 Days	NTP
Hydraulic Modeling	140 Days	NTP
Limited Field Investigations	60 Days	Identification of potential routes
Project Phasing and Packaging	30 Days	Completion of Route Analysis and Modeling
Preliminary Engineering Report	80 Days	Completion of Project Phasing and Packaging

Schedule assumes basis of design can be finalized by the Town and partners in the first quarter of 2021, including required flows and delivery locations.

This is **EXHIBIT B**, consisting of 3 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated December 20 ___, 2020.

Owner's Responsibilities

Article 2 of the Agreement is amended and supplemented to include the following agreement of the parties.

B2.01 *In addition to other responsibilities of Owner as set forth in this Agreement, Owner shall at its expense:*

- A. Provide Engineer with all criteria and full information as to Owner's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility, and expandability, and any budgetary limitations; and furnish copies of all design and construction standards which Owner will require to be included in the Drawings and Specifications; and furnish copies of Owner's standard forms, conditions, and related documents for Engineer to include in the Bidding Documents, when applicable.

Furnish to Engineer any other available information pertinent to the Project including reports and data relative to previous designs, or investigation at or adjacent to the Site.

Following Engineer's assessment of initially-available Project information and data and upon Engineer's request, furnish or otherwise make available such additional Project related information and data as is reasonably required to enable Engineer to complete its Basic and Additional Services. Such additional information or data would generally include the following, unless Exhibit A expressly requires the Engineer to provide the following:

Property descriptions.

Zoning, deed, and other land use restrictions.

Property, boundary, easement, right-of-way, and other special surveys or data, including establishing relevant reference points other than documents provided under this contract.

Explorations and tests of subsurface conditions at or contiguous to the Site, drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site, or hydrographic surveys, with appropriate professional interpretation thereof.

Environmental assessments, audits, investigations, and impact statements, and other relevant environmental or cultural studies as to the Project, the Site, and adjacent areas.

Data or consultations as required for the Project but not otherwise identified in the Agreement or the Exhibits thereto.

Give prompt written notice to Engineer whenever Owner observes or otherwise becomes aware of the presence at the Site of any Constituent of Concern, or of any other development that affects

the scope or time of performance of Engineer's services, or any defect or nonconformance in Engineer's services, the Work, or in the performance of any Contractor.

Authorize Engineer to provide Additional Services as set forth in Part 2 of Exhibit A of the Agreement as required.

Arrange for safe access to and make all provisions for Engineer to enter upon public and private property as required for Engineer to perform services under the Agreement.

Examine all alternate solutions, studies, reports, sketches, Drawings, Specifications, proposals, and other documents presented by Engineer (including obtaining advice of an attorney, insurance counselor, and other advisors or consultants as Owner deems appropriate with respect to such examination) and render in writing timely decisions pertaining thereto.

Provide reviews, approvals, and permits from all governmental authorities having jurisdiction to approve all phases of the Project designed or specified by Engineer and such reviews, approvals, and consents from others as may be necessary for completion of each phase of the Project.

Provide, as required for the Project:

Accounting, bond and financial advisory, independent cost estimating, and insurance counseling services.

Legal services with regard to issues pertaining to the Project as Owner requires, Contractor raises, or Engineer reasonably requests.

Such auditing services as Owner requires to ascertain how or for what purpose Contractor has used the moneys paid.

Placement and payment for advertisement for Bids in appropriate publications.

Advise Engineer of the identity and scope of services of any independent consultants employed by Owner to perform or furnish services in regard to the Project, including, but not limited to, cost estimating, project peer review, value engineering, and constructability review.

Furnish to Engineer data as to Owner's anticipated costs for services to be provided by others (including, but not limited to, accounting, bond and financial, independent cost estimating, insurance counseling, and legal advice) for Owner so that Engineer may assist Owner in collating the various cost categories which comprise Total Project Costs.

If Owner designates a construction manager or an individual or entity other than, or in addition to, Engineer to represent Owner at the Site, define and set forth as an attachment to this Exhibit B the duties, responsibilities, and limitations of authority of such other party and the relation thereof to the duties, responsibilities, and authority of Engineer.

If more than one prime contract is to be awarded for the Work required for a given assignment designed or specified by Engineer, designate a person or entity to have authority and responsibility for coordinating the activities among the various prime Contractors, and define and set forth the duties, responsibilities, and limitations of authority of such individual or entity

and the relation thereof to the duties, responsibilities, and authority of Engineer as an attachment to this Exhibit B that is to be mutually agreed upon and made a part of this Agreement before such services begin.

Attend the pre-bid conference; bid opening; pre-construction conferences; construction progress and other job related meetings; and Substantial Completion and final payment inspections.

Provide the services of an independent testing laboratory to perform all inspections, tests, and approvals of Samples, materials, and equipment required by the Contract Documents, or to evaluate the performance of materials, equipment, and facilities of Owner, prior to their incorporation into the Work with appropriate professional interpretation thereof.

Provide Engineer with the findings and reports generated by the entities providing services to Owner pursuant to this paragraph.

This is **EXHIBIT C**, consisting of 1 page, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated December 20____, 2020.

BASIS OF COMPENSATION

The Work identified here in Exhibit A will be billed on a Time and Materials to a not to exceed value of \$1,003,680. The Basis of Compensation will be invoiced monthly at the following hourly billing rates.

Vice President	\$235
Senior Associate	\$225
Associate	\$175
Senior Principal Engineer	\$160
Principal Engineer	\$140
Construction Observer	\$110
Engineer	\$120
Assistant Engineer	\$110
Senior Principal CAD Designer	\$150
Principal CAD Designer	\$120
Senior CAD Designer	\$100
Administrative	\$80
_____	\$
_____	\$
_____	\$
_____	\$
_____	\$
_____	\$

Subconsultants employed by Hazen and Sawyer will be billed at cost times a multiplier of 1.1. All other reimbursable project expenses will be billed at cost and vehicle mileage will be billed at rates allowed by the Federal Internal Revenue Service.

Scope and fee for additional engineering services will be negotiated using these hourly billing rates and incorporated into this Agreement by Amendment. Hourly billing rates may be increased annually, but not in excess of five percent.

Insurance

Paragraph 6.04 of the Agreement is amended and supplemented to include the following agreement of the parties.

G6.04 Insurance

A. The limits of liability for the insurance required by Paragraph 6.04.A and 6.04.B of the Agreement are as follows:

1. By Engineer:

- a. Workers' Compensation: Statutory
- b. Employer's Liability --
 - 1) Each Accident: \$500,000 _____
 - 2) Disease, Policy Limit: \$500,000 _____
 - 3) Disease, Each Employee: \$500,000 _____
- c. General Liability --
 - 1) Each Occurrence (Bodily Injury and Property Damage): \$1,000,000 _____
 - 2) General Aggregate: \$2,000,000 _____
- d. Excess or Umbrella Liability --
 - 1) Each Occurrence: \$5,000,000 _____
 - 2) General Aggregate: \$5,000,000 _____
- e. Automobile Liability --Combined Single Limit (Bodily Injury and Property Damage):
Each Accident \$1,000,000 _____
- f. Professional Liability --
 - 1) Each Claim Made \$1,000,000 _____
 - 2) Annual Aggregate \$1,000,000 _____
- g. Other (specify): \$ none _____



Water Conveyance System from City of Sanford WTP

Draft PER Review – Progress Meeting 12

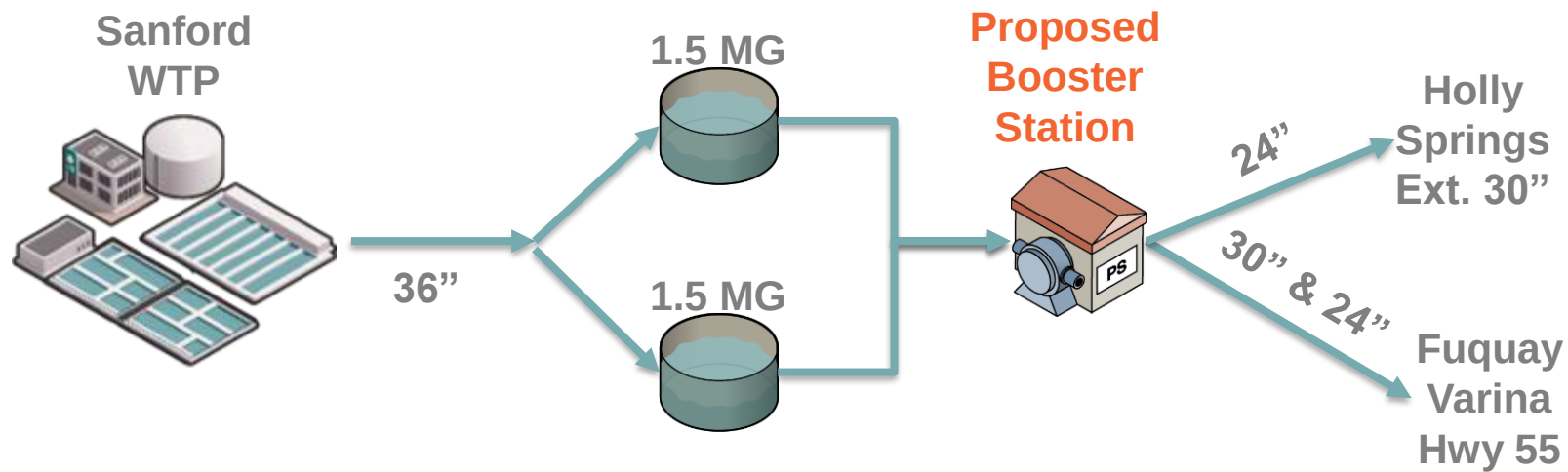
January 6, 2022

Agenda

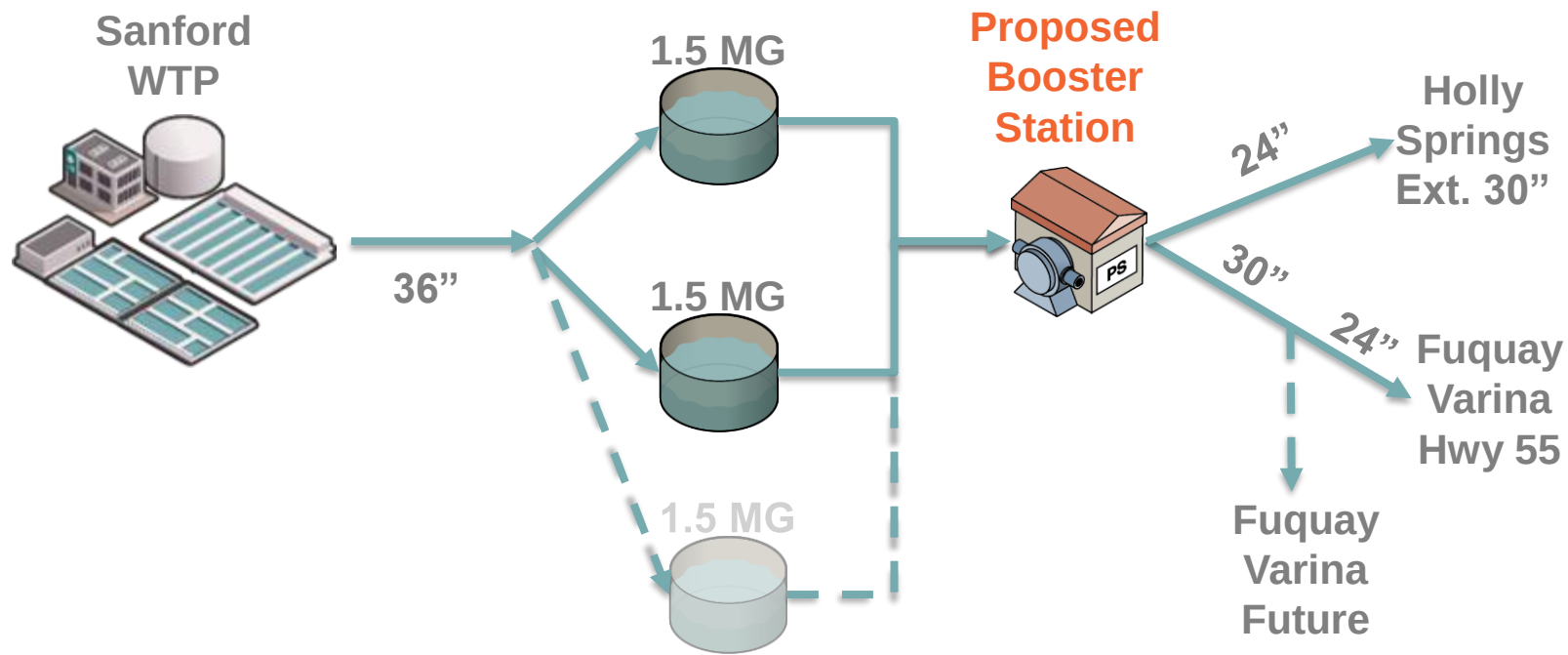
- Recommendation Summary
- Route Review
- Pump Station Location and Layout
- Storage Review
- Opinion of Probable Construction Cost
- Schedule

Recommendation Summary

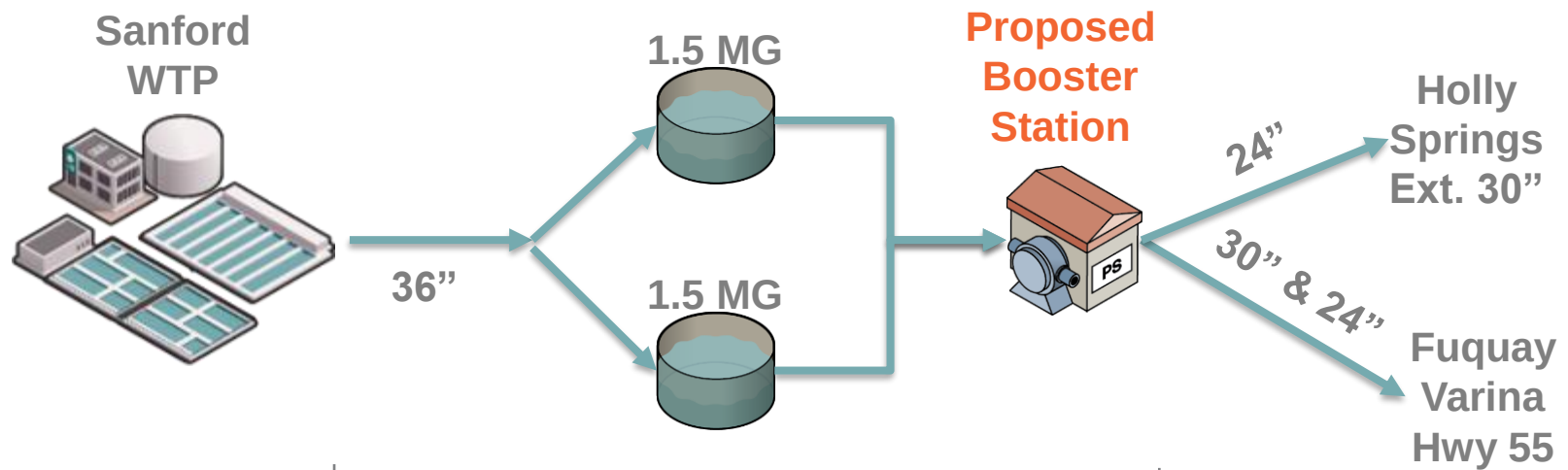
Recommendation Summary - 2025



Recommendation Summary - Future



Recommendation Summary - 2025



Transmission Main and BPS

- 36" DIP from the WTP to the BPS Site
- Two, 1.5 MG GST
- Booster Pump Station

Total Cost \$72,433,000

Conveyance to Distribution Systems

- 24" to HS
- 30" and 24" to F-V

Total Cost
\$17,721,000

Recommendation Summary

Transmission Main

- Route 3
 - Along Hwy 42 to cross the Cape Fear River and then cross country through Duke Energy property
 - Avoids Harnett County
- 36" DIP
 - Conveys up to 16 MGD
 - Approximately 71,000 feet long
- Shared pipe up to proposed BPS

BPS and Storage

- Near the intersection of Buckhorn Duncan Road and Duncan Cook Road
- Single BPS building with dedicated pumping to Fuquay-Varina and Holly Springs
 - Fuquay-Varina
 - 3, 4.33 MGD pumps for current
 - 4, 4.33 MGD pumps in future
 - Holly Springs
 - 3, 3 MGD pumps cover full range of flows
- Two, 1.5 MG ground storage tanks with space for 1 additional tank in the future

Conveyance to Distribution

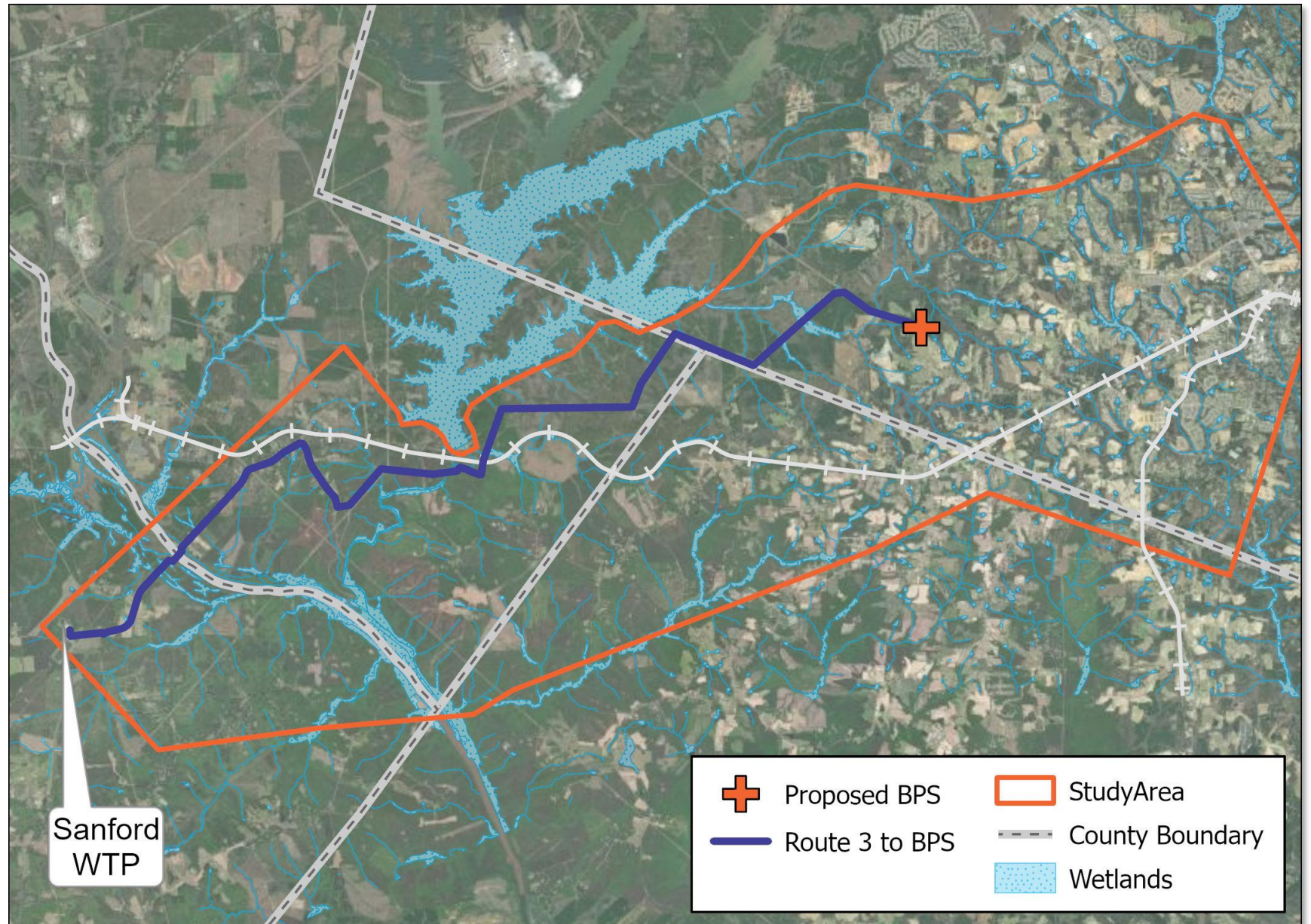
- Fuquay-Varina
 - 30" DIP from BPS to Piney Grove Wilbon Road and Duncan Cook Road intersection
 - 10,500 feet
 - 24" along Piney Grove Wilbon Road, Wilbon Road, and Judd Parkway
 - 15,500 feet
 - Additional CIP improvements
- Holly Springs
 - 24" from BPS to existing 30" at the Piney Grove Wilbon Road and Duncan Cook Road intersection

Transmission Main Review

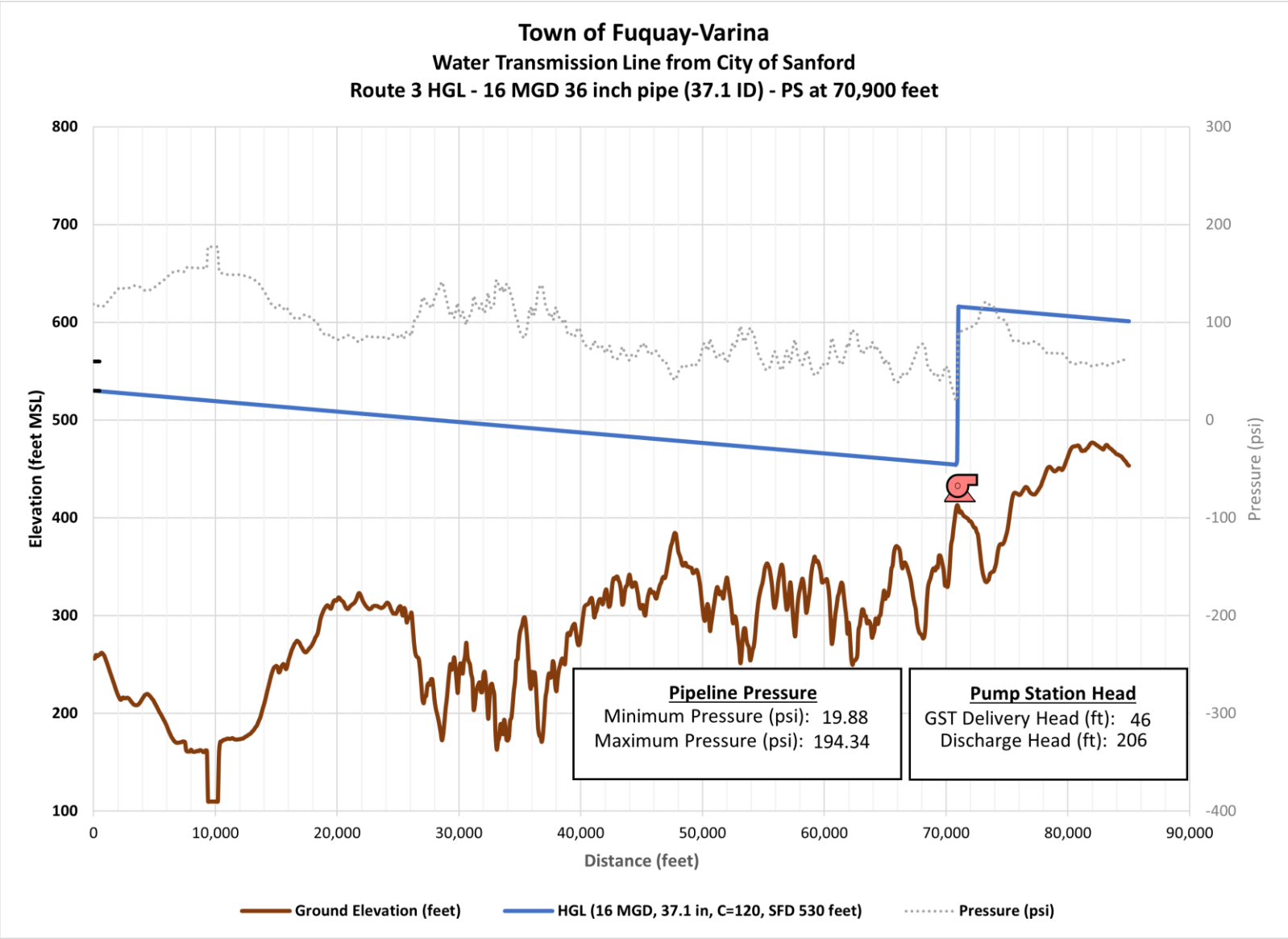
Recommended Route

Route 3

- Crosses the Cape Fear River at Hwy 42
- Follows Hwy 42 to Buckhorn Dam Rd and then is largely cross county in property owned by Duke Energy
- Outside of Harnett County
- Booster PS in a hydraulically favorable location



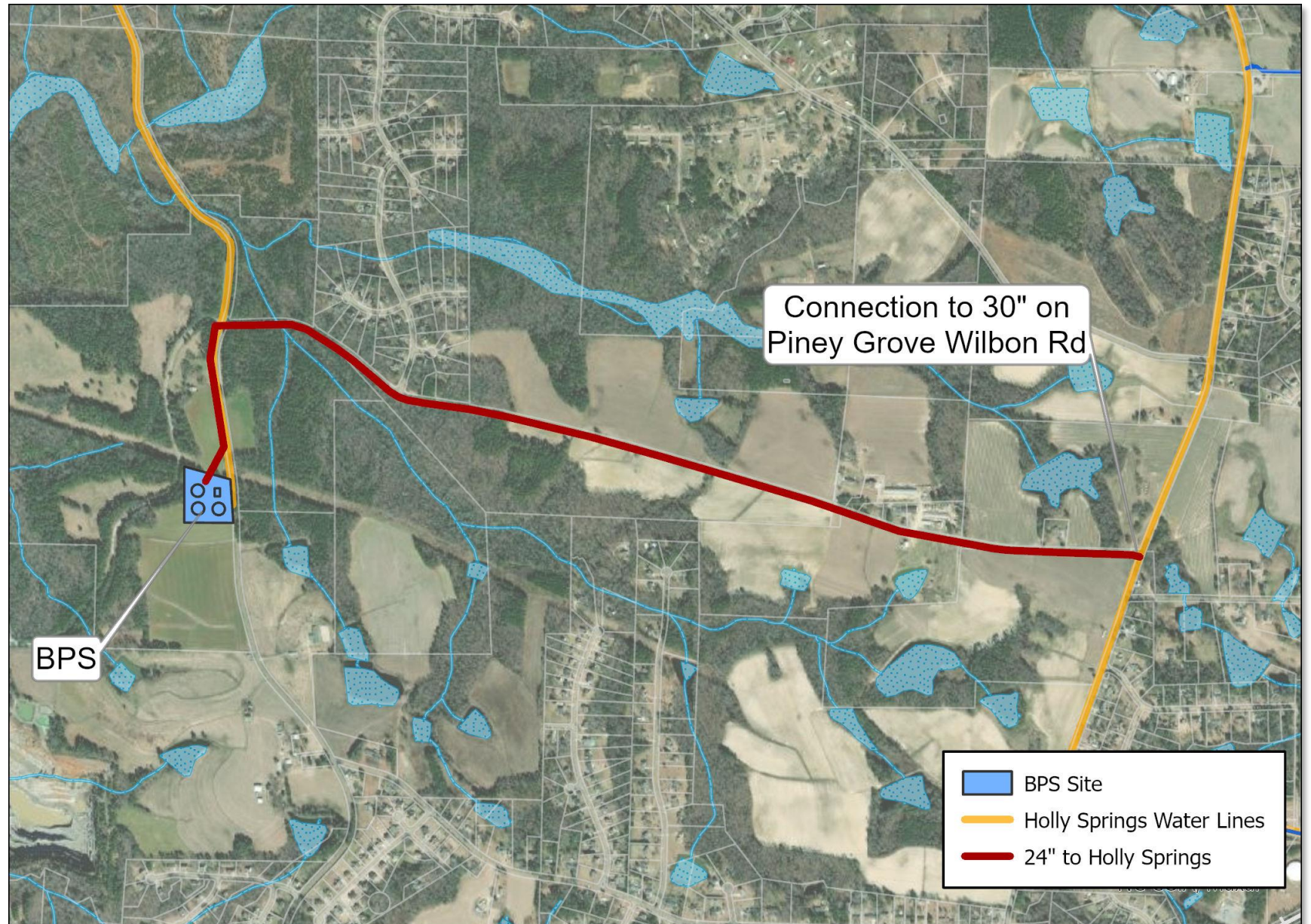
Recommended Route – Hydraulic Profile



Recommended Route

Connection to Holly Springs Distribution System

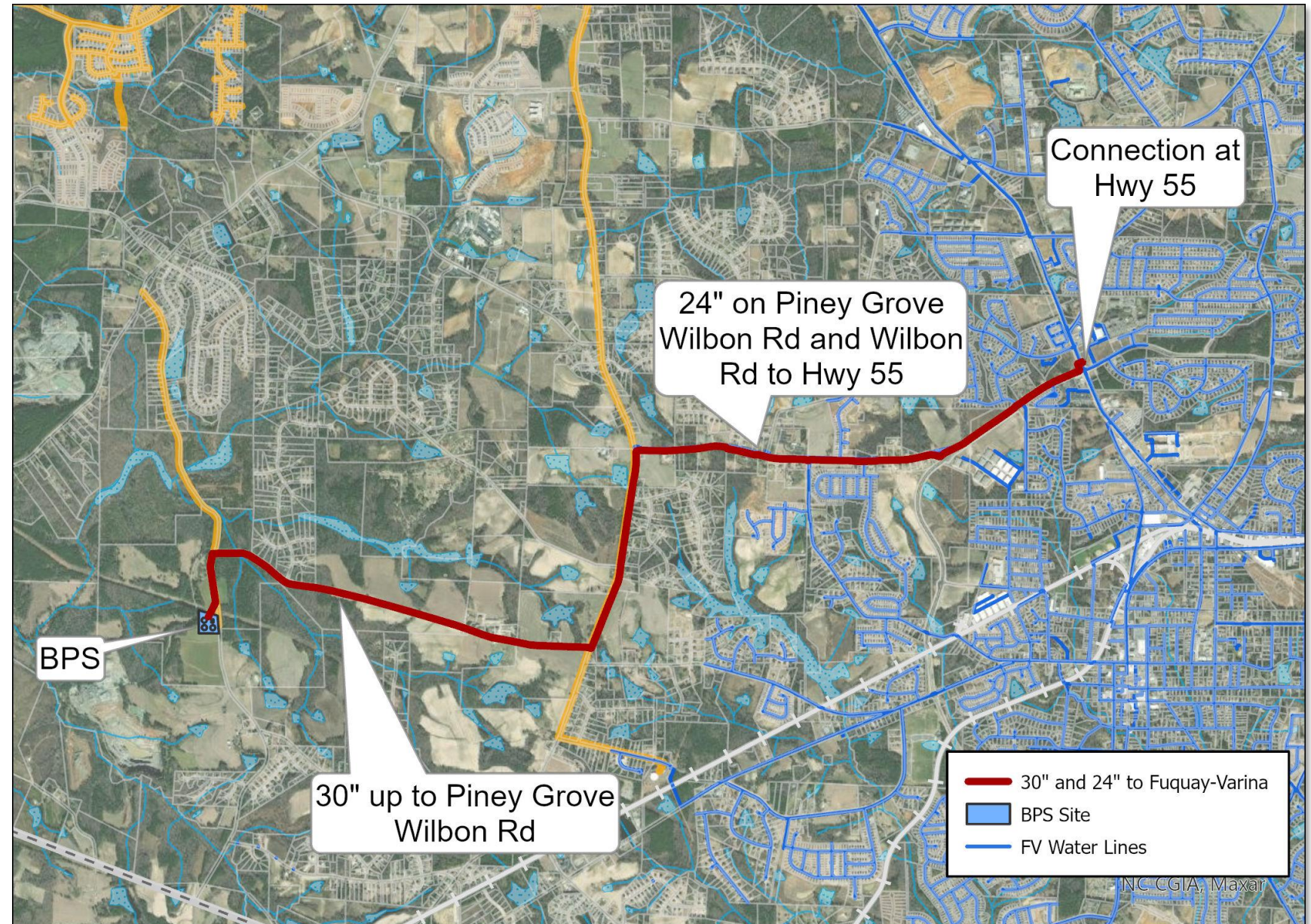
- 24" DIP from the BPS to the existing 30" on Piney Grove Wilbon Road.
- Existing pumps at the WCBPS are sufficient but operational changes may be needed to operate both pump stations at the same time at full capacity



Recommended Route

Connection to Fuquay-Varina Distribution System

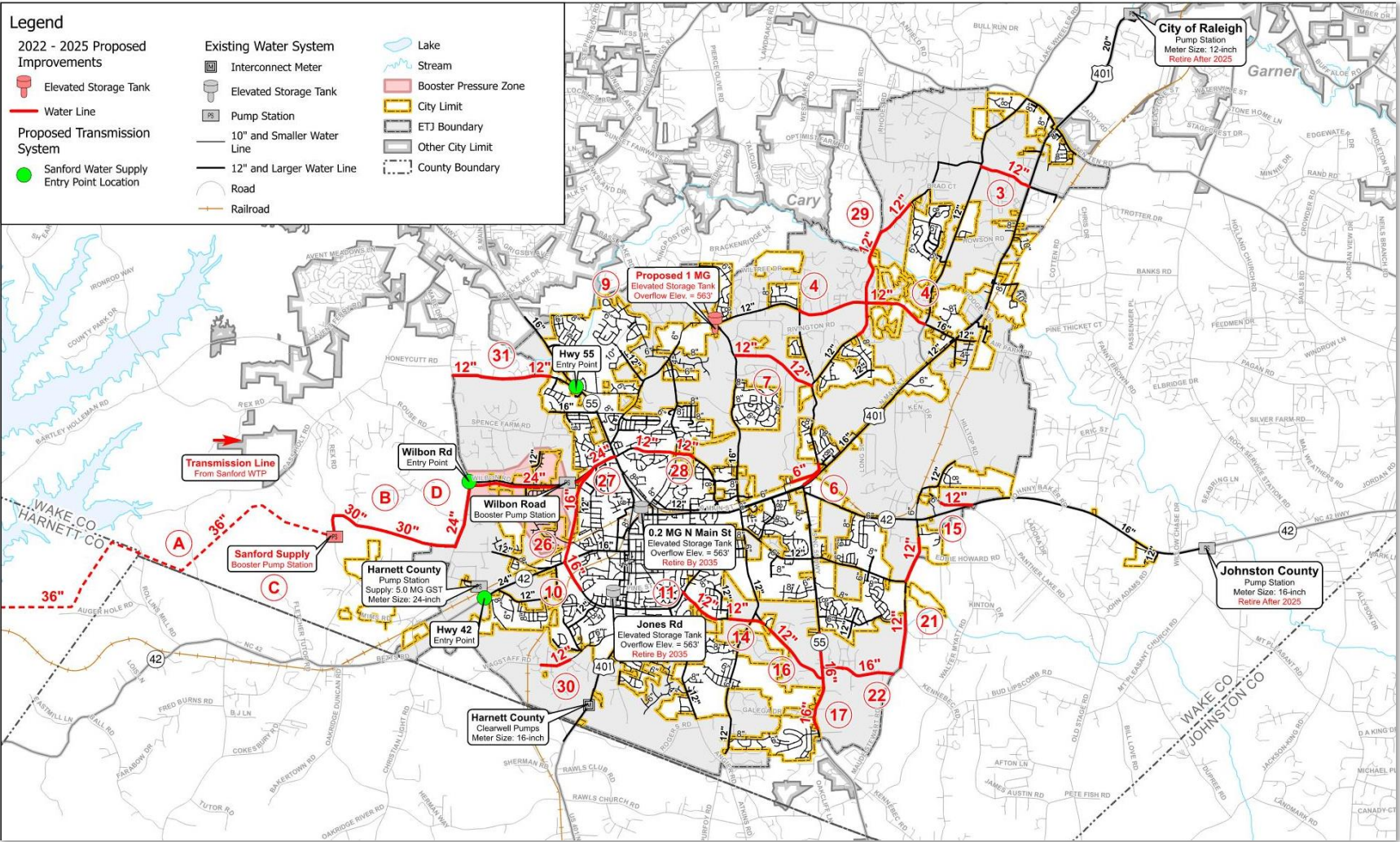
- 30" up to Piney Grove Wilbon Road will allow a future connection to feed the southern part of the system
- 24" on Piney Grove Wilbon Road and Wilbon Road to Hwy 55



Fuquay-Varina CIP Improvements 2022 - 2025

- Improvements shown need to be completed before the Sanford transmission main and BPS are in service.
- Projects have been updated to reflect the Sanford Supply

Project Number	Project Description
3	12-inch Donny Brook Road Line
4	12- Inch Hilltop Needmoor Road Loop
6	6-Inch Johnson Pond Road Loop
	12-Inch US 401 Loop
7	12-Inch Whitted Road Loop
9	1.0 MG Elevated Storage Tank
10	16-Inch Judd Parkway Loop
14	12-Inch Holland Road Loop (West)
15	12-Inch Holland Road Loop (Center)
16	12-Inch Dwight Rowland Road (East)
	12-Inch Holland Road Loop (East)
17	16-Inch NC 55 Loop (North)
21	16-Inch NC 55 Loop (South)
22	12-Inch Kennebec Road Loop (North and South)
26	16-Inch Clayton Road Loop
27	16-Inch Judd Parkway Loop (Future South)
28	16-Inch Judd Parkway Loop (Future North)
29	12-Inch Judd Parkway NE Loop
30	12-Inch Johnson Pond Road Loop (South)
31	12-Inch Wagstaff Road Extension

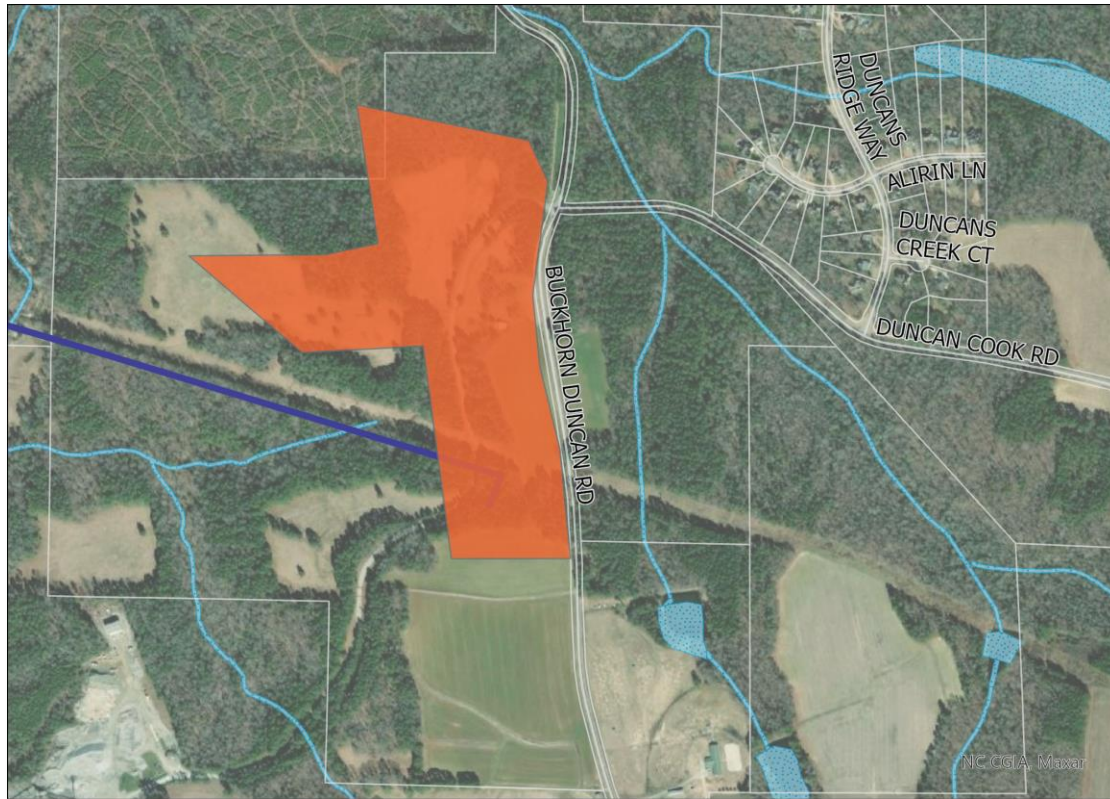


- Map of updated improvements need through 2055



Booster Pump Station Site and Layout

Booster Pump Station



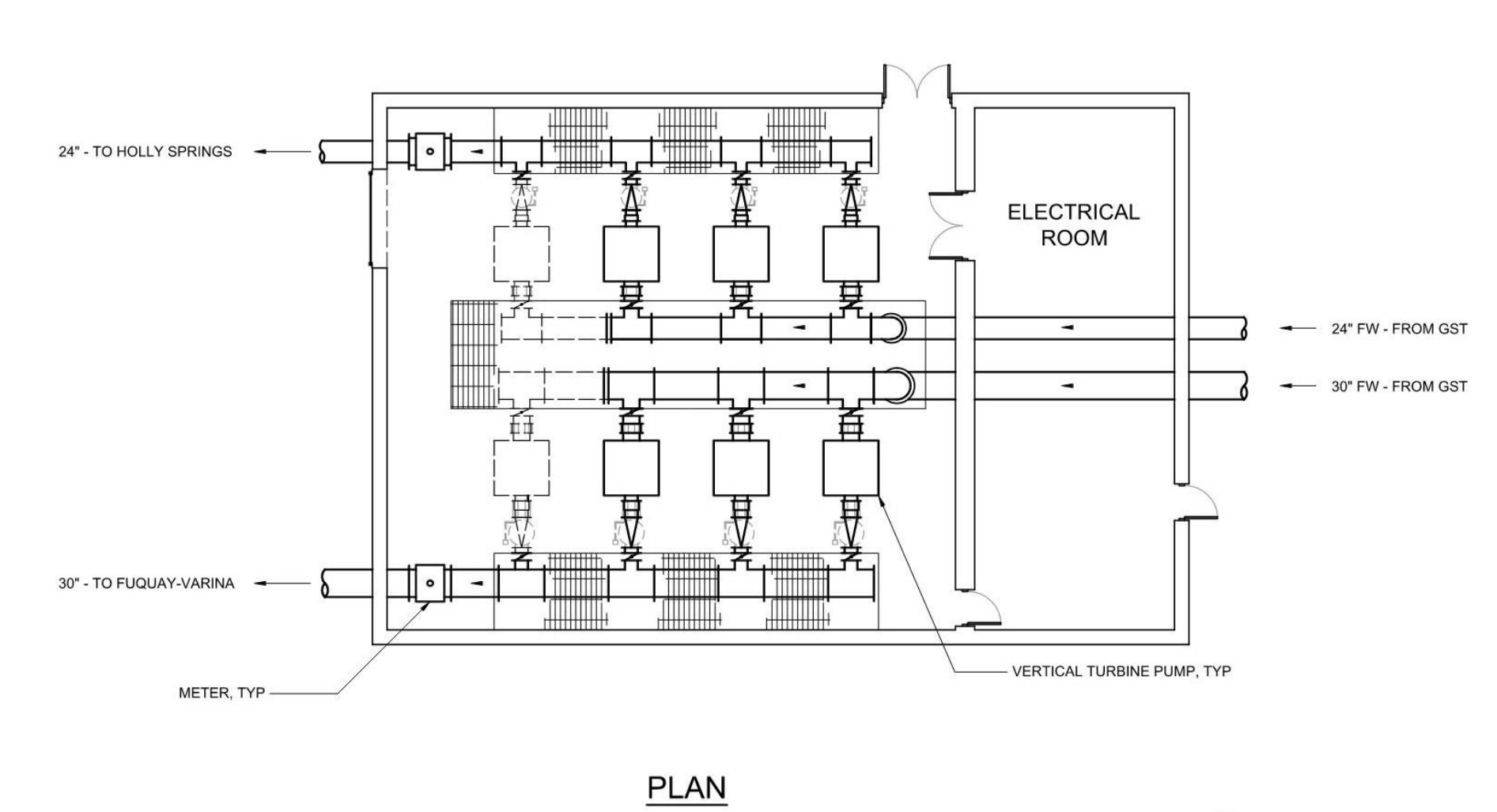
- BPS should be around elevation 380 - 410
- Can work within the shaded area



Potential 4.6 acre layout with BPS and two 1.5 MG GST

Booster Pump Station

- Assumes a single pump station serving both systems
- Fuquay-Varina
- 3, 4.33 MGD pumps for current
- 4, 4.33 MGD pumps in future
- Holly Springs
- 3, 3 MGD pumps cover full range of flows



Storage Review and Ground Storage Tank Recommendation

Fuquay-Varina Storage Review

Distributed Storage (Elevated Storage)	Volume (Current)	Volume (2025)	Volume (2035)	Volume (2055)
The Hill Tank	0.2	0.2	0.0	0.0
Jones Road Tank	0.5	0.5	0.0	0.0
North Tank (Future)	0.0	1.0	1.0	1.0
401 Tank (Future)	0.0	0.0	0.0	1.0
SE Tank (Future)	0.0	0.0	1.5	1.5
Total Distributed Available	0.7 MG	1.7 MG	2.5 MG	3.5 MG
Total Required (Equalization + Fire)	1.38 MG (0.75 MG + 0.63 MG)	1.5 MG (0.87 MG + 0.63 MG)	1.88 MG (1.25 MG + 0.63 MG)	2.65 MG (2.02 MG + 0.63 MG)
Surplus (+) or Deficit (-)	-0.68 MG	0.20 MG	0.62 MG	0.85 MG

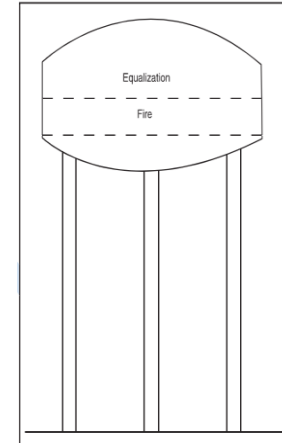
Fuquay-Varina Storage Review

Distributed Storage (Elevated Storage)	Volume (Current)	Volume (2025)	Volume (2035)	Volume (2055)
The Hill Tank	0.2	0.2	0.0	0.0
Jones Road Tank	0.5	0.5	0.0	0.0
North Tank (Future)	0.0	1.0	1.0	1.0
401 Tank (Future)	0.0	0.0	0.0	1.0
SE Tank (Future)	0.0	0.0	1.5	1.5
Total Distributed Available	0.7 MG	1.7 MG	2.5 MG	3.5 MG
Total Required (Equalization + Fire)	1.38 MG (0.75 MG + 0.63 MG)	1.5 MG (0.87 MG + 0.63 MG)	1.88 MG (1.25 MG + 0.63 MG)	2.65 MG (2.02 MG + 0.63 MG)
Surplus (+) or Deficit (-)	-0.68 MG	0.20 MG	0.62 MG	0.85 MG

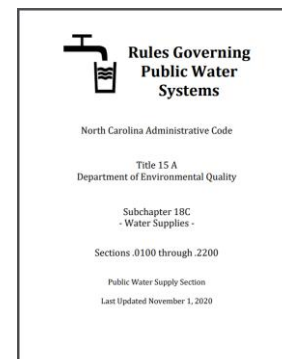
Minimum Storage Per PWS	Volume	Volume	Volume	Volume
Harnett County Ground Storage	1.04 MG	1.04 MG	1.04 MG	1.04 MG
Total Distributed Storage	0.70 MG	1.7 MG	2.50 MG	3.50 MG
Total Emergency Storage Available	1.74 MG	2.74 MG	3.54 MG	4.54 MG
Total Emergency Required (Ground + Elevated)	1.26 MG	1.80 MG	2.60 MG	4.2 MG
Surplus (+) or Deficit (-)	0.49 MG	0.94 MG	0.94 MG	0.34 MG

Holly Springs Water System Storage Analysis (Associated with 2030)

Distributed Storage (Elevated Storage)	Volume
Avent Ferry Tank	1.2 MG
Lee St. Tank	0.3 MG
School Tank	1.1 MG
Proposed Tank	1.0 MG
Total Distributed Available	3.6 MG
Total Required (Equalization + Fire)	2.36 MG (1.73 MG + 0.63 MG)
Surplus (+) or Deficit (-)	1.24 MG (Surplus)



Minimum Storage Per PWS	Volume
Harnett County Ground Storage	2.1 MG (Proportionate use of 5MG GST)
Total Distributed Storage	3.6 MG (Includes future 1MG Tank)
Total Storage Available	5.7 MG
Total Minimum Required (Ground + Elevated)	3.5 MG
Surplus (+) or Deficit (-)	2.2 MG (Meets Storage Requirement)



Storage Recommendation – Fuquay-Varina

Analysis shows no additional storage is needed to meet minimum requirements.

Performed a review to determine the anticipated hours of storage with the Sanford supply out of service.

- Largest source out - Sanford
- Proposed 1.5 MG GST
- Proposed ESTs
- Assume all tanks are half full
- Assumes increase of 0.5 MGD from Harnett County to drain GST
- Assumes a steady demand, not peak hour demand flows

No Supply from Sanford – Max Day Demand				
	Current	2025	2035	2055
Total Supply (MGD)	5.25	4.25	2.5	2.5
MDD (MGD)	4.7	5.4	7.8	12.6
Deficit (MG)	None	1.15	5.3	10.1
Hours of Storage	Na	44.2	10.2	7.1

No Supply from Sanford – Average Day Demand				
	Current	2025	2035	2055
Total Supply (MGD)	5.25	4.25	2.5	2.5
ADD (MGD)	2.8	3.6	5.2	8.4
Deficit (MG)	None	None	2.7	5.9
Hours of Storage	Na	Na	20.1	12.2

Storage Recommendation – Holly Springs

Analysis shows no additional storage is needed to meet minimum requirements.

Performed a review to determine the anticipated hours of storage with the Sanford supply out of service.

- One source out of service at a time
- Proposed 1.5 MG GST
- Proposed EST
- Assume all tanks are half full
- Assumes increase of 0.5 MGD from GST to drain the tank
- Assumes a steady demand, not peak hour demand flows

No Supply from Harnett County – Max Day Demand			
	Current	2030	2060
Total Supply (MGD)	0	3.5	6.5
MDD (MGD)	6.2	12	16
Deficit (MG)	6.2	8.5	9.5
Hours of Storage	9	10.1	9

No Supply from Harnett County – Average Day Demand			
	Current	2030	2060
Total Supply (MGD)	0	3.5	6.5
ADD (MGD)	2.7	7.1	9.5
Deficit (MG)	2.7	3.6	3.5
Hours of Storage	20.8	23.9	24.6

Storage Recommendation – Holly Springs

No Supply from Sanford– Max Day Demand			
	Current	2030	2060
Total Supply (MGD)	10	10.5	10.5
MDD (MGD)	6.2	12	16
Deficit (MG)	0	1.5	5.5
Hours of Storage	na	57.4	15.6

No Supply from Sanford– Average Day Demand			
	Current	2030	2060
Total Supply (MGD)	10	10	10
ADD (MGD)	2.7	7.1	9.5
Deficit (MG)	0	0	0
Hours of Storage	Na	Na	Na

Opinion of Probable Construction Cost

Project Cost - Total

36" Transmission Main, BPS, GST

Items	Cost
Construction (with 20% Contingency)	\$58,868,000
Easement Acquisition (with 20% Contingency)	\$1,284,000
Engineering Design and CA/CO – 15% of Construction	\$8,831,000
Project Contingency – 5%	\$3,450,000
Total in 2022 Dollars	\$72,433,000

Conveyance to Distribution System

Items	Cost
Construction (with 20% Contingency)	\$14,079,000
Easement Acquisition (with 20% Contingency)	\$684,000
Engineering Design and CA/CO – 15% of Construction	\$2,113,000
Project Contingency – 5%	\$845,000
Total in 2022 Dollars	\$17,721,000

Project Cost - Split

Total for both projects

36" Transmission Main, BPS, GST

Items	Fuquay-Varina 62.5%	Holly Springs 37.5%
Construction	\$36,792,500	\$22,075,500
Easement Acquisition	\$802,500	\$481,500
Engineering Design and CA/CO – 15%	\$5,519,375	\$3,311,625
Project Contingency – 5%	\$2,156,250	\$1,293,750
Total in 2022 Dollars	\$45,270,625	\$27,162,375

Conveyance to Distribution System

Items	Fuquay-Varina	Holly Springs
Construction	\$10,721,000	\$3,358,000
Easement Acquisition	\$600,000	\$84,000
Engineering Design and CA/CO – 15%	\$1,609,000	\$504,000
Project Contingency – 5%	\$647,000	\$198,000
Total in 2022 Dollars	\$13,577,000	\$4,144,000

Project Cost - Split

36” Transmission Main, BPS, GST, Conveyance to Distribution Systems

Items	Fuquay-Varina	Holly Springs
Construction and Easements	\$51,362,000	\$27,299,000
Engineering Design and CA/CO	\$7,485,000	\$4,007,000
Total in 2022 Dollars	\$58,847,000	\$31,306,000

Project Cost – Fuquay-Varina CIP Projects

Projects from the 2017 Water Capacity Study

- Costs have been escalated from the 2017 values to reflect current day cost.
- Construction with a 30% contingency and design costs are included.
- Easements, property purchases, and construction services are not included.

Project Number	Project Description	Estimated Project Cost
3	12-inch Donny Brook Road Line	\$778,000
4	12- Inch Hilltop Needmoor Road Loop	\$1,995,000
6	6-Inch Johnson Pond Road Loop	\$232,000
	12-Inch US 401 Loop	\$420,000
7	12-Inch Whitted Road Loop	\$1,282,000
9	1.0 MG Elevated Storage Tank	\$973,000
10	16-Inch Judd Parkway Loop	\$647,000
14	12-Inch Holland Road Loop (West)	\$652,000
15	12-Inch Holland Road Loop (Center)	\$526,000
16	12-Inch Dwight Rowland Road (East)	\$526,000
	12-Inch Holland Road Loop (East)	\$1,094,000
17	16-Inch NC 55 Loop (North)	\$897,000
21	16-Inch NC 55 Loop (South)	\$1,066,000
22	12-Inch Kennebec Road Loop (North and South)	\$1,954,000
26	16-Inch Clayton Road Loop	\$1,456,000
27	16-Inch Judd Parkway Loop (Future South)	\$393,000
28	16-Inch Judd Parkway Loop (Future North)	\$1,597,000
29	12-Inch Judd Parkway NE Loop	\$883,000
30	12-Inch Johnson Pond Road Loop (South)	\$2,226,000
31	12-Inch Wagstaff Road Extension	\$463,000
Total		\$21,489,000

Schedule

Schedule

- Schedule noted is for the 36” transmission main and booster pump station site
- It is assumed the conveyance to the distribution system can be completed within the same schedule
- The Sanford WTP expansion is scheduled to be completed in late 2025/early 2026

36” Transmission Main, BPS, GST			
Task	Start	End	Days
Design	3/1/22	3/26/23	390
Field Data Collection	3/1/22	7/29/22	150
Easement Acquisition	11/26/22	4/25/23	150
Permitting	3/26/23	7/24/23	120
Bidding	7/24/23	10/22/23	90
Construction	10/22/23	10/19/25	728



Water Conveyance System from City of Sanford WTP Preliminary Engineering Report

Draft PER

Hazen No 31486-000
February 2022

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Appendix A: Modeling

Appendix B: Historic Preservation Sites

Executive Summary

This Preliminary Engineering Report (PER) was authorized by the Town of Fuquay-Varina (“the Town”). Preparation of this report was completed by the team of Hazen and Sawyer and Freese and Nichols Inc. Previous reports and studies documented the Town’s need for an additional water supply source. The Town of Fuquay-Varina and the City of Sanford are moving forward with a water supply agreement to meet the long-term drinking water needs of the Town. The purpose of this PER is to define the route and size for the water transmission main from the City of Sanford water treatment plant (WTP) to the Town's distribution system, booster pump station (BPS) requirements and siting, water modeling for the proposed transmission main and connection(s) to the Fuquay-Varina distribution system, and coordination with the related City of Sanford WTP expansion project.

The Town of Holly Springs is a partner in the development of the PER, as they too are expected to receive water from the City of Sanford via this transmission system.

It was determined a common 13.4 mile 36-inch transmission main from the WTP to a single site with ground storage and booster pumping facilities at the end of the transmission main was appropriate. The BPS is proposed to be a single structure with separate booster pumps for each system, pumping through separate water transmission mains to convey water from the BPS site to the respective distribution system. Individual pumping and conveyance from the BPS will allow each Town’s water supply to be independently operated and controlled.

Fuquay-Varina Distribution System Modeling

Anticipated Demand Projections

The water demand projections developed as part of the Interbasin Transfer (IBT) study project being completed by Hazen were relied upon for planning and modeling for the transmission system. The Town is projected to have a maximum day demand of 12.6 MGD in 2055. The Town currently is under contract with Harnett Regional Water (HRW) for 2.0 MGD with an opportunity to increase the supply from HRW. Therefore, the Town established 10 MGD as the desired target maximum day demand for the proposed transmission main.

The Town of Holly Springs established 6 MGD as the desired transmission main capacity required for their foreseeable needs. Therefore, the basis of the transmission main size from the Sanford WTP to the ground storage tank and BPS is 16 MGD.

Connection Point Modeling

The Town’s water distribution model was updated, verified, and used to evaluate potential connection point locations for water supply from the City of Sanford and to assess the impacts of each potential connection point on the existing distribution system. Wilbon Road was identified as the preferred connection point for the Town’s system, with additional transmission main along Wilbon Road to Hwy 55 at Judd Parkway.

The existing 30-inch water main along Piney Grove-Wilbon Road was identified as the preferred connection point for the Holly Springs distribution system.

Route Investigation

The study area for the transmission main from the City of Sanford WTP spans across portions of Lee, Harnett, Chatham, and Wake County, covering approximately 54 square miles as shown in Figure ES-1. Within the study area are public and private roads and utilities, community resources, and points of environmental interest such as the Cape Fear River and various streams and wetlands.

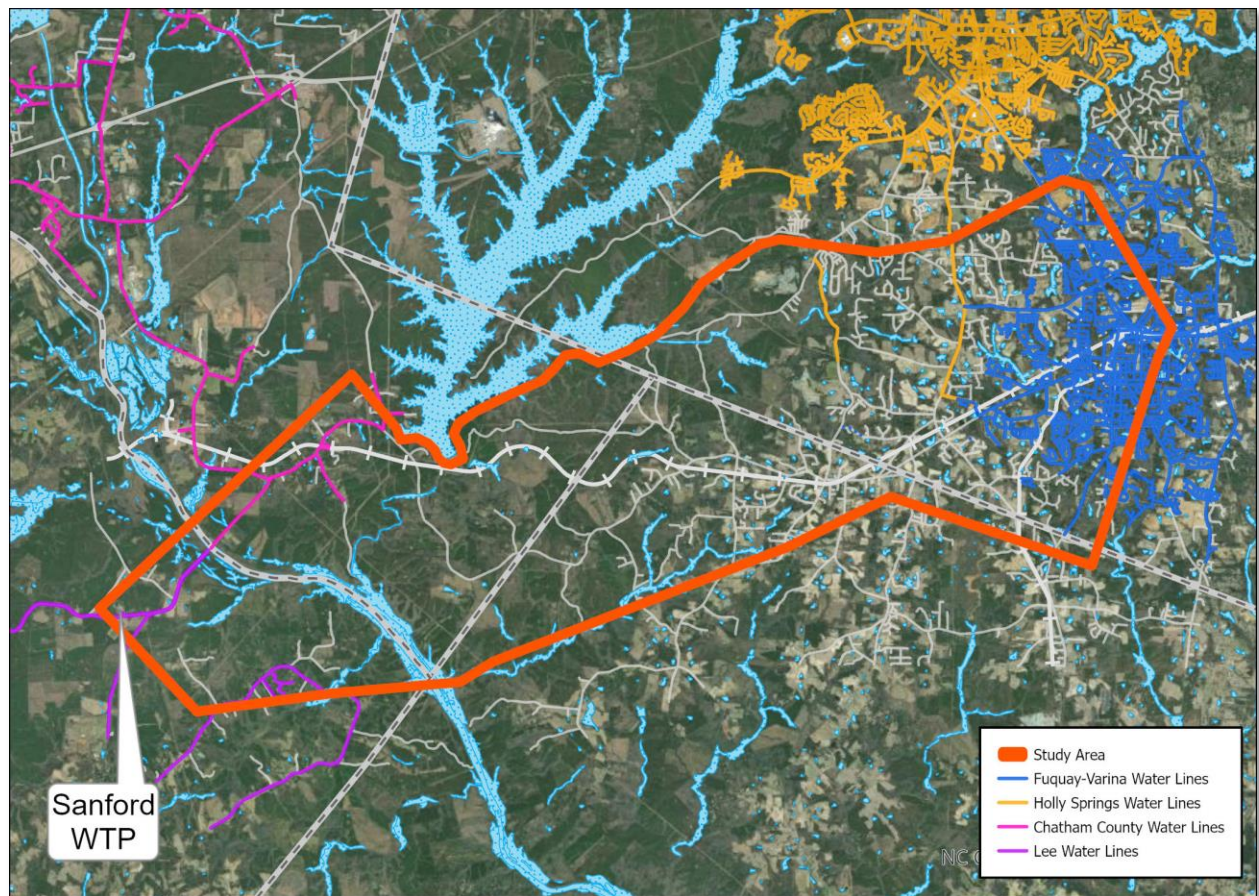


Figure ES-1: Study Area

Four routes were identified from the Sanford WTP to the eastern end of the study area and evaluated in concurrence with the feasible connection points in the Fuquay-Varina and Holly Springs distribution systems. Figure ES-2 shows the recommended route and targeted connection points for each system. The route leaves the WTP and follows NC-42 to Buckhorn Road and is then cross country through property owned by Duke Energy.

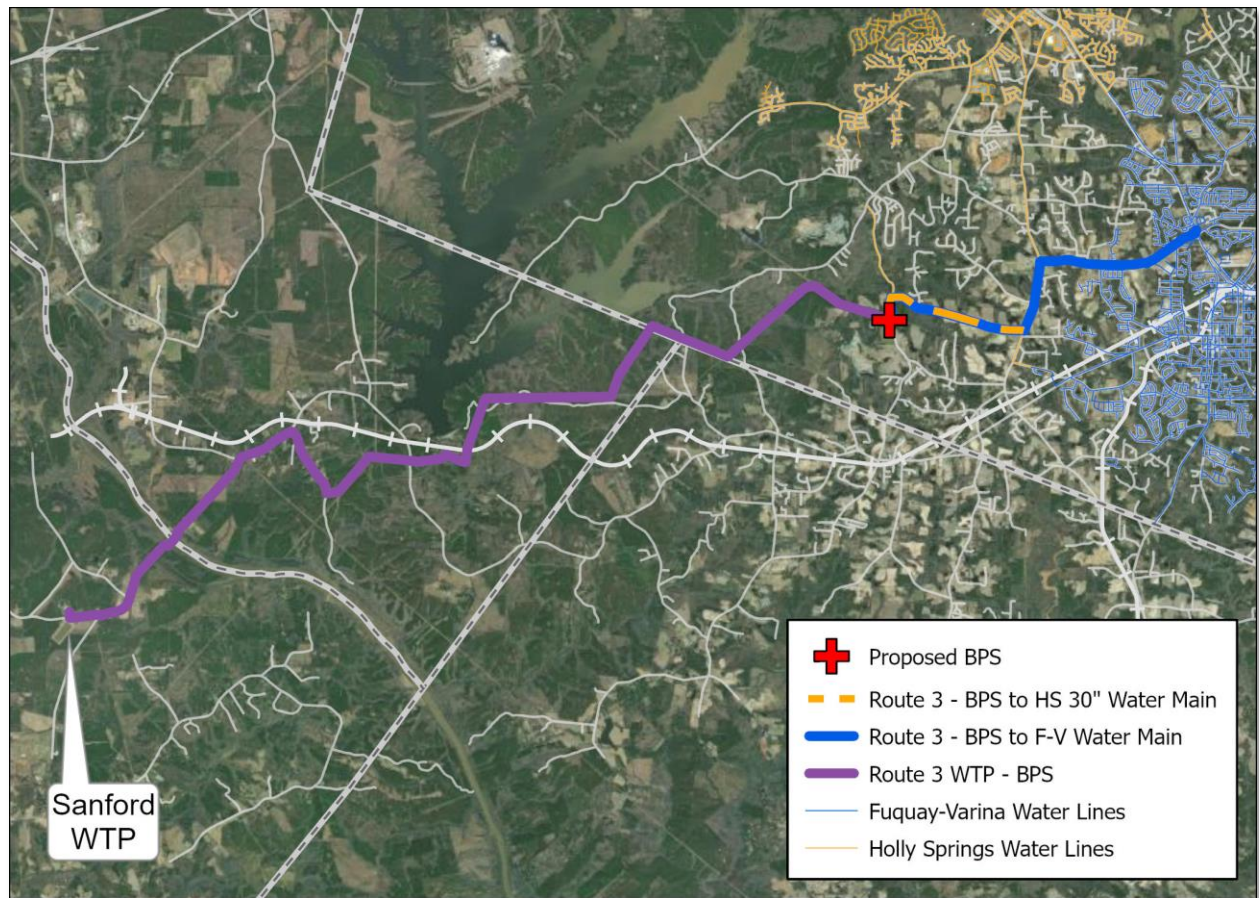


Figure ES-2: Recommended Route 3

Booster Pumping and Ground Storage

A single BPS site near the intersection of Duncan Cook Road and Buckhorn-Duncan Road is recommended. The recommended site is approximately 4.6-acres and is suitable for two ground storage tanks with capacities of 1.5 million gallons and room for a future tank. It is assumed that one BPS structure will be constructed on the site, sized for the ultimate capacity required, with separate and dedicated pumps to Fuquay-Varina and Holly Springs.

Conveyance to Fuquay-Varina

Based on the hydraulic modeling, a combination of 30-inch and 24-inch transmission main will convey up to 13 MGD into the Town's system to meet peak hourly flow demands. The recommended route is depicted on Figure ES-3. The proposed 30-inch transmission main will leave the pump station heading north on Buckhorn Duncan Rd and turn east on Duncan Cook Rd. The proposed transmission line will reduce to a 24-inch after crossing Piney Grove-Wilbon Rd and continue north until reaching Wilbon Rd, where it will turn east again and follow the street as it continues onto Judd Parkway. The new 24-inch transmission main will cross under Hwy-55 and can be connected to the existing 16-inch ACP.

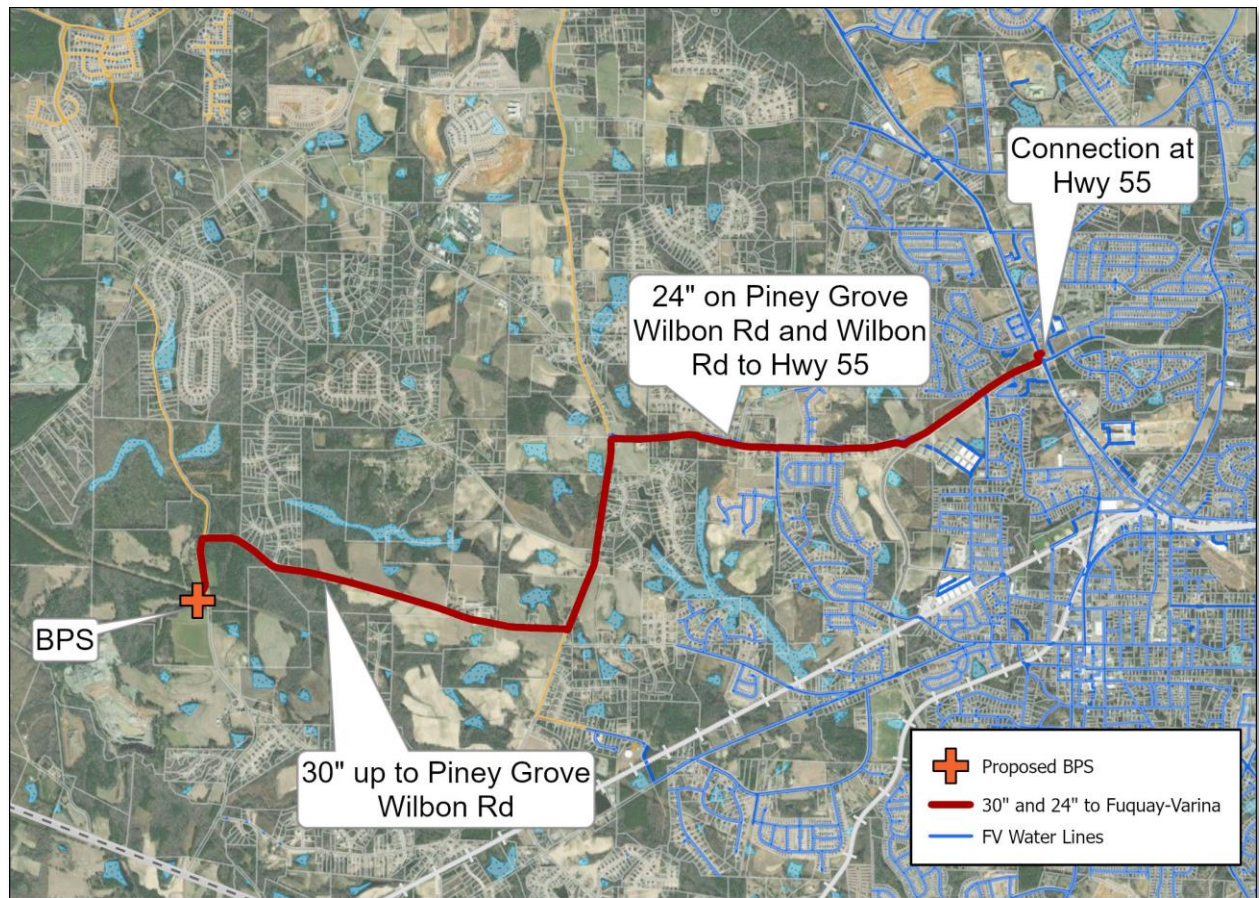


Figure ES-3: 30-inch and 24-inch Conveyance to Fuquay-Varina Distribution System

Conveyance to Holly Springs

Based on the hydraulic modeling a 24-inch transmission main will convey up to 6 MGD into the existing 30-inch transmission main on Piney Grove-Wilbon Rd as shown on Figure ES-4. The proposed 24-inch transmission main will follow the same route as the proposed Fuquay-Varina transmission main parallel to Buckhorn-Duncan Rd and then turn east on Duncan Cook Rd, ending at the intersection of Duncan Cook Rd and Piney Grove-Wilbon Rd.

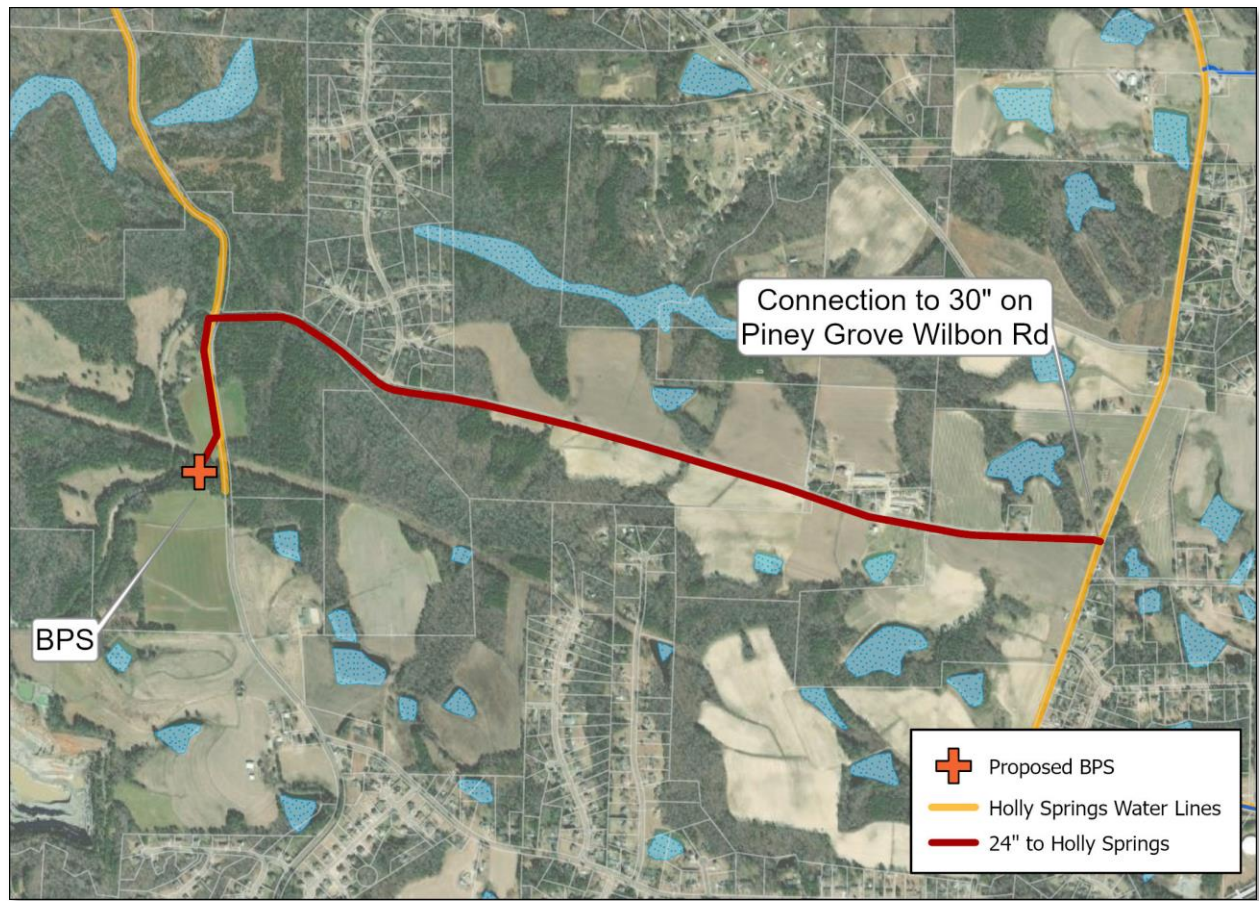


Figure ES-4: 24-inch Conveyance to Holly Springs Distribution System

Recommendation Summary

Figure ES-5 shows the proposed project components including:

1. 36-inch transmission main from the Sanford WTP to the proposed BPS
2. Two, 1.5-million-gallon ground storage tanks, with space for a future third tank
3. A single booster pump station and electrical room with dedicated pumping to both distribution systems
4. 30-inch and 24-inch transmission main to Fuquay-Varina
5. 24-inch transmission main to Holly Springs

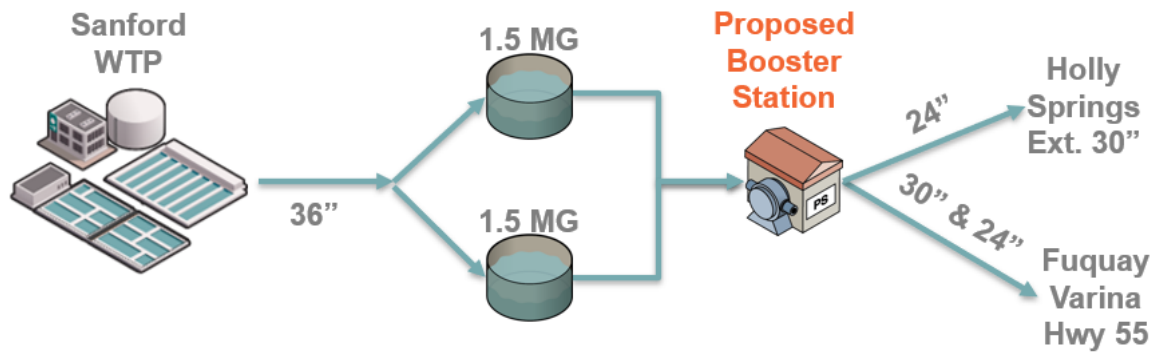


Figure ES-5: Proposed Project Components

Preliminary Opinion of Probable Cost

The opinion of probable construction cost (OPCC) developed for the recommended facilities reflects a Class 3 level estimate. A 20% contingency was included to account for potential variations in final construction costs and the level of detail of the preliminary cost estimate.

The following tables summarize the OPCC for the entire project. The costs are broken into two projects: the 36-inch transmission main from the Sanford WTP to the BPS including the BPS and ground storage tanks, and a second project for the two transmission mains from the BPS to the distribution system connections for Fuquay-Varina and Holly Springs. All costs were developed in current day values. An escalation of 10% was applied to construction costs and shown separately in each table below.

Table ES-1: OPCC for 36-inch Transmission Main and BPS

Items	36-inch Transmission Main and BPS Site
Construction and Easement Costs	\$60,142,000
Engineering Design and CA/CO Costs – 15% of Construction	\$8,831,000
Project Contingency – 5%	\$3,450,000
Construction Escalation – 10%	\$5,886,800
Project Total	\$78,319,800

Table ES-2: OPCC for Transmission Mains to Fuquay-Varina and Holly Springs

Items	Transmission Main to Fuquay-Varina	Transmission Main to Holly Springs
Construction and Easement Costs	\$11,321,000	\$3,442,000
Engineering Design and CA/CO – 15% of Construction	\$1,609,000	\$504,000
Project Contingency – 5%	\$647,000	\$198,000
Construction Escalation – 10%	\$1,072,100	\$335,800
Project Total	\$14,649,100	\$4,479,800

Table ES-3: Cost Opinion Summary

Items	Fuquay-Varina Cost	Holly Springs Cost
Construction and Easement Costs	\$51,362,000	\$27,299,000
Engineering Design and CA/CO Costs	\$7,485,000	\$4,007,000
Construction Escalation – 10%	\$4,751,350	\$2,543,350
Total	\$63,598,350	\$33,849,350

Schedule

A schedule was developed through construction completion. The table below outlines the major tasks required for the transmission piping and BPS.

Table ES-4: Schedule

TASK	START	END	Days
Design	3/1/22	3/26/23	390
Field Data Collection	3/1/22	7/29/22	150
Easement Acquisition	11/26/22	4/25/23	150
Permitting	3/26/23	7/24/23	120
Bidding	7/24/23	10/22/23	90
Construction	10/22/23	10/19/25	728

The current schedule for the Sanford WTP expansion has construction completed in late 2025/early 2026. Coordination between the two projects will continue as design progresses on each project.

1. Introduction

This PER was authorized by the Town of Fuquay-Varina. Preparation of this report was completed by the team of Hazen and Sawyer and Freese and Nichols Inc. The purpose of this PER is to define the route and size for the water transmission main from the City of Sanford WTP to the Town's BPS siting, water modeling for the proposed transmission main and connection(s) to the Fuquay-Varina distribution system, and coordination with City of Sanford WTP expansion project.

1.1 Purpose and Need

The Town has existing water supply agreements with the City of Raleigh, Johnston County, and Harnett County, amounting to a total water supply of 5.25 MGD. The water demand projections developed as part of the IBT study being completed by Hazen were relied upon for planning and modeling for the transmission system. The Town is projected to have a maximum day demand of 12.6 MGD in 2055. The Town currently is under contract with HRW for 2.0 MGD with an opportunity to get increased supply from HRW. Therefore, the Town established 10 MGD as the desired target maximum day demand for the proposed transmission main from the Sanford WTP.

The Town of Fuquay-Varina and the City of Sanford are moving forward with a water supply agreement to meet the long-term drinking water needs of the Town. This PER is focused on the infrastructure to convey the water while the WTP expansion is addressed in a separate project.

1.2 Project Partners

An agreement between Fuquay-Varina and Holly Springs was made for collaboration on the transmission main and BPS PER. The Town of Holly Springs established 6 MGD as the desired transmission main capacity required for their foreseeable needs. Therefore, the basis of the transmission main size from the Sanford WTP to the ground storage tank and BPS is 16 MGD.

Sharing a single, larger diameter pipe is more cost-effective and easier to install than having two smaller parallel pipes for each Town. It was determined a common 13.4-mile 36-inch transmission main from the WTP to a single site with ground storage booster pumping facilities at the north end of the transmission main was appropriate. The booster pump facility would have separate booster pumps for each system pumping through separate water transmission mains to convey water from the BPS site to the respective distribution system. Individual pumping and conveyance from the BPS will allow each Town's water supply to be independently operated and controlled.

1.3 Study Area Overview

The study area for the transmission main from the City of Sanford WTP spans across portions of Lee, Harnett, Chatham, and Wake County, covering approximately 54 square miles as shown in Figure 1-1. The western corner of the area begins at the Sanford WTP in Lee County on Poplar Springs Church Rd and is bound by the Shearon Harris Reservoir along the northern edge of the area in Chatham and Wake County. The northern city limits of Fuquay-Varina along NC-55 are within the northeast corner of the

study area, and the eastern area includes N. Main St just before the street becomes US-401. The southern edge of the study area includes the Town of Duncan and agricultural land in Harnett and Lee County.

Within the study area is the state highway, NC-42, and an inactive Norfolk Southern railroad, both of which traverse the four counties. The majority of the land in the western half of the study area is classified for agriculture and residential (single-family and occasional two-family) use. Slightly denser residential (including multifamily and mobile homes), and some industrial and commercial land use is within the eastern half of the study area. The major environmental features include the Cape Fear River and Buckhorn Dam, as well as state game lands in the proximity of Shearon Harris Lake.

Elevations throughout the study area are shown via a heat map in Figure 1-2. The Cape Fear River represents the lowest point in the study area with a river bottom elevation of approximately 140 ft. The highest point in the study area is 486 ft.

1.3.1 Streets

The streets within the western, more rural half of the study area are primarily owned and/or maintained privately or by the NCDOT. NC-42 is the main road that travels through all four counties. The streets within the eastern, more densely populated portion of the study area are local, private, or state-owned. Within the Fuquay-City limits, the streets are nearly all city-owned.

1.3.2 Existing Utilities

Below is a summary of the existing utilities within the study area. Available county and municipality GIS data was reviewed and is shown on Figure 1-3.

Each county has waterlines within the study area. Lee County owns 16-inch, 24-inch, and 36-inch waterlines along Avents Ferry Rd/ NC-42 and 6-inch distribution lines in the vicinity of Buckhorn Rd on the west side of the Cape Fear River. Chatham County owns 6-inch and 8-inch diameter lines within the study area along NC-42, Buckhorn Rd east of the Cape Fear River, and Christian Chapel Church Rd. Harnett County owns a waterline along NC-42 beginning near the intersection of NC-42 and Clarks Corner Rd that alternates between 6-8 inches in diameter as it heads east towards Duncan. The waterline expands to 12 inches along W Academy St. Harnett also supplies water to the Wake County Pump Station through a 36-inch pipe. Holly Springs owns an 8-inch waterline along Buckhorn Duncan Rd and a 30-inch line on Piney Grove-Wilbon Rd in Wake County within the study area. Fuquay-Varina's distribution extends to Piney Grove-Wilbon Rd and includes pipes ranging from 6 to 24 inches in diameter.

Gas pipelines containing natural gas and liquid butane, ethane, and propane fall within the study area. One 8-inch pipeline transports natural gas along Poplar Springs Church Rd and Avents Ferry Rd across the bridge spanning the Cape Fear River. This pipeline turns northwest after crossing the river. A 6-inch pipeline transports liquid butane, ethane, and propane for the Dixie Pipeline Company through Lee and Chatham County approximately 500 ft parallel to the gas line along Avents Ferry Rd. Finally, another natural gas pipeline is located near the outskirts of Fuquay-Varina crossing the study area north to south.

Duke Power owns transmission lines within the study area near the Lee/Chatham County line, Shearon Harris Reservoir, and in Wake County.

1.3.3 Points of Interest

Features such as churches, cemeteries, parks, and schools are important to communities. These features within the study area in each of the counties are summarized below and are shown on Figure 1-4.

Moore Union Christian Church on Buckhorn Rd and Memphis Church on Poplar Springs Church Rd are two churches with cemeteries in Lee County that lie within the study area. The Memphis Church is directly next to the Sanford WTP and is a historical church and cemetery maintained by the Old Memphis Preservation Society.

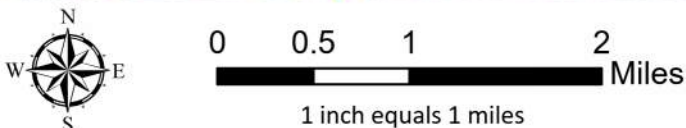
In Harnett County, Macedonia Baptist Church and Duncan Baptist Church are located along NC-42, and Full Assurance Fellowship of God is located on the southern boundary of the study area. Macedonia Baptist Church also has a cemetery on the property. Three additional cemeteries are located in Harnett County within the study area: one along Wade Stephenson Rd near the southern border of the study area, and two near the Harnett/Wake boundary on Charlie Lee Ln and Piney Grove Rawls Rd.

Buckhorn United Methodist Church and Cemetery are located in Chatham County along NC-42 in the town of Moncure. Moncure Fire Station 14 is located at the intersection of NC-42 and Corinth Rd.

Four Wake County schools are located near the eastern border of the study area. Twelve churches and twelve cemeteries are also in the study area. Piney Grove Baptist Church owns three parcels that includes a cemetery near the intersection of W Academy St and Piney Grove-Wilbon Rd, and First Baptist Church of Fuquay owns a parcel near the intersection of W Academy and N Main St.

Legend

- Study Area
- Railroad
- County Boundaries
- Existing Water Infrastructure
 - Chatham County Water Lines
 - FV Water Lines
 - FV Water Tanks
 - FV Booster Pump
 - Holly Springs Water Lines
 - Lee Water Lines
 - Wetlands



FUQUAY-VARINA
a dash more

FREESE
NICHOLS
Hazen

Water Conveyance System
from City of Sanford WTP
Preliminary Engineering Report
Town of Fuquay-Varina

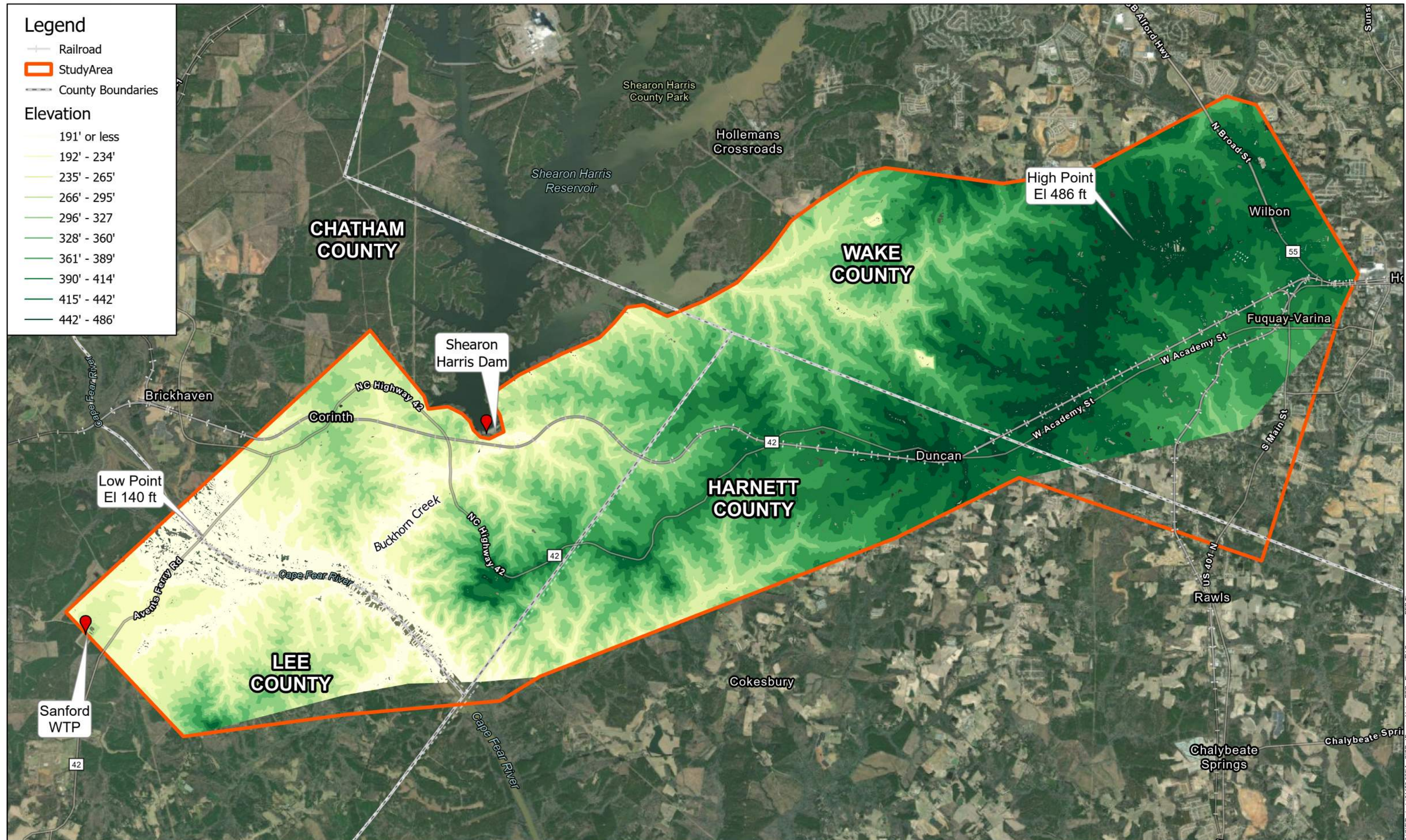
Figure 1-1
Study Area

Legend

- Railroad
- StudyArea
- County Boundaries

Elevation

- 191' or less
- 192' - 234'
- 235' - 265'
- 266' - 295'
- 296' - 327'
- 328' - 360'
- 361' - 389'
- 390' - 414'
- 415' - 442'
- 442' - 486'



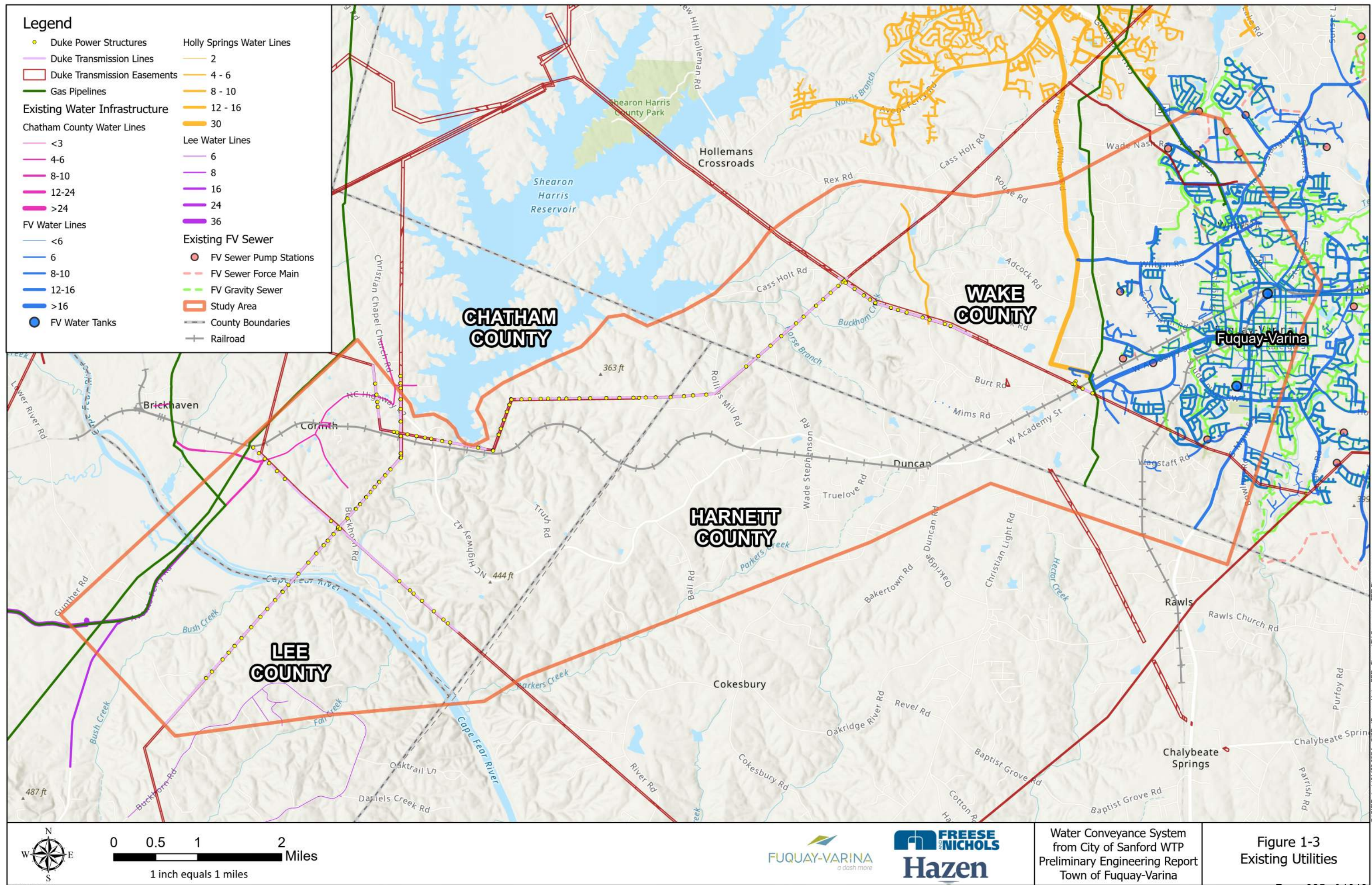
0 0.5 1 2 Miles
1 inch equals 1 miles

FUQUAY-VARINA
a dash more

FRESE
NICHOLS
Hazen

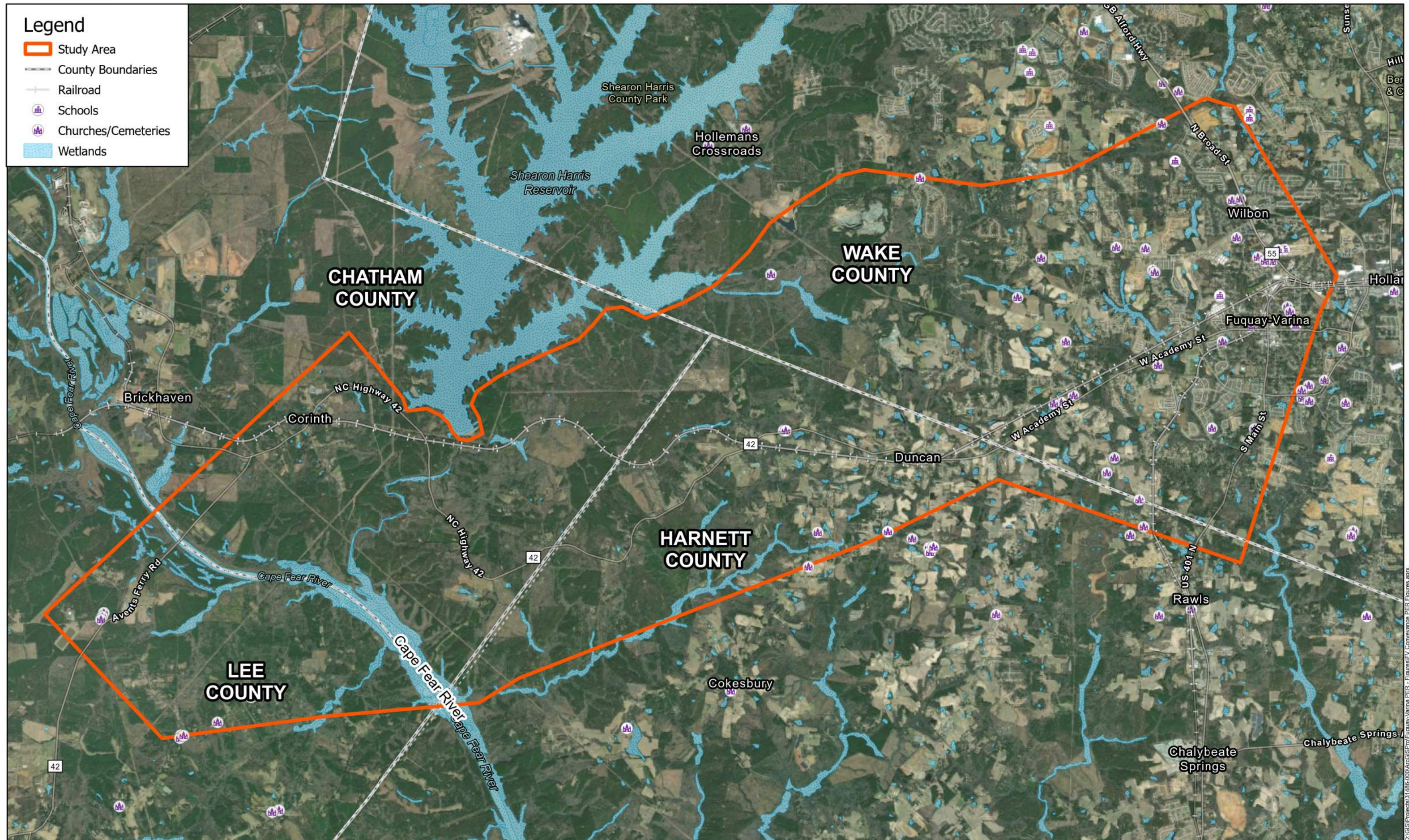
Water Conveyance System
from City of Sanford WTP
Preliminary Engineering Report
Town of Fuquay-Varina

Figure 1-2
Study Area Contours



Legend

-  Study Area
-  County Boundaries
-  Railroad
-  Schools
-  Churches/Cemeteries
-  Wetlands



0 0.5 1 2 Miles
1 inch equals 1 miles

FUQUAY-VARINA
a dash more

FREESE NICHOLS
Hazen

Water Conveyance System
from City of Sanford WTP
Preliminary Engineering Report
Town of Fuquay-Varina

Figure 1-4
Points of Interest

2. Fuquay-Varina Distribution System Modeling

The Town's existing water distribution system consists of a network of 245 miles of water lines, three pump stations, one ground storage tank (GST) and two elevated storage tanks (EST). The distribution system is largely operated as a single pressure zone with the overflow of the two ESTs set to 563 feet. There is a small pressure zone near Wilbon Rd with a booster pump station to increase distribution system pressure and fire flow capabilities. No changes are recommended to the Wilbon Rd booster pressure zone.

2.1 Water Model Update and Verification

To verify the hydraulic model accurately represents the distribution system operation, an extended period simulation (EPS) model verification was performed. The 24-hour period occurring on May 29, 2019, was selected for verification. This day was selected because there were no major irregularities in system operations, and it approximated 2019 maximum day demand conditions.

The Town's water model, originally developed as part of the 2017 Water Capacity Study, was updated using the InfoWater software by *Innovyze*®. Town staff provided GIS shapefiles of recent water lines that were imported in the model. Current water demands were assigned to model nodes based on July 2020 water meter billing data provided by the Town and scaled to match the May 29, 2019 demand of 4.73 MGD. The Town also provided updated pump and valve controls for the City of Raleigh, Johnston County, and Harnett County pump stations.

To assist with model verification, the Town provided daily SCADA data from all facilities for 2019 through 2020. Once the daily data was reviewed and the verification day was selected, the Town provided hourly SCADA data for May 29, 2019. Estimated flows and tank levels were utilized to calculate an overall system diurnal curve by examining water supply (flow into system) and storage changes in the distribution system. The calculated diurnal curve factors, pump station controls, and valve settings were adjusted such that the modeled tank levels and pump station flows better matched the SCADA data. The verification statistics are presented in Table 2-1. Appendix A includes graphed verification results for each facility.

Table 2-1: Model Verification Statistical Summary for May 29, 2019 - Maximum Day Demand Conditions

Facility Type	Facility Name	Within 1 MGD (flow)/ Within 5 feet (level)	Within 0.5 MGD (flow)/ Within 3 feet (level)
Control Valve	Harnett County 401 South	100%	100%
	Harnett County Fleming Road	100%	96%
Pump Station	Johnston County	100%	100%
	City of Raleigh	100%	100%
Elevated Storage Tank	0.2 MG Hill/Main Street	92%	79%
	0.5 MG Jones Road	100%	100%

Model verification results suggested potentially pinched or closed distribution system valves near the Hill EST. It was recommended that the Town investigate water system connectivity and valve status in this area.

2.2 Water Demand Update

The Town currently has intergovernmental agreements with Harnett County, Johnston County, and the City of Raleigh to purchase wholesale water from these three water suppliers at four meter locations, totaling 5.25 MGD. Population and water demand projections from previous studies were compared against current interbasin transfer (IBT) projections. Traffic Analysis Zone (TAZ) population projections were scaled to match the IBT projections for 2025, 2035, and 2055 demand conditions. Based on conversations with the Town, it is anticipated that the City of Raleigh water supply will not be available after 2035 and the Johnston County supply availability is uncertain in the future based on their own system needs. The modeling included some resiliency scenarios to evaluate the Town's reliability on the supplies from Raleigh and Johnston County. Table 2-2 shows the projected water demand and available water supply for the Town, as well as recommended water supply from the City of Sanford.

Table 2-2: Town of Fuquay-Varina Available Water Supply and Demand Projections

Available Water Supply and Anticipated Demand Projections (MGD)				
	2021	2025	2035	2055
City of Raleigh	1.75	1.75	-	-
Johnston County	1.50	1.50	1.50	-
Harnett County	2.00	2.00	2.00	2.00
City of Sanford	-	2.00	6.00	11.00
Total Supply	5.25	7.25	9.50	12.00
Average Day Demand	2.80	3.60	5.20	8.40
Maximum Day Demand	4.70	5.40	7.80	12.60

The projected water demands were updated in the Town's water model under the appropriate future water system scenario.

2.3 Water System Analysis and Recommendations

The Town's water distribution model was used to evaluate three connection points for the proposed water supply transmission main from the City of Sanford WTP and assess the impacts on the existing distribution system and previously recommended water distribution system capital improvement projects (CIP). The analysis included 24-hour EPS simulations under 2025, 2035, and 2055 maximum day and average day demand conditions. The three potential connection point locations are shown on Figure 2-1 and include the Highway 55, Wilbon Road, and the 24-inch water line near the existing Harnett County pump station along NC-42.

By examining the distribution system under these various operating conditions, it is possible to determine where issues with pressures occur, if tanks are filling or draining properly, and if the service pumping facilities are adequate to meet the required demand at acceptable pressures. A maximum day EPS model run evaluates the ability of the system to provide adequate supply to meet demands while maintaining levels in storage facilities. During a maximum day EPS analysis, the peak hour demand is also simulated using the diurnal curve. Peak hour demand represents the single hour of the year with the highest system demand. Peak hour simulations are used to assess the ability of the distribution system to maintain minimum residual pressures. Lower demand periods throughout the day are simulated in EPS modeling as well, evaluating the system's ability to replenish storage tanks.

Legend

- 2022 - 2025 Proposed Improvements

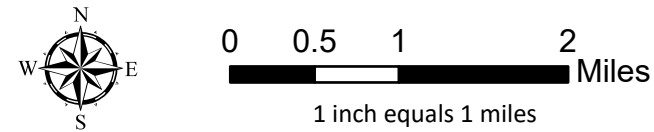
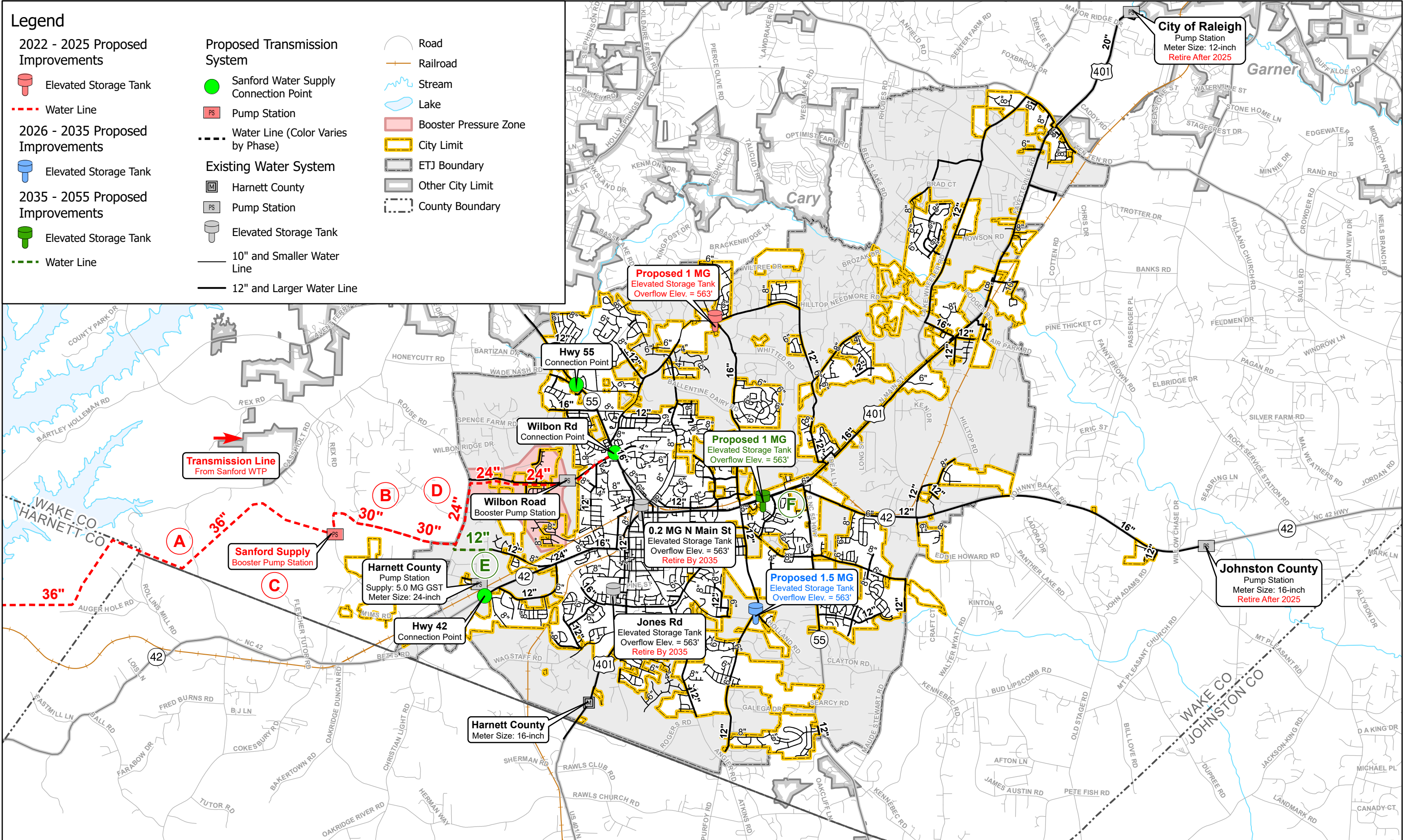
 - Elevated Storage Tank
 - Water Line
- 2026 - 2035 Proposed Improvements

 - Elevated Storage Tank
- 2035 - 2055 Proposed Improvements

 - Elevated Storage Tank
 - Water Line
- Proposed Transmission System

 - Sanford Water Supply Connection Point
 - Pump Station
 - Water Line (Color Varies by Phase)
- Existing Water System

 - Harnett County
 - Pump Station
 - Elevated Storage Tank
 - 10" and Smaller Water Line
 - 12" and Larger Water Line
- Road
 - Railroad
 - Stream
 - Lake
 - Booster Pressure Zone
 - City Limit
 - ETJ Boundary
 - Other City Limit
 - County Boundary



Water Conveyance System
from City of Sanford WTP
Preliminary Engineering Report
Town of Fuquay-Varina

Figure 2-1

2.3.1 Hydraulic Analysis Results

Initial modeling results suggest a similar distribution system response between the Highway 42 and the Wilbon Road connection points. The northern connection point at Highway 55 is further from the proposed Sanford booster pump station, requiring additional infrastructure and creating additional operational challenges. Therefore, only the Highway 42 and Wilbon Road connection point locations were considered for further analysis.

The Town is currently planning a new elevated storage tank (EST) in the northern area of the system near Sunset Lake and Bass Lake Road. Under the intermediate modeling scenario (2025), when the new water supply from Sanford is online, the hydraulic model was used to evaluate the system operations and evaluate the EST turnover. With the smaller existing ESTs (Jones = 0.5 MG and Hill = 0.2 MG) located in the central part of Town, and the new water supply from Sanford in the east, along with the existing Harnett County supply in the southeast, the two existing ESTs have a more difficult time to cycle and achieve good turnover. As demands in the system continue to increase and the supply from Sanford is also increased, this trend becomes more evident in the modeling results. To improve the distribution of the water supply from Sanford, it is recommended the two existing EST be retired and a new 1.5 MG EST be constructed by 2035. Additionally, the current 0.5 MG EST currently under design in the northern part of the system should be increased to 1.0 MG and a third 1.0 MG EST is proposed within the 2055 planning horizon, to provide the elevated storage required for the Town's domestic and fire flow needs. The ESTs should be phased according to system demands and located centrally (east to west) across the system, one in the north (currently under design), one near Highway 401 and 42, and a third one in the south/southeast.

Hydraulic modeling results from the 2055 scenario with the proposed three new ESTs were evaluated for the two proposed connection points. The results, as indicated in Figures 2-2a and 2-2b, show that the system can maintain EST levels such that minimum system pressure requirements for average day, max day and fire flow condition can be achieved, and the current level of service will be maintained. Under 2055 maximum day conditions, the EST water levels recover better with the connection point location at Wilbon Road. This location provides better results based on the hydraulic analysis and provides better operational functionality as well as system resiliency since the Highway 42 connection point would be a shared connection with the Harnett County supply and could provide a single point of failure for a majority of the Town's water supply in the future.

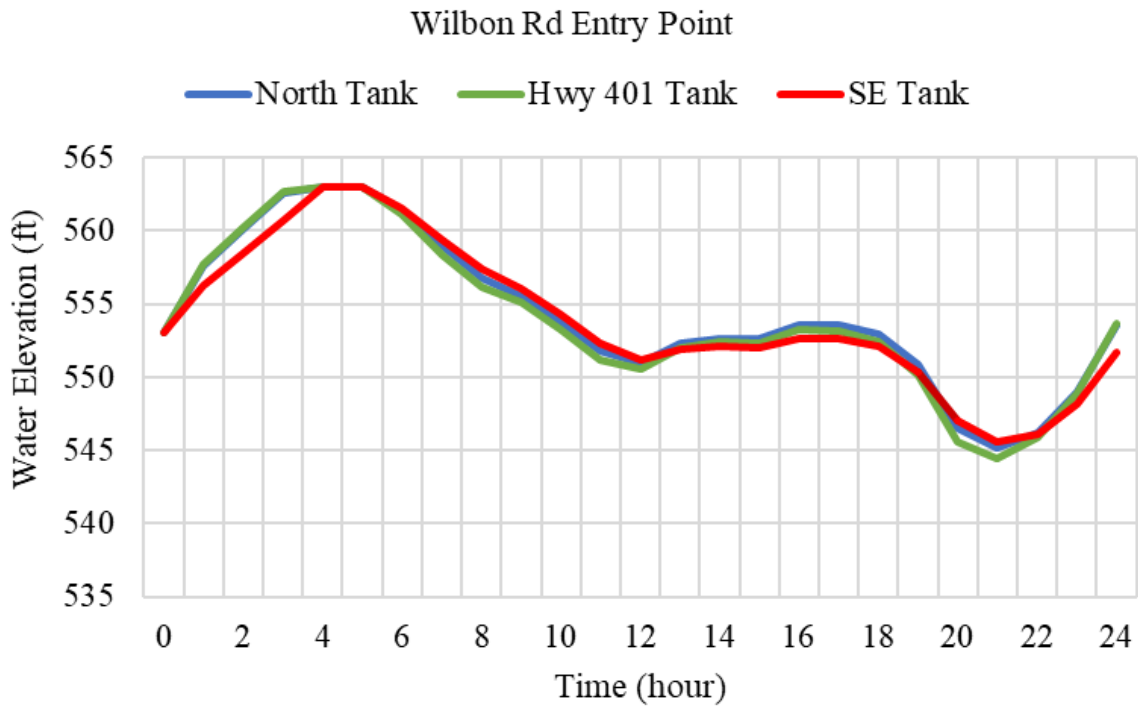


Figure 2-2a: Wilbon Connection Point Analysis of EST Performance (2055 Maximum Day)

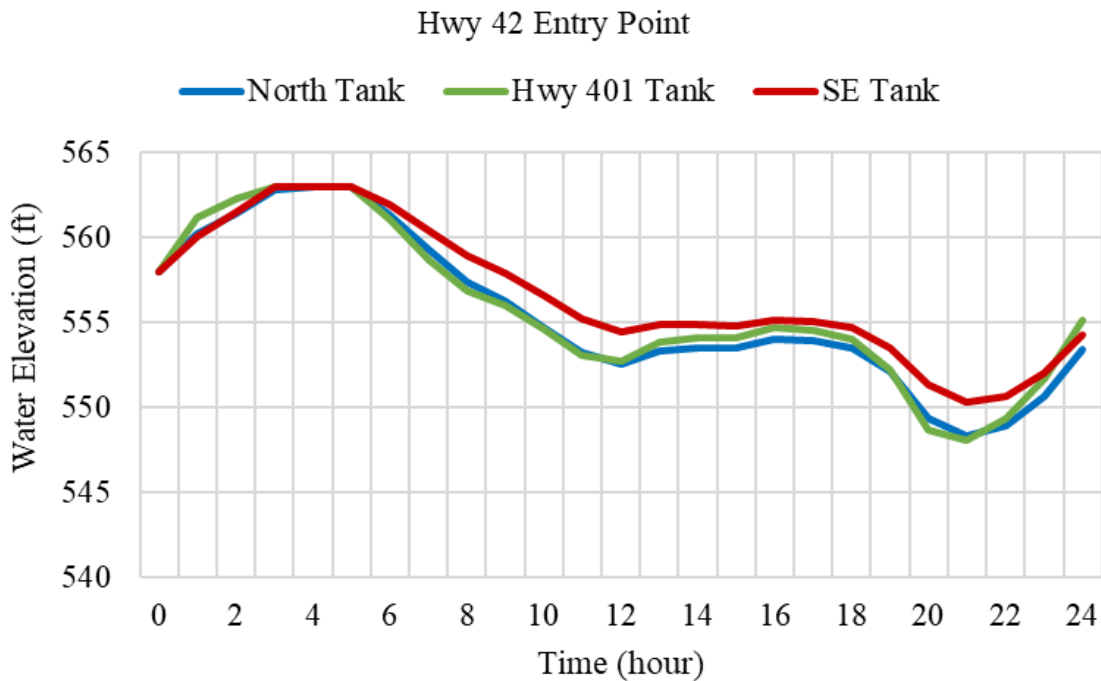


Figure 2-2b: NC-42 Connection Point Analysis of EST Performance (2055 Maximum Day)

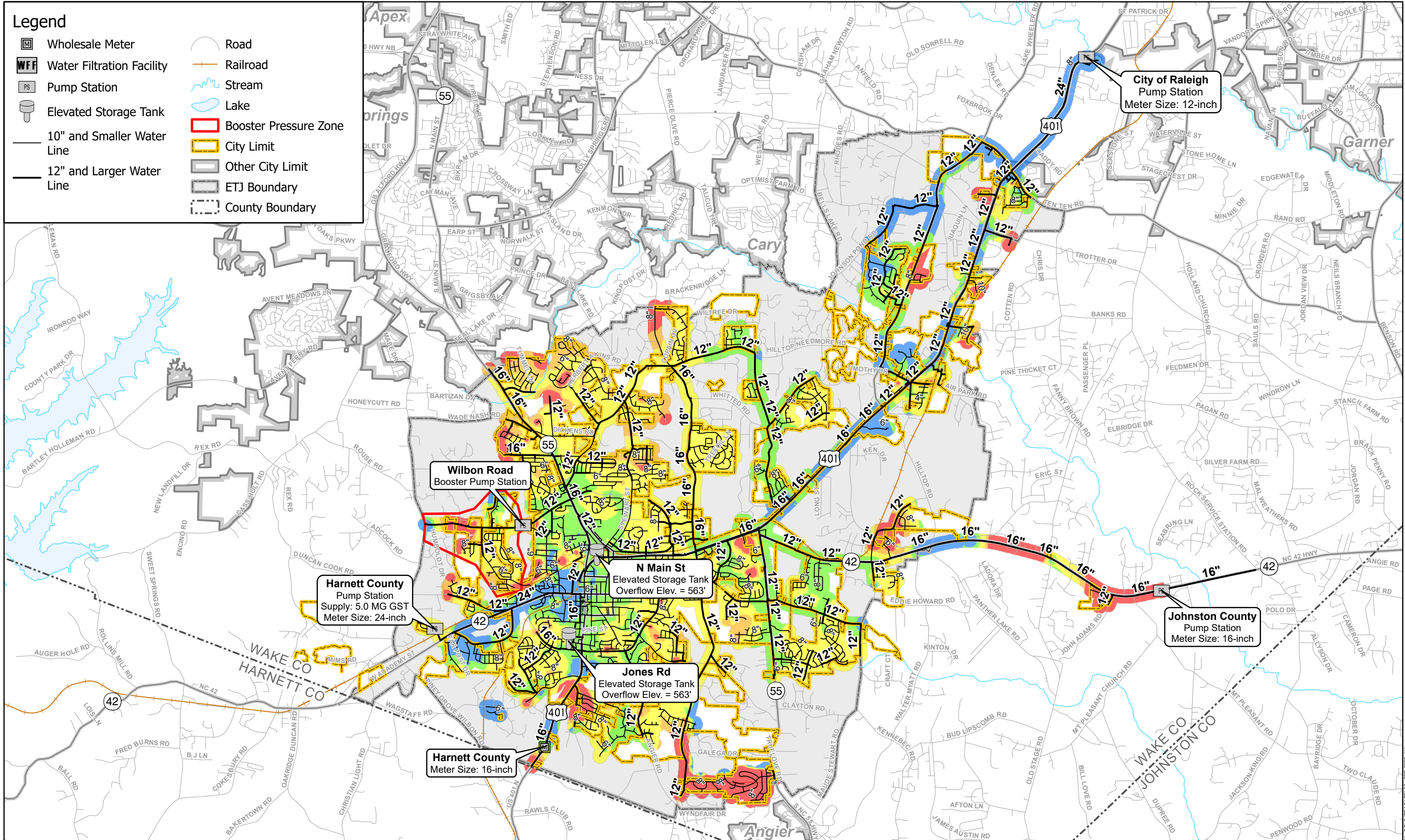
2.3.2 Water Quality Analysis

Water age modeling was conducted under existing average day demand conditions to establish a baseline and determine the impact that operational changes, increased demands, and system improvements have on water age. While higher water age does not always directly indicate poor water quality, it is known that chlorine residual degrades over time and disinfection byproduct levels increase over time; therefore, increasing water age can lead to the loss of chlorine residual and the formation of disinfection byproducts. The model analysis calculates the water age within the distribution system based on how usage affects the rate of flow over time throughout the system. The Town also provided historical water quality sampling data to compare with the modeled baseline water age.

A 60-day simulation was performed under average day demand conditions to ensure a consistent pattern of water age was established in the model. The age of water leaving the water supply points is zero in the model. Overall, the majority of the Town's water is less than five days old. Areas with dead end water lines and along the extremities of the water system have water age over five days old. These areas are the farthest water distribution points from the current supply points and have little circulation. When the new City of Sanford water supply is brought online, the water age is anticipated to improve such that the majority of the Town's water is less than two days old. Figures 2-3, 2-4, and 2-5 show the Town's water age for the existing (2021) average day demand conditions, 2035 average day demand conditions, and 2055 average day demand conditions, respectively.

Legend

- Wholesale Meter
- Water Filtration Facility
- Pump Station
- Elevated Storage Tank
- 10" and Smaller Water Line
- 12" and Larger Water Line

 Road Railroad Stream Lake Booster Pressure Zone City Limit Other City Limit ETJ Boundary County Boundary

0 0.5 1 2 Miles
1 inch equals 1 miles

Average Water Age

- Less than 1 Day
- 1 - 2 Days
- 2 - 5 Days
- 5 - 7 Days
- Greater than 7 Days



Water Conveyance System
from City of Sanford WTP
Preliminary Engineering Report
Town of Fuquay-Varina

Figure 2-3
Existing Water System
Water Age Under Average
Day Demand

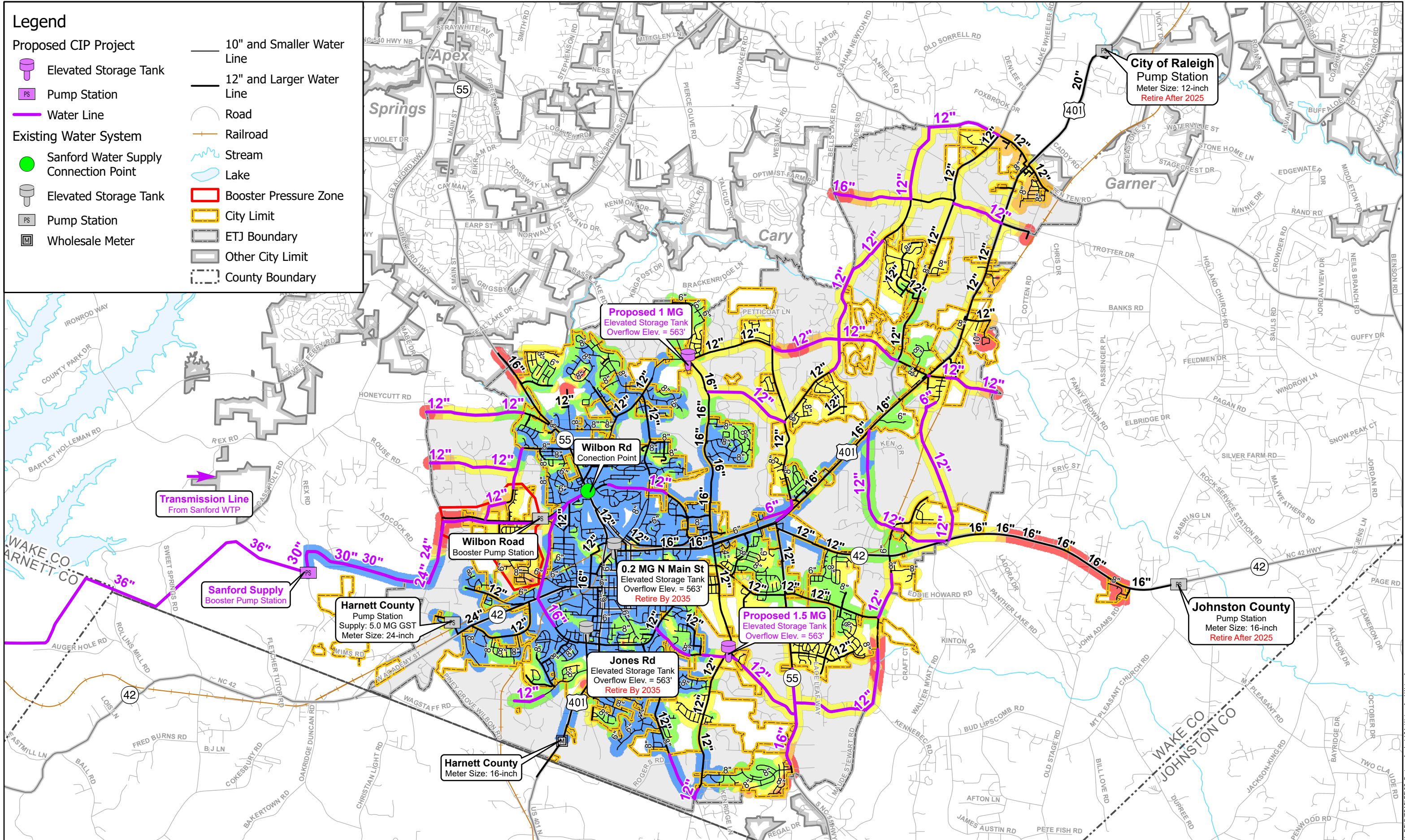
Legend

Proposed CIP Project

- Elevated Storage Tank
- Pump Station
- Water Line

Existing Water System

- Sanford Water Supply Connection Point
- Elevated Storage Tank
- Pump Station
- Wholesale Meter
- 10" and Smaller Water Line
- 12" and Larger Water Line
- Road
- Railroad
- Stream
- Lake
- Booster Pressure Zone
- City Limit
- ETJ Boundary
- Other City Limit
- County Boundary



0 0.5 1 2 Miles
1 inch equals 1 miles

Average Water Age
Less than 1 Day
1 - 2 Days
2 - 5 Days
5 - 7 Days
Greater than 7 Days



Water Conveyance System
from City of Sanford WTP
Preliminary Engineering Report
Town of Fuquay-Varina

Figure 2-4
2035 Water System Water
Age Under Average
Day Demand

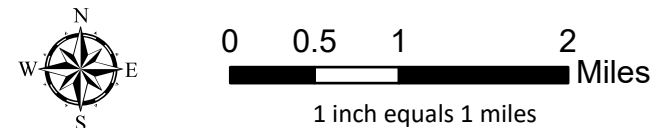
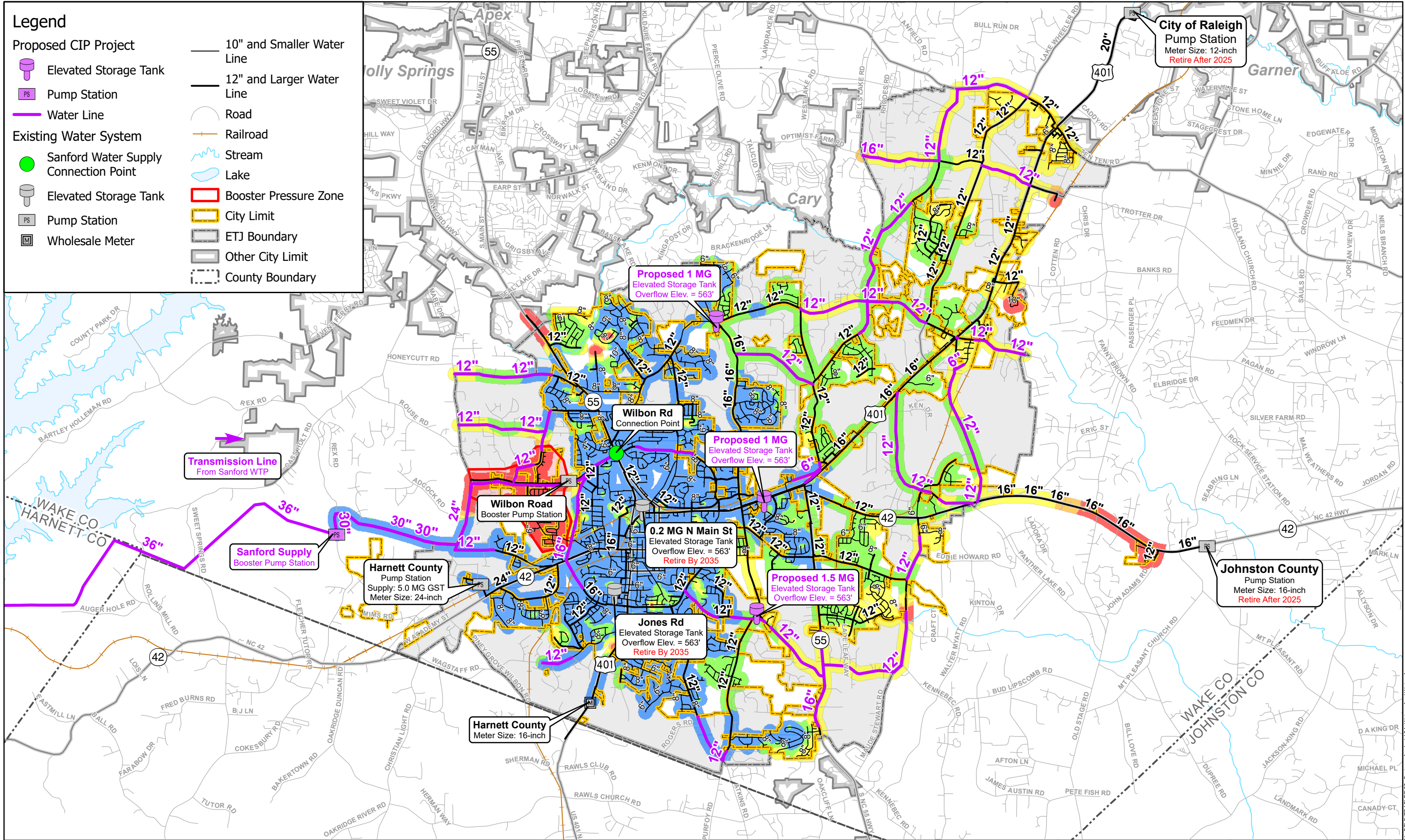
Legend

Proposed CIP Project

- Elevated Storage Tank
- Pump Station
- Water Line

Existing Water System

- Sanford Water Supply Connection Point
- Elevated Storage Tank
- Pump Station
- Wholesale Meter
- 10" and Smaller Water Line
- 12" and Larger Water Line
- Road
- Railroad
- Stream
- Lake
- Booster Pressure Zone
- City Limit
- ETJ Boundary
- Other City Limit
- County Boundary



Water Conveyance System
from City of Sanford WTP
Preliminary Engineering Report
Town of Fuquay-Varina

Figure 2-5
2055 Water System Water Age
Under Average Day Demand

3. Preliminary Route Investigation

Four routes were identified from the Sanford WTP to the eastern end of the study area and evaluated in concurrence with the feasible connection points in the Fuquay-Varina and Holly Springs distribution systems. Figure 3-1 shows the routes and targeted connection points for each system. Each route requires crossing the Cape Fear River, at least one crossing of an inactive railroad, and multiple trenchless crossings of roads and streams. The four routes are discussed in detail below.

3.1 Upper NC-42 Route (Route 1)

The Upper NC-42 Route (Route 1) exits the Sanford WTP, crosses Poplar Springs Church Rd., and heads east towards the Cape Fear River. Route 1 crosses Avents Ferry Rd. (NC-42), then parallels the winding highway through Lee, Chatham, Harnett, and Wake County until it ties into the Town's distribution system about half a mile from the intersection of W. Academy St (NC-42) and Piney Grove-Wilbon Rd. The route alternates from the north and south sides of the highway to mitigate conflicts such as railroad crossings and impacts to existing structures. 34 trenchless crossings are required, 18 of which involve crossing NC-42. The route crosses the Cape Fear River near the raw water intake for the Sanford WTP approximately 2.1 miles upstream from the Buckhorn Dam. The river crossing would require tunneling under the river where the water depth is approximately 20 ft deep and require an easement on the east (or downstream) side of the bridge to avoid impacting the state recreational area and boating access on the west (or upstream) side of the bridge.

Route 1 poses several challenges: four railroad crossings; and structures near or inside the NCDOT right-of-way in Corinth, Duncan, and along NC-42. North Carolina General Statute 153A-15 requires the consent of the board of commissions from select counties before land may be acquired by a unit of local government outside of the county. Lee, Chatham, Harnett, and Wake County are all on the list of counties included in the General Statute. During the PER process conversations between Fuquay-Varina and Harnett County officials were held to discuss potential routes within Harnett County. The outcome of the conversations was a potential route in Harnett County could be considered, however, the County requested the public right of way be preserved for their future use. To meet this goal all portions of the routes in Harnett County require easements be obtained from property owners.

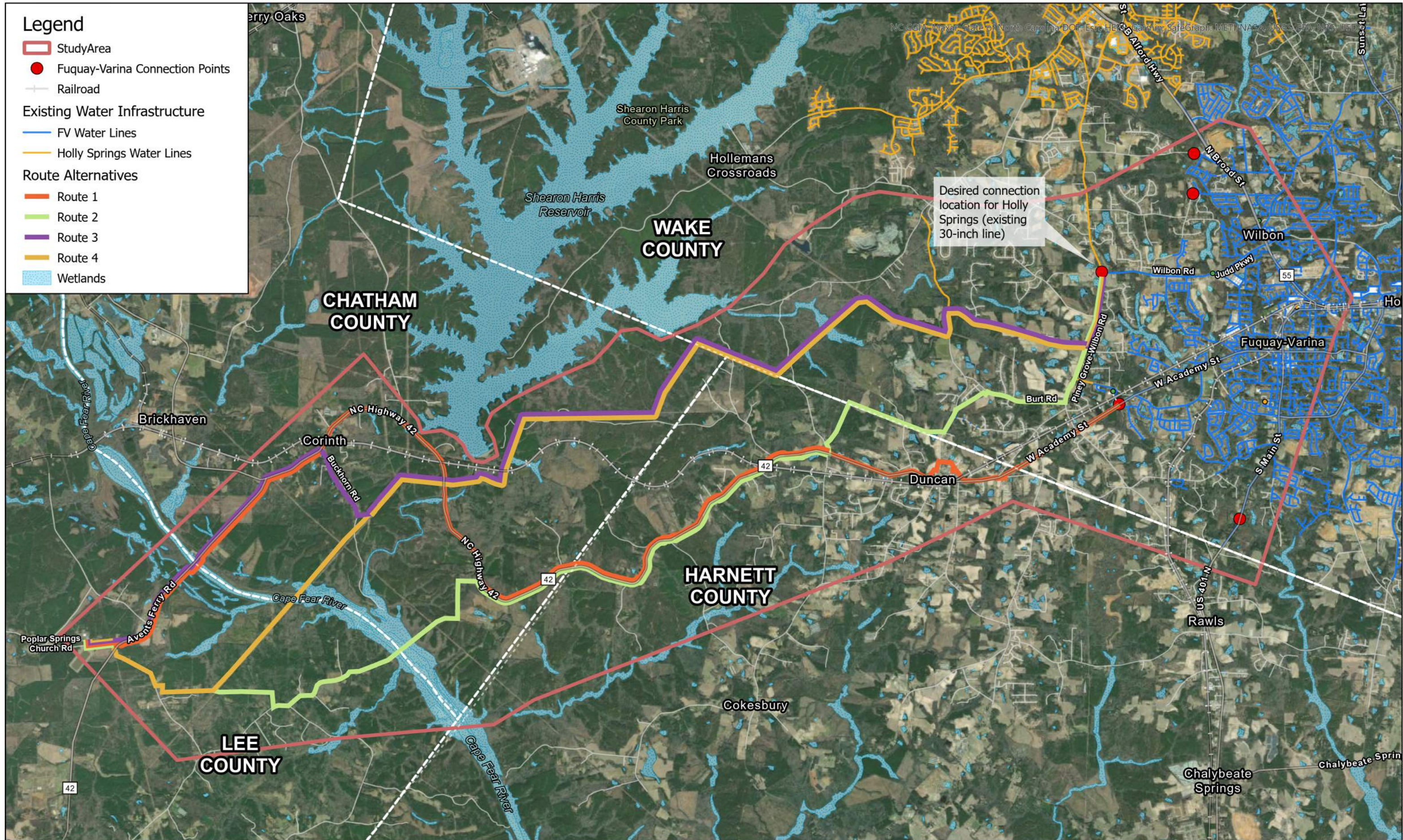
Figures 3-2, 3-3, and 3-4 show areas of Route 1 that will require attainment of private easements to avoid obstacles, and/or attainment of encroachment agreements. These areas are:

- Structures near NCDOT right-of-way on NC-42 and Duke Energy transmission line encroachment (Figure 3-2)
- Private wells required relocation (Figure 3-3)
- Private easements for all portions of route in Harnett County and railroad crossing (Figure 3-4)

The low points on the route are at the Cape Fear River and Buckhorn Creek, which have elevations of approximately 140 ft and 160 ft, respectively. A high point of approximately 440 ft is located about a third of the way into the route. An intermediate booster pump station would be required at the high point to avoid excessively high pressures at the WTP end of the transmission main. The length of the Route 1 is 16.6 miles.

Legend

- StudyArea
- Fuquay-Varina Connection Points
- Railroad
- Existing Water Infrastructure
 - FV Water Lines
 - Holly Springs Water Lines
- Route Alternatives
 - Route 1
 - Route 2
 - Route 3
 - Route 4
 - Wetlands



0 0.5 1 2 Miles
1 inch equals 1 miles

FUQUAY-VARINA
a dash more

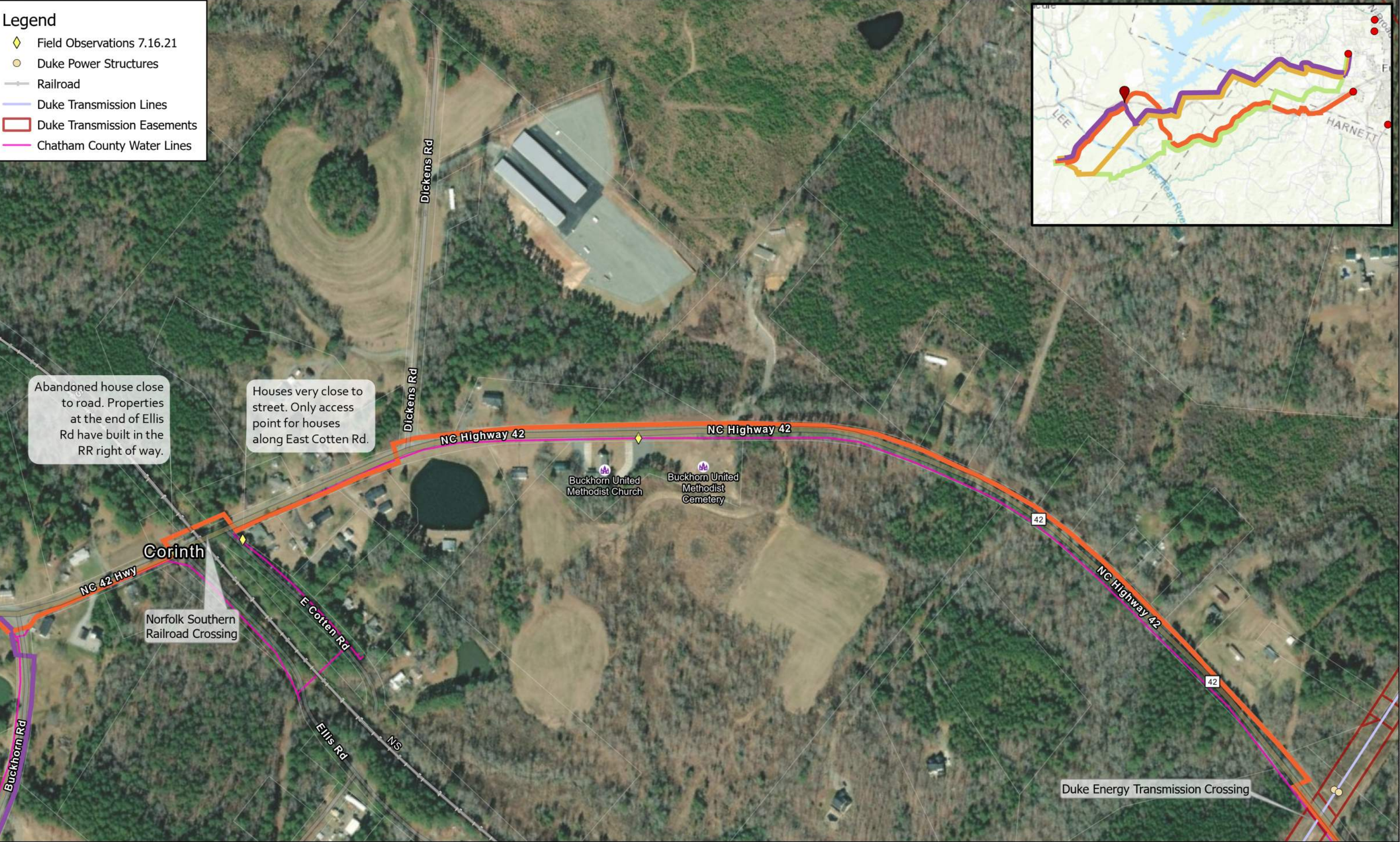
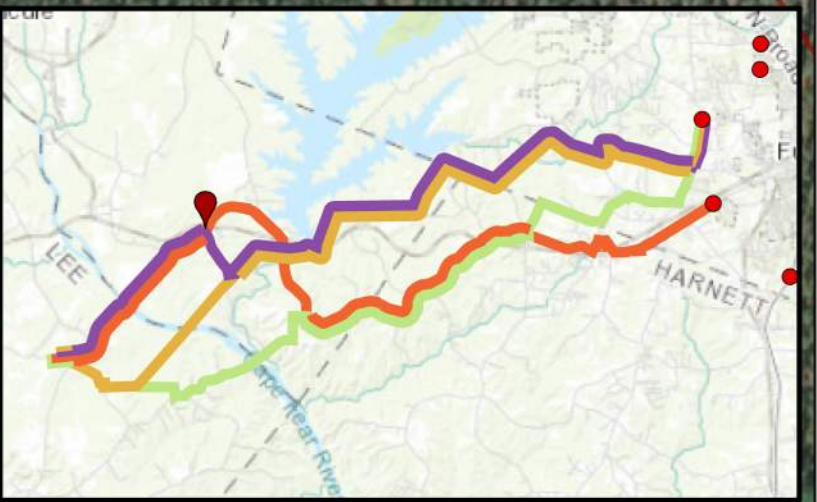
FRESE
NICHOLS
Hazen

Water Conveyance System
from City of Sanford WTP
Preliminary Engineering Report
Town of Fuquay-Varina

Figure 3-1
Alternate Routes

Legend

- Field Observations 7.16.21
- Duke Power Structures
- Railroad
- Duke Transmission Lines
- Duke Transmission Easements
- Chatham County Water Lines





Homes in this area with private wells that would need relocating



0 75 150 300 Feet
1 inch equals 150 feet

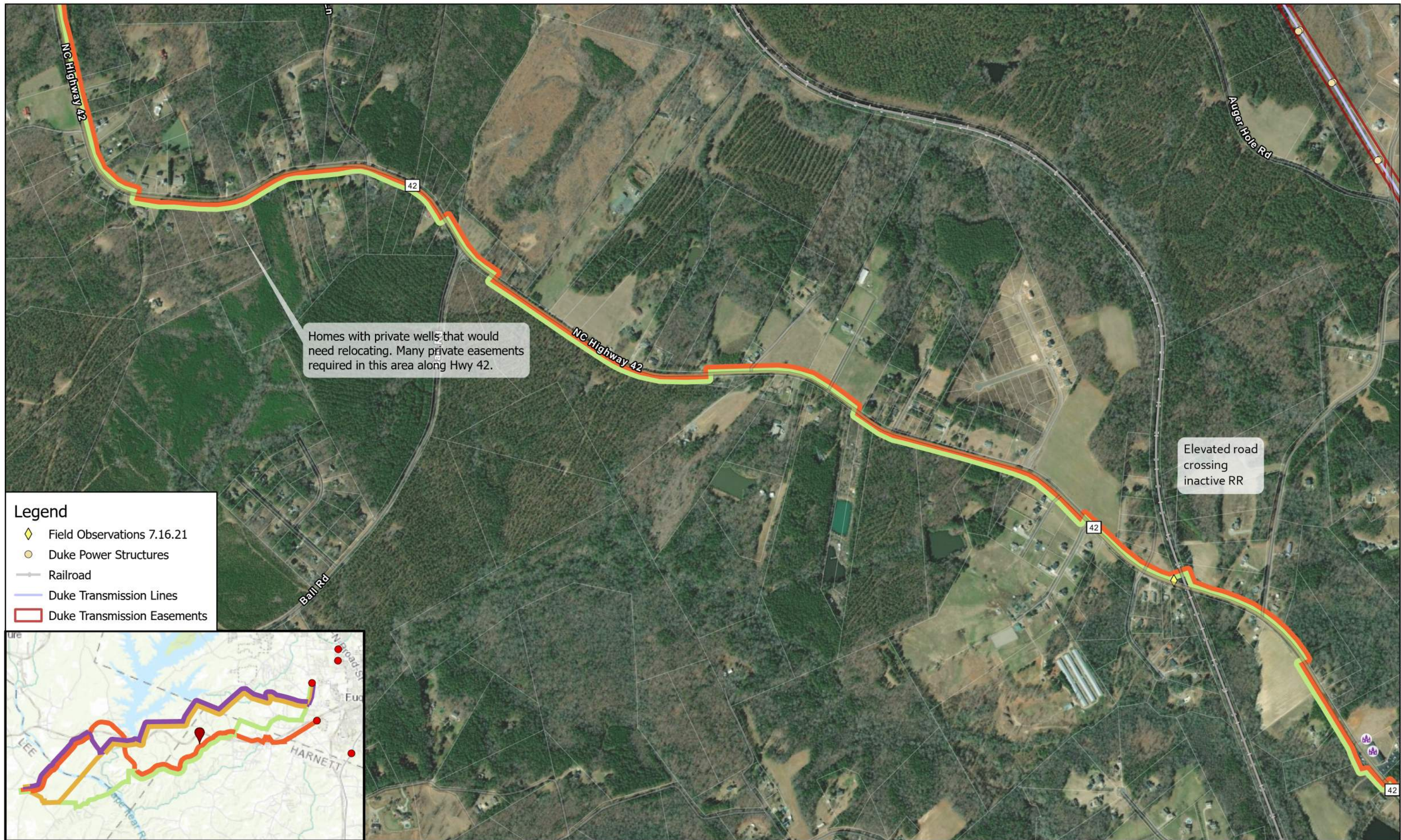
Route 1
Route 2
Route 3

Route 4
Fuquay-Varina Connection Points



Water Conveyance System
from City of Sanford WTP
Preliminary Engineering Report
Town of Fuquay-Varina

Figure 3-3
Route 1 & 2 Conflicts
NC-42 Parcels



3.2 Lower NC-42 Route (Route 2)

The Lower NC-42 Route (Route 2) exits the Sanford WTP, crosses Poplar Springs Church Rd. and NC-42, and heads southeast towards Beaver Farm Ln. It crosses the Duke Energy power easement and follows Doyle Cox Rd. northeast towards the Cape Fear River, where it crosses ~3000 ft below Buckhorn Dam. The route continues northeast along heavily wooded parcels until it reaches NC-42. It then follows NC-42, alternating on the north and south sides of the road as conflicts necessitate trenchless crossings under the road. Note: routes 1 and 2 follow the same path for approximately 5.2 miles. The route crosses the Norfolk Southern Railroad near the Macedonia Baptist Church. Just past the church, the route turns north on Wade Stephenson Rd., then heads northeast across agricultural and wooded parcels towards the Wake County boundary. Route 2 follows the county line southeast until reaching Cokesbury Rd., where it continues northeast on Buckhorn Duncan Rd. The route goes behind the Vintage Acres development and turns east on Burt Rd., then turns north on Piney Grove-Wilbon Rd. and parallels the road for approximately 1.6 miles until it connects to the existing Holly Springs and Fuquay-Varina distribution systems in the vicinity of the intersection of Piney Grove-Wilbon Rd. and Wilbon Rd.

Route 2 encounters a high point of approximately 445 ft about a third of the way into the route, which consequently presents the need for an intermediate BPS. The low point is at the Cape Fear River crossing, which has an elevation of approximately 140 ft at the river bottom. The route poses several challenges: houses close to the NCDOT right-of-way, obtaining private easements in Harnett County, and the environmental impacts of crossing the Cape Fear River below the Buckhorn Dam, which is the habitat for the endangered Cape Fear Shiner, as noted in Section 4 of this PER. Route 2 has similar trouble areas as Route 1, which are shown in Figures 3-3 and 3-4. The Cape Fear River crossing below the dam and a Duke Energy transmission crossing are shown in Figure 3-5. The length of Route 2 is ~16.2 miles.

3.3 Upper Cross-Country Route (Route 3)

Route 3 exits the Sanford WTP, crosses Poplar Springs Church Rd., and heads east towards the Cape Fear River. Route 3 crosses Avents Ferry Rd. (NC-42), then crosses the Cape Fear River near the raw water intake for the Sanford WTP (same location as Route 1) above the Buckhorn Dam. It continues to parallel NC-42 through Chatham County until reaching the town of Corinth, where it turns southeast and continues on Buckhorn Rd. for about 0.86 mi. It then turns east and goes on a mostly cross-country route paralleling Duke Energy transmission easements or parcel boundaries. It crosses Buckhorn Creek ~1000 ft below a spillway for the Shearon Harris Reservoir, as shown in Figure 3-6. The route crosses the Norfolk Southern Railroad near the reservoir and continues cross-country along a Duke Energy transmission easement and parcel boundaries as it crosses into Wake County. The route continues east, turns north along Buckhorn-Duncan Rd. for about 0.25 miles, then turns east on Duncan Cook Rd, crosses Piney Grove-Wilbon Rd. and turns north for about 0.9 mi until reaching Wilbon Rd. The route would tie into the existing Holly Springs distribution system in this area and continue further east to tie into Fuquay-Varina's distribution system.

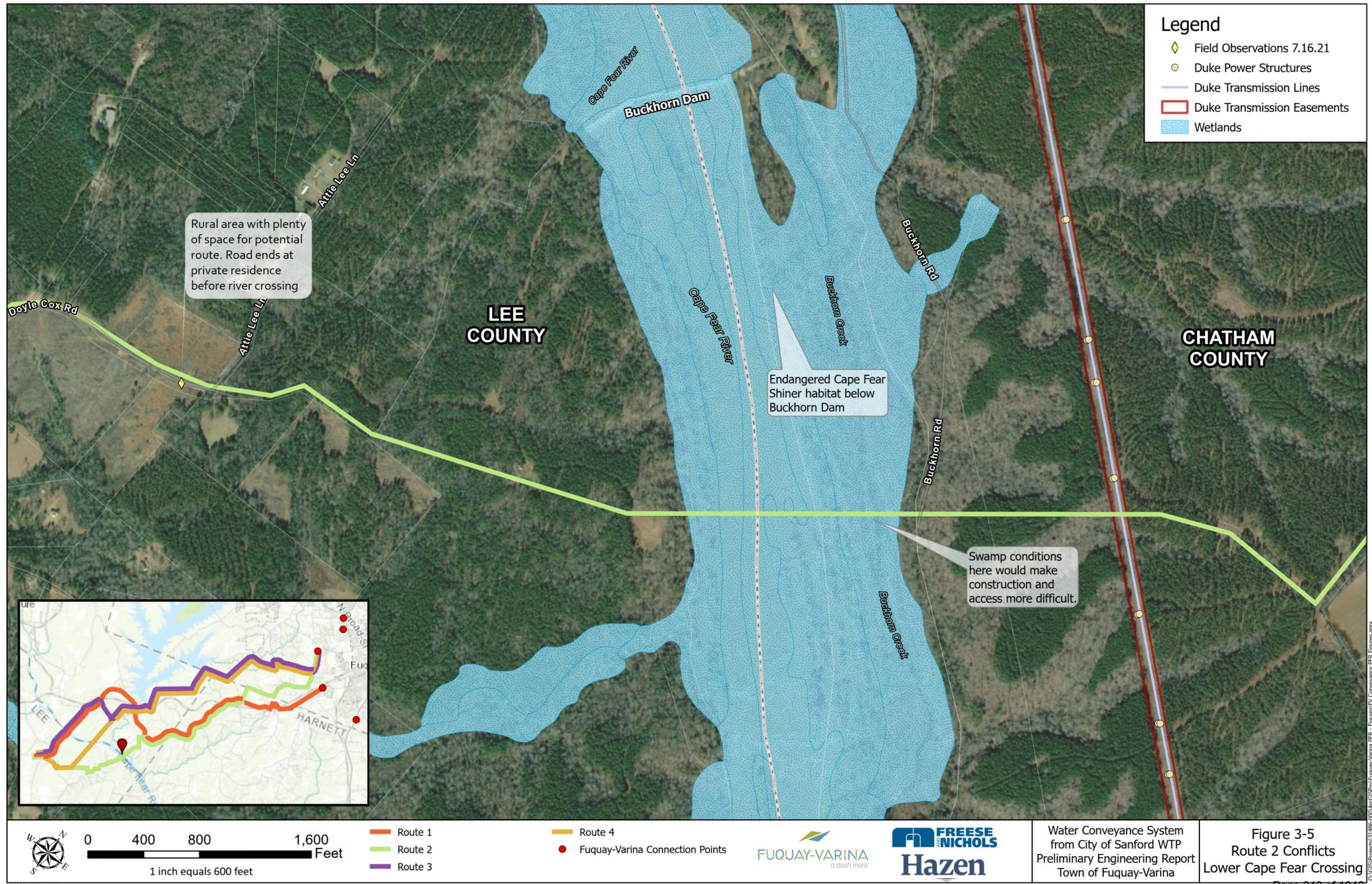
The route has low points at the Cape Fear River and Buckhorn Creek crossings, which have elevations of 140 ft and 160 ft, respectively. The high points are encountered around the middle and latter half of the route, ranging from 380 ft to 475 ft. A BPS would be required near the Town as the water is added into the distribution systems. Route 3 encounters far less conflicts along NC-42 compared to Routes 1 and 2,

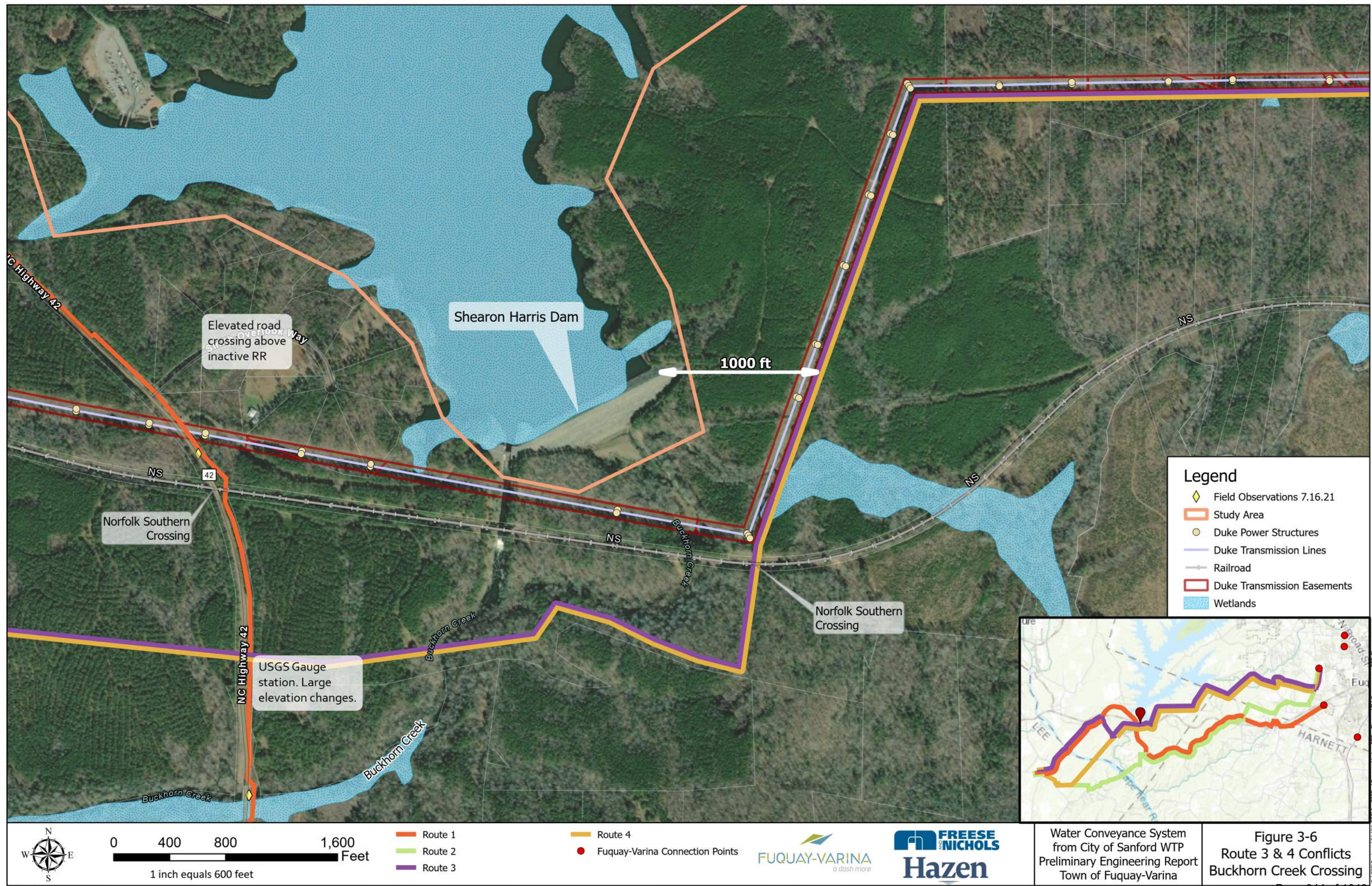
but there are a few structures close to the NCDOT right-of-way near the intersection of NC-42 and Buckhorn Rd. The length of the Route 3 is 16.3 miles.

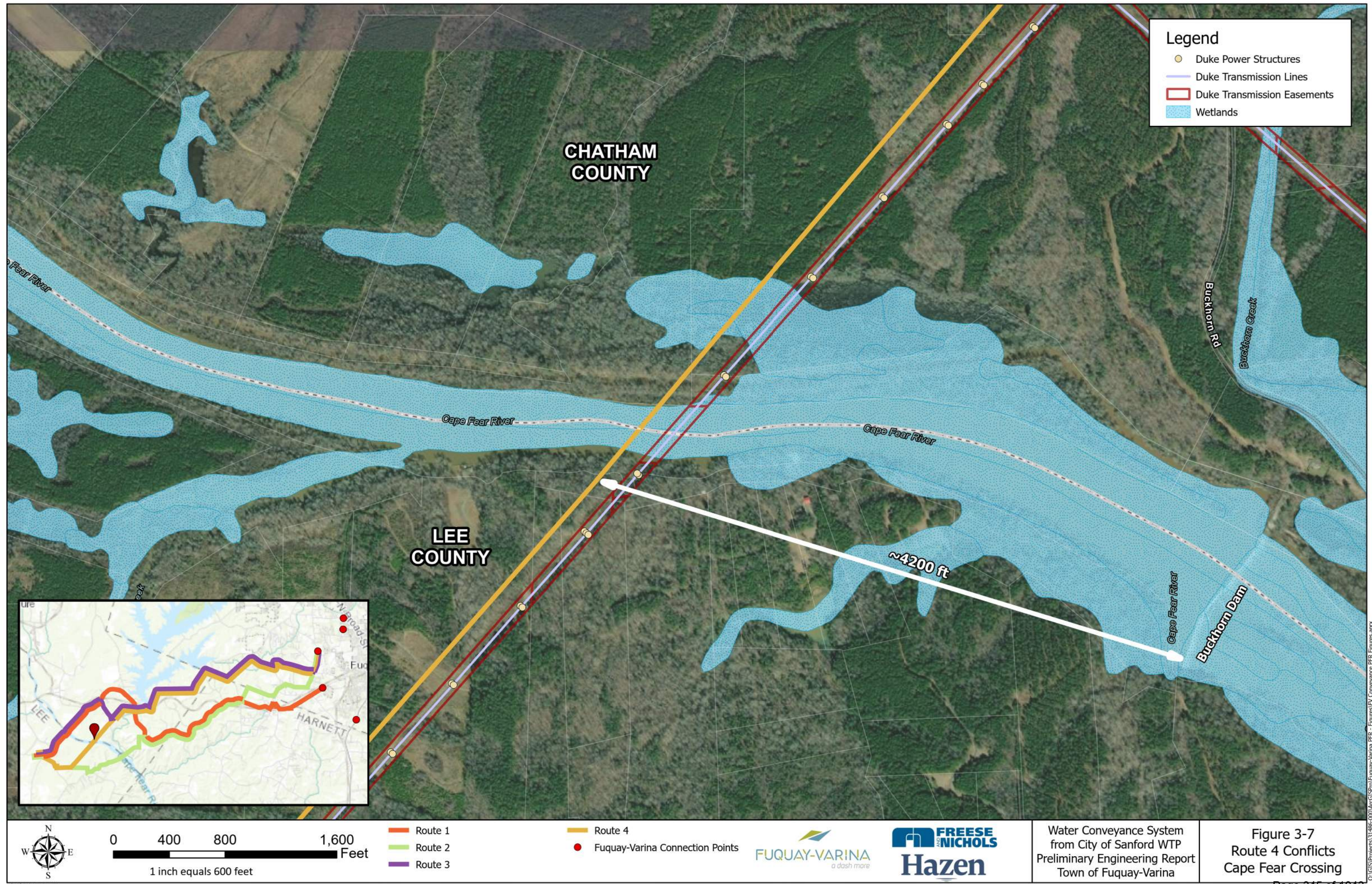
3.4 Lower Cross-Country Route (Route 4)

The Lower Cross-Country Route (Route 4) provides an alternative location for the North Route to cross the Cape Fear River. The route heads southeast towards Beaver Farm Ln and turns east until reaching a Duke Energy power easement traveling northeast. The route parallels the Duke Energy easement and crosses the Cape Fear River ~4200 ft upstream from the Buckhorn Dam, as shown in Figure 3-7. It continues to follow the Duke Energy easement and continues along the same path as the Route 3 near Buckhorn Rd.

Route 4 has low points at the Cape Fear River and Buckhorn Creek crossings, which have elevations of 140 ft and 160 ft, respectively. The high points are encountered towards the middle and latter half of the route. Like Route 3, a BPS would be required near the Town as the water is added into the distribution systems. The length of the Route 4 is approximately 16.1 miles.







4. Environmental Screening and Evaluation

A desktop environmental review was conducted to identify locations where hazardous conditions may be found, locations with natural and cultural significance, wetland and streams, and potential sites where federally protected species could be found.

4.1 Hazardous Sites

Hazen performed an inventory of sites within an 800-foot area around the four preliminary routes to determine whether there may be soil or groundwater contamination. The inventory was compiled using the Division of Waste Management Site Locator Tool, provided by the NCDEQ, and a review of available documents. This environmental screening does not guarantee that contaminated soil or groundwater will not be present during construction, but it provides an overview and summary of the available information.

Fifteen sites were identified within 800 feet of the four proposed routes, including four cemeteries, seven UST incidents, two AST incidents, and two active USTs (Figure 4-1). Three UST incidents are considered high risk, two of which are located on the same property in Fuquay-Varina. The cemeteries and high-risk UST incidents are listed below.

Cemeteries:

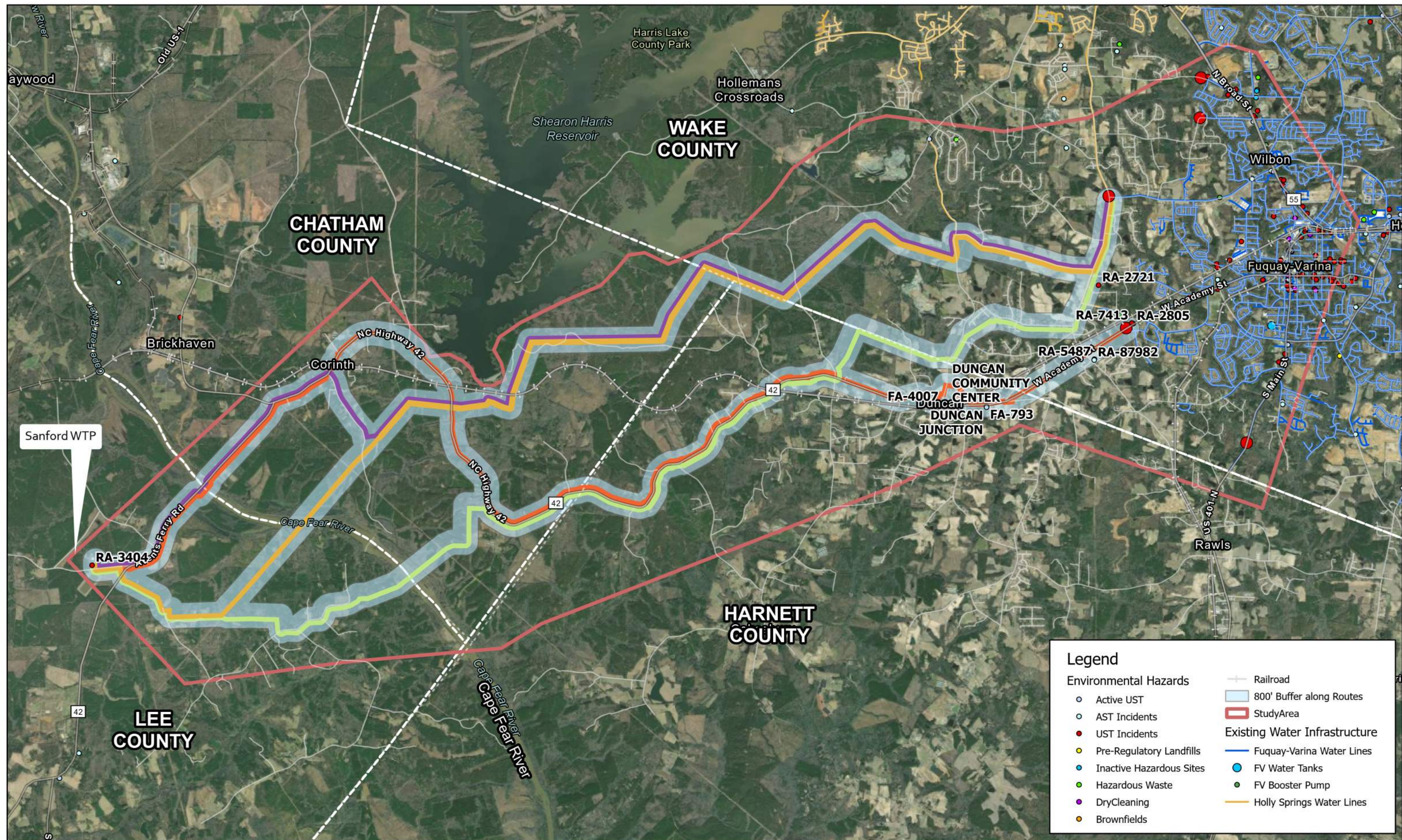
- Route 1
 - Piney Grove Baptist Church of Fuquay-Varina
 - Macedonia Baptist Church of Fuquay-Varina
 - Duncan Baptist Church
- Route 1 and 3
 - Memphis Church

High-risk UST incidents:

- Route 1
 - Adam's Place (gasoline and diesel release)
- Route 2
 - Leagan Property, Ida (petroleum release)

4.2 Natural and Cultural Resources

Hazen conducted a review of natural and cultural resources associated with the water conveyance project. The review consisted of a desktop review of publicly available published information. The areas evaluated for the water conveyance project include the proposed pipe routes extending from the Sanford WTP to a connection point in the Town's distribution system, as described in Section 3. The proposed pipe corridors traverse roadway rights-of-way, overhead electric easements, and private property. The findings of the environmental evaluation are described in the following sections.



4.3 Waters of the U.S.

Jurisdictional waters of the U.S. include open waters, streams, and wetlands. Wetlands, as defined by federal regulations [40 Code of Federal Regulations 230.3(t)], are "...areas that are inundated or saturated by an accumulation of surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." The U.S. Army Corps of Engineers (USACE) requires the presence of three parameters (hydrophytic vegetation, hydric soils, and evidence of hydrology) in support of a jurisdictional wetland determination (Environmental Laboratory, 1987). The boundary between wetlands and deepwater habitat is defined as the maximum depth where rooted emergent vegetation may be found. Rooted emergent vegetation is generally present at depths less than six feet below mean low water during the growing season.

A Hazen biologist reviewed National Wetland Inventory (NWI) mapping of the proposed pipe corridors to determine areas of likely wetland presence (Figure 4-2). NWI mapping is intended for use in regional and watershed data analysis regarding the distribution and type of wetlands in support of conservation efforts. The mapping was developed through the interpretation of aerial photography and has not been ground-truthed.

Route 1 traverses two wetland features shown on the NWI map. One mapped wetland is situated along Buckhorn Creek downstream of Shearon Harris Reservoir, and the other feature is located along an unnamed tributary (UT) to the Cape Fear River. Both wetlands are palustrine, forested, broad-leaved deciduous in character (PFO1A and PFO1/4A). Additionally, the Cape Fear River is depicted on the NWI map at the Route 1 crossing as a lacustrine feature (L1UBHh).

The NWI map shows that Route 2 crosses two wetland communities adjacent to the Cape Fear River. The mapped wetlands are located in the floodplain of the river along both banks. The features are described as palustrine, forested, broad-leaved deciduous wetlands (PFO1A and PFO1C). The Cape Fear River at the Route 2 crossing is mapped as a riverine feature (R3UBH).

The NWI map shows three wetland features that are either crossed by or are immediately adjacent to Route 3. The three wetland features abut small streams, specifically Buckhorn Creek upstream of Shearon Harris Reservoir, a UT to Buckhorn Creek downstream of Shearon Harris Reservoir, and a UT to the Cape Fear River. The wetland that abuts a UT to the Cape Fear River is also crossed by Route 1. The wetlands are identified as palustrine, forested, broad-leaved deciduous (PFO1/4A and PFO1A) features. The NWI map also shows the Cape Fear River as a lacustrine feature (L1UBHh) at the Route 3 crossing.

The NWI map shows three wetland features along the Route 4 corridor. Two of the wetlands are also crossed by Route 3, and one wetland is unique to Route 4. The NWI-mapped wetland that is unique to Route 4 is identified as a complex containing a palustrine, forested, broad-leaved deciduous (PFO4C) community and a palustrine, shrub/scrub, broad-leaved deciduous (PSS1F) community. The PFO4C community is seasonally flooded, and the PSS1F community is semi-permanently flooded. The wetland is located adjacent to and in the floodplain of the Cape Fear River, which is shown as a lacustrine feature at the Route 4 crossing (L1UBHh).

A Hazen biologist reviewed GIS data published by the North Carolina Division of Water Resources (DWR) to identify stream crossings along the proposed pipe routes. The DWR stream datasets include

those streams that have been classified in DWR's best use classification system and unclassified streams that are also subject to regulation under the Clean Water Act. As is the case with the NWI mapping of wetlands, the DWR stream mapping has not been ground-truthed.

The DWR stream datasets were reviewed to determine the number of streams that are likely to be crossed by the proposed pipe routes (Figure 4-3). The DWR stream mapping shows that Routes 1 and 2 each cross 13 streams, including the Cape Fear River. The datasets show 18 streams, including the Cape Fear River, being crossed by Route 3. Route 4 traverses 23 streams, including the Cape Fear River, according to the datasets. At this time, the anticipated installation method is open cut with trenchless crossings at some roads, the railroad, and the Cape Fear River.

The presence and limits of the jurisdictional waters of the U.S. were not delineated or surveyed for the purpose of the PER. Upon selection of a preferred alternative and identification of the limits of disturbance associated with the selected alternative, delineations of jurisdictional waters of the U.S. will be necessary. Impacts to jurisdictional areas will be calculated based on the jurisdictional delineation and project design.

4.4 Federally Protected Species

The U.S. Fish and Wildlife Service (USFWS) identifies species of plants and animals that are in the process of decline and at risk of extinction. Federal law, under the provisions of Section 7 of the Endangered Species Act of 1973, as amended, requires that any action likely to adversely affect a federally protected species be subject to review by USFWS. Other species may receive additional protection under separate federal laws.

Hazen consulted the Information for Planning and Conservation (IPaC) tool, which is maintained by USFWS, on November 23, 2021. On the IPaC report, USFWS identified four endangered species, one threatened species, and one candidate species as having the potential to occur within the vicinity of the project. The identified species include red-cockaded woodpecker (*Picoides borealis*), Cape Fear shiner (*Notropis mekistocholas*), Atlantic pigtoe (*Fusconaia masoni*), monarch butterfly (*Danaus plexippus*), harperella (*Ptilimnium nodosum*), and Michaux's sumac (*Rhus michauxii*).

4.4.1 Red-cockaded woodpecker (*Picoides borealis*)

The red-cockaded woodpecker (RCW) is an endangered, medium-sized bird with entirely black and white plumage, except for small red streaks on the nape of the male. The back of the RCW is striped, and the bird has a large white cheek patch surrounded by a black cap, nape, and throat. This woodpecker's diet is composed mainly of insects, including ants, beetles, wood-boring insects, caterpillars, and corn earworms, if available. The RCW lays its eggs in April, May, and June; the eggs hatch approximately 38 days later.

The RCW is found in the southeastern United States. It is unique among woodpeckers because it nests exclusively in living pine trees. The RCW uses open, old-growth stands of southern pines, particularly longleaf pine, for foraging and nesting habitat. Slash, pond, or loblolly pines will also be utilized if longleaf is not available. The preferred forested stand contains at least 50 percent pine and lacks a thick understory. These birds usually excavate nests in pines greater than 60 years old and contiguous with pine stands at least 30 years of age. Living pines infected with red-heart disease (*Formes pini*) are often

selected for cavity excavation because the inner heartwood is usually weakened. Cavities are located from 12 to 100 feet above ground level and below live branches. These trees may be identified by candles, large encrustations of running sap that surrounds the tree. Clusters consist of one to many of these candle trees. The foraging range of the red-cockaded woodpecker may extend 500 acres and must be contiguous with suitable nesting sites. Habitat for the RCW is expected to be present adjacent to the proposed pipe corridors.

4.4.2 Cape Fear shiner (*Notropis mekistocholas*)

The Cape Fear shiner is an endangered, small fish, rarely exceeding 2 inches in length, which is endemic to the Cape Fear drainage in North Carolina. It is specifically found in Randolph, Moore, Lee, Harnett, and Chatham Counties of the lower Piedmont and upper Sandhills. The fish is pale silvery yellow with a black band the length of its body. The fins are yellowish and somewhat pointed. Unlike other members of its genus, the Cape Fear shiner is thought to feed extensively on plant material. Information on breeding behavior is not available. The preferred habitat is clean streams with gravel, cobble, and boulder substrates with pools, riffles, shallow runs, and side channels and pools. The preferred water quality is good to excellent with low silt loads. Critical habitat has been designated for this species on several multi-mile reaches of the Rocky River, Bear Creek, Deep River, and Fork Creek. Habitat may be present within the streams crossed by the proposed pipe corridors.

4.4.3 Atlantic pigtoe (*Fusconaia masoni*)

The Atlantic pigtoe is a threatened, freshwater mussel with a shell that reaches a length of 2.3 inches. The mussel has a medium, rhomboidal-shaped shell that has a distinctive, angular posterior ridge. The periostracum is yellowish-brown to greenish-brown, and the nacre color ranges from iridescent blue or white to salmon. The adults are essentially sessile. Some passive movement downstream may occur. The Atlantic pigtoe inhabits relatively fast waters with high-quality riverine/large creek habitat. The Atlantic pigtoe is typically found in headwater or rural watersheds in sand or gravel substrates below riffles. Habitat may be present within the streams crossed by the proposed pipe corridors.

4.4.4 Monarch butterfly (*Danaus plexippus*)

The monarch butterfly is a candidate species. Both male and female monarchs are bright orange with black borders and black veins. The butterfly's wingspan ranges from 3 to 5 inches. Monarch butterflies are a predominantly open country, frost-intolerant species whose range of breeding habitats is greatly dependent upon the presence of milkweeds (*Asclepias* sp.). The species requires dense tree cover for overwintering. Monarchs inhabit a wide geographic range, covering North and South America, islands of the Caribbean Sea, Australia and other islands of the Pacific Ocean, the Canary Islands, and parts of western Europe. Habitat for monarch butterflies may be present within or adjacent to the proposed pipe corridors.

4.4.5 Harperella (*Ptilimnium nodosum*)

Harperella is an endangered herb in the Apicaceae family. This fine, slender plant grows a narrow stem from 6 to 36 inches tall, which supports reduced to hollow quill-like leaves. The flowers are terminal on

the stem and arranged as a compound umbel of small white flowers like those of Queen Anne's lace. Flowering begins in May to June and continues until frost. Seed set in this plant is usually prolific; thus, a large number of individuals may occur within a population at any given time. Populations of harperella are found in Alabama, Arkansas, Georgia, South and North Carolina, West Virginia, and Maryland. However, this species inhabits a narrow, precarious micro-environment within its known range. It requires bare ground as rock and gravel shoals and margins of swift-flowing reaches of riverine sites in the Mountains or Piedmont, or the exposed edges of intermittent pineland ponds in the Coastal Plain. Currently, this plant is known from only two populations in North Carolina – one in the Tar River in Granville County and one reintroduced to the Deep River in Chatham County. Habitat for harperella may be present within or adjacent to the proposed pipe corridors.

4.4.6 Michaux's sumac (*Rhus michauxii*)

Michaux's sumac is an endangered, densely pubescent, dioecious, rhizomatous shrub. It has a low stature, growing to usually less than 2 feet high. The leaves are compound with 7 to 13, serrately edged, hairy leaflets on a hairy rachis. Male or female flowers are found in dense terminal panicles typical of the genus. Flowers bloom in June, and seed heads are visible from August to September. Due to habitat fragmentation colonies of this dioecious plant, when they occur, often are only one large clone representing a single sex. Unfortunately, this quality is a serious limitation to the reproduction and repopulation of this species. Michaux's sumac grows in dry, open woodlands and forest edges in scattered locations from Virginia to Georgia. In the Piedmont region, it is usually associated with acidic to subacid clay loam or sandy clay loam soils over granites and occasionally found on clayey soils derived from mafic rock such as Carolina slates or gabbro. Habitat for Michaux's sumac is present within the proposed pipe corridors.

4.4.7 Conclusions

Habitat for the previously discussed species may be available within or abutting the proposed project corridors. There is no critical habitat for any of the species designated within 50 feet of the proposed pipe alignments. Upon selection of a preferred alternative and identification of the limits of disturbance associated with the selected alternative, onsite assessments for the presence of habitat that can support federally protected species will be necessary during the design phase of the project. If suitable habitat is found for one or more federally protected species, then species-specific surveys will be needed.

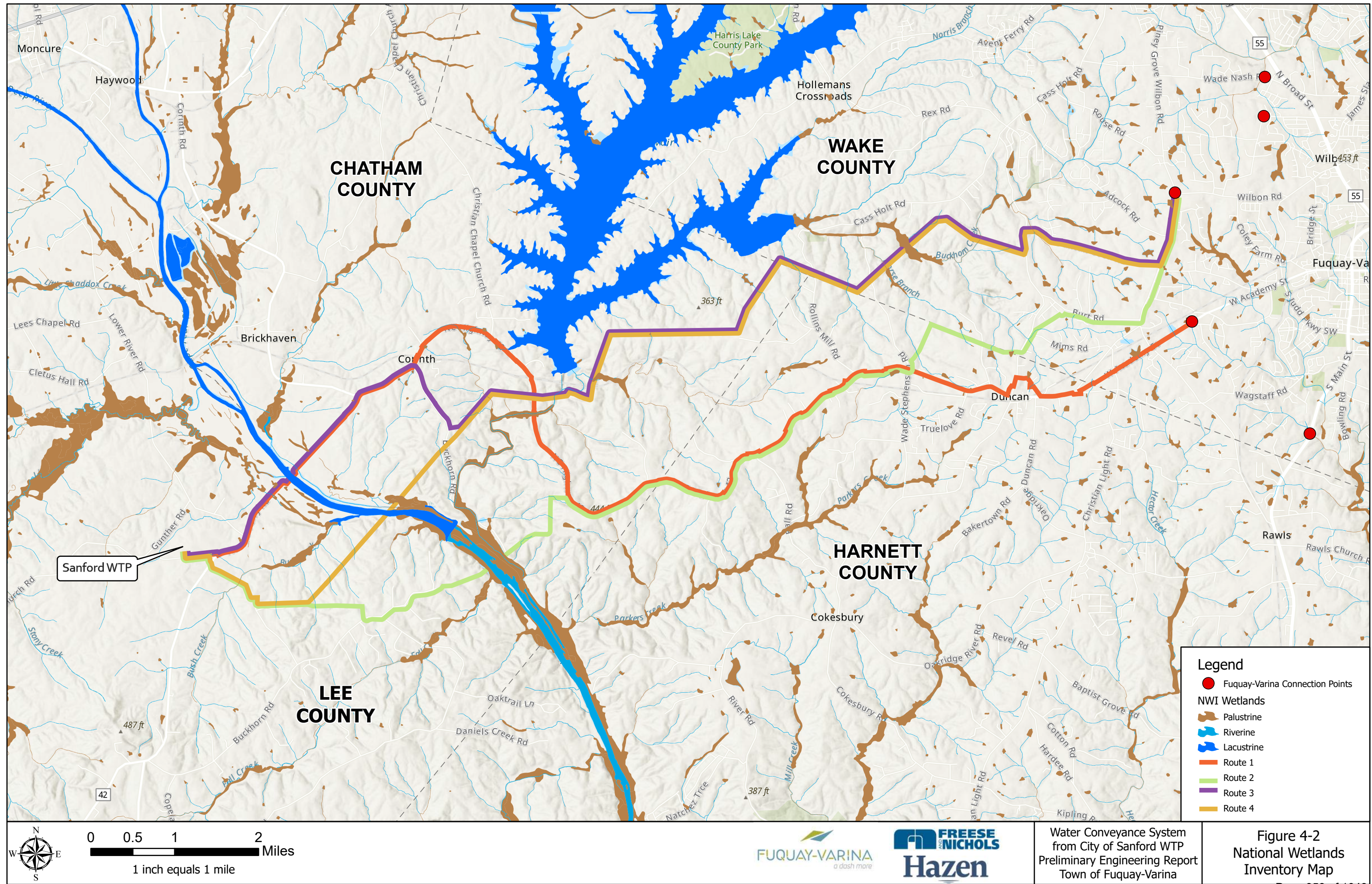
4.5 Historic and Cultural Resources

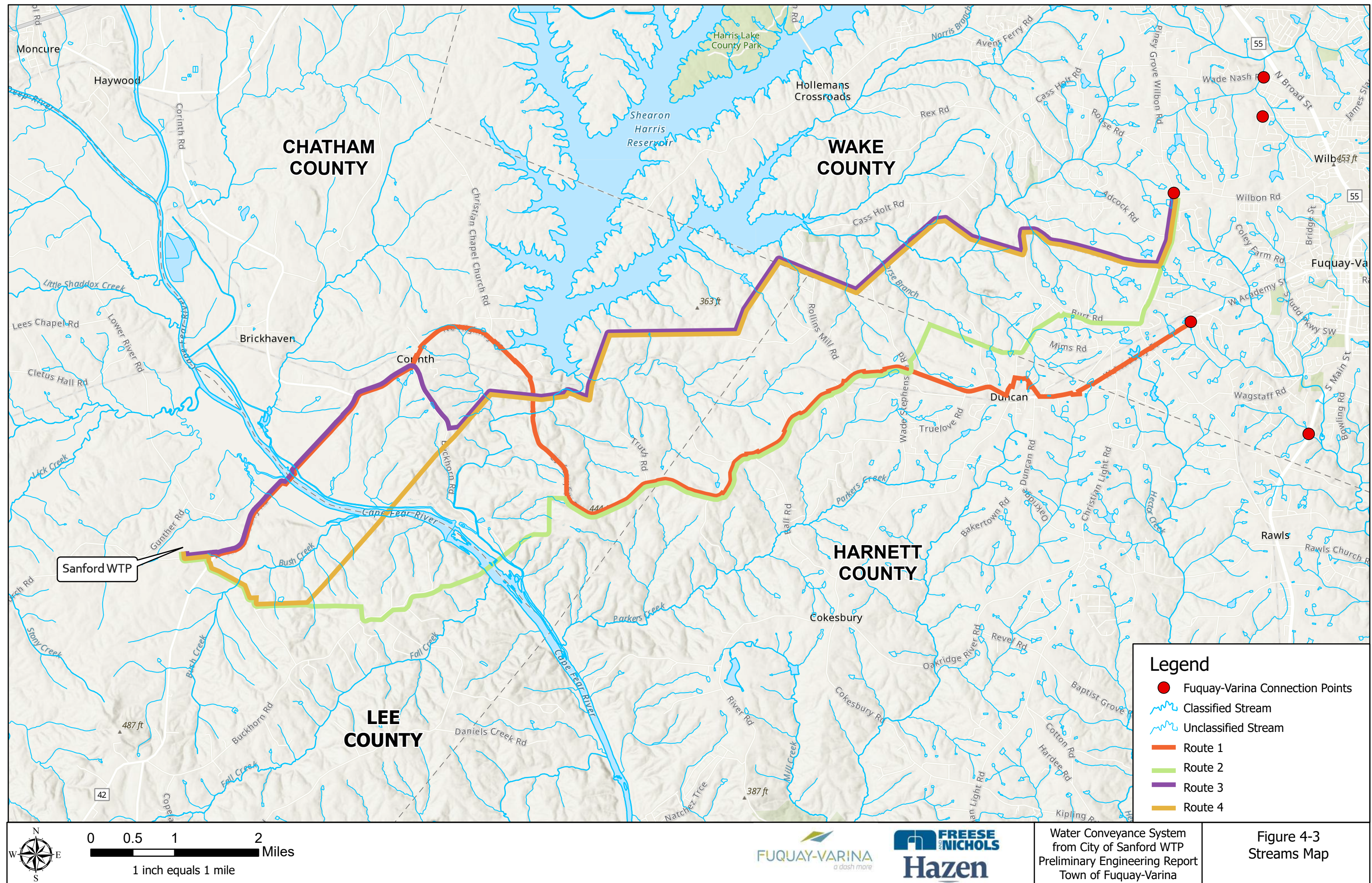
Hazen utilized the HPOWEB 2.0 online mapper to perform a desktop review cultural resources in the vicinity of the proposed pipe corridors. There are numerous surveyed structures and sites along the proposed pipe corridors. Structures and sites that are in proximity to one or more pipe routes and are on the Study List or the National Register of Historic Places (NRHP) are described below.

Routes 1 and 2 pass approximately 2,900 feet northwest of Harrington-Dewar House (HT0123), a NRHP structure in Harnett County. Route 1 also passes near Burt Farm (WA0538), a Study List property with a Study List structure. Route 2 passes near two Study Listed sites, Buckhorn Falls Navigation Works (LE0242) in Lee County and Nash-Weathers House (WA1029) in Wake County.

Routes 1 and 3 pass along the road frontage of Memphis Methodist Church and Cemetery (LE0242), a Study List property in Lee County, and Routes 2 and 4 pass near the property. Along the segments of Routes 3 and 4 that coincide with each other, the pipe corridors traverse Burt Farm (WA0538) and terminate approximately 850 feet south of a building that is listed on the NRHP – Davis-Adcock Store (WA0548) in Wake County (Appendix B).

Archaeological resources may be present in the vicinity of the pipe corridors. Previous land-disturbing activities to support the construction of existing development, installation of associated utilities and other infrastructure, and agricultural activities have likely disturbed archaeological resources that may have been present in portions of the pipe corridors. Due to the proximity of the aforementioned historic resources to the proposed pipe corridors and the possibility of archaeological resources in the area, Hazen recommends that coordination with the State Historic Preservation Office (SHPO) be initiated early in the design phase. SHPO may identify design or construction considerations to be incorporated to maintain the historical significance, character, and integrity of cultural resources of the area as well as ensuring compliance with the National Historic Preservation Act. Additionally, SHPO may request an archaeological survey be performed in areas along the selected route.





5. Stakeholder Engagement

5.1 Duke Energy

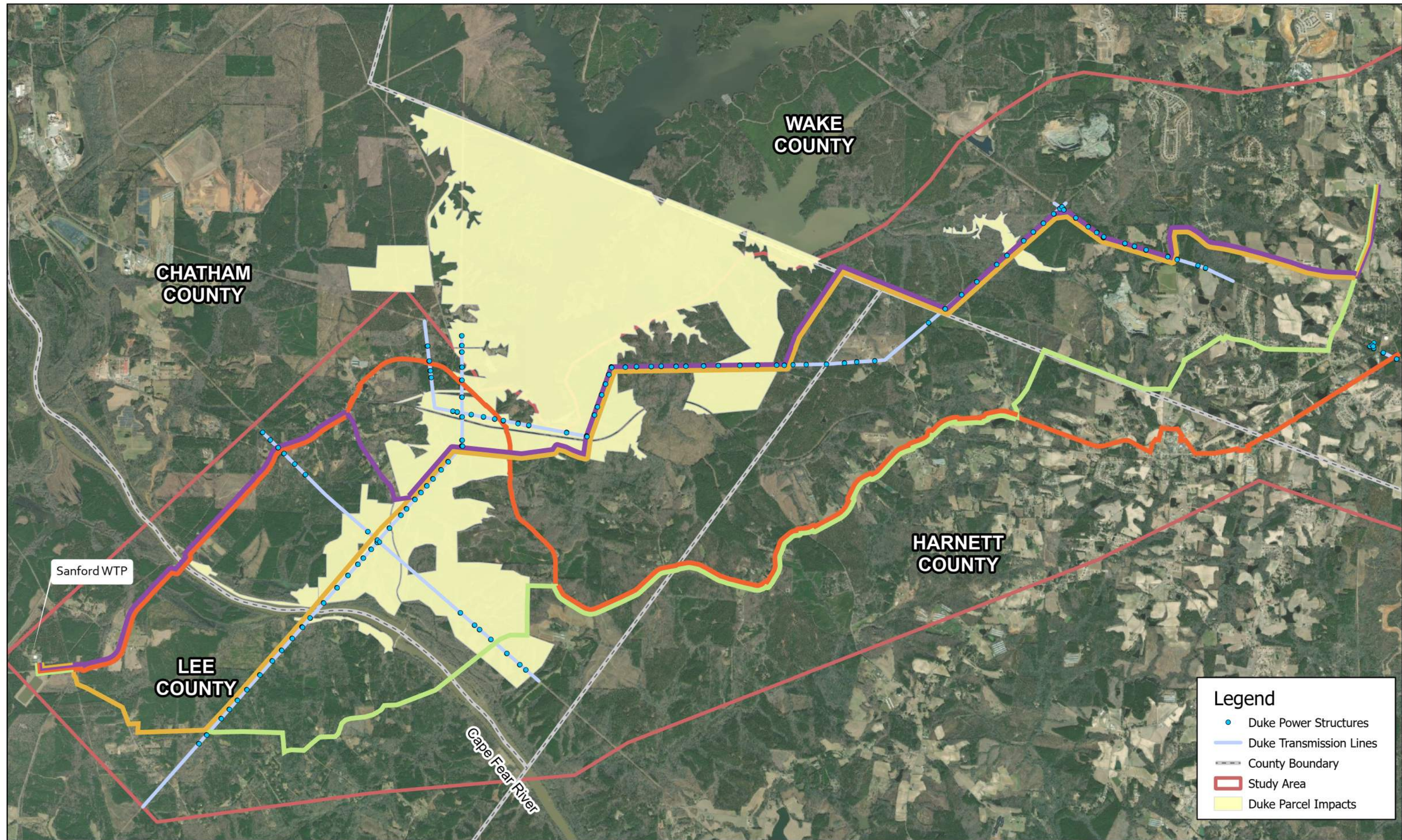
Duke Energy owns parcels along the Cape Fear River and the Shearon Harris Reservoir within the study area as they maintain transmission easements through some private properties in Lee and Chatham County for their 115 kV and 230 kV lines (Figure 5-1). Discussions were held with Duke Energy to understand requirements for crossing power transmission mains. Requirements include waterlines being at least 40 ft from any power structures and any transmission crossings to be at an angle between 45-90°. No waterline structures may be installed in Duke's easements. These requirements were incorporated into the routes as appropriate.

Discussions were also held with Duke Energy to determine if routes through their property are feasible. Preliminary routes were provided to their Real Estate Representative and Timber Manager for review. They were open to the route concepts presented but have not provided feedback in an official capacity. Conversations with Duke Energy will continue through future phases.

5.2 NCDOT

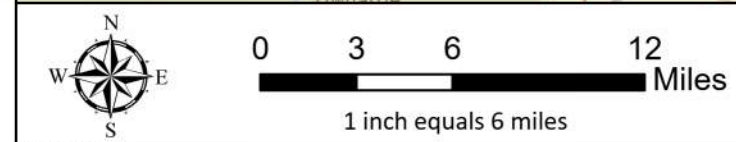
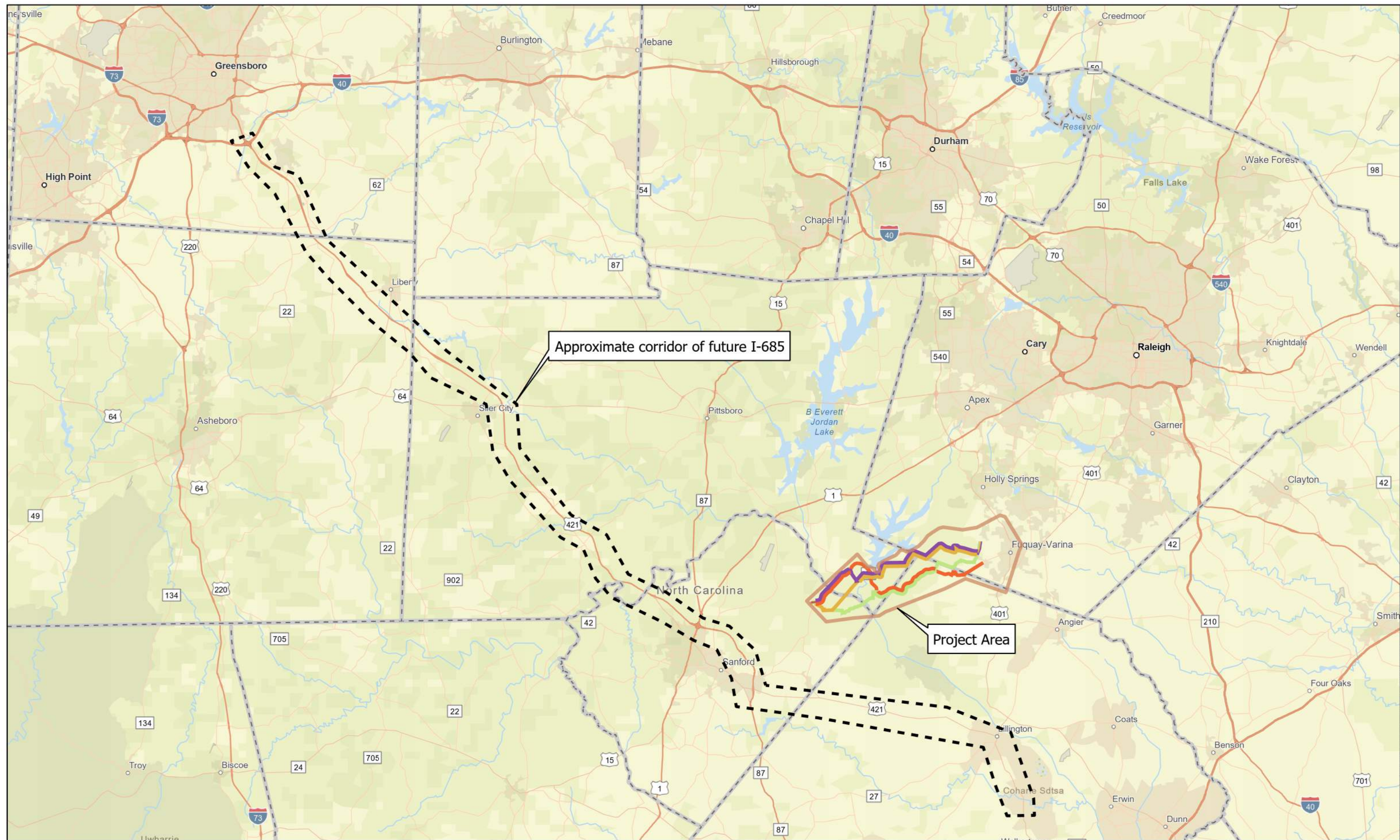
The current and future NCDOT Capital Improvement Projects were reviewed in conjunction with the study area map for this project. There are no planned NCDOT projects within the water transmission study area; disturbances or changes in the design due to roadway improvements are not anticipated.

On November 15th, 2021, H. R. 3684, the Infrastructure Investment and Jobs Act, became public law. The legislation designated U.S. 421 as a high priority corridor on the National Highway System; this measure allows NCDOT to request a future interstate designation for NC-421. If approved, future I-685 would span from I-85 in Greensboro to I-95 in Dunn (Figure 5-2). At this time, it does not appear the proposed project will impact any of the reviewed routes. The forthcoming design for this project, and any other NCDOT projects, will be monitored as the water transmission design progresses.



Legend

- Duke Power Structures
- Duke Transmission Lines
- - - County Boundary
- ▭ Study Area
- ▭ Duke Parcel Impacts



- Route 1
- Route 3
- Route 2
- Route 4



Water Conveyance System
from City of Sanford WTP
Preliminary Engineering Report
Town of Fuquay-Varina

Figure 5-2
Future I-685 Project
Vicinity

6. Hydraulic Assessment of Routes

6.1 Project Capacity

A review of the previous reports as well as updated population and demand projections was completed as a part of this study. It was determined a flow of 10 MGD from the City of Sanford will be required to meet Fuquay-Varina future demands in addition to their other water supply contracts. Additionally, the Town of Holly Springs requested 6 MGD as a part of the project. Therefore, the total required capacity of the proposed transmission line from the City of Sanford WTP to the proposed BPS is 16 MGD.

To determine the sizing of the transmission line from the Sanford WTP to the BPS, hydraulic grade line (HGL) profiles were developed for each route using a 36-inch pipe under 16 MGD flow conditions. Additionally, Route 3 was modeled using a 30-inch pipe to compare the resulting BPS location using the smaller pipe. It was assumed the hydraulic grade from the City of Sanford WTP would range from 530 feet above mean sea level (MSL) to 560 feet. During the initial modeling efforts, it was assumed that the routes would deliver the full 16 MGD to a hydraulic grade of 600 feet near the Town of Fuquay-Varina connection point through a single transmission line. This allowed for a complete assessment of the routes in terms of pipe size and potential BPS location without regard for how the flow would ultimately split between the two Towns.

Figure 6-1 shows the HGL profile for Route 3 based on a 36-inch pipe size, including the recommended BPS location. Figure 6-2 shows the HGL profile for Route 3 based on a 30-inch pipe size for comparison purposes, including the recommended BPS location. Transmission line modeling results indicate that a 36-inch pipe allows the BPS to be sited much closer to the delivery locations compared with a 30-inch pipe. A BPS closer to the distribution systems allows each system to receive water from dedicated pumps and transmission mains between the BPS and the delivery points to each system, improving the operations and system control for each system. Therefore, a 36-inch transmission line is recommended to convey water from the City of Sanford WTP to the BPS.

6.2 Booster Pump Station

6.2.1 Preliminary Pump Station Siting

HGL profiles were developed for the remaining three routes assuming the conditions in Section 6.1 and the recommended 36-inch transmission pipe size (Figures 6-3, 6-4, and 6-5). For each of the four routes, preliminary BPS locations were determined based on hydraulic performance within the transmission line. The minimum pressure in the transmission line was targeted to be above 20 psi and the maximum pressure in the transmission line was recommended to be below 200 psi. Based on the pressure constraint, the BPS locations included on the HGL profiles below are recommended for a given route.

The BPS for Route 1 must be located closest to the City of Sanford WTP when compared with the other routes. This presents challenges with conveying water from the BPS to the delivery connections, such as two long parallel transmission lines to each distribution system, a second BPS closer to the delivery connections to pump water into the Holly Springs system or complex throttling and control strategies that

will require excessive energy to be wasted. The proposed BPS location for Route 2 is closer to the delivery connections but still far enough away to present similar challenges as Route 1. The proposed BPS location is the same for both Routes 3 and 4 and is located much closer to the delivery connections when compared with Routes 1 and 2. This is a significant advantage for conveying water into the receiving water systems since only one BPS is required to pump into the respective Town's water systems.

Figure 6-1: Route 3 HGL Profile – 36-inch Transmission Main

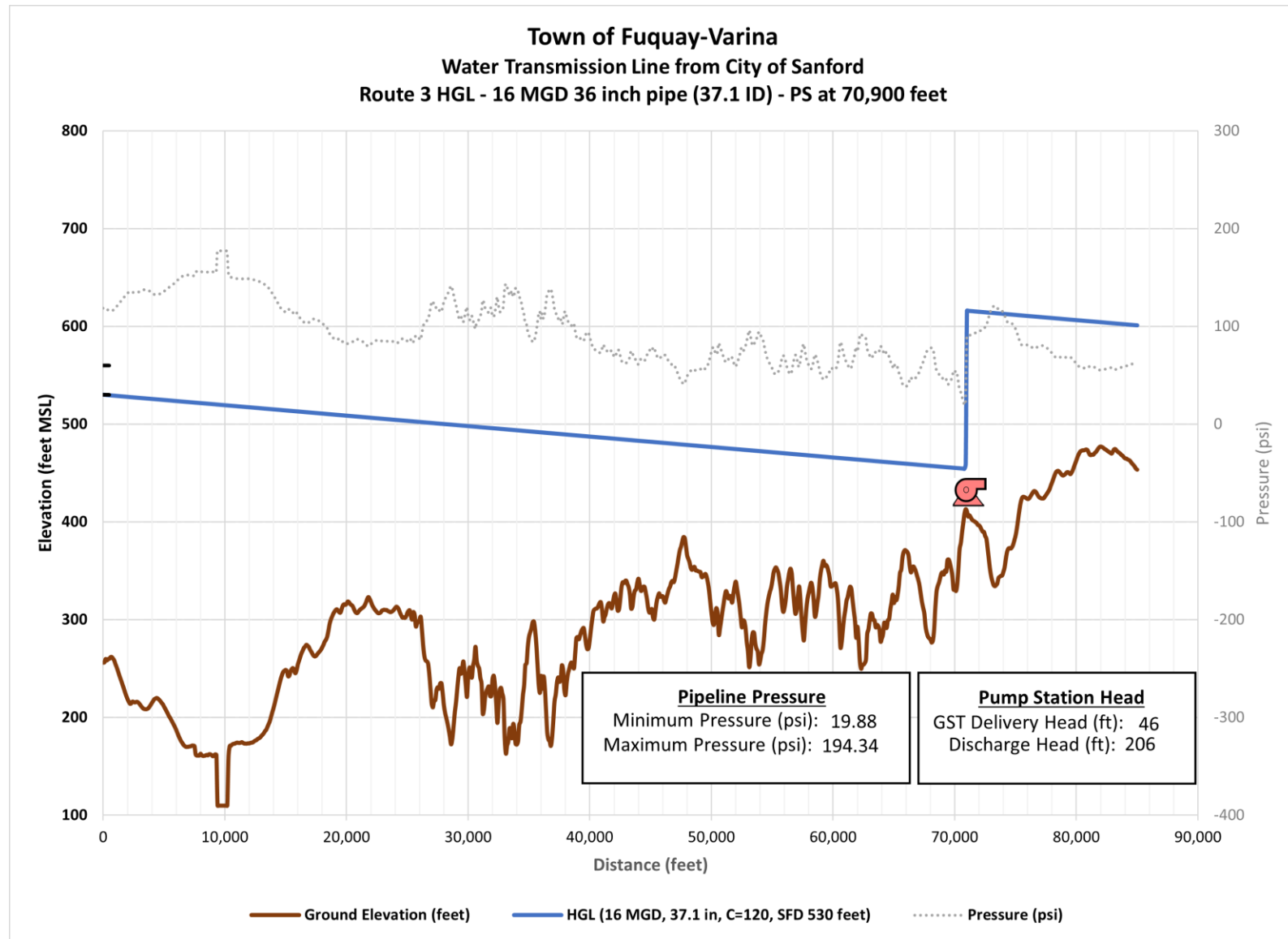


Figure 6-2: Route 3 HGL Profile – 30-inch Transmission Main

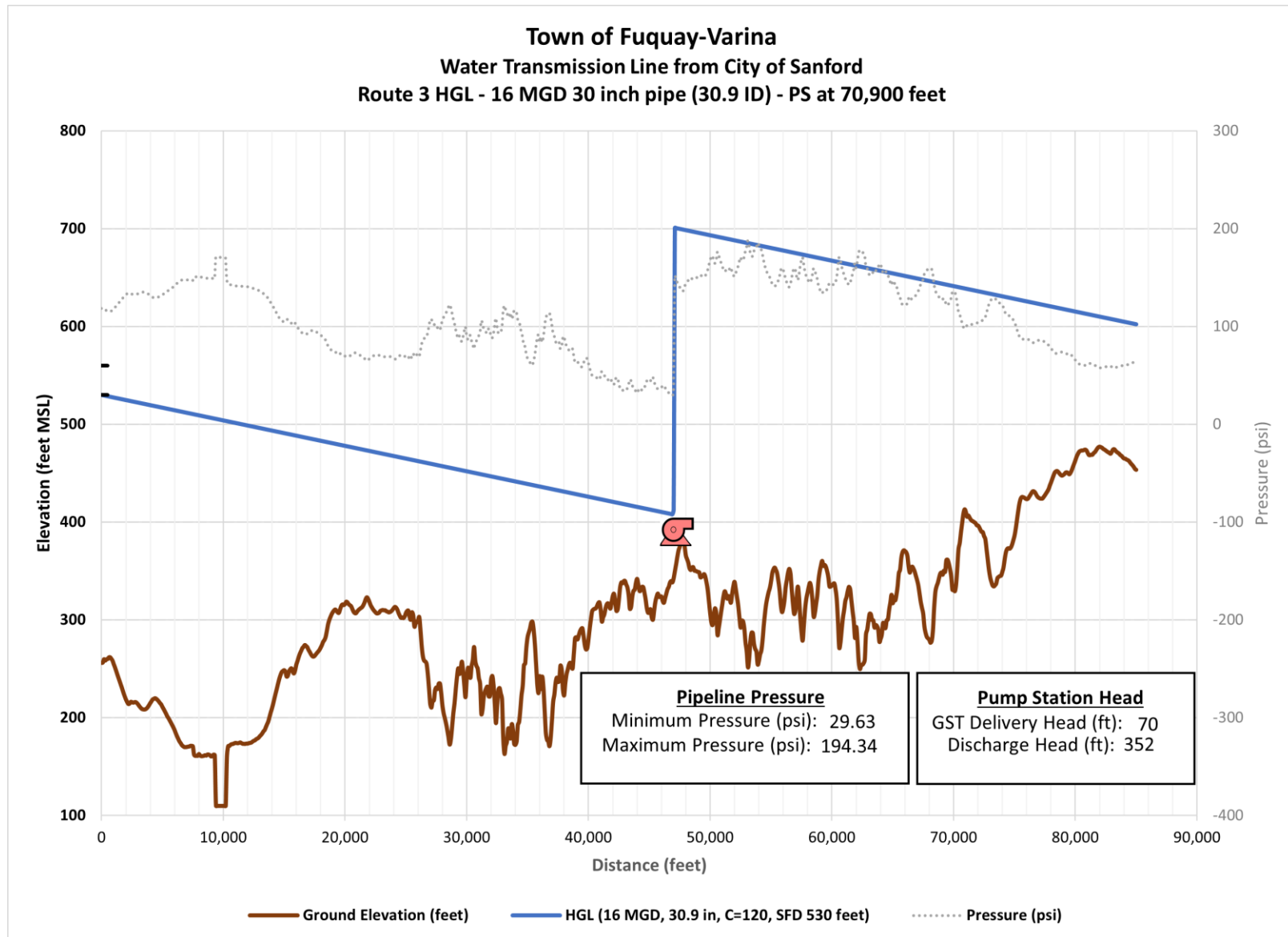


Figure 6-3: Route 1 HGL Profile

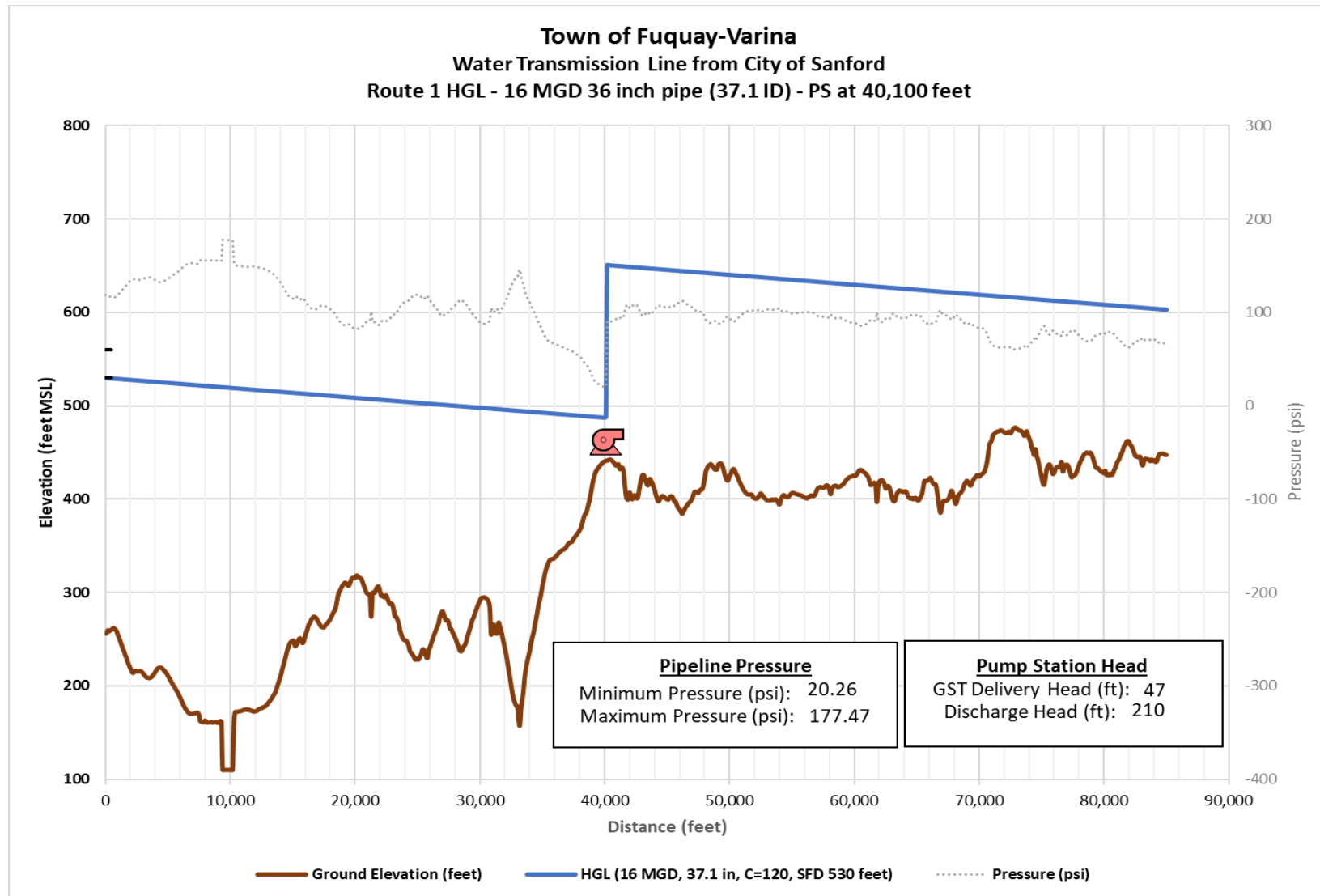


Figure 6-4: Route 2 HGL Profile

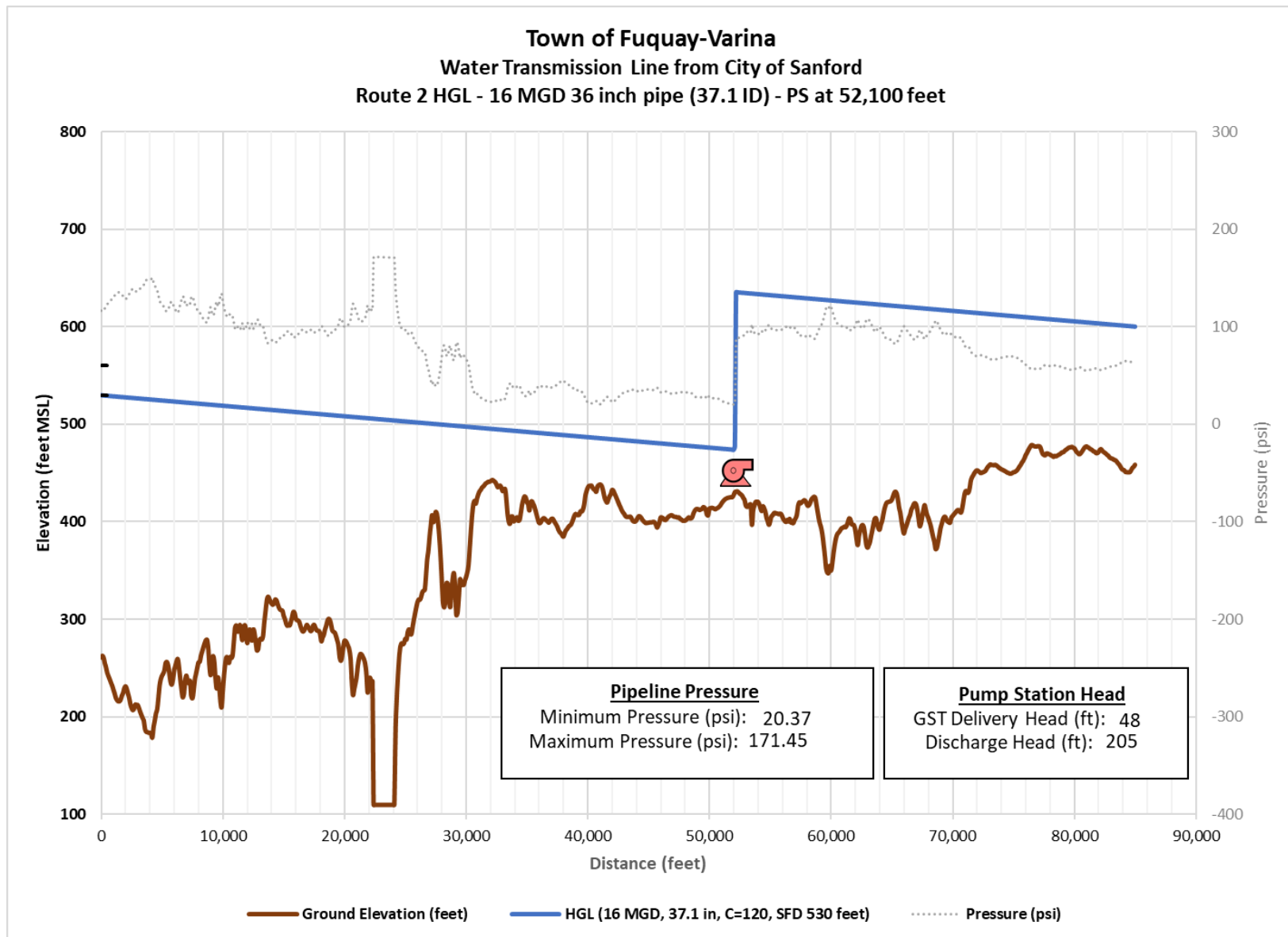
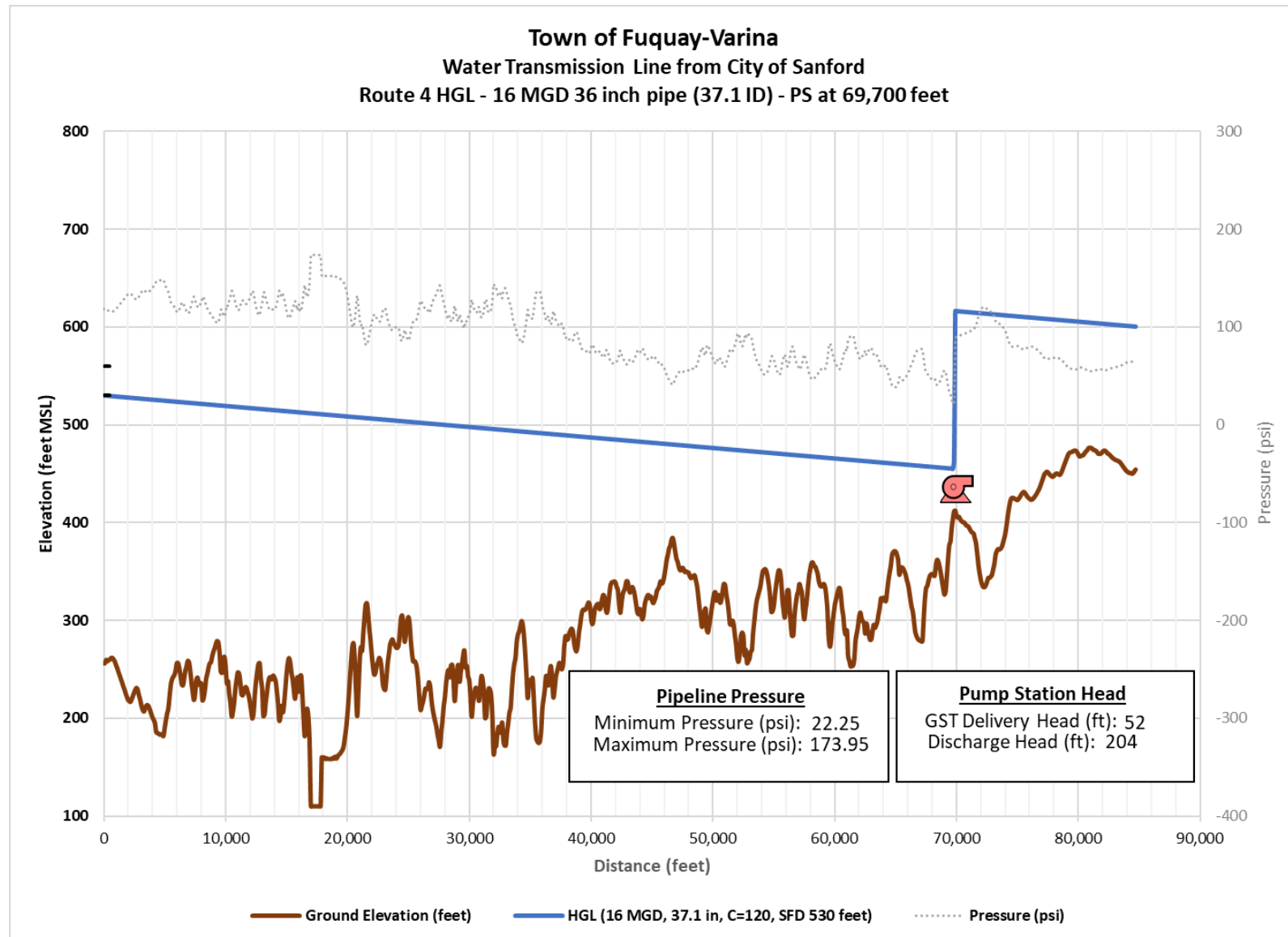


Figure 6-5: Route 4 HGL Profile



7. Trenchless Crossings

All routes include several road crossings and one railroad crossing in addition to the crossing of the Cape Fear River. Figure 7-1 depicts the trenchless crossings needed along each route, including streets maintained by NCDOT, the Norfolk Southern railroad, and tunneling under Cape Fear River. Trenchless crossings for large diameter pipes prove to be costly during construction due to the specialized equipment required and complex construction methods. This section addresses the sections of each route that are to be installed by trenchless methods, an overview of the different trenchless technologies considered, and the recommended tunneling methods for the different crossings.

7.1 Route Alternatives

The subsections below outline the required trenchless crossings for each route alternative.

7.1.1 Route 1

Route 1 has a total of 34 trenchless crossings, including 4 railroad crossings, tunneling under Cape Fear River at Hwy-42, and a bore and jack under Buckhorn Creek. This route requires the most crossings of Hwy-42 because it follows the highway through the study area and must cross the road to avoid impacting structures built near or within the NCDOT right-of-way. 28 of the 34 trenchless crossings on Route 1 are NCDOT roads, including Poplar Springs Church Road, Buckhorn Road, Dickens Road, Hwy-42, Truth Road, Wade Stephenson Road, Barefoot Road, Fletcher Tutor Road, Cokesbury Road, and Betts Road.

7.1.2 Route 2

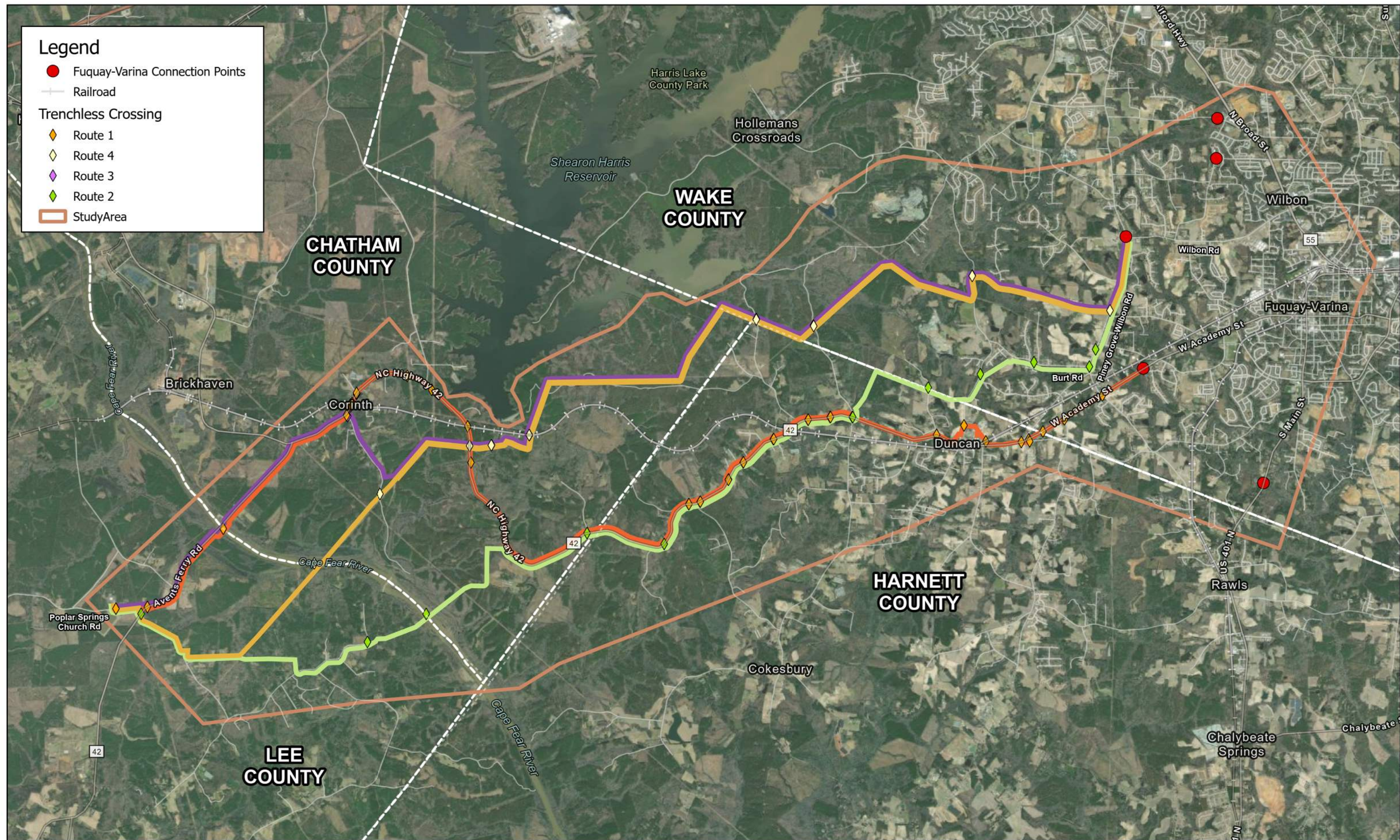
Route 2 has a total of 20 trenchless crossings, including one railroad crossing. The Cape Fear River crossing on this route is assumed to be by open cut method. 18 of the 20 trenchless crossings on Route 2 are NCDOT roads, including Poplar Springs Church Road, Hwy-42, Truth Road, Wade Stephenson Road, Fletcher Tutor Road, Buckhorn Duncan Road, Pine Summit Drive, Burt Road, Doyle Cox Road, and Piney Grove-Wilbon Road.

7.1.3 Route 3

Route 3 has a total of 11 trenchless crossings, including one railroad crossing, tunneling under Cape Fear River at NC-42, and a bore and jack under Buckhorn Creek. 9 of the 11 trenchless crossings on Route 3 are NCDOT roads, including Poplar Springs Church Road, Hwy-42, Buckhorn Road, Buckhorn Duncan Road, Piney Grove-Wilbon Road, Cass Holt Road, and Sweet Springs Road.

7.1.4 Route 4

Route 4 has a total of 11 trenchless crossings, including one railroad crossing, tunneling under Cape Fear River upstream of Buckhorn Dam, and a bore and jack under Buckhorn Creek. 9 of the 11 trenchless crossings on Route 4 are NCDOT roads, including Poplar Springs Church Road, Hwy-42, Cass Holt Road, Sweet Springs Road, Buckhorn Duncan Road, Piney Grove-Wilbon Road, and Buckhorn Road.



7.2 Trenchless Methods

A successful trenchless installation starts with a method feasibility analysis to ensure that the appropriate equipment is being selected given the purpose, length, diameter and geology. This feasibility analysis first begins with examining which trenchless methods are available, as shown in Figure 7-2.

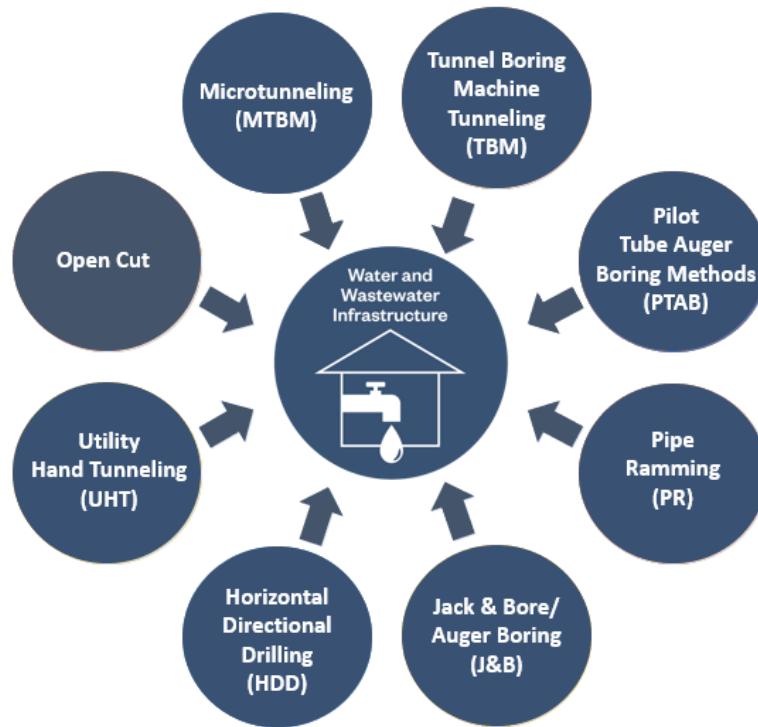


Figure 7-2: Trenchless Methods Feasibility Analysis

Once the methods have been identified, project specific characteristics are utilized to evaluate which methods are appropriate for the project. These characteristics include, but are not limited to, the length of trenchless crossing, diameters of carrier pipes, and the anticipated geological conditions in the project area.

The information presented below includes methods that were evaluated for this project including a description of each method and, where applicable, why the method was eliminated from consideration. Since very limited geotechnical information is currently available, geological conditions were considered but were not used as a factor to eliminate tunnel methods.

7.2.1 Horizontal Auger Boring (Jack and Bore)

Horizontal Auger Boring (Jack and Bore (J&B)) is a shaft-to-shaft method of tunnel construction in which an auger boring machine is advanced utilizing a jacking frame pushing on jacking pipe connected to the rear of the machine (Figure 7-3). As the machine is propelled forward the auger removes the spoils through the casing pipe back to the construction shaft. Jack and Bore does not require personnel entry for normal operations and provides an open-face system of excavation. An open-face system is not recommended in areas with groundwater and loose sands, as this would result in running/flowing soil conditions with a potential for ground loss through the tunnel. Typically, auger boring is limited to drives less than 300 linear feet, although longer drive lengths are possible with the use of advanced equipment attachments such as Small Boring Units (SBUs) or steerable heads. The Jack and Bore method would be appropriate for the shorter road and railroad crossings on all route alternatives. Jack and Bore would not be an appropriate method for the Cape Fear River crossing given the lengths of these crossings.

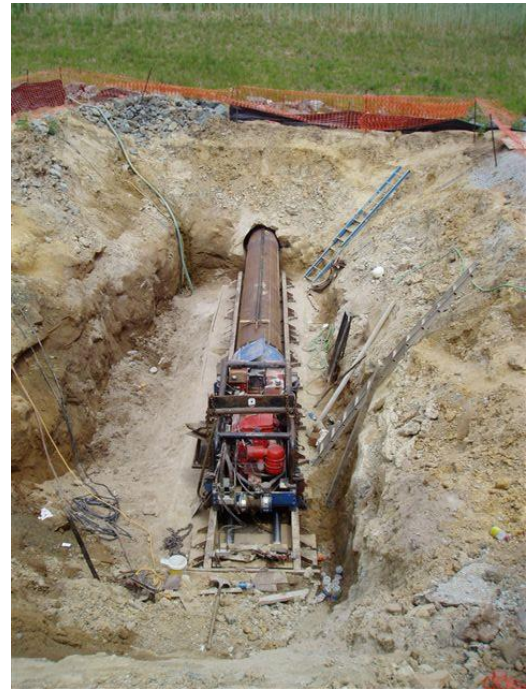


Figure 7-3: Horizontal Auger Boring (Jack and Bore)

7.2.2 Pipe Ramming

Pipe Ramming is a shaft-to-shaft method of tunnel construction in which casing pipe is advanced utilizing a pneumatic hammer attached to the rear of the casing pipe using repetitive hammering (Figure 7-4). A sliding bulkhead is constructed at the face of the lead casing pipe which is pushed backwards by soil entering the pipe as the casing is advanced. The resulting soil “plug” prevents settlement as a result of running soil as well as preventing groundwater infiltration. The hammer is detached after each casing pipe is installed, and another casing is set into the launch pit, attached to the hammer, and then hammered in. This process repeats until all casing pipes are installed. Once the casing is fully installed, an auger is inserted in the casing to remove soil from within the casing.



Figure 7-4: Pipe Ramming

By decoupling the tunnel lining and excavation, Pipe Ramming can control the face of the excavation and prevent ground loss from running soils through the casing. Pipe Ramming is limited to a maximum tunnel length of 200 to 250 feet. This method would not be appropriate if rock is

discovered at the tunnel elevation. In non-cohesive soils (i.e., sand and larger silts), consolidation induced by vibration (vibratory settlement) from grain realignment of the soils becomes problematic. A geotechnical investigation would be required to determine whether Pipe Ramming is appropriate for the shorter road and railroad crossings on all route alternatives. Pipe Ramming would not be an appropriate method for the Cape Fear River crossing given the lengths of these crossings.

7.2.3 Pipe Jacking with Shield

Pipe Jacking with Shield (PJ w/S) is a shaft-to-shaft method of tunnel construction in which a shield is advanced utilizing a jacking frame pushing on jacking pipe connected to the rear of the shield (Figure 7-5). Personnel inside the shield hand excavate at the face of the tunnel and utilize varying means of transporting spoils back to the construction shaft. Pipe Jacking with Shield requires personnel entry for normal operations and provides an open-face system of excavation. In subsurface conditions with running/flowing soil, PJ w/S installation has increased risk of settlement given the difficulty of controlling and supporting the open



Figure 7-5: Pipe Jacking with Shield

face of excavation. The open-face can be partially closed using breasting boards to excavate a mixed-face condition. Since this method is dependent on personnel entry for tunnel excavation, a tunnel diameter large enough to accommodate personnel and tunnel logistics (i.e., ventilation, power, spoil removal) is required. A practical limit on tunnel length for PJ w/S is 1000 feet. A geotechnical investigation would be required to determine whether this method is appropriate for the shorter road and railroad crossings on all route alternatives. This method would not be recommended for the Cape Fear River crossing as lengths are at or above the practical limit on tunnel length for PJ w/S.

7.2.4 Pilot Tube Auger Boring

Pilot Tube Auger Boring (PTAB) is a trenchless installation method using a steerable head connected to pilot tubes with a 4-inch outer diameter (typical) (Figure 7-6). The pilot head uses a laser theodolite to maintain line and grade. After the pilot tube insertion is complete, the bore hole is enlarged using a reamer and auger casing. The end of the auger casing is then attached to the permanent pipe, which is

jacked or pulled into the borehole depending on pipe material and subsurface conditions. With a baffled auger system, PTAB can be used in running/flowing soils and in the presence of low head groundwater conditions (up to 12 feet of groundwater head). This method requires displaceable soils (SPT $n \leq 50$ blow counts) to successfully complete a drive. PTAB can be installed at a maximum length of 400 to 450 feet. A geotechnical investigation would be required to determine whether this method is appropriate for the shorter road and railroad crossings on all route alternatives. PTAB would not be an appropriate method for the Cape Fear River crossing given the lengths of these crossings.



Figure 7-6: Pilot Tube Auger Boring

7.2.5 Horizontal Directional Drilling



Figure 7-7: Horizontal Directional Drilling

Horizontal Directional Drilling (HDD) is a surface-to-surface method of trenchless installation in which a pilot hole is drilled using a specialized bit and pressurized drilling fluid to create the initial path (Figure 7-7). Next, a series of backreamers is utilized to expand the hole to the desired size for the pipe installation and the hole is held open by the drilling fluid. Finally, the pipe is pulled back through the open path to complete the installation. HDD can be used for diameters between 2 inches and 54 inches and is recommended for use in high groundwater conditions and in uniform material. Depending on project conditions like depth of installation, soil properties, pipe diameter, and pipe thickness, HDD can be installed at lengths up to 7,500 feet. HDD does not require shafts but does require a surface footprint for drilling equipment on the drilling side of the alignment, and an area designated for pipe pullback on the other end where pipe is connected and strung up to be pulled through the borehole.

HDD is not recommended in areas with boulders or cobbles are present at the installation depth. HDD would not be recommended for the road and railroad crossings on all alternatives given the short lengths of these crossings. HDD may be feasible for the Cape Fear River crossing dependent on confirmation of the absence of boulders and cobbles and other subsurface information. However, the surface space constraints for all alternatives make this method impractical. It would not be recommended for use on this project.

7.2.6 Utility Hand Tunneling (Drill and Blast)



Figure 7-8: Utility Hand Tunneling

Utility Hand Tunneling (UHT), commonly referred to as Drill and Blast Tunneling, is a shaft-to-shaft method of tunnel construction in which the face of the tunnel is drilled and loaded with explosives repetitively as the tunnel advances (Figure 7-8). Initial tunnel support is installed as the tunnel excavation progresses in the form of liner plate, ribs and lagging, or rock bolts and mesh. Spoils are transported back to the construction shaft by varying means depending on tunnel diameter and length. Utility Hand Tunneling requires personnel entry for normal operations and provides an open-face system of excavation. As this method is dependent on personnel

entry for tunnel excavation, a tunnel diameter large enough to accommodate personnel and tunnel logistics (i.e., ventilation, power, spoil removal) is required. This method would be appropriate for the Cape Fear River crossings should the geotechnical investigation show the presence of competent rock.

7.2.7 Microtunnel Boring Machine

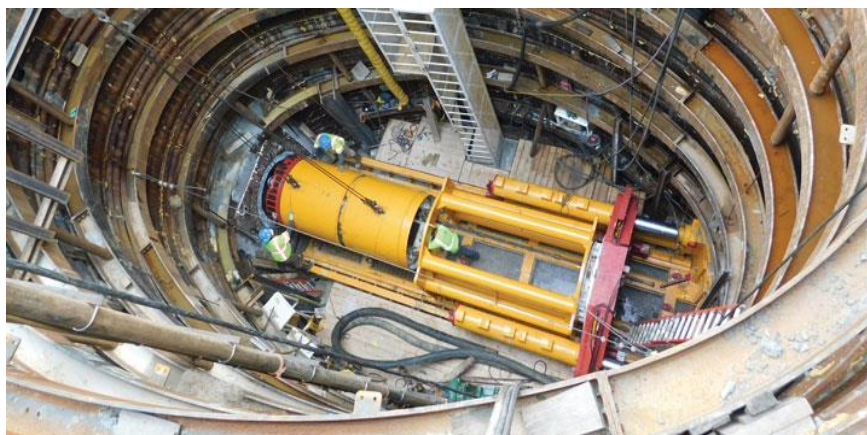


Figure 7-9: Microtunneling

Microtunneling is a shaft-to-shaft method of tunnel construction in which a Microtunnel Boring Machine (MTBM) is advanced utilizing a jacking frame pushing on jacking pipe connected to the rear of the machine (Figure 7-9). Slurry lubrication is utilized to mix with excavated spoils for transport to the surface in addition to providing lubrication around the jacking pipe during tunnel

advancement. MTBM does not require personnel entry for normal operations and provides a closed-face system of excavation. This method would be appropriate for the Cape Fear River crossing if a geotechnical investigation revealed soft soils or partially weathered rock. Microtunneling would not be recommended if a subsurface investigation revealed the tunnel would be in hard rock, or if it went in and out of hard rock and softer material.

7.2.8 Tunnel Boring Machine



Figure 7-10: Tunnel Boring Machine

Tunneling utilizing a Tunnel Boring Machine (TBM) is a shaft-to-shaft method of tunnel construction in which a TBM is advanced utilizing either hydraulic grippers on the machine to brace itself against the walls of the excavation or pushing off of the initial tunnel support (Figure 7-10). Rock is excavated by the cutterhead at the tunnel face as a pattern of cutter discs, determined by the material being excavated, roll across the face of the tunnel and chip off rock as pressure is applied. Initial tunnel support is installed as the tunnel excavation progresses in the form of liner plate, ribs and lagging, or rock bolts and mesh. Spoils are typically transported back to the construction shaft by locomotive and muck cars. TBM

tunneling requires personnel entry for normal operations and provides an open-face system of excavation. This method would be appropriate for the Cape Fear River crossing if a geotechnical investigation reveals competent rock at the tunnel elevation.

7.3 Cape Fear River Crossing

As previously stated, and as shown in Figure 7-1, all route alternatives require a crossing of the Cape Fear River, to be accomplished by trenchless methods. The subsections below will provide a review of the known subsurface conditions and provide additional detail on the river crossing route alternatives.

7.3.1 Subsurface Conditions

A review of available geological information in the project area revealed the proposed alignments are in a location near the boundary of three different bedrock conditions. Figure 7-11 shows the Cape Fear River crossing alignments on a state geologic map.

A thick alluvium layer is expected on each side of the river. The underlying bedrock shown on the map in brown represents bedrock of the Newark Supergroup, consisting of alternating mudstones, siltstones, sandstones, and conglomerates. These soft to medium strength rocks are likely to have a low

permeability. A layer of weathered bedrock consisting of dense sand with some gravel likely between the alluvium and the bedrock.

The underlying bedrock shown on the map in green represents Biotite Gneiss and Schist. These metamorphic rocks are relatively strong, foliated, and could contain multiple joint sets and the occasional shear zone. Permeability will depend on the degree of weathering and discontinuities.

The underlying bedrock shown on the map in purple represents Metamorphosed Granitic Rock. It is likely to be heavily jointed and water-bearing close to the top of bedrock. This rock type is expected to be strong and abrasive.

An appropriate characterization of the ground is essential for the feasibility assessment of methods and successful trenchless installations. Therefore, a geotechnical boring program that is sufficient to appropriately characterize the ground conditions should be performed during design to better define the boundaries between types of bedrock and characterize the subsurface conditions at the proposed tunnel elevations.

7.3.2 Routes 1 and 3

Routes 1 and 3 both cross the Cape Fear River near the raw water intake for the Sanford WTP approximately 2.1 miles upstream from the Buckhorn Dam, just south of the NC-42 bridge crossing. The trenchless crossing at this location is approximately 850 LF in length.

A prior bathymetric survey of the river at this location indicated the low point of the river was at Elevation 140. Given the lack of a geotechnical investigation at this time, a minimum of three tunnel diameters between the top of the tunnel and the river bottom was used as basis for design (Figure 7-12).

As described in the previous section, a thick layer of alluvium is expected on the riverbanks, with a layer of dense sand between the alluvium and the underlying bedrock. The sedimentary bedrock is expected to consist of alternating sandstones, mudstones, conglomerates, and siltstones. Permeability is likely to be low. With these assumed conditions, two tunneling methods are recommended depending on depth to rock.

If alluvium material or the dense sand layer are discovered at the proposed tunnel elevation, installation by microtunneling would be the recommended tunnel method (see Section 7.2.7). Microtunneling provides a closed-face system of excavation, which would be appropriate in the water-bearing alluvium or dense sand layers.

For this 850 LF tunnel, a 60-inch microtunnel machine is recommended to install a 60-inch steel casing and accommodate all microtunnel equipment. A tunnel of this length and size could be excavated at 20 to 30 LF per work shift, which is limited by the time it takes to stop and weld the next stick of casing pipe. This production rate could be accelerated by the use of an interlocking joint steel casing pipe.

If low permeability sedimentary rocks are present at the proposed tunnel elevation, an open mode Tunnel Boring Machine (TBM) would be the recommended method (see Section 7.2.8). An open mode TBM is suitable if the groundwater infiltration rate is expected to be low. . . Since tunneling by TBM requires personnel entry for spoil removal and installation of initial tunnel support, a 72-inch diameter TBM is

recommended to accommodate personnel and tunnel equipment. Initial tunnel support would be a combination of ribs and timber lagging and rock bolts and mesh. Initial tunnel support recommendations will be refined once a subsurface investigation program is complete. In this sedimentary bedrock material expected at this crossing location, tunnel excavation could be as fast as 80 LF per day once the first 100 feet of tunnel are excavated.

Given the lack of geotechnical information, further information is necessary to determine the recommended tunnel method of construction for this crossing.

7.3.3 Route 4

Route 4 crosses the Cape Fear River approximately 0.8 miles upstream from Buckhorn Dam. A preliminary site investigation revealed the presence of wetlands on the eastern shore at this crossing location. In order to eliminate any open cut installation in these wetlands, the trenchless crossing of the Cape Fear River was extended to tunnel beneath the wetlands as well as the river, resulting in a trenchless crossing approximately 2100 LF in length.

No bathymetric survey data is available for this crossing location. For the purpose of this evaluation, the river bottom profile was assumed to match the profile near NC-42 where a survey was completed, with a low point at Elevation 140. Given the lack of a geotechnical investigation at this time, a minimum of three tunnel diameters between the top of the tunnel and the river bottom was used as basis for design (Figure 7-13).

As described in the previous section, a thick layer of alluvium is expected on the riverbanks, with a layer of dense sand between the alluvium and the underlying bedrock. This route alternative crosses a geologic boundary, with two different types of bedrock. For a portion of the tunnel, the bedrock is likely to consist of gneiss and schist and transitioning to metamorphosed granitic rock. With these assumed conditions, two tunneling methods are recommended depending on depth to rock and type of rock discovered during a geotechnical investigation program.

If alluvium or the dense sand layer is present at the proposed tunnel elevation, installation by microtunneling would be the recommended tunnel method, and relatively straight-forward to construct. If a geotechnical investigation shows that the tunnel will pass in and out of both soil and rock, microtunneling would become problematic.

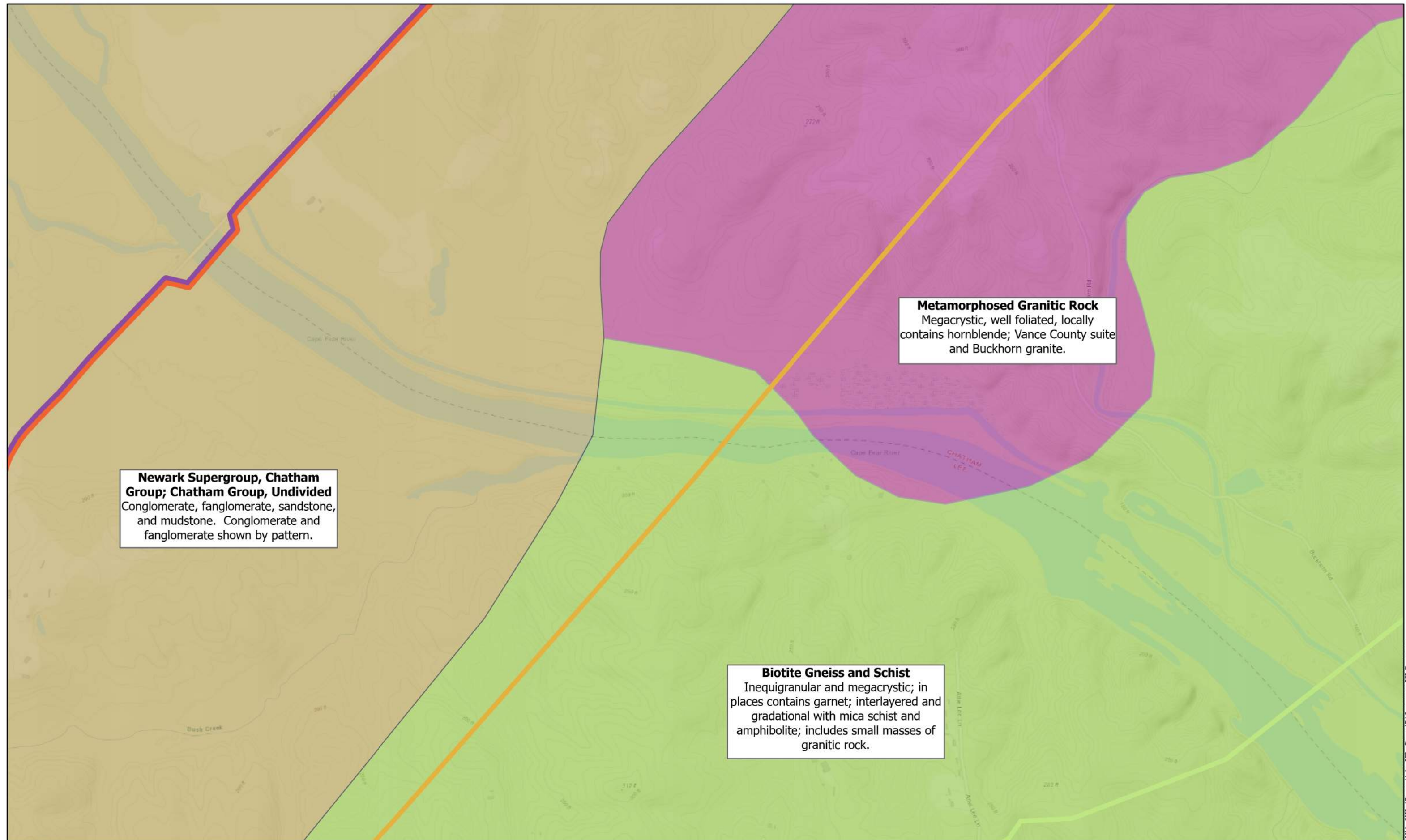
For this 2100 LF tunnel, a 72-inch microtunnel machine is recommended to accommodate all microtunnel equipment and to install a 72-inch steel casing. Jacking force calculations during design may indicate that reinforced concrete jacking pipe is necessary for this length of tunnel, as well as the use of intermediate jacking stations. A larger tunnel is required for this crossing location given the increased length of the tunnel, and to accommodate personnel entry to change cutters at the face of the tunnel if rock is encountered. A tunnel of this length and size could be excavated at 20 to 30 LF per work shift, which is limited by the time it takes to stop and weld the next stick of casing pipe. This production rate could be accelerated by the use of an interlocking joint steel casing pipe (if jacking forces allow for the use of steel casing).

An open-mode TBM (see Section 7.2.8) would be the most practical for this long tunnel if a geotechnical investigation shows the tunnel alignment is within competent rock. However, in the geology anticipated

at this crossing, groundwater could be a problem within the jointed rock/fracture zones. It is recommended that the tunnel be installed deeper to get into more competent/less-jointed rock. For an open-mode tunnel in this geology, a minimum of four tunnel diameters separation between the top of the tunnel and bottom of the river is recommended to reduce the risk of encountering significant groundwater.

The increased length of this crossing when compared with the Routes 1 and 3 crossing requires a larger tunnel diameter to accommodate the larger size of life support (ventilation, lighting) and spoil hauling equipment. For this TBM crossing, a 78-inch to 84-inch diameter TBM is recommended to accommodate personnel and tunnel equipment. Initial tunnel support would be a combination of ribs and timber lagging and rock bolts and mesh. Initial tunnel support recommendations will be refined once a subsurface investigation program is complete. In the harder, higher strength bedrock materials anticipated at this crossing location, tunnel excavation would advance on average about 50 LF per day once the first 100 feet of the tunnel are excavated.

Given the limited geotechnical information currently available, further information is necessary to determine the recommended tunnel method of construction for this crossing.



0 500 1,000 2,000 Feet
1 inch equals 1,000 feet

Route 1 Route 3
Route 2 Route 4

FUQUAY-VARINA
a dash more

FRESE NICHOLS
Hazen

Water Conveyance System
from City of Sanford WTP
Preliminary Engineering Report
Town of Fuquay-Varina

Figure 7-11
Subsurface Geology

Figure 7-12 Preliminary Tunnel Profile for Routes 1 and 3

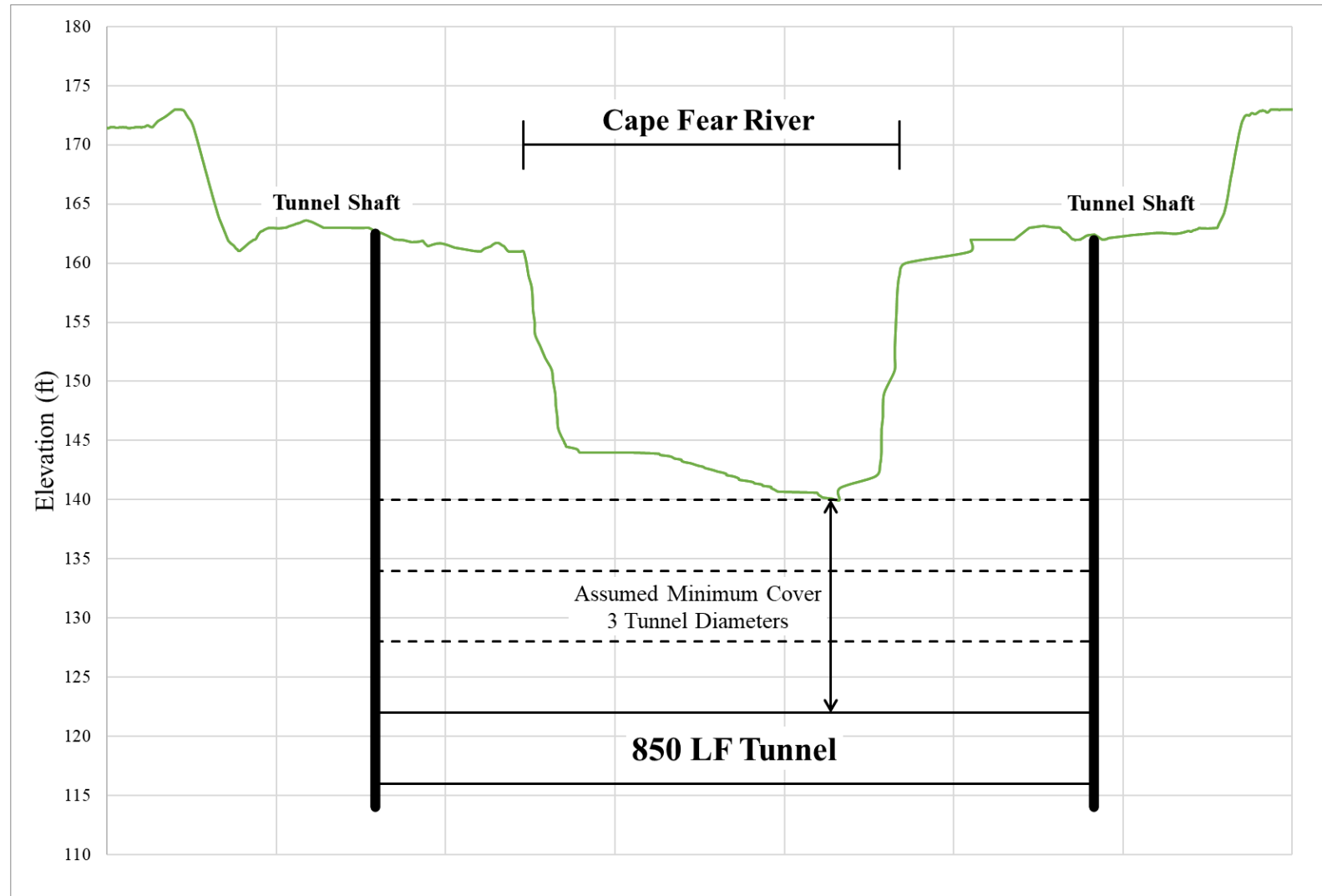
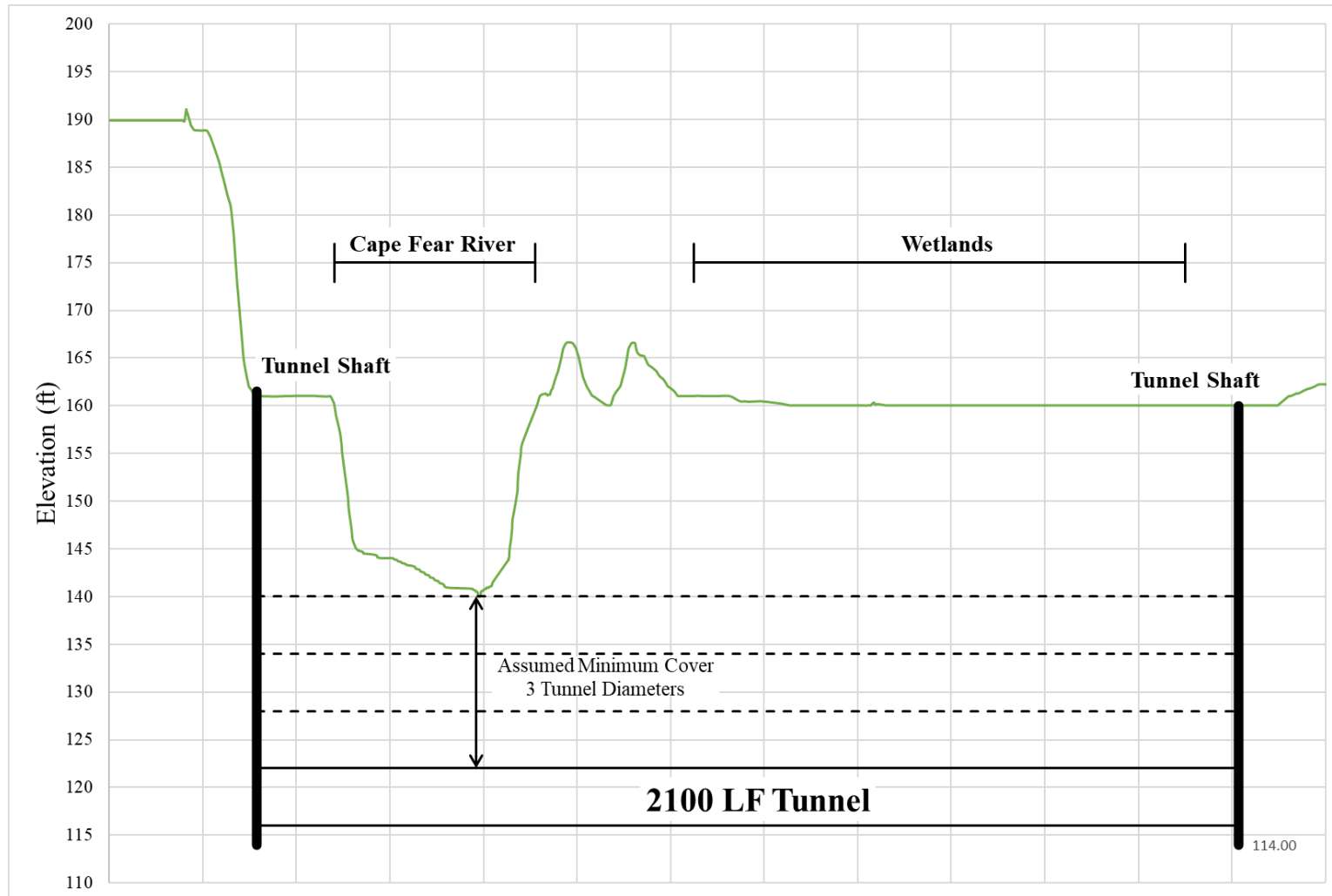


Figure 7-13 Preliminary Tunnel Profile for Route 4



7.3.4 Preliminary Tunnel Cost Estimate

Preliminary construction costs were estimated for the tunnel crossing of the Cape Fear River by Microtunneling or Tunnel Boring Machine using the installation lengths, depths, diameters, and production rates discussed in prior sections for the route alternatives (Table 7-1).

Table 7-1: Tunnel Crossing Cost Estimate

Route Alternative	Microtunneling (MTBM)	Tunnel Boring Machine (TBM)
Routes 1 and 3	\$3,885,000	\$2,280,000
Route 4	\$8,030,000	\$3,660,000

The tunnel method recommendations and associated cost estimates will be further refined once a geotechnical investigation has been completed. For the overall Opinion of Probable Cost provided in Section 10, the more conservative number was used.

7.3.5 Cape Fear River Crossing Recommendations

After review and analysis of the two tunnel crossing locations, the tunnel crossing location for Routes 1 and 3 near NC-42 is recommended as the preferred crossing location. The largest advantage this crossing location has are the expected subsurface conditions. At this crossing, the entire tunnel alignment remains within the same bedrock material. The bedrock material is soft, easily excavatable rock with low permeability, making a TBM an appropriate installation method if this rock is discovered within the proposed tunnel alignment. Given the significant difference in costs between microtunneling and an open-mode TBM, adjustments to the tunnel elevation could be made during design to ensure the alignment is in this material.

Installation of a tunnel at the Route 4 crossing location introduces significantly more geotechnical risk given the change in bedrock material along the alignment, and the presence of jointed, water-bearing rock. A much more extensive geotechnical investigation program would be required for this route alternative in order to locate the interface where rock material changes and to determine how the ground will behave during tunnel excavation.

Other benefits of the crossing location for Routes 1 and 3 is the overall tunnel length, construction access, and reduced cost. This tunnel is 2.5 times shorter than the tunnel for Route 4, as that route must account for tunneling beneath the wetland areas on the east side of the river. This crossing location has better access for construction, including material deliveries and spoil hauling, requiring only short construction access roads when compared with the Route 4 crossing location. The tunnel crossing for Routes 1 and 3 is also significantly cheaper than the cost of the tunnel for Route 4. This reduced cost is a result of a shorter tunnel, with a smaller diameter and higher production rates.

One additional thing to note about the Cape Fear River tunnel is that no matter which alternative and tunnel method are recommended during design, the tunnel will be oversized for a 36-inch transmission main, leaving space within the tunnel to install another utility pipe across the Cape Fear River. Once the final tunnel diameter is determined during design, this opportunity should be investigated.

7.4 Road and Railroad Crossings

As shown in Figure 7-1, all route alternatives contain numerous road crossings and a railroad crossing that require a trenchless installation method. Jack and Bore is recommended for all these shorter crossings as all lengths fall within capabilities of this tunnel method, and Jack and Bore is the most common installation method in this area for these types of crossings. A 48-inch Jack and Bore machine is recommended on these shorter crossings to accommodate the installation of the 36-inch transmission main.

8. Route Comparison Criteria

In order to evaluate the proposed routes, seven screening criteria were developed. The items were intended to cover the major anticipated non-economic criteria regarding route selection; however, it is acknowledged cost is a factor when comparing the overall length of the routes. The following criteria were used for the route comparison:

1. Length: The overall length of each route will impact the cost and schedule. A longer route will have an increased material and labor cost for instruction and increases the likelihood of more impacted parcels, and an extended construction period.
 - Route 1: 87,775 ft
 - Route 2: 85,380 ft
 - Route 3: 86,140 ft
 - Route 4: 84,775 ft
2. Duke Energy Impacts: Crossing Duke Energy transmission easements will require obtaining encroachment permits; more crossings increase the associated costs and could delay schedule to get approval.
 - Route 1: Five crossings
 - Route 2: Three crossings
 - Route 3: Five crossings
 - Route 4: Five crossings
3. Easement Acquisition: Easement acquisition is a potentially lengthy and costly process. Each route was reviewed to determine the number of potential easements required.
 - Impacted Properties
 - i. Route 1: 218 parcels
 - ii. Route 2: 170 parcels
 - iii. Route 3: 92 parcels
 - iv. Route 4: 59 parcels
4. Hydraulic Advantages: The topography along each route factors into the booster pump station siting required to deliver minimum pressures to the Towns of Fuquay-Varina and Holly Springs and avoiding excessive pressures at the Sanford WTP. The most favorable site would be in an easily accessible area for maintenance to both towns.
 - Route 1: 50,000 ft (9.5 mi) away from connection point, BPS in Harnett County
 - Route 2: 38,000 ft (7.2 mi) away from connection point, BPS in Harnett County
 - Route 3: 20,000 ft (3.8 mi) away from connection point, BPS in Wake County
 - Route 4: 20,000 ft (3.8 mi) away from connection point, BPS in Wake County
5. NCDOT Roadway Impacts: Both trenchless crossings of NCDOT roadways and construction within NCDOT rights-of-way will require additional permits and consideration during detailed plan development.

- Route 1: 28 NCDOT crossings
 - Route 2: 18 NCDOT crossings
 - Route 3: 9 NCDOT crossings
 - Route 4: 9 NCDOT crossings
6. Environmental Considerations: Routes adjacent to the areas of environmental concern noted in Section 4 of the PER are considered less desirable.
- Route 1:
 - Adam's Place – Academy Street – High Risk (1997 UST spill)
 - Adam's Place – Academy Street – High Risk (2014 UST spill)
 - Adam's Place – Academy Street – Unknown Risk (Unrecorded AST spill)
 - Former Hobby Store – NC-42 – Low Risk
 - Ledbetter Timber & Pulpwood Inc – NC-42 – Low Risk
 - Sanford Water Treatment Plant – Poplar Springs Church Rd.– Low Risk
 - Underwood Residence – Piney Grove-Wilbon Road – Low Risk (UST spill)
 - Underwood Residence – Piney Grove-Wilbon Road – Low Risk (AST spill)
 - Route 2:
 - Leagan Property (Ida) – Phelps West Road – High Risk
 - Sanford Water Treatment Plant – Poplar Springs Church Rd.– Low Risk
 - Route 3:
 - Sanford Water Treatment Plant – Poplar Springs Church Rd.– Low Risk
 - Route 4:
 - Sanford Water Treatment Plant – Poplar Springs Church Rd.– Low Risk

Routes with more stream crossings are less desirable due to the associated environmental impacts.

- Route 1: 13 crossings
 - Route 2: 13 crossings
 - Route 3: 18 crossings
 - Route 4: 23 crossings
7. As noted in Section 7 Trenchless Crossings, the location of the Cape Fear River crossing will impact both the project cost and risk. The crossing at NC-42 is noted as more favorable than the cross-country crossing further southeast on the river. The open cut crossing below Buckhorn Dam is deemed the most unfavorable due to concerns of impacting the endangered Cape Fear Shiner's habitat.

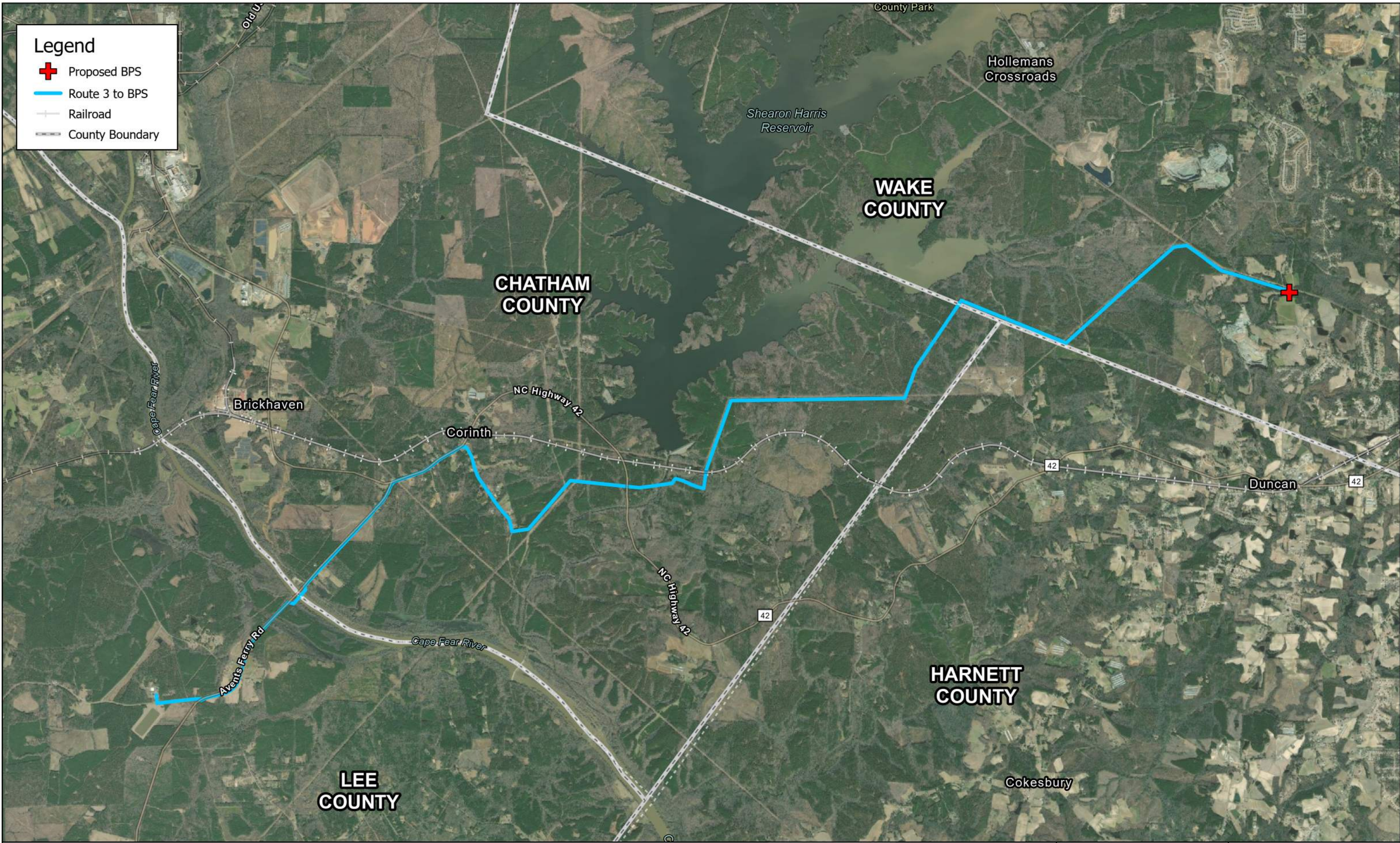
Each route was ranked 1-4 for each criterion and assigned a value based on that ranking with 1 being the best and 4 being the worst. Table 8-1 displays the ranking and total for each route.

Table 8-1 Route Comparison

Criteria	Route 1	Route 2	Route 3	Route 4
Length	4	2	3	1
Duke Energy Impacts	2	1	2	2
Easement Acquisition	4	3	2	1
Hydraulic Advantages	2	2	1	1
Number of Road Crossings	3	2	1	1
Environmental Screening Impacted Locations	4	3	1	1
Number of Stream Crossings	1	1	2	3
Cape Fear River Crossing	1	3	1	2
Ranking	21	17	13	12

8.1 Recommended Route

Routes 3 and 4 scored nearly evenly in the route comparison table in Section 8, with Route 4 scoring 12 and Route 3 scoring 13. Both routes share an alignment for most of the corridor east of Buckhorn Rd. The largest difference between the routes is where they cross the Cape Fear River. As detailed in Section 7 Trenchless Crossings, the crossing of the Cape Fear River near NC-42 is more favorable. Since routes 3 and 4 have similar scores, Route 3 is the recommended route because it has the more favorable Cape Fear River Crossing location. Figure 8-1 depicts Route 3 from the Sanford WTP to the proposed booster pump station site. The total length of transmission main from the Sanford WTP to the BPS is approximately 13.4 miles.



Legend

- Proposed BPS
- Route 3 to BPS
- Railroad
- County Boundary



0 2,000 4,000 8,000 Feet
1 inch equals 4,000 feet



Water Conveyance System
from City of Sanford WTP
Preliminary Engineering Report
Town of Fuquay-Varina

Figure 8-1
Recommended Route to
Booster Pump Station

9. Booster Pumping and Ground Storage

Based on the hydraulic assessment of Route 3, one BPS is required. The proposed BPS is near the intersection of Duncan Cook Road and Buckhorn-Duncan Road. A proposed 4.6-acre site is shown on Figure 9-1. There is some flexibility in the general vicinity of the proposed site, but sites in the area with elevations between 380 and 415 are most favorable to accommodate the desired hydraulic design for the ground storage and the BPS. It is recommended that one BPS structure will be built with separate, dedicated pumping, to Fuquay-Varina and Holly Springs.

9.1 Pumping to Fuquay-Varina

Scenarios were developed in the Town of Fuquay-Varina water model to estimate the operating conditions for the portion of the BPS that pumps into the Town's water system. Wilbon Road was the assumed connection point. The system curve scenarios considered both high and low HGL conditions at the ESTs within the Fuquay-Varina distribution system. The InfoWater system curve development tool was utilized to generate the head and flow conditions shown on Figure 9-2.

9.1.1 Fuquay-Varina Pump Selection

Multiple demand scenarios were evaluated for pumping from the new BPS to the Fuquay-Varina distribution system. Additional scenarios and combinations will be evaluated during detailed design; however, the objective of this level of study was to define a workable approach that could be refined during design. The scenarios included average day and maximum day demands at the 2025-, 2035-, and 2055-year timelines as shown in Figure 9-2. The demands considered for pump selection ranged from a minimum of 2 MGD in 2025 up to a maximum of 13 MGD in 2055. 13 MGD corresponds to a peak pumping rate during the maximum day in 2055 to ensure the elevated tanks refill as required. Given the range of flows, it is recommended that three (3) vertical turbine can-type pumps be installed with a slot for a fourth pump to be installed in the future if required. The pumps will operate in a duty/standby operation with one pump out of service. Each pump was selected to have equal pumping capacity to allow for ease of operations and maintenance. With each pump rated at 4.33 MGD, the future firm pumping capacity with three out of four pumps running is 13 MGD and the current day firm pumping capacity is 8.66 MGD.

The approach includes pumps provided with variable frequency drives (VFDs) to reduce motor speed for the lower flow and head conditions covering the full range of conditions without throttling and excessive energy requirements. The design parameters for the proposed Fuquay-Varina booster pumps are listed in Table 9-1. The current day pumping configuration accommodates flows through the 2035 scenario whereas the future configuration is designed to meet the forecasted 2055 flows. The pump curves in Figure 9-3 include the current day minimum, current day maximum, and future maximum design points. The current day flows are met by operating pumps at a reduced motor speed and the future max flow is met by operating three pumps at full speed. Additional pumping conditions can be met using a combination of one, two, or three pumps running and the use of a VFD.



Legend

- Route 3 to BPS
- BPS Area
- Wake Parcels



0 300 600 1,200
 Feet
 1 inch equals 400 feet



Water Conveyance System
 from City of Sanford WTP
 Preliminary Engineering Report
 Town of Fuquay-Varina

**Figure 9-1
 Booster Pump Station
 Area**

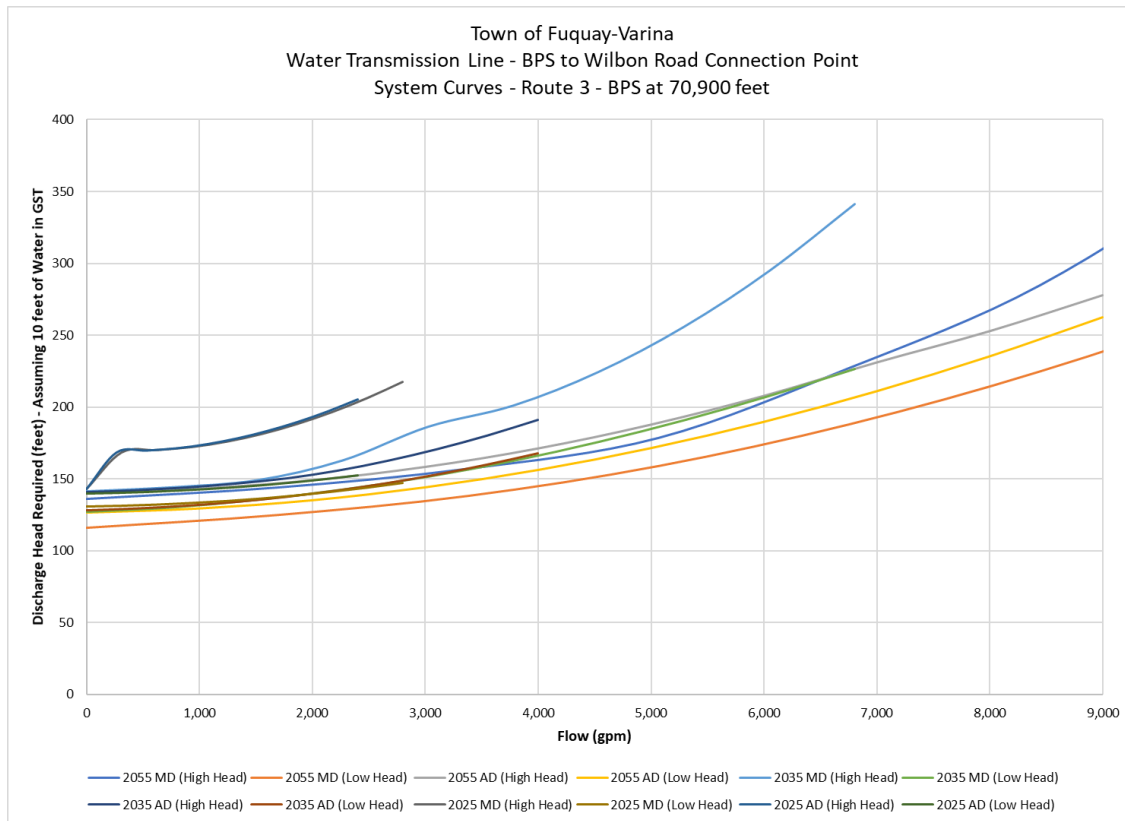


Figure 9-2: Fuquay-Varina System Curves

Table 9-1 Booster Pump Station Design Parameters – Fuquay-Varina

Pumping Scenario	Current Day Min	Current Day Max	Future Max
Total Pumps / Flow	3 pumps; 4.33 MGD each		4 pumps; 4.33 MGD each
Motor HP	300		
Drive Type	VFD		
Condition	Reduced Speed Point	Reduced Speed Point	Primary Point
Flow (MGD)	2	6	13
No. Pumps Running	1	2	3
Total Dynamic Head (ft)	134	212	312
Operating Speed (rpm)	Reduced – 1,074	Reduced – 1,394	Full – 1,780
Efficiency (%)	82	85	86
Motor HP, rated	58	131	276

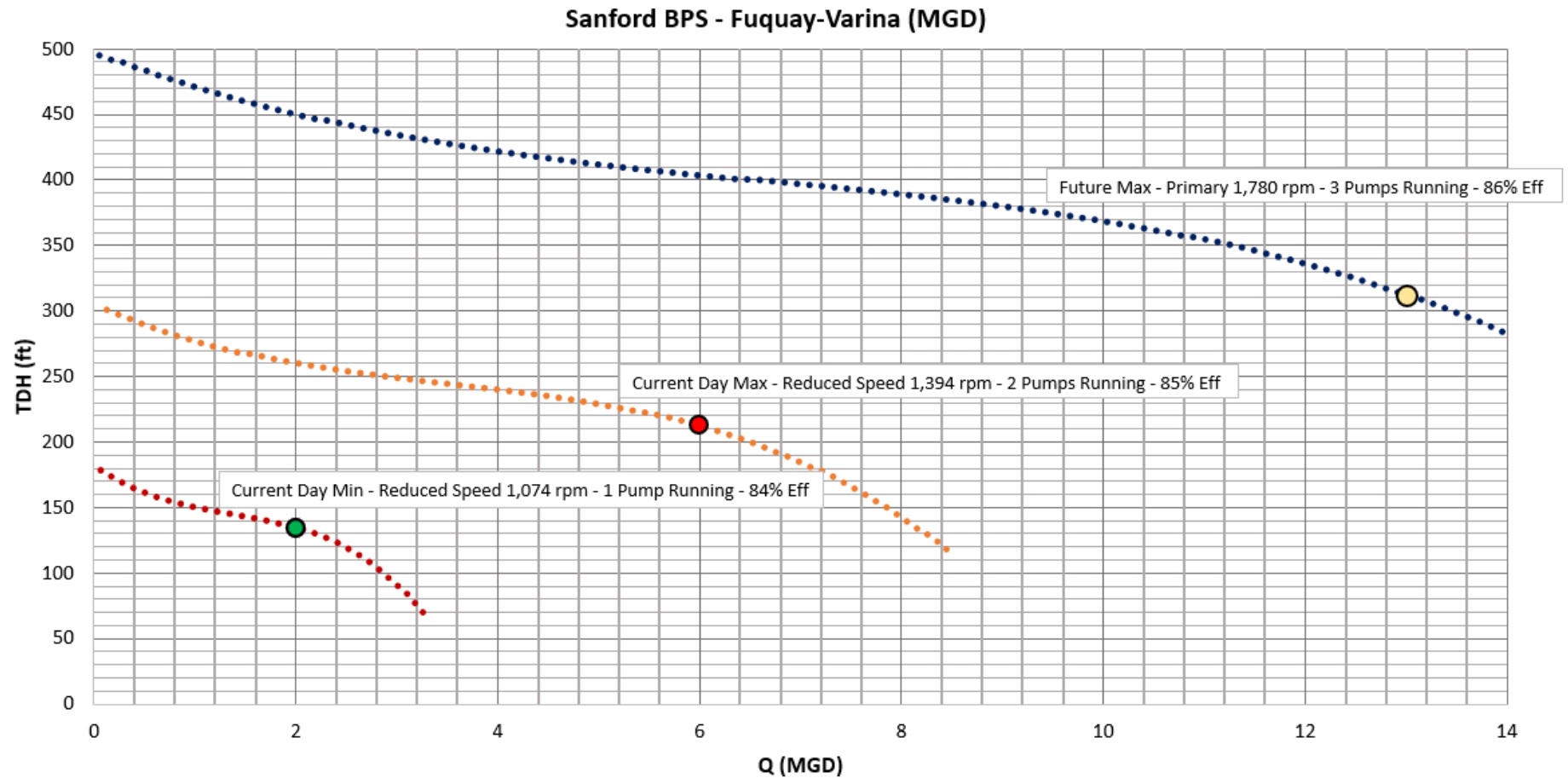


Figure 9-3: Pump Curves and Design Points – Fuquay-Varina

9.2 Pumping to Holly Springs

The existing 30-inch Holly Springs water main from the Wake County Booster Pump Station (WCBPS) is the closest large diameter main feeding directly into the Holly Springs distribution system. Scenarios were modeled to determine operational limitations related to pumping from the new BPS into the existing transmission main. The scenarios reviewed high and low hydraulic gradelines (HGLs) related to flow ranges from the new BPS and WCBPS, high and low tanks levels in the Holly Springs distribution system, high and low levels of the ground tank at the WCBPS as well as the number of pumps running at the WCBPS (Figure 9-4). The impacts of the suction side ground tank at WCBPS were nominal, except to the pumps at the WCBPS itself. Hydraulic gradelines were reviewed at the connection point of the Sanford BPS to the existing 30-inch used by the WCBPS. The likely hydraulic gradelines at the connection point ranged from 566 ft to 641 ft. The hydraulic gradeline for 566 ft occurred when the new BPS was operating at 2 MGD, the WCBPS was off, and the Holly Springs distribution system elevated tanks were half-full. Flows to Holly Springs exceeding 10 MGD cause HGLs that are greater than 610 ft. These would be year 2030 and beyond scenarios. Figure 9-4 demonstrates the pocket of flows and HGLs that could be experienced at the Sanford BPS and the Holly Spring 30-inch waterline connection point. The booster pumps at the WCBPS are only be impacted by the operation of the Sanford BPS when insufficient pumps in the WCBPS are operating. This can be addressed by operating additional pumps; however, the existing pumps are satisfactory.

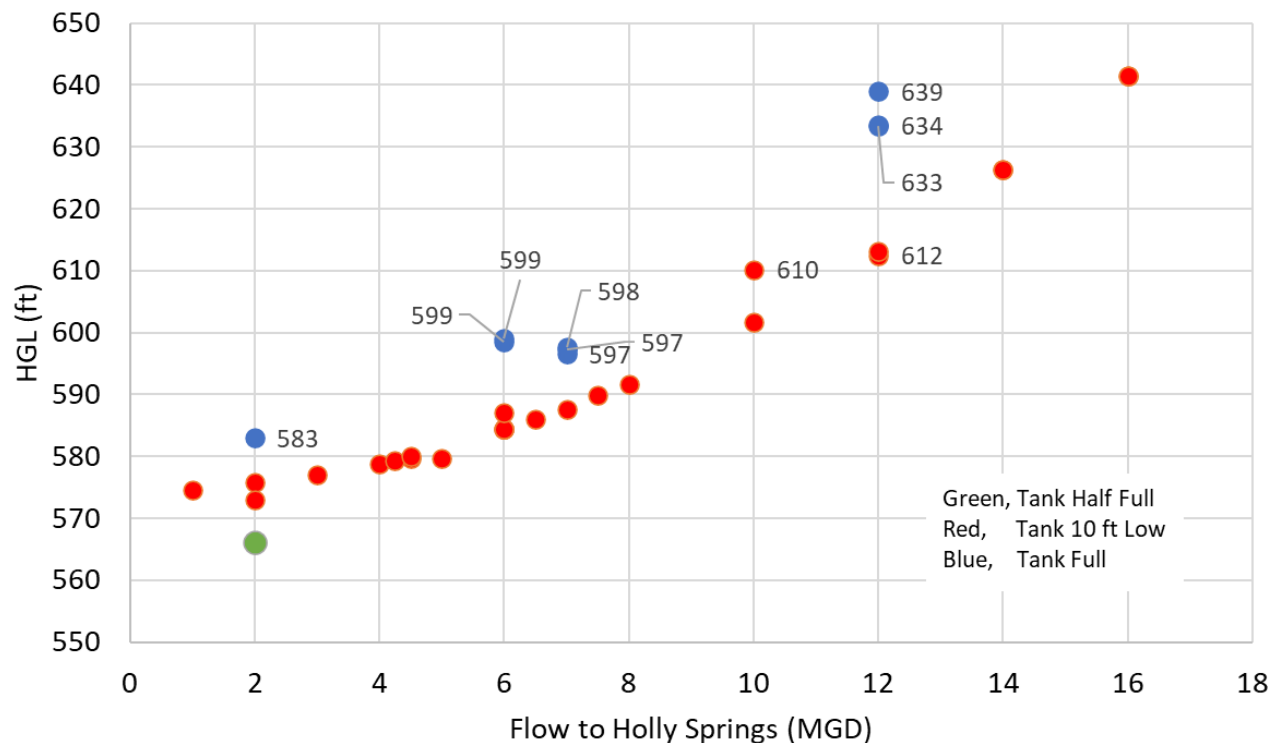


Figure 9-4: Holly Springs Flow and HGL Conditions

9.2.1 Holly Springs Pump Selection

Two pumping scenarios were developed based on the hydraulic modeling described in Section 9.2. Additional scenarios and combinations can be evaluated during detailed design; however, the objective of this level of study was to define a workable approach that could be refined during design. The scenarios encompass the low and high flow conditions from the new BPS to the connection point at the Holly Springs distribution system. The low flow condition assumed 2 MGD from the new BPS and no flow from the WCBPS for a total of 2 MGD. The high flow condition assumed 6 MGD from the new BPS and 10 MGD from the WCPS for a total of 16 MGD. At the high flow condition, dynamic head is increased significantly due to friction loss in the piping. Therefore, the high flow condition was selected as the primary operating point with the intent to ramp pump speed down to meet the low flow and head condition.

The recommended pump configuration to meet the range of flow and pressure conditions is three (3) identical 3 MGD vertical turbine can-type pumps. The duty/standby pumping configuration provides a total pumping capacity of 9 MGD and a firm pumping capacity of 6 MGD. The pumps should be provided with VFDs to reduce motor speed for the low flow and head condition. The design parameters for the proposed Holly Springs booster pumps are listed in Table 9-2. The pump curves in Figure 9-6 illustrate the primary point met with two pumps running at full speed and the secondary point met with one pump running at a reduced motor speed. Additional pumping conditions can be met with a combination of one or two pumps running and use of the VFD. A fourth pump slot is recommended in the pump station to allow for operational flexibility in the future.

Table 9-2 Booster Pump Station Design Parameters – Holly Springs

Pumping Scenario	Scenario 1	Scenario 2
Total Pumps / Flow	3 pumps; 3 MGD each	
Motor HP	200	
Drive Type	VFD	
Condition	Reduced Speed Point	Primary Point
Flow (MGD)	2	6
No. Pumps Running	1	2
Total Dynamic Head (ft)	139	261
Operating Speed (rpm)	Reduced – 1,270	Full – 1,780
Efficiency (%)	84	85
Motor HP, rated	58	162

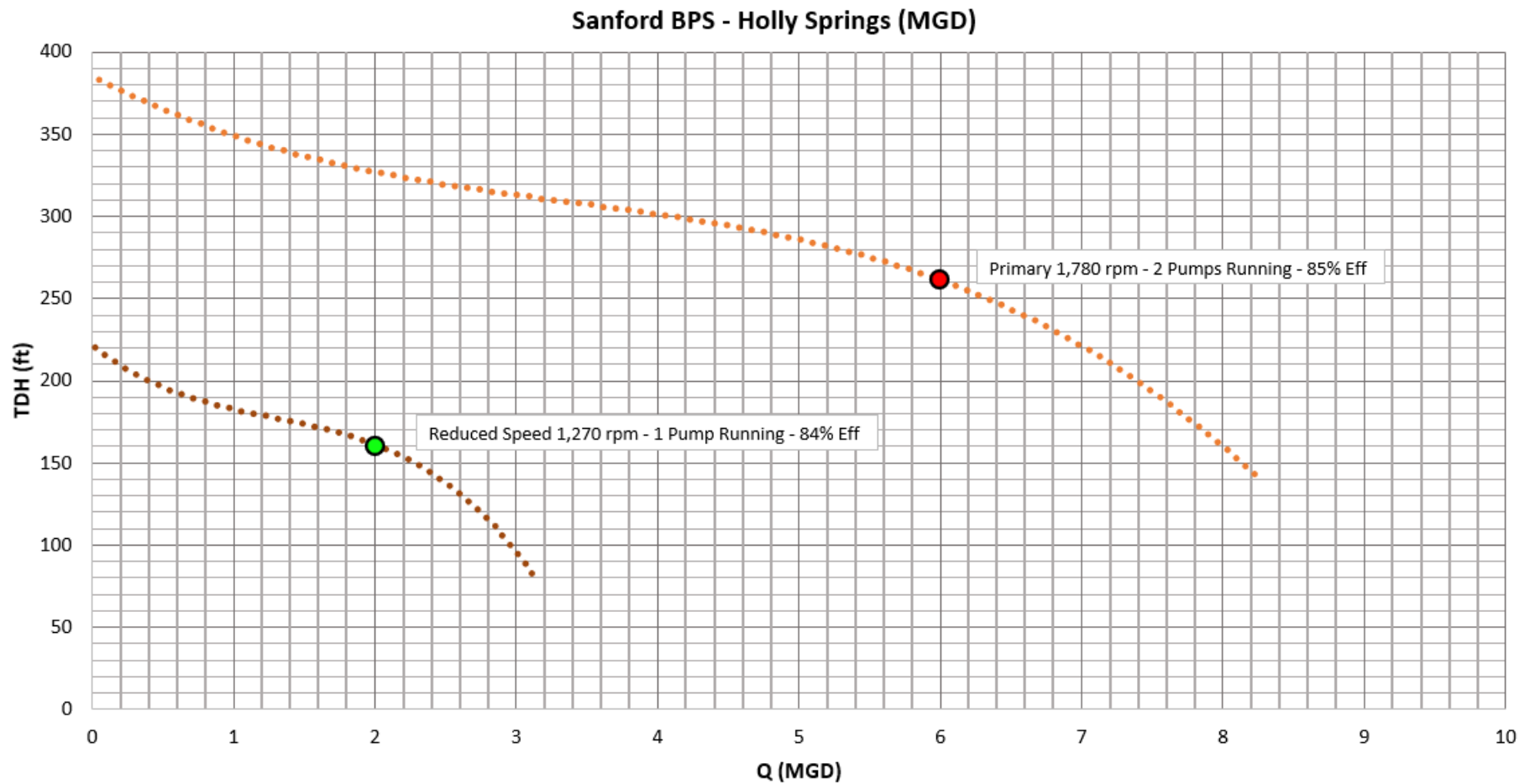


Figure 9-6: Pump Curves and Design Points – Holly Springs

9.3 Ground Storage

A holistic review of all available storage capacity was completed for both Fuquay-Varina and Holly Springs. The available storage was reviewed for equalization and fire flow need, compliance with minimum requirements per Public Water Supply (PWS) rules, and emergency use. Both systems meet the equalization and fire flow, and PWS requirements with the proposed elevated storage and the existing ground storage allocated to the respective system. Tables 9-2 and 9-3 summarize the current and proposed storage evaluations for both water systems, without additional storage at the proposed booster pump station.

Table 9-2: Fuquay-Varina Storage

Distributed Storage (Elevated Storage)	Volume (Current)	Volume (2025)	Volume (2035)	Volume (2055)
The Hill Tank	0.2	0.2	0.0	0.0
Jones Road Tank	0.5	0.5	0.0	0.0
North Tank (Future)	0.0	1.0	1.0	1.0
401 Tank (Future)	0.0	0.0	0.0	1.0
SE Tank (Future)	0.0	0.0	1.5	1.5
Total Distributed Available	0.7 MG	1.7 MG	2.5 MG	3.5 MG
Total Required (Equalization + Fire)	1.38 MG (0.75 MG + 0.63 MG)	1.5 MG (0.87 MG + 0.63 MG)	1.88 MG (1.25 MG + 0.63 MG)	2.65 MG (2.02 MG + 0.63 MG)
Surplus (+) or Deficit (-)	-0.68 MG	0.20 MG	0.62 MG	0.85 MG

Minimum Storage Per PWS				
Harnett County Ground Storage	1.04 MG	1.04 MG	1.04 MG	1.04 MG
Total Distributed Storage	0.70 MG	1.7 MG	2.50 MG	3.50 MG
Total Emergency Storage Available	1.74 MG	2.74 MG	3.54 MG	4.54 MG
Total Emergency Required (Ground + Elevated)	1.26 MG	1.80 MG	2.60 MG	4.2 MG
Surplus (+) or Deficit (-)	0.49 MG	0.94 MG	0.94 MG	0.34 MG

Table 9-3: Holly Springs Storage

Distributed Storage (Elevated Storage)	Volume
Avent Ferry Tank	1.2 MG
Lee St. Tank	0.3 MG
School Tank	1.1 MG
Proposed Tank	1.0 MG
Total Distributed Available	3.6 MG
Total Required (equalization + Fire)	2.36 MG
Surplus (+) or Deficit (-)	1.24 MG
Minimum Storage Per PWS	
Harnett County Ground Storage	2.1 MG (Proportionate use of 5 MG GST)
Total Distributed Storage	3.6 MG
Total Storage Available	5.7 MG
Total Minimum Required (Ground + Elevated)	3.5 MG
Surplus(+) or Deficit (-)	2.2 MG

The analysis shows no additional storage is required, however emergency storage for use during a supply outage is typically based on owner preference and operation goals. To develop a recommendation for additional ground storage at the new BPS, a supply disruption scenario was reviewed for both the max day and average day demands for each distribution system. For this scenario, it was assumed all existing and proposed tanks were in service with an additional 1.5 MG GST at the proposed BPS. Tanks were assumed to be half full with the largest supply out of service. A calculation of total hours of storage was performed for the current and future demand.

Table 9-4: Fuquay-Varina Calculated Hours of Storage – 1.5 MG GST

No Supply from Sanford – Max Day Demand				
	Current	2025	2035	2055
Total Supply (MGD)	5.25	4.25	2.5	2.5
MDD (MGD)	4.7	5.4	7.8	12.6
Deficit (MG)	None	1.15	5.3	10.1
Hours of Storage	Na	44.2	10.2	7.1
No Supply from Sanford – Average Day Demand				
	Current	2025	2035	2055
Total Supply (MGD)	5.25	4.25	2.5	2.5
ADD (MGD)	2.8	3.6	5.2	8.4
Deficit (MG)	None	None	2.7	5.9
Hours of Storage	Na	Na	20.1	12.2

Table 9-5: Holly Springs Calculated Hours of Storage – 1.5 GST

No Supply from Harnett County – Max Day Demand			
	Current	2030	2060
Total Supply (MGD)	0	3.5	6.5
MDD (MGD)	6.2	12	16
Deficit (MG)	6.2	8.5	9.5
Hours of Storage	9	10.1	9
No Supply from Harnett County – Average Day Demand			
	Current	2030	2060
Total Supply (MGD)	0	3.5	6.5
ADD (MGD)	2.7	7.1	9.5
Deficit (MG)	2.7	3.6	3.5
Hours of Storage	20.8	23.9	24.6

For this project two, 1.5 MG storage tanks are recommended for the site, with room for an additional future tank. Two tanks will provide redundancy and will allow for the BPS to continue operation during a tank outage for maintenance.

9.4 Conveyance to Fuquay-Varina

Based on the hydraulic modeling, a combination of 30-inch and 24-inch transmission main will accommodate the maximum day condition of 10 MGD and peak day condition of 13 MGD into the Town's system (Figure 9-7). The proposed 30-inch transmission main will leave the pump station heading north on Buckhorn Duncan Rd and turn east on Duncan Cook Rd. The proposed transmission line will reduce to a 24-inch and will cross Piney Grove-Wilbon Rd and continue north until reaching Wilbon Rd, where it will turn east again and follow the street as it continues onto Judd Parkway. The new 24-inch transmission main will cross under Hwy-55 and can be connected to the existing 16-inch ACP.

9.5 Conveyance to Holly Springs

Based on the hydraulic modeling a 24-inch transmission main will convey up to 6 MGD into the existing 30-inch transmission main on Piney Grove-Wilbon Rd (Figure 9-8). The proposed 24-inch transmission main will follow the same route as the proposed Fuquay-Varina transmission main parallel to Buckhorn-Duncan Rd and then turn east on Duncan Cook Rd, ending at the intersection of Duncan Cook Rd and Piney Grove-Wilbon Rd. The new 24-inch transmission main can be connected to the existing 30-inch DIP.

9.6 Recommendation Summary

Figure 9-9 shows the proposed project components including:

6. 36-inch transmission main from the Sanford WTP to the proposed booster pump station
7. Two, 1.5-million-gallon ground storage tanks, with space for a future third tank
8. A single booster pump station and electrical room with dedicated pumping to both distribution systems
9. 30-inch and 24-inch transmission main to Fuquay-Varina
10. 24-inch transmission main to Holly Springs

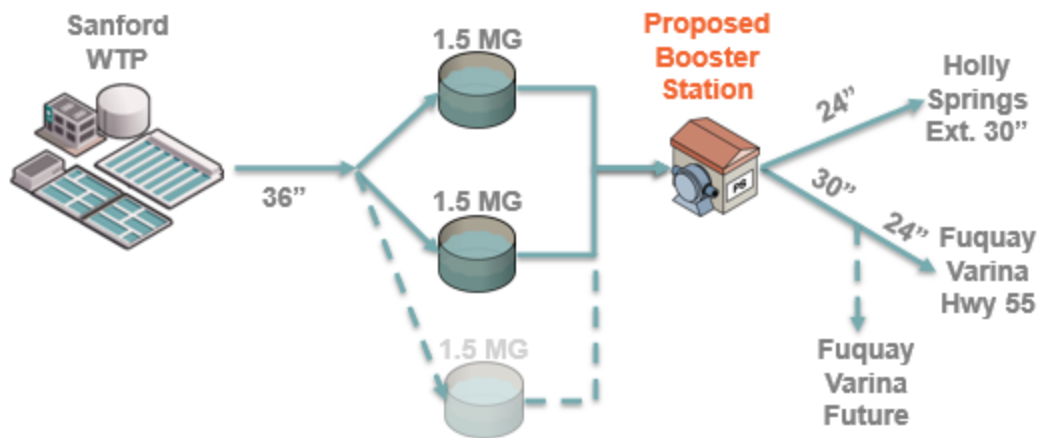
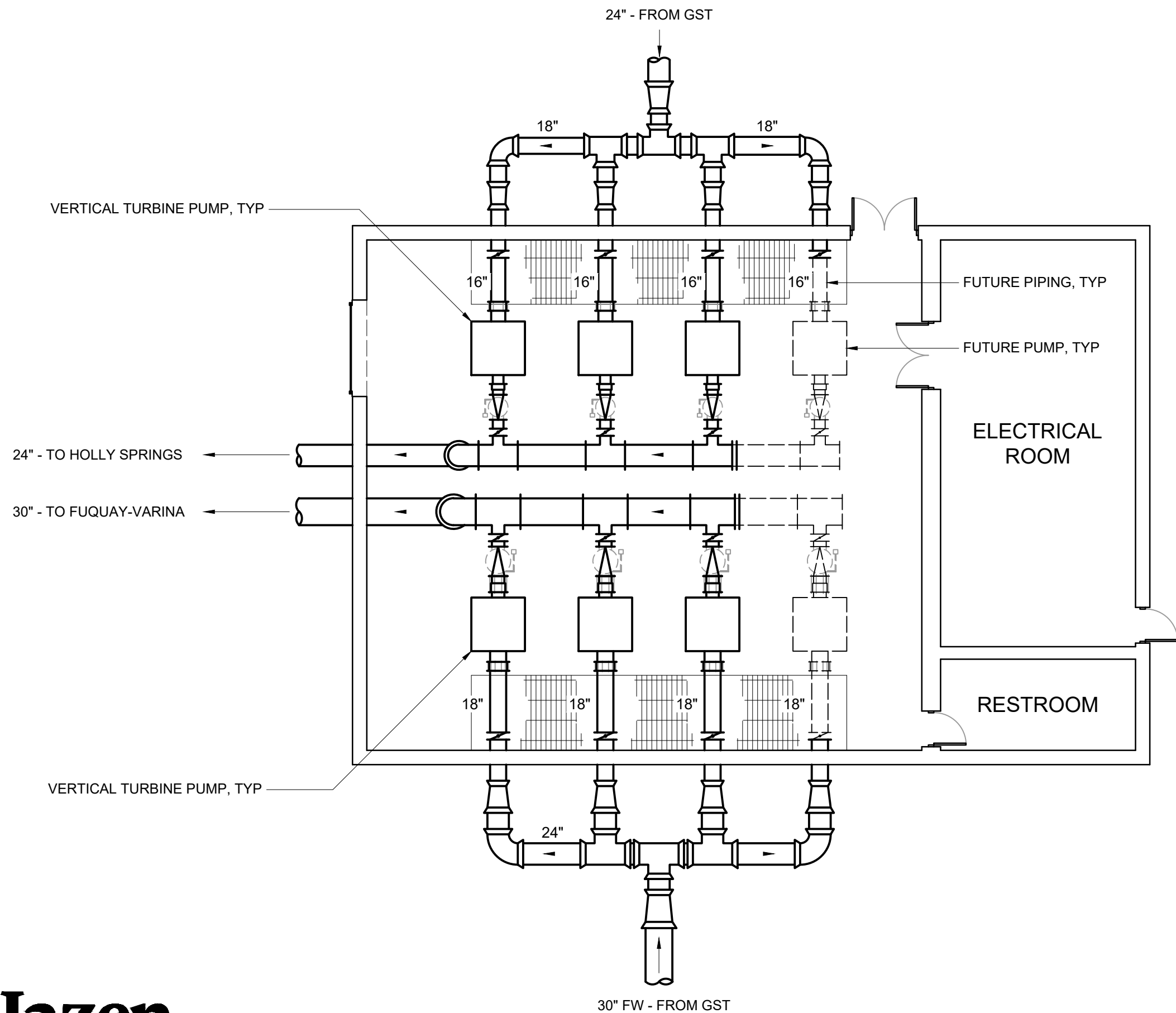


Figure 9-9: Proposed Project Components

Figure 9-10 shows a proposed layout of the booster pump station building. Figure 9-11 shows a potential layout of the booster pump station site including the building and ground storage tanks.



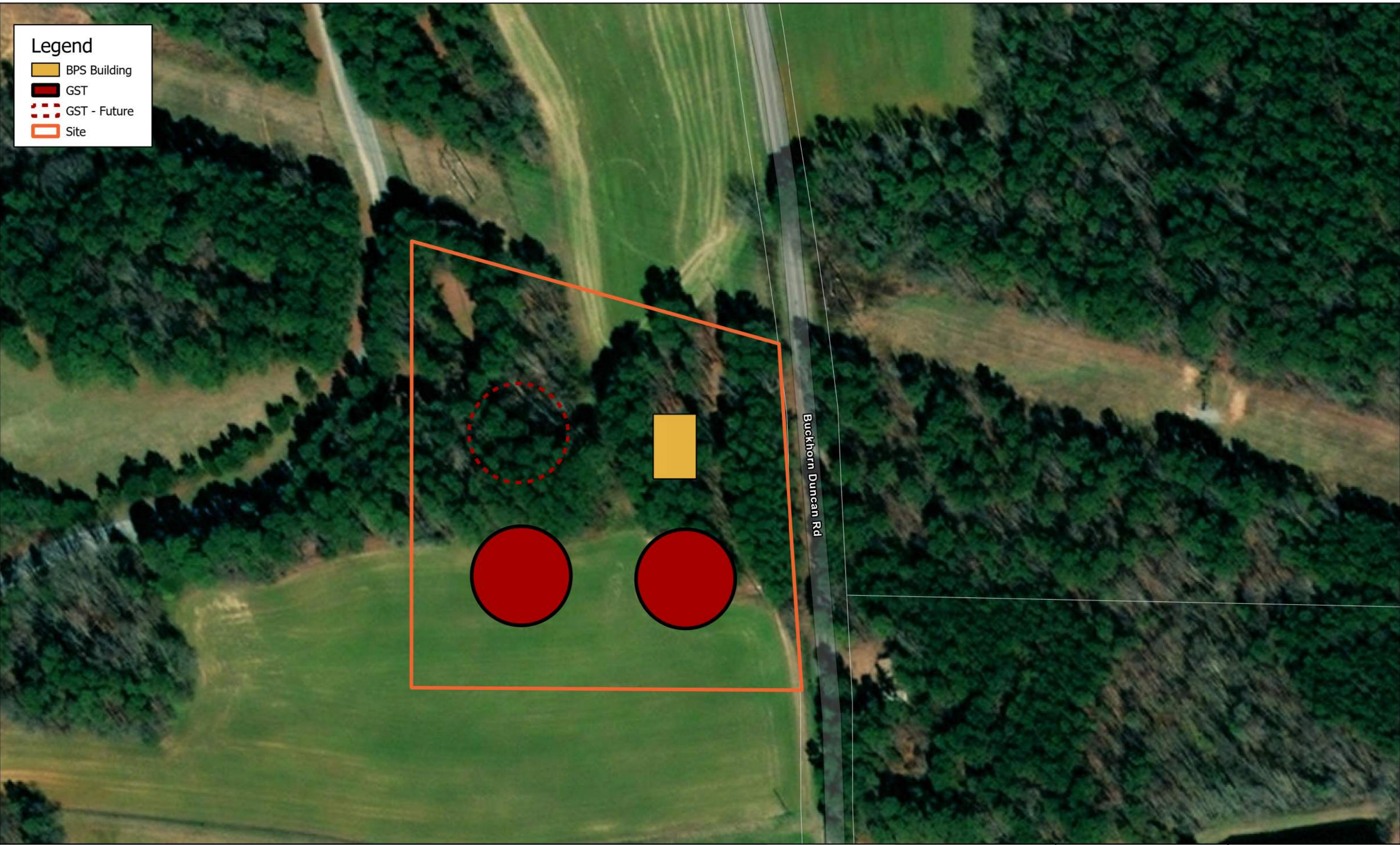
PLAN

FUQUAY - VARINA

BOOSTER PUMP STATION

Legend

-  BPS Building
-  GST
-  GST - Future
-  Site






1 inch equals 100 feet




Water Conveyance System
from City of Sanford WTP
Preliminary Engineering Report
Town of Fuquay-Varina

Figure 9-11
Booster Pump Station
Site Layout

10. Preliminary Opinion of Probable Cost

The opinion of probable construction cost (OPCC) developed for the recommended facilities reflects a Class 3 level estimate. The estimate was based on construction bids received for past projects and recent material quotes from suppliers; however, inflation in material and equipment costs introduces added uncertainty. Final construction costs depend on actual labor, material, and equipment costs; competitive market conditions; actual site conditions; and other factors that cannot be quantified at the current level of detail. A 20% contingency was included to account for potential variations in final construction costs and the level of detail of the preliminary cost estimate. All costs are in current day values and should be escalated for construction in the future as needed.

10.1 Cost Opinion Methodology

10.1.1 Construction Cost

The cost opinion was developed by quantifying the major materials required for the project including:

- Pipe
- Fittings
- Valves
- Air Release Valves
- Stone Bedding

An installation cost was developed by reviewing the route and identifying unique areas of installation such as locations parallel to the road, through easements, in or adjacent to wetlands, stream crossings, and trenchless installation. These areas were the assigned and estimated installation rate per day ranging from 60 LF per day when crossing Duke Energy power lines to 160 lf per day in NCDOT right of way.

A cost per foot was assigned to bore and jack trenchless crossings, stream crossings, and erosion and sediment control. The booster pump stations and ground storage tank estimates were developed using recent construction costs.

The material, installation, and other miscellaneous costs were totaled and contractor general conditions, overhead and profit, bonds and insurance, and 20% contingency were added.

10.1.2 Engineering Design and Construction Administration

Engineering design and construction costs were estimated at 15% of the construction.

10.1.3 Easement Acquisition

Right-of-Way Consultants (RWC) provided a high-level cost summary to acquire permanent utility easement (PUE) and/or temporary construction easement (TCE) along two of the four routes. Routes 1 and 4 were selected for easement cost review. The costs are summarized below. RWC used the following general pricing guidelines for their calculations:

1. Raw land in Lee County was calculated at \$7500/acre.
2. Raw land in Chatham County was calculated at \$7500/acre to \$10,000/acre as the line came closer to Harnett County. Single family lot prices ranged from \$20,000 to \$50,000 per acre.
3. Raw land in Harnett County was calculated at \$10,000/acre and increased to \$20,000/acre as the line came closer to Wake County. Single family lot prices ranged from \$30,000 to \$50,000 per acre.
4. As the route entered Wake County prices are projected to increase significantly because of demand. Development tracts were calculated at \$50,000/acre. Lot prices were calculated at \$75,000/acre.

Route 1 would require obtaining TCE and/or PUE on approximately 218 parcels between the Sanford WTP and the approximate connection location in Fuquay-Varina, i.e., the intersection of Wilbon Rd and Piney Grove-Wilbon Rd. The total easement cost is approximately \$928,000. The added acquisition cost is approximately \$654,000, which would include the process of meeting with property owners, any necessary appraisals, negotiation, and settlement. The total estimated cost to purchase and acquire easements is \$1,582,800.

Route 4 would require obtaining TCE and/or PUE on approximately 59 parcels between the Sanford WTP and the approximate connection location in Fuquay-Varina, i.e., on W Academy St south of the Wake County Pump Station and 0.21 mi southwest from the intersection with Fleming Loop Rd. The total easement cost is approximately \$953,000. The estimated time to obtain the easements for this route is 4-6 months. The added acquisition cost is approximately \$177,000. The total estimated cost to purchase and acquire easements is \$1,130,000.

Route 3, the recommended route, is a blend of Routes 1 and 4. This route would require obtaining TCE and/or PUE on approximately 92 parcels between the Sanford WTP and the approximate connection location in Fuquay-Varina, i.e., the intersection of Wilbon Rd and Piney Grove-Wilbon Rd. The total easement cost is approximately \$1,035,080. The added acquisition cost is approximately \$276,000.

As discussed in Section 9. 4, the connection location for Route 3 was later determined after further modeling, thus requiring additional easements to finish the connection. This connection would require an estimated 31 additional easements, which would cost approximately \$239,700 for the parcel impacts and \$93,000 in acquisition costs.

10.2 Opinion of Probable Construction Cost

The following tables summarize the OPCC for the entire project. The costs are broken into two projects: the 36-inch transmission main from the Sanford WTP to the BPS including the BPS and ground storage tank, and a second project for the two transmission mains from the BPS to the distribution system connections for Fuquay-Varina and Holly Springs. An escalation of 10% was applied to construction costs and shown separately in each table below.

Table 10-1 OPCC for 36-inch Transmission Main and BPS

Items	36-inch Transmission Main and BPS Site
Construction Costs	
Transmission Main Materials	\$24,163,000
Transmission Main Installation	\$3,827,000
Booster PS and Storage Tanks	\$6,250,000
Trenchless Crossings and Miscellaneous Items	\$4,799,000
Construction Subtotal	\$39,037,000
General Conditions	\$3,904,000
Contractor OH&P	\$5,153,000
Bonds and Insurance	\$962,000
Contingencies – 20%	\$9,812,000
Construction Total	\$58,868,000
Easement Acquisition	\$1,284,000
Engineering Design and CA/CO – 15% of Construction	\$8,831,000
Project Contingency – 5%	\$3,450,000
Construction Escalation – 10%	\$5,886,800
Project Total	\$78,319,800

The project cost detailed in Table 10-2 are for the parallel transmission mains from the booster pump station to the distribution systems. It is assumed the transmission mains will be designed and constructed together, but the costs are broken down for each system.

Table 10-2 OPCC for Transmission Mains to Fuquay-Varina and Holly Springs

Items	Transmission Main to Fuquay-Varina	Transmission Main to Holly Springs
Construction Costs		
Transmission Main Materials	\$4,924,000	\$1,560,000
Transmission Main Installation	\$1,209,000	\$489,000
Trenchless Crossings and Miscellaneous Items	\$977,000	\$177,000
<i>Construction Subtotal</i>	<i>\$7,108,000</i>	<i>\$2,226,000</i>
General Conditions	\$711,000	\$223,000
Contractor OH&P	\$939,000	\$294,000
Bonds and Insurance	\$176,000	\$55,000

Contingencies – 20%	\$1,787,000	\$560,000
Construction Total	\$10,721,000	\$3,358,000
Easement Acquisition	\$600,000	\$84,000
Engineering Design and CA/CO – 15% of Construction	\$1,609,000	\$504,000
Project Contingency – 5%	\$647,000	\$198,000
Construction Escalation – 10%	\$1,072,100	\$335,800
Project Total	\$14,649,100	\$4,479,800

Table 10-3 summarizes the total project cost for each partner. For the 36-inch transmission main and booster pump station site the split was assumed to be 10/16 for Fuquay-Varina and 6/16 for Holly Springs.

Table 10-3 Total Project Cost Opinion Summary

Items	Fuquay-Varina Cost	Holly Springs Cost
Construction and Easement Costs	\$51,362,000	\$27,299,000
Engineering Design and CA/CO Costs	\$7,485,000	\$4,007,000
Construction Escalation – 10%	\$4,751,350	\$2,543,350
Total	\$63,598,350	\$33,849,350

11. Required Permits

Permits to disturb the various resources identified in or immediately adjacent to the proposed construction area may be required by federal, state, and local regulations and restrictions. Permits that may be necessary are discussed in the following paragraphs. Permitting requirements will depend on the final design and the requirements of each applicable regulation. The project team will strive to develop a design that avoids permanently impacting protected resources and that minimizes temporary impacts to protected resources.

11.1 Public Water Supply Section

A Water Supply System Plans and Specifications permit will be required for the project. Generally, the review process is 30 days from when a permit is submitted, and the time for completed review varies. It is recommended to submit the permit application as soon as the transmission main design is completed in order to allow for the potentially lengthy approval process. The permit is valid for 24 months from the date of the authorization letter.

11.2 State Erosion and Sediment Control

A North Carolina State Erosion and Sediment Control (E&SC) permit will be required for the project. The E&SC plan will be developed according to state rules and regulations. Generally, the approval process is 60 days from when a permit is submitted assuming one round of comments is received.

11.3 NC Department of Transportation

An encroachment agreement with NCDOT will be required for installation within the DOT right of way. The following roads are maintained by NCDOT:

- NC-42 – Route will parallel street within right of way
- Poplar Springs Church Road – Route will cross street with a trenchless installation and parallel street within right of way
- Buckhorn Road – Route will cross street with a trenchless installation and parallel street within right of way
- Buckhorn Duncan Road – Route will cross street with a trenchless installation and parallel street within right of way
- Piney Grove-Wilbon Road – Route will cross street with a trenchless installation and parallel street within right of way
- Cass Holt Road – Route will cross street with a trenchless installation
- Sweet Springs Road – Route will cross street with a trenchless installation
- Duncan Cook Road – Route will parallel street within right of way

11.4 Railroad

The route will require permitting with Norfolk Southern Railroad for one trenchless crossing for the transmission main included in the project. It is recommended to submit the permit application as soon as the crossings have been designed in order to allow for the potentially lengthy approval process.

11.5 Duke Energy Encroachment

The route will require submitting plans to Duke Energy “Transmission Asset Protection” and receiving a written Letter of No Objection before commencing any construction in the transmission easements. Plan reviews typically take four weeks. It is recommended to submit plan sheets as soon as the crossings have been designed to plan for potential comments from Duke.

11.6 Sections 401/404 of the Clean Water Act

Impacts to jurisdictional waters of the U.S. may require acquisition of a Section 404 of the CWA permit from the USACE prior to commencement of construction activities. Work within jurisdictional waters of the U.S. may qualify for authorization under a Nationwide Permit (NWP), specifically NWP 58 for construction of utility line activities for water and other substances in jurisdictional areas. Mitigation for permanent impacts to jurisdictional waters of the U.S. may be required, depending upon the total area of permanent impacts resulting from the project. Conversion of forested wetlands to herbaceous wetlands, as is often done in maintained utility rights-of-way, is considered a permanent impact by the USACE and may require mitigation of the impacts.

North Carolina’s Section 401 Water Quality General Certification No. 4276 corresponds with the NWP 58 and may be applicable to the project. Notification of North Carolina Division of Water Resources and issuance of a project-specific Individual 401 Water Quality Certification may be required if certain thresholds are exceeded, including but not limited to greater than 500 feet of temporary impacts to streams along the entire utility corridor, any permanent impacts to streams, or total permanent impacts to wetlands or open waters equal to or greater than 0.10 acre within the entire utility project. Notification to the USACE and DWR and application for regulatory approvals from these agencies is accomplished using the Pre-Construction Notification (PCN) form and initiates concurrent review by both agencies.

Since acquisition of the permits or certifications from the aforementioned regulatory agencies may be required prior to commencement of construction activities, submittal of the PCN at the earliest opportunity is recommended. It should be noted that submittal of the PCN should not occur until design of the proposed activities is at a point where the limits of disturbance are not going to change. Any changes to the location and extent of land disturbance that impact jurisdictional waters of the U.S. after submittal of the PCN or receipt of permits described herein may require permit modifications, which may delay receipt of the permit(s) and may impact construction activities and schedule.

As of November 2021, five federally protected species and one candidate species were identified via the IPaC tool as having the potential to inhabit the project vicinity. Review of the potential for a project to adversely affect a federally protected species occurs during the USACE review of the PCN. Therefore, it is recommended that the IPaC tool be checked as the project progresses through the design phase. If a species is listed as federally threatened or endangered prior to completion of construction, then the

potential of the project to affect the species will be evaluated, and protective measures may be implemented to provide protection as prescribed under the ESA. Continued monitoring of the IPaC tool for the project vicinity will allow the project team to be aware of new or proposed listings and any applicable avoidance or minimization measures, mitigation requirements, relocation requirements, or other steps that may be necessary to protect the listed species.

12. Schedule

A schedule was developed through construction completion. The table below outlines the major tasks required for the 36-inch transmission piping and BPS.

Table 12-1 Schedule

TASK	START	END	Days
Design	3/1/22	3/26/23	390
Field Data Collection	3/1/22	7/29/22	150
Easement Acquisition	11/26/22	4/25/23	150
Permitting	3/26/23	7/24/23	120
Bidding	7/24/23	10/22/23	90
Construction	10/22/23	10/19/25	728

The current schedule for the Sanford WTP expansion has construction complete in late 2025/early 2026.

Appendix A: Modeling

Town of Fuquay-Varina

Water Supply Study

Water Model Verification - May 29, 2019

Pump Station and Valve

City of Raleigh Pump Station

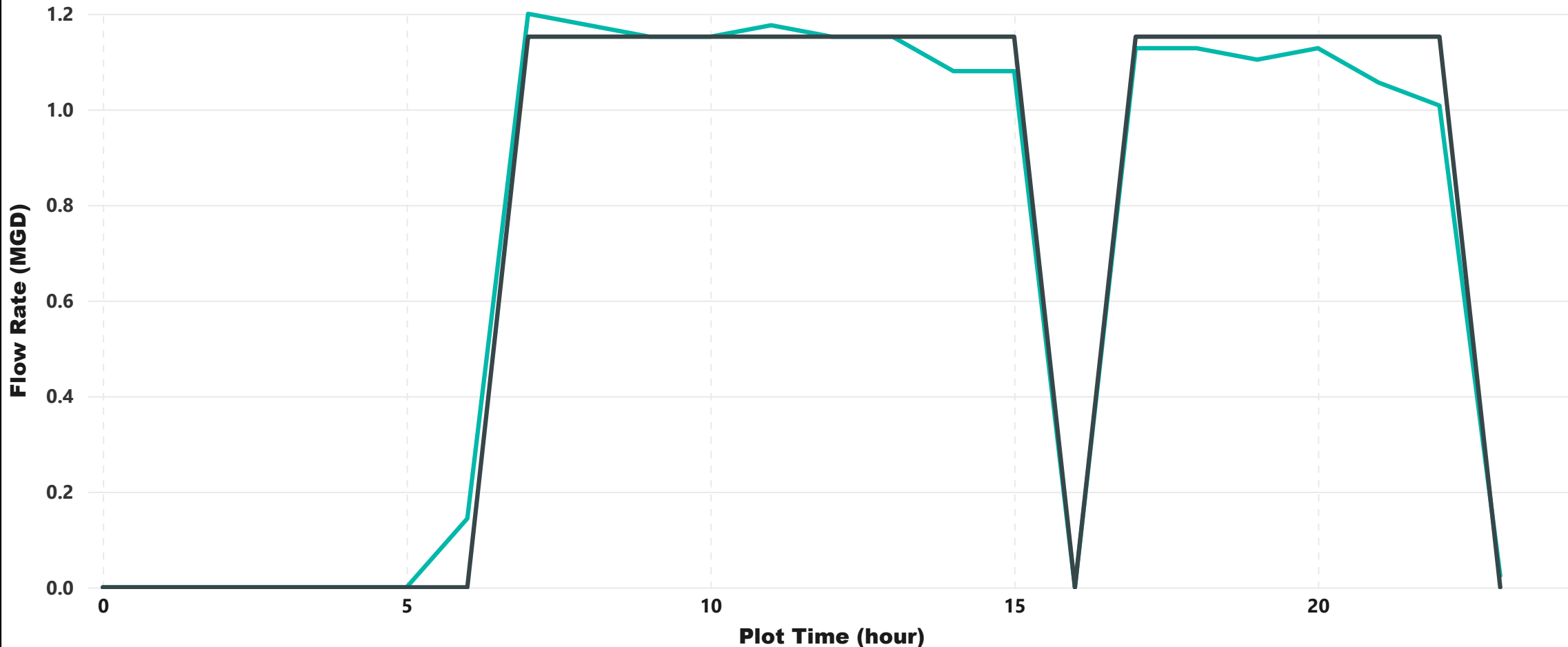
Harnett County 401 South Valve

Harnett County Fleming Road Pump Station

Johnston County Pump Station

Model Verification Results

● SCADA Data ● Model Results



within 1 MGD

100.00%

within .5 MGD

100.00%

within .1 MGD

91.67%

Town of Fuquay-Varina

Water Supply Study

Water Model Verification - May 29, 2019

Pump Station and Valve

City of Raleigh Pump Station

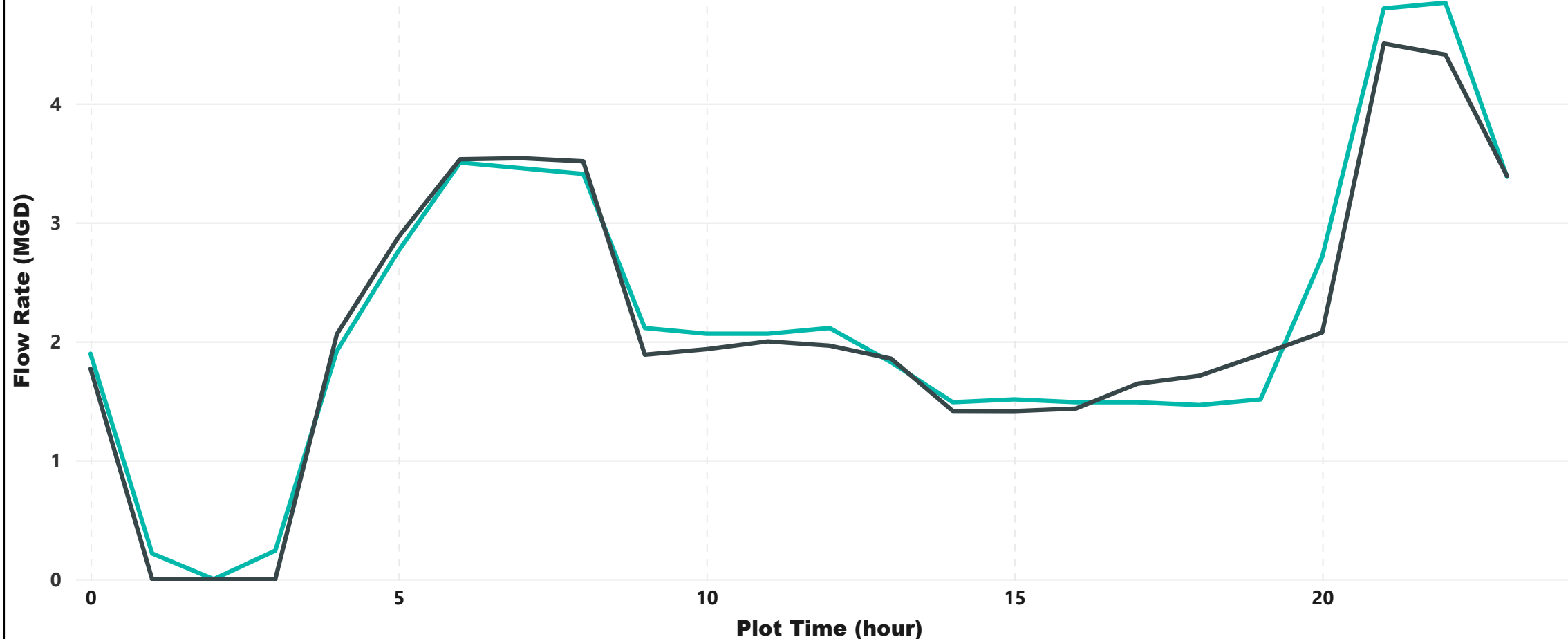
Harnett County 401 South Valve

Harnett County Fleming Road Pump Station

Johnston County Pump Station

Model Verification Results

● SCADA Data ● Model Results



within 1 MGD

100.00%

within .5 MGD

95.83%

within .1 MGD

37.50%

Town of Fuquay-Varina

Water Supply Study

Water Model Verification - May 29, 2019

Pump Station and Valve

City of Raleigh Pump Station

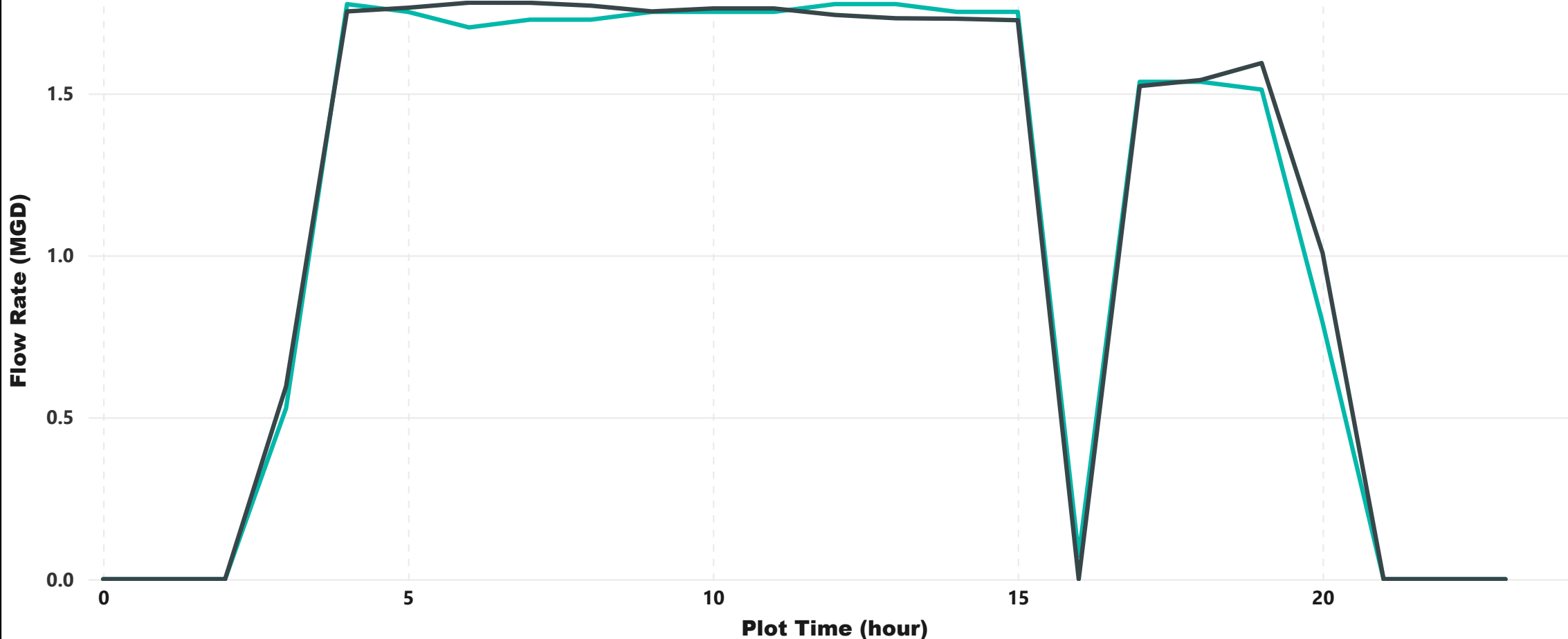
Harnett County 401 South Valve

Harnett County Fleming Road Pump Station

Johnston County Pump Station

Model Verification Results

● SCADA Data ● Model Results



within 1 MGD

100.00%

within .5 MGD

100.00%

within .1 MGD

95.83%

Town of Fuquay-Varina

Water Supply Study

Water Model Verification - May 29, 2019

Pump Station and Valve

City of Raleigh Pump Station

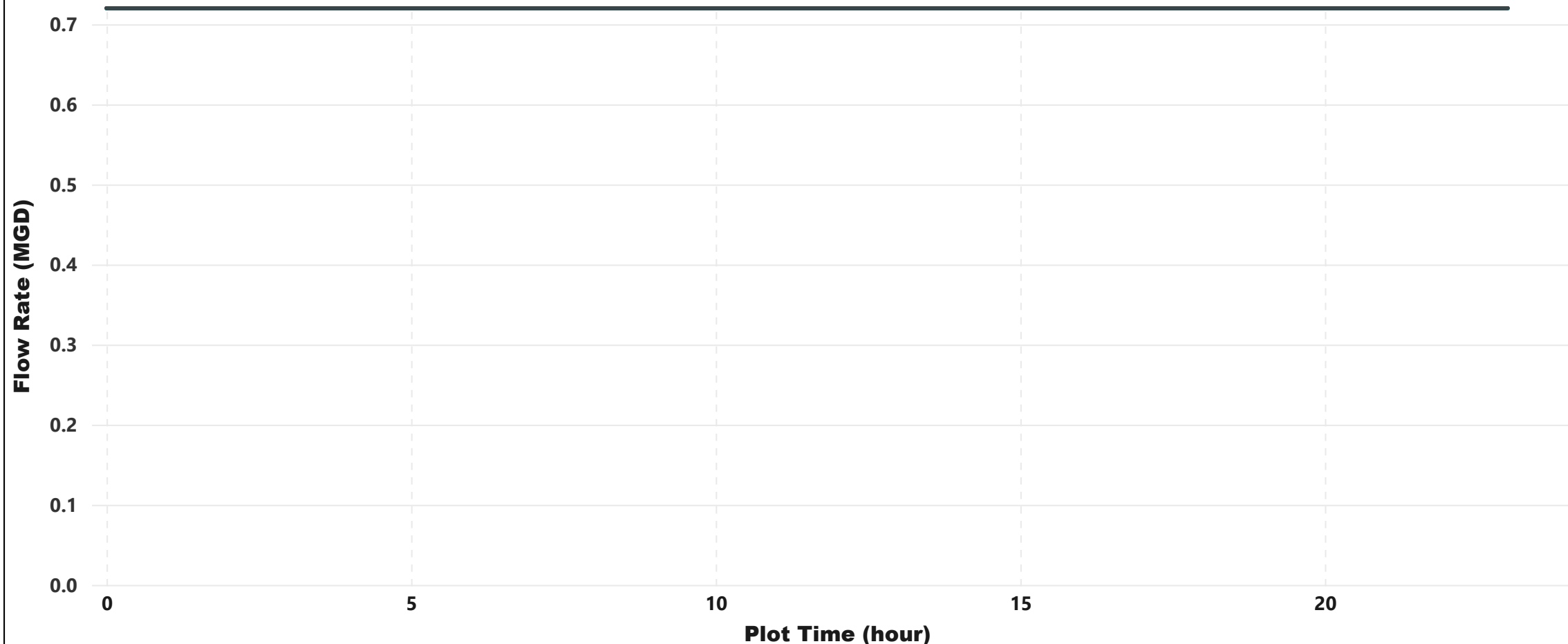
Harnett County 401 South Valve

Harnett County Fleming Road Pump Station

Johnston County Pump Station

Model Verification Results

● SCADA Data ● Model Results



within 1 MGD

100.00%

within .5 MGD

100.00%

within .1 MGD

100.00%

Town of Fuquay-Varina

Water Supply Study

Water Model Verification - May 29, 2019

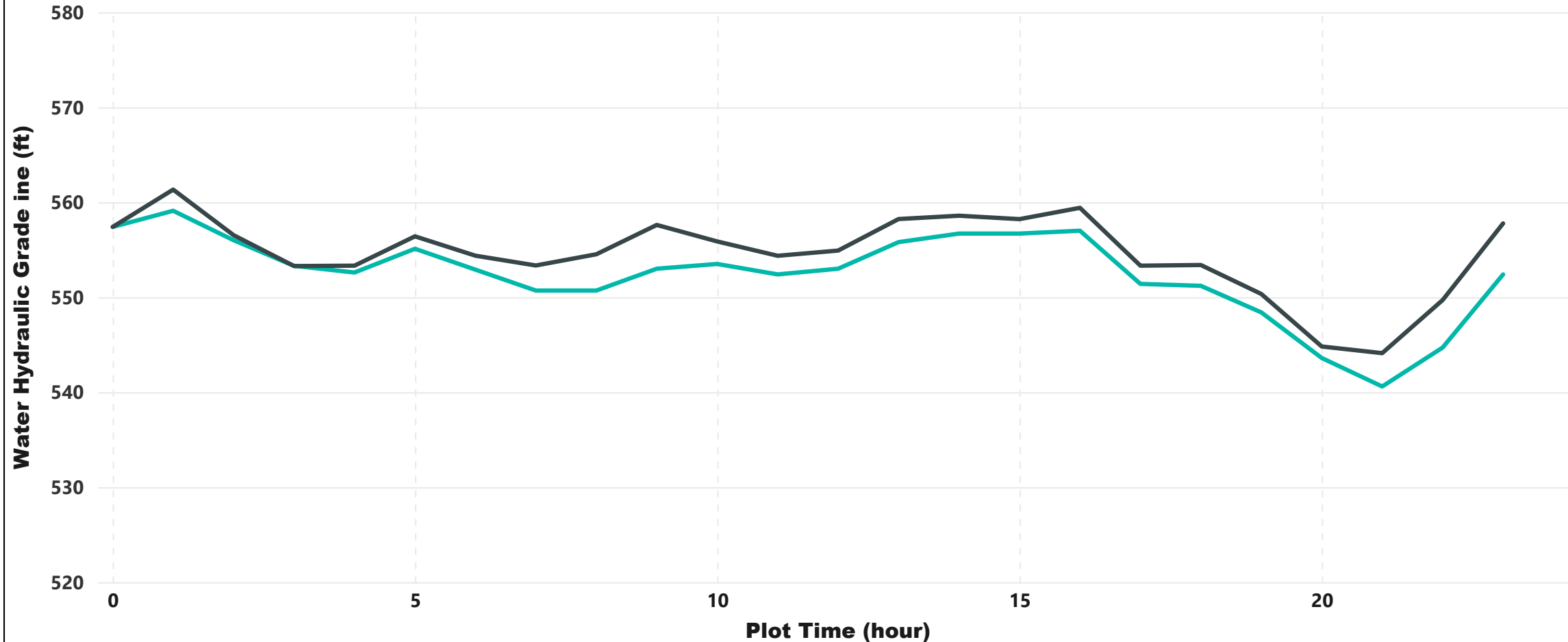
Elevated Storage Tank

.2 MG Hill/Main Street Tank

.5 MG Jones Road Tank

Model Verification Results

● SCADA Data ● Model Results



within 5 ft

91.67%

within 3 ft

79.17%

within 1 ft

16.67%

Town of Fuquay-Varina

Water Supply Study

Water Model Verification - May 29, 2019

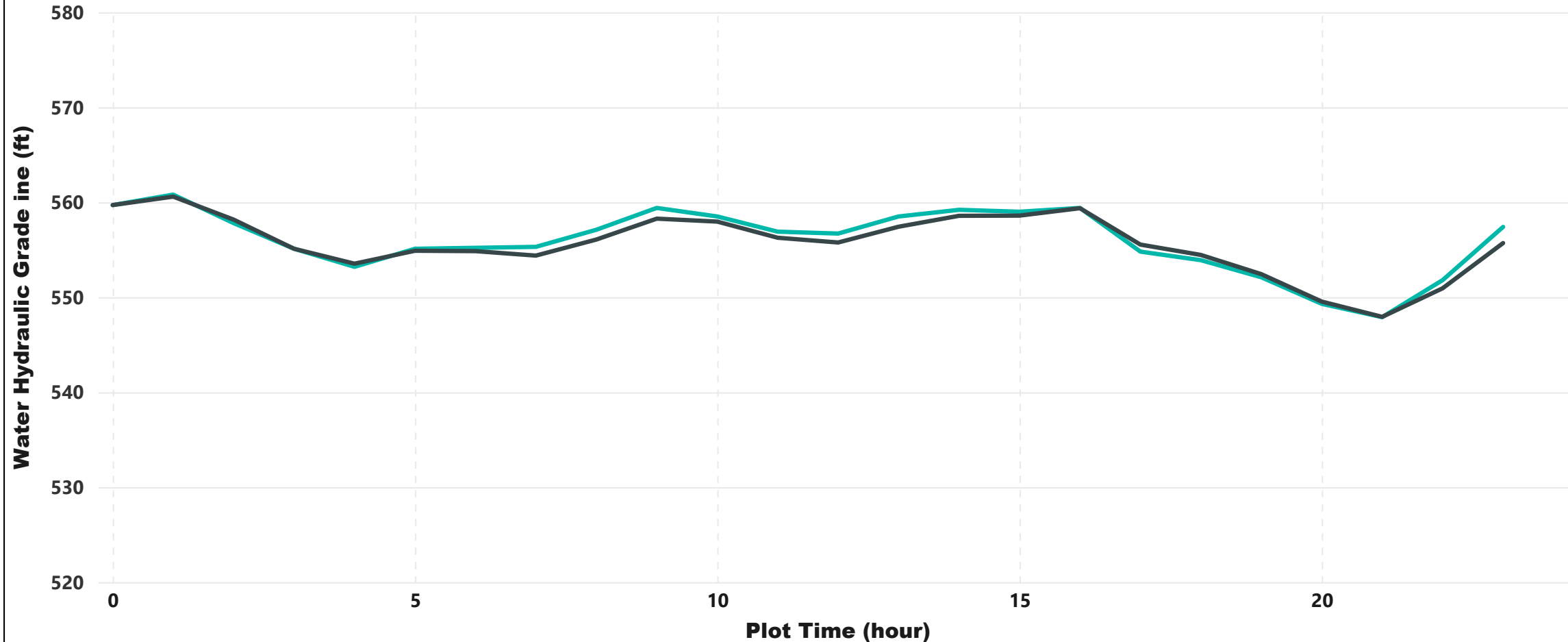
Elevated Storage Tank

.2 MG Hill/Main Street Tank

.5 MG Jones Road Tank

Model Verification Results

● SCADA Data ● Model Results



within 5 ft

100.00%

within 3 ft

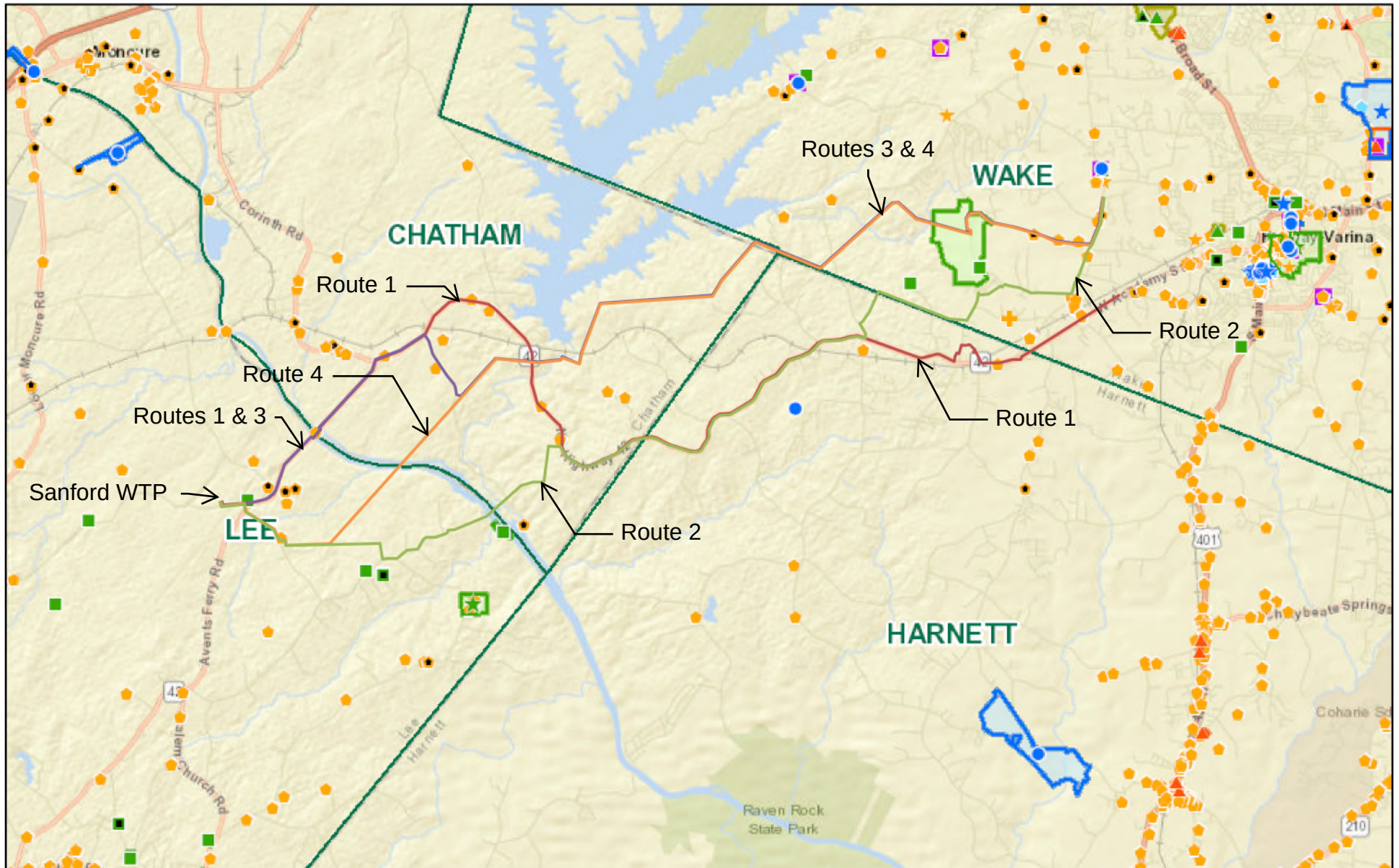
100.00%

within 1 ft

83.33%

Appendix B: Historic Preservation Sites

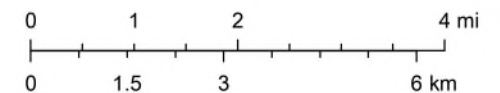
NCHPO HPOWEB



11/24/2021, 11:08:01 AM

- Local districts & boundaries
- Local Landmark, Gone
- ★ Local HD Center Point
- Local Landmark
- Surveyed Only individual resources & centerpoints
- Surveyed Only
- Surveyed in NRHD

1:144,448



Town of Cary, State of North Carolina DOT, Esri, HERE, Garmin, NGA,

February 8, 2022

Rachel Ingham, PE, Utility Engineer
Town of Holly Springs
128 S Main Street
Holly Springs, NC 27540

Re: Funding Participation – Memorandum of Understanding for Joint Water Treatment Conveyance System; Town of Fuquay-Varina and Town of Holly Springs

Dear Ms. Ingham:

As a result of increasing water demands and projections due to expected populations growth, Fuquay-Varina and Holly Springs have determined that additional treated water capacity will be required within the next 25 years. Therefore, Fuquay-Varina and Holly Springs have agreed in principle to embark on a water treatment facility expansion and conveyance project with the City of Sanford and have determined that such a project is feasible and in the best interest of both communities.

On December 22, 2020, the Fuquay-Varina Town Board of Commissioners authorized a Professional Engineering Services contract with engineering firm Hazen & Sawyer (Engineer) to perform a Preliminary Engineering Report (PER) to examine the conveyance system for treated water from the Sanford Water Treatment Plant to Fuquay-Varina as part of the future water supply/capacity project. The detailed scope of services provided by the Engineer is attached for reference (referred to as ATTACHMENT A). Accordingly, Fuquay-Varina engaged Hazen & Sawyer to conduct a treated water conveyance system preliminary engineering report on behalf of both Fuquay-Varina and Holly Springs in the amount of \$1,003,680.00.

The enclosed Memorandum of Understanding (MOU) dated September 10, 2021, between the Town of Fuquay-Varina and the Town of Holly Springs, outlines a cost-sharing arrangement between the two entities to explore mutually beneficial opportunities for each organization by collaborating on a shared water conveyance system. Both entities had previously signed an MOU with the City of Sanford to determine if expanding a collaborative water treatment plant is a viable solution for future water treatment needs.

As of the September 2021 MOU, Holly Springs had not yet fully committed to participating in the conveyance system project and agreed to initially contribute \$76,650.00 towards the \$1,003,680.00 engineering fee. Holly Springs's initial fee participation represented a portion of fees relating to the scope of work consisting of routing/siting and potential partner coordination. In addition, Holly Springs's preliminary cost share participation included the Engineer providing the organization an overview needed to determine if a joint water conveyance system is feasible. Since the September 2021 MOU, Holly Springs has affirmed its intent to participate in the joint conveyance system project.

When determining the final pro-rata share costs to be paid by Holly Springs per the terms of the September 2021 MOU, under Section 2 – Shared Costs of the MOU:

The Parties hereto agree to mutually share in the costs of preparing the joint water conveyance preliminary engineering report. Holly Springs shall contribute \$76,650, representing 1/3 of the fees for Item 1 – Routing and Siting, Item 11– Potential Partner Coordination, and Item 14- Preliminary Engineering report for their portion of the preliminary engineering report costs. The \$76,650 shall be paid to Fuquay-Varina by July 30, 2021.

If Holly Springs determines that a joint water conveyance system is feasible and elects to participate in the project, their portion of the remaining items in Attachment A shall be a pro-rata share of the costs determined by ratio of treated water system conveyance capacity, i.e., if the capacity of the conveyance system is designed for 10 million gallons a day (mgd), and Fuquay-Varina has 6 mgd of conveyance capacity and Holly Springs has 4 mgd of conveyance capacity, the Fuquay-Varina would pay 60% of preliminary engineering costs and Holly Springs would pay 40% of preliminary costs. Parties recognize that the decision by Holly Springs may occur after completion of the Preliminary Engineering Report and that their pro-rata share would be submitted as a reimbursement to the Town of Fuquay—Varina within 60-days of notification that they will participate in the conveyance system. Future project costs would be memorialized in an Agreement that also addresses ownership, operation, and maintenance of the system.

To date, Holly Springs has paid their initial contribution of \$76,650.00. Under the cost-sharing terms of the MOU, the remaining balance owed by Holly Springs to Fuquay-Varina is \$299,730 (breakdown of cost-sharing attached). The Holly Springs remaining balance contribution is based on a pro-rata share of costs associated with the design and construction of a 36" Transmission Main conveyance system capable of providing 16 million gallons per day (MGD). Fuquay-Varina has elected to receive 10 MGD, and Holly Springs receives 6 MGD. This pro-rata cost-share for construction and design of the 36" Transmission Main conveyance represents a 62.5% Fuquay-Varina ownership of the line and 37.5% ownership by Holly Springs.

Fuquay-Varina and Holly Springs are reviewing the (Draft) Water Conveyance System PER. With this letter, on behalf of the Town of Fuquay-Varina, I am officially requesting the Town of Holly Springs's pro-rata cost-share contribution reimbursement of \$299,730. The Town of Fuquay-Varina looks forward to working with the Town of Holly Springs on this joint venture. Please feel free to contact me if you have any questions or require any additional documentation.

Sincerely,

Jim Seymour
Assistant Town Manager

Cc: Mike Wagner, Public Utilities Director (Town of Fuquay-Varina)
JoAnne Crabtree, Finance Director (Town of Fuquay-Varina)



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 12.

Consent Agenda

Title: 2022 Pavement Condition Survey and Lifecycle Modeling - Contract

Strategic Priority Area: Responsible & Balanced Growth
Safe & Friendly

Staff Resource: Aaron Levitt, Utilities and Infrastructure

Action(s):

Award a Contract for Professional Services for the 2022 Pavement Condition Survey and Asset Lifecycle Modeling to WithersRavenel in the amount of \$66,200 and authorize the Town Manager to execute the contract and any change orders for additional professional services as may be needed during the project up to the authorized project budget of \$80,000.

Explanation:

- A pavement condition survey serves as a basis for the determination of the scope, prioritization and budget for pavement repair and resurfacing programs.
- The last survey conducted in 2016 included approximately 117 centerline miles and the proposed update will include approximately 154 miles. The survey will employ the Long-Term Pavement Performance methodology to determine the Pavement Condition Index (PCI) for each street segment.
- These PCIs along with financial cost data for various repair/resurfacing methods and predictive PCI degradation curves will be used to develop an Asset Lifecycle Model for the Town's street network. The model will enable the town to develop and evaluate various capital investment planning strategies with the goal of providing consistent and sustainable PCI service levels across the street network.
- The Town issued a Request for Qualifications on December 28, 2021 for professional services associated with the project. Qualification Packages were received on January 12, 2021 from four (4) firms. Each Qualification Package was reviewed and scored independently by a three (3) member committee. At the end of the review process, the committee came to the consensus that the best qualified firm was WithersRavenel. The staff then negotiated a scope of work and cost proposal for professional services with WithersRavenel.
- The proposal cost for the Pavement Condition Survey and the Asset Lifecycle Cost Modeling (Tasks 1 thru 3) is \$66,200.
- This project was approved in the FY 2021-22 Community Investment Plan for up to \$80,000.
- As part of the proposal cost, the first year of "managed services" for the Asset Lifecycle Model is included. These services provide for quarterly updates to the Model to incorporate current data on maintenance and repairs performed on the streets, changes in the street inventory, changes in the financial data utilized to calculate repair and maintenance costs, and changes in the predictive degradation algorithms. These

managed services help ensure that the model up to date. As part of possible, future budget requests, an annual managed service fee with the consultant to keep the Model up to date might be considered, currently estimated at approximately \$10,000/year.

Background:

- A pavement condition survey is conducted on the street network owned and maintained by the Town at approximately five (5) year intervals.
- The condition survey serves as a basis for the determination of the scope, prioritization and budget for pavement repair and resurfacing programs. The last survey was performed in 2016.

Funding Source(s):

FY 2021-22 Community Investment Plan (CIP)

Attachment(s):

1. Request for Qualifications - Pavement Condition Survey
2. Proposal for Professional Services - WithersRavenel - Holly Springs 2022 PCS and Asset Lifecycle Model



Advertised: December 28, 2021

THE TOWN OF HOLLY SPRINGS UTILITY AND INFRASTRUCTURE DEPARTMENT

REQUEST FOR QUALIFICATIONS

Town of Holly Springs 2022 Pavement Condition Rating Survey (TOHS #22-001)

TITLE: TOHS 2022 Pavement Condition Rating Survey

ISSUE DATE: December 28, 2021

SUBMITTAL DEADLINE: January 12, 2022

ISSUING AGENCY: Town of Holly Springs
Utilities and Infrastructure Department

INTRODUCTION

The Town of Holly Springs (Town) is soliciting proposals from engineering firms to provide a Pavement Condition Rating Survey (PCRS) and a Pavement Management System (PMS) Application which has the ability to expand to other assets and directly link to the Town's GIS. The last PCRS was completed in 2015. The Town-maintained road system consists of approximately 147 miles of paved roads.

SCOPE OF WORK

The following shall be included in the scope of work:

1. Pavement Condition Rating Survey (PCRS)
 - a. A visual evaluation of the Town's road system for asphalt roadways is required. The information gathered will include physical characteristics and pavement distress types. This survey will be conducted at break points established by road centerlines. A shapefile will be provided by the Town which contains all the necessary inventory data.
 - b. The PCRS shall be performed in accordance with Publication No. FHWA-RD-03-031, Distress Identification Manual for the Long-Term Pavement Performance Program (LTPP) - (Fourth Revised Edition), June 2003 utilizing the following distresses:

- i. Fatigue Cracking
 - ii. Transverse Cracking
 - iii. Block Cracking
 - iv. Defective Patching and Potholes
 - v. Surface Defects
 - vi. Rutting & Roughness
 - vii. Reflective Cracking
 - c. Additional Attributes – Along with the distresses collected for the PCRS, the Town would like to collect the presence of curb and gutter.
 - d. Road Classification – With the assistance of Town staff, the roads will be classified as either Low Volume (A) or High Volume (B).
 - e. The Town will not consider automated data collection techniques including artificial intelligence (AI).
2. Pavement Management System (PMS)
- The PMS will:
- a. Be a vendor hosted web-based application.
 - b. Incorporate the pavement distresses listed in Section 1 and have the ability to incorporate others as the program develops.
 - c. Allow for multiple pavement maintenance activities with the ability to add or delete activities to match the Town’s evolving pavement management program.
 - d. Allow for user defined deterioration models.
 - e. Identify maintenance needs, estimate costs, and calculate the pavement condition index (PCI) for each road segment and entire roadway network.
 - f. Allow the updating of unit costs as determined by the Town or consultant.
 - g. Have the ability to store construction history.
 - h. Allow the Town to force or delay construction projects due to outside circumstances.
 - i. Have the ability to analyze various “what if” funding scenarios and determine the level of service.
 - j. Provide multi-year optimized work plans for each of the funding scenarios.
 - k. Allow the user direct access to the Town’s GIS from the software application.
 - l. Provide a dashboard to help demonstrate to elected officials the consequences of multiple funding scenarios and the use of alternative maintenance activities for pavements and other assets.
 - m. Model across all asset types including water, sewer, stormwater, communication, and provide a trade-off analysis.
3. Project Deliverables

The project deliverables shall include the following:

- a. The production of summary tables, an alphabetical listing, and a priority listing for the street system shall be included.
- b. Development of separate technical reports with tables and figures to summarize the condition of Town streets and maintenance needs. These reports shall contain all collected pavement data and recommended maintenance and preservation activities.
- c. Work plans for Town selected funding scenarios.
- d. A File Geodatabase shall be provided to the Town containing all collected pavement data, and recommended maintenance and preservation activities.
- e. A Council presentation to present the finds of the PCRS and analysis.

PROPOSAL CONTENT & FORMAT

Proposals shall include the following which will be used by the Town for evaluating and selecting a firm:

1. Introduction: introductory letter including firm name, address, telephone number, contact person, table of contents. (5%)
2. Firm experience – a detailed description of similar projects successfully completed by the firm; name, telephone number, and email address of a contact person for each client who can verify the information provided. Provide project examples where other utilities have been incorporated with the pavement modeling. (20%)
3. Firm personnel experience – a listing of team personnel who will actually be assigned to perform substantial amounts of the work on this project; provide experience record, anticipated amount of time each person will actually work on this project, and location of each person. The proposed Project Manager for the project is required to have a minimum of 5 years of experience managing LTPP PCRSs. (35%)
4. Project Approach – a detailed description of how the firm proposes to approach this project; include sufficient discussion of proposed methodologies, techniques, and procedures for each work item; provide a breakdown and description of tasks assigned per project team member. (35%)
5. Project Schedule – a proposed time schedule. (5%)

SUBMISSION

Each firm is asked to submit their proposal in PDF format via email to Dirk Siebenbrodt at dirk.siebenbrodt@hollyspringsnc.gov and Brent Quick at brent.quick@hollyspringsnc.gov. Hard copies will not be accepted for this RFQ. Questions should be directed to Dirk Siebenbrodt at dirk.siebenbrodt@hollyspringsnc.gov until January 5th, 2022.

The proposal shall be a maximum length of 15 pages. Cover, table of contents and dividers will not count towards the page limit.

SUBMISSION SCHEDULE AND KEY DATES

RFQ Release Date	December 28, 2021
Deadline for RFQ Submission	January 12, 2022
Consultant Selection	January 17, 2022
Anticipated Notice to Proceed	February 03, 2022
Anticipated Report Completion	May 05, 2022

February 3, 2022

Mr. Dirk Siebenbrodt, P.E.
Project Engineer
Town of Holly Springs
128 South Main Street
Holly Springs, NC 27540

**RE: Agreement for Professional Services
Holly Springs 2022 PCS & Asset Lifecycle Modeling
Holly Springs, North Carolina
WR Project No. 02201096.00**

Dear Mr. Siebenbrodt,

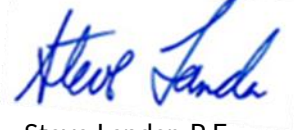
WithersRavenel is pleased to submit this agreement for executing a Town wide Pavement Condition Survey (PCS) for 2022. Pavement management is an important function of Public Works from an aesthetics aspect as well as maintaining the roadway network. In addition, being efficient in allocating funds for street repairs and repaving contracts is a necessity but is sometimes difficult due to the variables involved. Performing a PCS allows an unbiased perspective of the street system as a whole and allows that allocation of funding to be applied objectively.

Also provided in this agreement is Asset Lifecycle Modeling for the Town's pavement, water, and sewer. Asset management is an important function of Public Works for Capital Improvement Planning as well as maintaining utility networks to a desired level of service. In addition, being efficient in allocating funds for rehabilitation and replacement contracts is a necessity but is sometimes difficult due to the variables involved. Executing a lifecycle model allows for an optimized approach for managing all assets as a whole and ensures the appropriate allocation of funding to be applied objectively to meet desired levels of service.

We appreciate the opportunity to submit on this next step in your Town wide street system management plan with Asset Lifecycle Modeling and we look forward to hearing back from you and your staff on the future of this project. Please feel free to call me at 336.215.5521 or email at slander@withersravenel.com with any questions and/or to discuss any aspect of the attached proposal.

Sincerely,

WithersRavenel



Steve Lander, P.E.
Director of Pavement Management

Holly Springs 2022 PCS & Asset Lifecycle Modeling Holly Springs, North Carolina Proposal for Professional Services

A. Project Description

This fee proposal is intended to provide the scope of services and associated fees to provide consulting services per request of Town of Holly Springs and formalize an agreement for the implementation and logistics for these services.

For Task 1, WithersRavenel (WR) will provide a Pavement Condition Survey (PCS) of the Town of Holly Springs' streets. The purpose of the survey is to assess the overall condition of Town maintained roadway segments for the Project. This includes riding each street segment following a nationally recognized distress identification manual to determine the severity and extent of seven (7) distresses used to determine the condition of each segment and the entire roadway network. The Town owns and maintains approximately 154 centerline miles of roads to be included in the Pavement Condition Survey (PCS) project. A report will also be provided that describes methodologies, procedures and recommendations that will be explained at an online deliverables meeting.

For Task 2 - Asset Lifecycle Modeling (Pavement), WR will analyze the data collected in Task 1 for pavement and offer the necessary predictive modeling that will provide justification for proper funding to maintain the Town roads at a determined condition level or level of service. For each of the optimized budget scenarios from the predictive modeling, work plans will be provided containing a list of the exact streets, maintenance activities, and costs for each year of the analysis. WR will provide model development, managed services, project management, and dashboards for this task.

In Task 3, WR will explain the findings of the PCS and the pavement software analysis at a Council presentation.

In Task 4 - Asset Lifecycle Modeling (Water and Sewer), WR will analyze the data provided by the Town for water and sewer and provide similar services as mentioned in Task 2.

This scope of services will include sub-tasks as shown in the Scope of Services below.

For the purposes of this proposal and any subsequent agreements, the following references shall apply: Town of Holly Springs shall be known as the "Client"; WithersRavenel shall be known as the "Consultant" or "WR"; the property and overall project shall be known as the "Project"; the executed version of this proposal shall be known as the "Agreement".

B. Timeline for Services

WithersRavenel will begin work upon receipt of executed contract and/or written notice to proceed from the Client. Estimated timeframe for the basis of the services described in the Scope of Services will be three (3) months from the date of the pre-survey meeting that kicks off the project.

Should unexpected field conditions be encountered, or should other developments arise which are beyond WithersRavenel's control, and which result in delay of services (including acts of God or weather delays) to be rendered hereunder, it is understood that additional time may be required.

C. Scope of Services

Task 1 - Pavement Condition Survey & Report

1.1. Kickoff Meeting

Upon issuance of the Notice of Award to WR, WR will host an online kickoff meeting with the Town Staff to ascertain the extent of the roadway segments to be completed (up to 154 miles) and additional parameters/considerations that should be made by WR during the PCS. At the kickoff meeting, procedural guidelines, specific project requirements, Town goals, schedule, project setup needs, maintenance activities, and project deliverables will be discussed. The Town will provide a list of streets and the latest Town Powell Bill map. WR will utilize the GIS data from the 2016 PCS for the base GIS files; the mileage for the Town at the time of the 2016 PCS was approximately 117 miles.

1.2. GIS File Preparation and Project Administration

Because of the rapid growth of the Town since 2016 and the expansion of the roadway network, WR will utilize the Wake County GIS data to provide the streets added since the 2016 PCS (approximately 37 miles). This effort will include providing the following inventory data for each street segment: begin and end descriptions, length, pavement widths, number of lanes, and low and high-volume classification (A or B). Prior to going out into the field, WR will check the GIS data against the Town Powell Bill map to assess whether ownership information is correct for checked street segments and whether it is believed that all Town streets are included. Ownership issues uncovered by WR will be addressed with the Client prior to data collection.

Along with project coordination, this task will also include office administration time to set-up and prepare maps and formats to be utilized on this project.

1.3. Data Collection

WithersRavenel will perform a visual PCS or windshield survey which is linked to the Town's GIS centerline database of identified asphalt pavement street segments within the Town and owned/maintained by the Town (up to 154 centerline miles). This will involve riding each segment and observing and quantifying three (3) levels of severity (Low, Medium, and High) and various levels of extent for each pavement distress. WR will follow the Long-Term Pavement Performance (LTPP) distress definitions for the Town's PCS. The seven (7) distresses that will be collected include:

- ▶ Fatigue Cracking (FC – structural cracking)
- ▶ Transverse Cracking (TC)
- ▶ Block Cracking (BC)
- ▶ Patching and Potholes (PC)
- ▶ Surface Defects (Raveling) (SD)
- ▶ Rutting and Roughness (RR)
- ▶ Reflective Cracking (RC)

Since obtaining accurate PCS data is a crucial first step in managing an effective pavement management program, WR is painstaking in providing the highest quality data. As part of WR PCS services, the following will be provided:

- ▶ An experienced two-person rating crew and company vehicle.

- ▶ Rater Communication Protocol – For each street segment, both raters weigh in as to the observed severity and extent for all distresses. If they are not in total agreement, they turn around and ride the segment until they reach an agreement. At the end of each segment, the rater operating the computer reads back the distresses to the rater driving. Both must agree with the input before hitting enter and recording the data.
- ▶ An ArcGIS Field Application with GPS – The ArcGIS field application ensures accurate data entry with prepopulated pulldowns while the GPS unit ensures recording the correct data on the correct street segment.
- ▶ On-the-Fly Field Application PCI Calculation – The ArcGIS field application used for the PCS calculates the Pavement Condition Index (PCI) as distresses are recorded. By knowing the PCI on-the-fly, raters can gauge whether the PCI matches the true condition of the street segment. For instance, if a street has very few low severity distresses and is rated with a PCI score of 60, then it is apparent that something has been recorded incorrectly and should be corrected. Also, if there is PCI data from the last PCS, raters can compare the new PCI with the old as a benchmark. Knowing this information minimizes data entry mistakes which ensures the highest quality of data.

WR will also collect an additional attribute - presence of curb and gutter. This attribute does not affect the PCI score but is included to assist in making maintenance activity decisions.

After post processing the PCS data from the field, a weighted average PCI by lane miles will be produced for the entire roadway network as a general health indicator. WR will work with the Town to determine the maintenance activities and unit costs to be included in the report and will hold an online meeting to identify the high-volume streets.

1.4. Report

For the Pavement Condition Survey Report services, WR will provide the following digital deliverables:

- ▶ A Pavement Condition Survey Report containing the survey findings. This report will provide summary tables containing recommended maintenance activities and opinions of probable construction costs by activity based on unit maintenance costs to be supplied by the Client;
- ▶ Recommendations for broadening the maintenance toolbox;
- ▶ An alphabetical and PCI street listing provided in PDF format containing the following for each roadway segment:
 - Inventory (including pavement widths),
 - Collected distresses,
 - PCIs,
 - Treatments,
 - Treatment costs;
- ▶ Street listings provided in spreadsheet format;
- ▶ A PowerPoint slideshow of the PCS findings;
- ▶ A final GIS geodatabase in ESRI compatible format containing pavement condition inventory data, collected distresses, PCIs, recommended maintenance activities, and cost information for the Client's records.

WR will present the findings of the PCS Report in a Deliverables Meeting to Town Staff online. At this meeting, WR will review the findings and will discuss the next steps in the pavement management program.

Task 2 - Asset Lifecycle Modeling (Pavement)

2.1 Introduction

- ▶ Managing infrastructure depends on knowing what one has and what is needed – particularly when it comes to budgeting. With WR’s expertise and tools, a multi-year strategy will be provided that will help in the Client in making the right infrastructure investments at the right time. This can help to break the cycle of underfunding and emergency repairs.

2.2 Purpose

- ▶ The purpose of the Lifecycle Model Development Service (“Model”) is to build a working asset lifecycle model that will support the infrastructure investment planning processes. To facilitate this outcome, WR will use its expertise along with Town data and input to develop the lifecycle model and provide the associated reporting.

2.3 Value

By partnering with WR, expert consulting and the results of the Town’s infrastructure’s lifecycle model are provided. In summary, the scope of the proposed Model includes:

- ▶ WR to provide results of lifecycle model for the asset class identified in this task and using the data collected in Task 1;
- ▶ A Reporting Workshop along with documentation that reviews the results of the lifecycle model generated and a recommended budget strategy;
- ▶ Ongoing managed services to continue to support the lifecycle model when infrastructure is added or updated;

Per the scope of this task, a lifecycle model will be developed for pavement (approximate 154 miles).

2.4 Methodology and Approach

2.4.1 Model Development

- ▶ WR will utilize the data collected in Task 1 and input to refine the asset lifecycle model for the scoped asset. WR will build and optimize the infrastructure model with multiple budget scenarios and predefined treatment options. The treatment options include preservation-prevent (rejuvenators), crack seal, patching, preservation-correct (microsurfacing or slurry seal), rehabilitation, and reconstruction. WR will schedule workshops if required for Client to answer questions regarding data, existing processes, or other factors pertaining to the model. All model parameter changes will be made by WR as part of the managed service.

Deliverables

1. Up to five (5) budget scenarios will be built:
 - a. A Calibration simulation that illustrates an unlimited budget and where recommended treatments would be applied;
 - b. A budgeted simulation that applies to the Town’s current budget;
 - c. A recommended budget simulation that will improve the overall health of assets;
 - d. Other Client scenarios.
2. Access to the online Capital Predictor portal and Power BI dashboards where the developed scenarios can be compared and contrasted to demonstrate the optimal ROI.

2.4.2 Report Workshop

This time will be used to review the asset lifecycle model and review the results and available reporting.

Deliverables

1. Presentation by WR's Subject Matter Expert to review the lifecycle model results.
2. WR will review the results of the different budget simulations that were run and recommend the most adequate budget.
3. Written or online documentation that details the results of the different budget scenarios and the recommended budgeted amount to successfully manage assets.

2.4.3 Managed Services

Following delivery of the lifecycle model, WR will provide managed services for ongoing support to Client staff to keep the Town's model up to date as infrastructure is added or repaired. These updates are provided on a quarterly basis, with data refreshes and new budget simulations once per year. In addition, WR will be available to answer questions regarding the existing model and budget simulations. For this proposal, the services for this subtask are included for the first year. If the Town would like to utilize the asset lifecycle modeling after year 1, the Managed Services fee would be required for each additional year.

Deliverables

1. Written or online documentation that details the results of the updated budget scenarios.

2.4.4 Project Management & Dashboard

The services for this subtask include:

1. Prepare maps and worksheets to facilitate data gathering related to the Project;
2. Hold project update meetings and communicate with the Client's designated Project Manager at agreed upon intervals;
3. Provide overall Project Management services to monitor the job progress, arrange resources for the Project, and communicate to the Client the status of the Project;
4. Develop visualizations using tools such as PowerBI, in conjunction with GIS, to visualize the cost-benefit analysis data from the report. The deliverable will be an interactive product that allows the end user to adjust parameters on demand to model different scenarios related to development and operational decision making, such as budgeted maintenance and rehabilitation.

2.4.5 Task Assumptions

WR has made the following general assumptions in the task list to derive the estimated cost for this Task. It is the responsibility of the Client to validate these assumptions before signing the Acceptance. Deviations from these assumptions may impact WR's ability to successfully complete the project. Any changes in scope, schedule, or costs will be documented by the Project Manager, whether there is a cost impact or not.

- ▶ WR is not responsible for delays caused by missing data or other configuration information that is required to be available prior to the consulting service. Having the requested data and configuration information available prior to the consulting service may minimize delays so progress can be made quickly.
- ▶ Client shall use best efforts to identify all project-related key information to allow the project schedules to begin on time. Any changes to key information after Project kickoff may require a change to the task list.

- ▶ Parties agree to provide timely responses to task-related emails or phone calls to enable on-time completion of all assignments.
- ▶ At least a 24-hour notice cancellation shall be given by the Parties if required members for any scheduled meeting cannot attend. This shall allow sufficient time to cancel/re-schedule the meeting as soon as possible to keep the project on schedule.
- ▶ Data refreshes for Managed Services assumes the existing data schema does not change.

Task 3 - Council Presentation

WR will assist Town staff in preparing for a Council presentation and will attend in person one (1) Town Council meeting (up to 2 hours) and will provide the following:

- ▶ A PowerPoint presentation based on coordination with Town staff and the PCS results. The deliverables meeting presentation to Town Staff can be used as the template for the Council Presentation. The contents of the presentation can include:
 - PCS procedures, findings, and results
 - PCS Trends
 - Recommended Actions
 - Funding appropriation
 - Broadening the maintenance toolbox

Task 4 - Asset Lifecycle Modeling (Water and Sewer)

4.1 Introduction

- ▶ Managing the infrastructure depends on knowing what one has and what is needed – particularly when it comes to budgeting. With WR's expertise and tools, a multi-year strategy will be provided that will help the Town make the right infrastructure investments at the right time. This can help to break the cycle of underfunding and emergency repairs.

4.2 Purpose

- ▶ The purpose of the Lifecycle Model Development Service ("Model") is to build a working asset lifecycle model that will support the Town's infrastructure investment planning processes. To facilitate this outcome, WR will use its expertise along with Town data and input to develop the lifecycle model and provide the associated reporting.

4.3 Value

By partnering with WR, expert consulting and the results of the Town's infrastructure's lifecycle models are provided. In summary, the scope of the proposed Model includes:

- ▶ Consultant to provide results of lifecycle models for the asset classes identified in this task list and using the Client's data;
- ▶ A Reporting Workshop along with documentation that reviews the results of the lifecycle models generated and a recommended budget strategy;
- ▶ Ongoing managed services to continue to support the lifecycle models when infrastructure is added or updated.

Per the scope of this task, a lifecycle model will be developed for water (approximately 213 miles) and sewer (approximately 201 miles).

4.4 Methodology and Approach

4.4.1 Model Development

- ▶ WR will utilize Client data and input to refine the asset lifecycle model for the scoped assets. The Consultant will build and optimize the infrastructure model with multiple budget scenarios and treatment options. Consultant will schedule workshops if required for Client to answer questions regarding data, existing processes, or other factors pertaining to the model. All model parameter changes will be made by WR as part of the managed service.

Deliverables

1. Up to five (5) budget scenarios will be built:
 - a. A Calibration simulation that illustrates an unlimited budget and where recommended treatments would be applied;
 - b. A budgeted simulation that applies to the Town's current budget;
 - c. A recommended budget simulation that will improve the overall health of assets;
 - d. Other Client scenarios.
2. Access to the online Capital Predictor portal and Power BI dashboards where the developed scenarios can be compared and contrasted to demonstrate the optimal ROI.

4.4.2 Report Workshop

This time will be used to review the asset lifecycle model and review the results and available reporting.

Deliverables

1. Presentation by WR's Subject Matter Expert to review the lifecycle model results.
2. WR will review the results of the different budget simulations that were run and recommend the most adequate budget.
3. Written or online documentation that details the results of the different budget scenarios and the recommended budgeted amount to successfully manage assets.

4.4.3 Managed Services

Following delivery of the lifecycle model, WR will provide managed services for ongoing support to Client staff to keep the Town's model up to date as infrastructure is added or repaired. These updates are provided on a quarterly basis, with data refreshes and new budget simulations once per year. In addition, WR will be available to answer questions regarding the existing model and budget simulations. For this proposal, the services for this subtask are included for the first year. If the Town needs to utilize the asset lifecycle modeling after year 1, the Managed Services fee would be required for each additional year.

Deliverables

1. Written or online documentation that details the results of the updated budget scenarios.

4.4.4 Project Management & Dashboard

The services for this subtask include:

1. Prepare maps and worksheets to facilitate data gathering related to the Project.
2. Hold project update meetings and communicate with the Client's designated project manager at agreed upon intervals.
3. Provide overall Project Management services to monitor the job progress, arrange resources for the Project, and communicate to the Client the status of the Project.

4. Develop visualizations using tools such as PowerBI, in conjunction with GIS, to visualize the cost-benefit analysis data from the report. The deliverable will be an interactive product that allows the end user to adjust parameters on demand to model different scenarios related to development and operational decision making, such as budgeted maintenance and rehabilitation.

4.4.5 Task Assumptions

WR has made the following general assumptions in the task list to derive the estimated cost for this project. It is the responsibility of the Client to validate these assumptions before signing the Acceptance. Deviations from these assumptions may impact WR's ability to successfully complete the project. Any changes in scope, schedule, or costs will be documented by the Project Manager, whether there is a cost impact or not.

- ▶ WR is not responsible for delays caused by missing data or other configuration information that is required to be available prior to the consulting service. Having the requested data and configuration information available prior to the consulting service may minimize delays so progress can be made quickly.
- ▶ Client shall use best efforts to identify all project-related key information to allow the project schedules to begin on time. Any changes to key information after Project kickoff may require a change to the task list.
- ▶ Parties agree to provide timely responses to task-related emails or phone calls to enable on-time completion of all assignments.
- ▶ At least a 24-hour notice cancellation shall be given by the Parties if required members for any scheduled meeting cannot attend. This shall allow sufficient time to cancel/re-schedule the meeting as soon as possible to keep the project on schedule.
- ▶ Data refreshes for Managed Services assumes the existing data schema does not change.

D. Designated Representatives

The designated representatives of the Owner and WithersRavenel for purposes of this Task Order shall be as follows:

For the Owner:

Primary Contact Person:..... Dirk Siebenbrodt, P.E.
 Title:..... Project Engineer
 Telephone Number - Office:.....(919) 557-3931
 E-mail Address:..... dirk.siebenbrodt@hollyspringsnc.gov

The Town's primary contact person shall have complete authority to transmit instructions, receive information, interpret, and define the Town's policies and decisions with respect to materials, equipment, elements, and systems pertinent to the pavement management program.

For the Consultant Engineer:

Primary Contact Person (Project Manager).....Steve Lander, P.E.
 Title:..... Director of Pavement Management
 Telephone Number - Cell:(336) 215-5521
 E-mail Address:..... slander@withersravenel.com

E. Additional Services

Services that are not included in Section C or are specifically excluded from this Agreement (see below) shall be considered Additional Services if those services can be performed by WR and its agents if requested in writing by the Client and accepted by WR. Additional services shall be paid by the Client in accordance with the Fee & Expense Schedule outlined in Exhibit II. The Additional Services are described below but are not limited to the following:

Project Management

- ▶ Additional Meetings/Site Visits;
- ▶ Adjacent property owner discussions;
- ▶ Neighborhood meetings;
- ▶ Attendance at formal regulatory meetings unless noted above;

Services by Others

- ▶ Geotechnical Services;
- ▶ Structural Services;

Geomatics Services (including survey)

Environmental Services

Design Services

Documents/Drawings

- ▶ Conceptual Drawings;
- ▶ Construction Drawings;
- ▶ Technical specifications;
- ▶ Contract documents;

Permitting Services

Services During Construction

General

- ▶ Survey/Data Collection and Reports associated with any additional streets/roadway segments that were not included in the listing by the Town and agreed by WR during the pre-survey

meeting with Town staff at the start of the Project;

- ▶ NCDOT or Private Roadways are not included in this scope of Services;
- ▶ Destructive or non-destructive material testing procedures;
- ▶ Any work previously provided in other proposals;
- ▶ Unless otherwise included in the Consulting services, evaluation of current practices, policies, procedures, or personnel for the purposes of performance or other improvements;
- ▶ Troubleshooting any issues related to IT infrastructure, including computer software not provided by Dude Solutions and/or GIS or other systems;
- ▶ Migration of data from other systems or locations, unless specified on the Order Form;
- ▶ Updating any of Town's source data;
- ▶ Export of data to any other systems or third parties other than those specified on the Order Form;
- ▶ Training in model development;
- ▶ Any other services not specifically listed within Section C.

The above list is not all inclusive and the Scope of Services defines the services to be provided by WithersRavenel for this project.

Both parties agree that certain tasks, e.g. reviews and approvals, are performed by governmental agencies and that all parties have limited influence on these agencies to meet the prescribed deadlines and that neither party is responsible for delays caused by governmental agencies.

F. Client Responsibilities

The following items will be provided by the Client and WithersRavenel will rely upon the accuracy and completeness of this information:

- ▶ Pavement Condition Survey
- ▶ Prior to WR beginning work, provide full information as to its requirements and scope for the Project.
- ▶ Prior to WR beginning work, assist WR by placing at its disposal all available information pertinent to the Project, including previous Powell Bill maps, Powell Bill Street list, old drawings, maintenance records, and any other data relative to the scope of the Project.
- ▶ Prior to WR beginning work, provide unit costs from previous maintenance contracts. In the case where the Town does not have historical data or costs for maintenance activities used in the past, WR will make assumptions. Unit costs developed by WR from local prevailing rates are approximate only. Opinions of costs are approximate only and can fluctuate due to many factors such as size of project, time of year, cost of raw materials, and number of bidders to name a few.
- ▶ Prior to WR beginning work, the GIS files should be provided and contain basic street inventory data which includes direction, street name, street type, begin and end descriptions, segment length, width, number of lanes, and pavement type.
- ▶ Give prompt written notice to WR whenever the Town observes or otherwise becomes aware of any defect in the Project, request additional scope, or timing of WR's services.
- ▶ Provide access to all the streets requested to be analyzed including ensuring street segments are open to vehicular travel at the timing of the condition field survey. Street segments may be excluded if access is not available to WR for the survey at the time of the field visit.
- ▶ Model Development
 - ▶ Designate a Project Manager. This person will interact directly with WR to set meeting times, coordinate staff, direct feedback, approve invoices and other tasks as required to help keep the project on track.
 - ▶ Determine and assemble data sources that will be used in the Model, unless otherwise indicated in this Task Order.
 - ▶ Provide access to Subject Matter Experts to answer any questions required by the Consultant related to the data, asset management processes, or financial information.
 - ▶ Complete data schema and/or data updates recommended by the Consultant and provide updated data to WR.
 - ▶ WR will host any required meetings using online screen sharing software (WebEx, Zoom, or similar). The Client is responsible for ensuring remote access for all Client participants.
- ▶ Reporting Workshop
 - ▶ WR will host any required meetings using online screen sharing software (WebEx, Zoom, or similar). The Client is responsible for ensuring remote access for all Client participants.
 - ▶ Client is responsible for reviewing all reports and documentation.
- ▶ Managed Services
 - Determine and assemble updates data sources that will be used in the Model, unless otherwise indicated in this Task Order.
 - Provide access to Subject Matter Experts to answer any questions required by the consultant related to the data, asset management processes, or financial information.
 - Review the output on the Model.

G. Expenses

WithersRavenel does not expect any expenses related to this project. Should expenses arise, they will be verified with the Town for approval on an as needed basis.

H. Compensation for Services

WR proposes to provide the services outlined in Section C on a lump sum basis with fees as shown below. Additional services required outside the Scope of Services in Section C and reimbursable expenses will be billed on a Time and Material basis in accordance with Exhibit II.

Task No.	Task Name	Model Development	Managed Services	Fee
Task 1	Pavement Condition Survey (PCS) & Report			\$40,400
Task 2	Asset Lifecycle Modeling (Pavement)			
	Pavement (154 Miles)	\$10,000	\$10,000	\$20,000
	Project Management & Dashboard			\$2,800
Task 3	Council Presentation			\$3,000
Task 4	Asset Lifecycle Modeling (Water and Sewer)			
	Water (213 Miles)	\$6,000	\$8,400	\$14,400
	Sewer (201 Miles)	\$6,000	\$8,400	\$14,400
	Project Management & Dashboard			\$4,000
Total				\$99,000

Invoices will be based on the percentage of completion for each lump sum task, and the hourly rate for WithersRavenel personnel in accordance with Exhibit II for hourly tasks, as accomplished during the billing period. Payment is due upon receipt of invoice. Interest shall be charged at the rate of one and one-half (1.5) percent per month on all balances due over 30 days from date of invoice.

The above fees are based on the estimated timelines noted in the proposal. Any adjustments to those timelines may result in additional fees.

This proposal is valid 60 days from issuance date which is the date of correspondence to the Client through email, cover letter, or other form of transmittal.

Also, note that the attached Exhibit II, Fee & Expense Schedule, is based on WR current rates and may be subject to change for hourly tasks and any additional services that occur after any adjustments go into effect.

I. Acceptance

Receipt of an executed copy of this agreement will serve as the written agreement between WithersRavenel and Town of Holly Springs for the basic services outlined in Section C of this document. The attached Standard Terms and Conditions (Exhibit I), Fee & Expense Schedule (Exhibit II), and other Exhibits shown below shall be considered a part of this agreement.

OFFERED BY:

ACCEPTED BY:

WithersRavenel

Town of Holly Springs



2/3/22

Steve Lander, P.E. Date
Director of Pavement Management

Randy Harrington Date
Town Manager

Attachments:

Exhibit I- Standard Terms and Conditions

Exhibit II- Fee & Expense Schedule

EXHIBIT I

Standard Terms and Conditions

WithersRavenel, Inc.

The proposal submitted by WithersRavenel, INC. ("CONSULTANT") is subject to the following terms and conditions, which form an integral part of the Agreement. By accepting the proposal, the services, or any part thereof, the CLIENT agrees and accepts the terms and conditions outlined below:

1. Payment:

- a) The CLIENT will pay CONSULTANT for services and expenses in accordance with periodic invoices to CLIENT and a final invoice upon completion of the services. Each invoice is due and payable in full upon presentation to CLIENT. Invoices are past due after 30 days. Past due amounts are subject to interest at a rate of one and one-half percent per month (18% per annum) on the outstanding balance from the date of the invoice.
- b) If the CLIENT fails to make payment to the CONSULTANT within 45 days after the transmittal of an invoice, the CONSULTANT may, after giving 7 days written notice to the CLIENT, suspend services under this Agreement until all amounts due hereunder are paid in full. If an invoice remains unpaid after 90 days from invoice date, the CONSULTANT may terminate the Agreement. If Consultant initiates legal proceedings to collect the fees owed, Consultant shall also be entitled to recover the reasonable expenses of collection including attorney's fees.

2. Notification of Breach or Default: The CLIENT shall provide prompt written notice to the CONSULTANT if CLIENT becomes aware of any breach, error, omission, or inconsistency arising out of CONSULTANT's services or any other alleged breach of contract or negligence by the CONSULTANT. The failure of CLIENT to provide such written notice within ten (10) days from the time CLIENT became aware of the fault, defect, error, omission, inconsistency or breach, shall constitute a waiver by CLIENT of any and all claims against the CONSULTANT arising out of such fault, defect, error, omission, inconsistency or breach. Emails shall be considered adequate written notice for purposes of this Agreement.

3. Standard of Care: CONSULTANT shall perform its services in a professional manner, using that degree of care and skill ordinarily exercised by and consistent with the standards of professionals providing the same services in the same or a similar locality as the Project. THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE THAT WILL OR CAN ARISE OUT OF THE SERVICES PROVIDED BY CONSULTANT OR THIS AGREEMENT.

4. Waiver of Consequential Damages/Limitation of Liability: CLIENT agrees that CONSULTANT's aggregate liability for any and all claims that may be asserted by CLIENT is limited to \$50,000 or to the fee paid to CONSULTANT under this Agreement, whichever is greater. Both CLIENT and CONSULTANT hereby waive any right to pursue claims for consequential damages against one another, including any claims for lost profits.

5. Representations of CLIENT: CLIENT warrants and covenants that sufficient funds are available or will be available upon receipt of CONSULTANT's invoice to make payment in full for the services rendered by CONSULTANT.

6. Ownership of Instruments of Service: All reports, plans, specifications, field data and notes and other documents, including all documents on electronic media, prepared by the CONSULTANT as instrument of service, shall remain the property of the CONSULTANT. The CONSULTANT shall retain all common law, statutory and other rights, including the copyright thereto. In the event of termination of this Agreement and upon full payment of fees owed to CONSULTANT,

CONSULTANT shall make available to CLIENT copies of all plans and specifications.

7. Change Orders: CONSULTANT will treat as a proposed change order any written or oral order (including directions, instructions, interpretations, or determinations) from CLIENT which requests changes in the Agreement or CONSULTANT's Scope of Services. If CONSULTANT accepts the proposed change order, CONSULTANT will give CLIENT written notice within ten (10) days of acceptance of any resulting increase in CONSULTANT's fees.

8. Opinion of Cost/Cost Estimates: Since the CONSULTANT has no control over the cost of labor, materials, equipment or services furnished by others, or over methods of determining prices, or over competitive bidding or market conditions, any and all opinions as to costs rendered hereunder, including but not limited to opinions as to the costs of construction and materials, shall be made on the basis of CONSULTANT'S experience and qualifications and represent its reasonable judgment as an experienced and qualified professional familiar with the construction industry; but the CONSULTANT cannot and does not guarantee the proposals, bids or actual costs will not vary significantly from opinions of probable costs prepared by it. If at any time the CLIENT wishes assurances as to the amount of any costs, CLIENT shall employ an independent cost estimator to make such determination.

9. Assignment and Third Parties: Nothing under this Agreement shall be construed to give any rights or benefits in this Agreement to anyone other than the CLIENT and CONSULTANT, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of the CLIENT and the CONSULTANT and not for the benefit of any other party. Neither the CLIENT nor the CONSULTANT shall assign, sublet, or transfer any rights under or interests in this Agreement without the written consent of the other, which shall not be unreasonably withheld. However, nothing contained herein shall prevent or restrict the CONSULTANT from employing independent subconsultants as the CONSULTANT may deem appropriate to assist in the performance of services hereunder.

10. Project Site: Should CLIENT not be owner of the Project site, then CLIENT agrees to notify the site owner of the possibility of unavoidable alteration and damage to the site. CLIENT further agrees to indemnify, defend, and hold harmless CONSULTANT against any claims by the CLIENT, the owner of the site, or persons having possession of the site which are related to such alteration or damage.

11. Access to Site: CLIENT is responsible for providing legal and unencumbered access to site, including securing all necessary site access agreements or easements, to the extent necessary for the CONSULTANT to carry out its services.

12. Survival: All of CLIENT's obligations and liabilities, including but not limited to, its indemnification obligations and limitations of liability, and CONSULTANT's rights and remedies with respect thereto, shall survive completion, expiration or termination of this Agreement.

13. Termination: Either party may terminate the Agreement with or without cause upon ten (10) days advance written notice, if the other party has not cured or taken reasonable steps to cure the breach giving rise to termination within the ten (10) day notice period. If CLIENT terminates without cause or if CONSULTANT terminates for cause, CLIENT will pay CONSULTANT for all costs incurred, non-cancelable commitments, and fees earned to the date of termination and through demobilization, including any cancellation charges of vendors and subcontractors, as well as demobilization costs.

14. Severability: If any provision of this Agreement, or application thereof to any person or circumstance, is found to be invalid then such provision shall be modified if possible, to fulfill the intent of the parties as reflected in the original provision. The remainder of this Agreement, or the application of such provision to persons or circumstances other than those as to which it is held invalid, shall not be affected thereby, and each provision of this Agreement shall be valid and enforced to the fullest extent permitted by applicable law.

15. No Waiver: No waiver by either party of any default by the other party in the performance of any provision of this Agreement shall operate as or be construed as a waiver of any future default, whether like or different in character.

16. Merger, Amendment: This Agreement constitutes the entire Agreement between the CONSULTANT and the CLIENT and all negotiations, written and oral understandings between the parties are integrated and merged herein. This Agreement can be supplemented and/or amended only by a written document executed by both the CONSULTANT and the CLIENT.

17. Unforeseen Occurrences: If, during the performance of services hereunder, any unforeseen hazardous substance, material, element of constituent or other unforeseen conditions or occurrences are encountered which affects or may affect the services, the risk involved in providing the service, or the recommended scope of services, CONSULTANT will promptly notify CLIENT thereof. Subsequent to that notification, CONSULTANT may: (a) if practicable, in CONSULTANT's sole judgment and with approval of CLIENT, complete the original Scope of Services in accordance with the procedures originally intended in the Proposal; (b) Agree with CLIENT to modify the Scope of Services and the estimate of charges to include study of the previously unforeseen conditions or occurrences, such revision to be in writing and signed by the parties and incorporated herein; or (c) Terminate the services effective on the date of notification pursuant to the terms of the Agreement.

18. Force Majeure: Should completion of any portion of the Agreement be delayed for causes beyond the control of or without the fault or negligence of CONSULTANT, including force majeure, the reasonable time for performance shall be extended for a period at least equal to the delay and the parties shall mutually agree on the terms and conditions upon which Agreement may be continued. Force majeure includes but is not restricted to acts of God, acts or failures of governmental authorities, acts of CLIENT's contractors or agents, fire, floods, epidemics, pandemics, riots, quarantine restrictions, strikes, civil insurrections, freight embargoes, and unusually severe weather.

19. Safety: CONSULTANT is not responsible for site safety or compliance with the Occupational Safety and Health Act of 1970 ("OSHA"). Job site safety remains the sole exclusive responsibility of CLIENT or CLIENT's contractors, except with respect to CONSULTANT's own employees. Likewise, CONSULTANT shall have no right to direct or stop the work of CLIENT's contractors, agents, or employees.

20. Dispute Resolution/Arbitration: Any claim or other dispute arising out of or related to this Agreement shall first be subject to non-binding mediation in accordance with the then-current Construction Industry Mediation Procedures of the American Arbitration Association ("AAA"). If mediation is unsuccessful, such claim or other dispute shall be subject to arbitration in accordance with the AAA's then-current Construction Industry Arbitration Rules. Any demand for arbitration shall be filed in writing with the other party and with the American Arbitration Association. CLIENT agrees to the inclusion in such arbitration (whether by initial filing, by joinder or by consolidation) of any other parties and of any other claims arising out of or relating to the Project or to the transaction or occurrence giving rise to the claim or other dispute between CLIENT and CONSULTANT.

21. Independent Contractor: In carrying out its obligations, CONSULTANT shall always be acting as an independent contractor and not an employee, agent, partner or joint venturer of CLIENT. CONSULTANT's work does not include any supervision or direction of the work of other contractors, their employees or agents, and

CONSULTANT's presence shall in no way create any liability on behalf of CONSULTANT for failure of other contractors, their employees or agents to properly or correctly perform their work

22. Hazardous Substances: CLIENT agrees to advise CONSULTANT upon execution of this Agreement of any hazardous substances or any condition existing in, on or near the Project Site presenting a potential danger to human health, the environment or equipment. By virtue of entering into the Agreement or of providing services, CONSULTANT does not assume control of, or responsibility for, the Project site or the person in charge of the Project site or undertake responsibility for reporting to any federal, state or local public agencies, any conditions at the Project site that may present a potential danger to the public, health, safety or environment except where required of CONSULTANT by applicable law. In the event CONSULTANT encounters hazardous or toxic substances or contamination significantly beyond that originally represented by CLIENT, CONSULTANT may suspend or terminate the Agreement. CLIENT acknowledges that CONSULTANT has no responsibility as a generator, treater, storer, or disposer of hazardous or toxic substances found or identified at a site. Except to the extent that CONSULTANT has negligently caused such pollution or contamination, CLIENT agrees to defend, indemnify, and hold harmless CONSULTANT, from any claim or liability, arising out of CONSULTANT's performance of services under the Agreement and made or brought against CONSULTANT for any actual or threatened environmental pollution or contamination if the fault (as defined in N.C.G.S. 22B-1(f)(7)) of CLIENT or its derivative parties (as defined in N.C.G.S. 22B-1(f)(3)) is a proximate cause of such claim or liability.

23. Choice of Law: The validity, interpretation, and performance of this Agreement shall be governed by and construed in accordance with the law of the State of North Carolina, excluding only its conflicts of laws principles.

24. Construction Services: If construction administration and review services are requested by the CLIENT, CLIENT agrees that such administration, review, or interpretation of construction work or documents by CONSULTANT shall not relieve any contractor from liability in regard to its duty to comply with the applicable plans, specifications, and standards for the Project, and shall not give rise to a claim against CONSULTANT for contractor's failure to perform in accordance with the applicable plans, specifications or standards.

25. Field Representative: If CONSULTANT provides field services or construction observation services, the presence of the CONSULTANT's field personnel will only be for the purpose of providing observation and field testing of specific aspects of the Project. Should a contractor be involved in the Project, the CONSULTANT's responsibility does not include the supervision or direction of the actual work of any contractor, its employees, or agents. All contractors should be so advised. Contractors should also be informed that neither the presence of the CONSULTANT's field representative nor the observation and testing by the CONSULTANT shall excuse contractor in any way for defects in contractor's work. It is agreed that the CONSULTANT will not be responsible for job or site safety on the Project and that the CONSULTANT does not have the right to stop the work of any contractor.

26. Submittals: CONSULTANT's review of shop drawings and other submittals is to determine conformity with the design concept only. Review of shop drawings and submittals does not include means, methods, techniques, or procedures of construction, including but not limited to, safety requirements.

EXHIBIT II

Fee & Expense Schedule

Description	Rate
Project Management	
Client Experience Manager	\$ 209
Assistant Project Manager	\$ 161
Project Manager	\$ 177
Senior Project Manager	\$ 193
Principal	\$ 225
Engineering	
CAD Technician I	\$ 96
CAD Technician II	\$ 107
Senior CAD Technician	\$ 128
Designer I	\$ 123
Designer II	\$ 134
Senior Designer	\$ 155
Project Coordinator I	\$ 91
Project Coordinator II	\$ 102
Senior Project Coordinator	\$ 118
Lead Project Coordinator	\$ 134
Project Engineer I	\$ 150
Project Engineer II	\$ 161
Project Engineer III	\$ 177
Staff Professional I	\$ 86
Staff Professional II	\$ 128
Staff Professional III	\$ 139
Staff Professional IV	\$ 171
Senior Staff Professional	\$ 166
Senior Project Engineer	\$ 193
Senior Technical Consultant	\$ 209
Zoning Specialist	\$ 246
Construction Administration	
Construction Manager I	\$ 139
Construction Manager II	\$ 150
Senior Construction Manager	\$ 171
Resident Project Representative I	\$ 86
Resident Project Representative II	\$ 102
Resident Project Representative III	\$ 118
Senior Resident Project Representative	\$ 128
Administration	
Administrative Assistant	\$ 54
Office Administration	\$ 59
Administrative Assistant I	\$ 70
Administrative Assistant II	\$ 80
Administrative Assistant III	\$ 91
Director of Marketing	\$ 91
Marketing Administration II	\$ 102
Marketing Administration I	\$ 80
Office Administrator I	\$ 102
Office Administrator II	\$ 107
Office Administrator III	\$ 112

Description	Rate
Geomatics	
Geomatics CAD I	\$ 85
Geomatics CAD II	\$ 105
Geomatics CAD III	\$ 120
Geomatics Project Manager I	\$ 150
Geomatics Project Manager II	\$ 160
Geomatics Project Professional I	\$ 135
Geomatics Project Professional II	\$ 155
Geomatics Principal	\$ 220
Geomatics Remote Sensing Crew I	\$ 195
Geomatics Remote Sensing Crew II	\$ 275
Geomatics Survey Crew I	\$ 140
Geomatics Survey Crew II (2 Man)	\$ 170
Geomatics Survey Crew III (3 Man)	\$ 210
Geomatics Senior Manager	\$ 190
Geomatics Survey Tech I	\$ 50
Geomatics Survey Tech II	\$ 80
Geomatics Survey Tech III	\$ 105
Geomatics Survey Tech IV	\$ 115
Geomatics Sr. Technical Consultant	\$ 200
Geomatics SUE Crew 1	\$ 175
Geomatics SUE Crew 2	\$ 245
Geographic Information Systems	
GIS Specialist	\$ 134
GIS Technician I	\$ 86
GIS Technician II	\$ 102
GIS Technician III	\$ 118
GIS Analyst I	\$ 102
GIS Analyst II	\$ 118
GIS Project Manager	\$ 150
Funding & Asset Management	
F&AM Intern I	\$ 50
F&AM Intern II	\$ 60
F&AM Project Consultant I	\$ 102
F&AM Project Consultant II	\$ 112
F&AM Project Consultant III	\$ 107
F&AM Project Consultant IV	\$ 118
F&AM Senior Project Consultant I	\$ 134
F&AM Senior Project Consultant II	\$ 139
F&AM Project Manager	\$ 150
F&AM Principal Consultant	\$ 203
F&AM Staff Professional I	\$ 80
F&AM Senior Project Manager	\$ 187
F&AM Senior Technical Consultant	\$ 225

Description	Rate
Environmental	
Environmental Tech I	\$ 90
Environmental Tech II	\$ 100
Senior Environmental Tech	\$ 120
Environmental Geologist I	\$ 110
Environmental Geologist II	\$ 125
Environmental Geologist III	\$ 135
Environmental Professional I	\$ 110
Environmental Professional II	\$ 125
Environmental Professional III	\$ 135
Environmental Project Engineer I	\$ 145
Environmental Project Engineer II	\$ 155
Environmental Project Engineer III	\$ 165
Sr. Environmental Project Engineer	\$ 180
Project Geologist I	\$ 145
Project Geologist II	\$ 155
Project Geologist III	\$ 165
Sr. Environmental Project Geologist	\$ 180
Environmental Assistant PM	\$ 155
Environmental Project Manager	\$ 165
Environmental Sr. Project Manager	\$ 175
Environmental Director	\$ 185
Environmental Principal	\$ 225
Environmental Project Scientist I	\$ 145
Environmental Project Scientist II	\$ 155
Environmental Project Scientist III	\$ 165
Sr. Environmental Project Scientist	\$ 180
Environmental Scientist I	\$ 110
Environmental Scientist II	\$ 125
Environmental Scientist III	\$ 135
Environmental Sr. Technical Consultant	\$ 205
Landscape Architecture/Planning	
Landscape Architect I	\$ 139
Landscape Architect II	\$ 150
Landscape Architect III	\$ 166
Landscape Designer I	\$ 118
Landscape Designer II	\$ 128
Planner I	\$ 112
Planner II	\$ 128
Planner III	\$ 150
Planning Technician	\$ 102
Senior Landscape Architect	\$ 182
Senior Planner	\$ 171
Expenses	
Bond Prints (Per Sheet)	\$ 1.75
Mylar Prints (Per Sheet)	\$ 11.00
Mileage	Per IRS
Delivery – Project Specific (Distance & Priority)	
Subcontractor Fees (Markup)	1.15
Expenses / Reprod. / Permits (Markup)	1.15

Effective January 1, 2022 – Schedule is subject to change



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 13.

Public Hearings

Title: Zoning Reassignment and Zone Map Adoption 22-REZ-01 - Legislative Public Hearing

Strategic Priority Area: Responsible & Balanced Growth

Staff Resource: Sean Ryan, Development Services

Action(s):

1. Conduct Legislative Public Hearing
2. Adopt Rezoning Ordinance RZS22-02 to adopt the statement of compatibility and approve rezoning, with adjustments as requested (if any).

Explanation:

- In order to implement the new zoning districts created by the new Unified Development Ordinance (UDO), adopted in November 2021, parcels will need to be reassigned to a comparable zoning district.
- Properties must be reassigned to a comparable zoning district since the current zoning districts will no longer exist following the March 1, 2022 effective date of the new UDO.
- For all developed properties and farms, the current use of the property will be permitted to continue.
- For most residential subdivisions, the zoning map update reflects a comparable residential zoning category and will not impact the use of the property.
- Property owners will NOT be required to make any changes to their property or the way they use it. The zoning map update only impacts future construction or if an owner decides to change the way property is being used (i.e. convert a residence to a commercial use).
- Staff mailed postcards to each impacted property owner notifying them of the reassignment.
- Staff hosted two workshops on January 26th and 27th.
- Eight requests for alternate reassignment have been submitted and are included in the Planning Board staff report and public comment attachments (1 request has been withdrawn). The Town Council may choose to make adjustments to the map based on public comment when adopting the rezoning ordinance. Adjustment request #9 for 9729, 9733, and 9737 Holly Springs Road was submitted after the Planning Board packet was submitted to the Planning Board but is included in the attachments for this item.
- One map adjustment has been added to the ordinance in Part 1 to reassign the recently approved "Norris Crossing" rezoning from R-10 CU to SR CU.

Planning Board Recommendation:

The Planning Board discussed the following issues and concerns on 02/22/2022:

Town Council Business Meeting
March 1, 2022

- Whether staff has discussed the process for rezoning with the property owners requesting adjustments since rezoning is typically required when a property is ready to develop and the reassignment does not change that process.
- The Planning Board did not recommend any of the requested adjustments by property owners.

Planning Board Recommendation:

The Planning Board recommended approval (8-0-1)

Note: Adjustment request #9 for 9729, 9733, and 9737 Holly Springs Road was submitted after the Planning Board packet was submitted to the Planning Board.

Background:

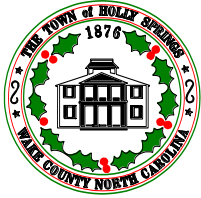
- The zoning map outlines the different zoning districts in the town's jurisdiction, showing where different kinds of buildings can be constructed and how buildings can be used (as homes, shops, offices, etc.).
- The Town of Holly Springs adopted a new UDO in November, 2021, following an 18-month process and an effective date of March 1, 2022.
- The primary goal of the new UDO is to implement the character-based approach to development outlined in the Land Use & Character Plan adopted in 2019.
- This re-zoning ordinance was advertised pursuant to statute.

Funding Source(s):

N/A

Attachment(s):

1. 22REZ01_ZoningReassignment_PB_02222022
2. 22REZ01_ZoningReassignment_AdjustmentRequest9
3. 22REZ01_ZoningReassignment_AdjustmentRequest10
4. 22REZ01_ZoningReassignment_Comments
5. 2022 New HS Zoning Map
6. 22REZ01_ZoningReassignment_OpenHousePresentation01262022
7. RZ22-02 Zoning Reassignment Ordinance



Town of Holly Springs Staff Report to the Planning Board

REQUEST FOR ZONE MAP CHANGE Zoning Reassignment 22-REZ-01

PETITIONER(S):

Town of Holly Springs

ANTICIPATED REVIEW SCHEDULE:

Planning Board: February 22, 2022

Public Hearing and Town Council Action: March 1, 2022

STAFF CONTACTS: Sean Ryan, Planning Manager

ATTACHMENTS:

Proposed Reassignment Map

Draft Rezoning Ordinance

PROJECT OVERVIEW

In November 2021, the Town Council adopted the new Unified Development Ordinance (UDO) with an effective date of March 1, 2022. Following the UDO adoption, staff began working with our consultant, Erin Perdu with Stantec, to reassign all properties (nearly 11,500 properties), with the exception of Planned Unit Developments, to a new, comparable, zoning district.

Purpose of Zoning Reassignment

- The purpose of reassigning properties to a comparable district in the new UDO was to ensure that properties could continue to be used as they are currently.
- The reassignment process was not used to proactively zone properties to a new land use category (i.e. existing residential property being reassigned to a higher density residential district or non-residential district, except as outlined in phase 2 or 3 of the zoning reassignment methodology).
- Property owners wishing to be reassigned to a different district are able to submit a petition to have their property rezoned through the typical rezoning process, allowing the Town Council to review the request separately from this reassignment.

For all developed properties and farms, the current use of the property will be permitted to continue following the reassignment. For most residential subdivisions, the zoning reassignment reflects a comparable residential zoning district and will not impact the use of the property. Even if the zoning regulations change, property owners will NOT be required to make any changes to the property or the way it is being used. The zoning reassignment only impacts future construction or if the property owner decides to change the way the property is being used (for example, converting a home into a shop, or expanding a business).

At the December 14, 2021 Town Council workshop, staff outlined the process and methodology that would be used to reassign properties to a comparable district under the new UDO.

Zoning Reassignment Process:

1. Adoption of UDO with new zoning districts – November 30, 2021
2. Zoning Reassignment website and interactive zoning map – December 2021/January 2022
3. Open House / Public Engagement
 - a. Postcards were mailed to every property owner subject to the reassignment which indicated the reassigned district and upcoming public engagement opportunities.
 - b. Open House #1: January 26 – 4 virtual open houses with 82 attendees
 - c. Open House #2: January 27 – 4 hour in-person open house with approximately 50 attendees.
 - d. Staff has responded to approximately 25 phone calls.
4. Evaluate map based on feedback received from public engagement.
5. Presentation of map to Planning Board for recommendation – February 22, 2022.
6. Presentation of map to Town Council for determination following a public hearing – March 1, 2022.

Zoning Reassignment Methodology:

1. Phase 1: Conversion to new districts.
Reassign all properties from the current UDO districts to the comparable district in the new UDO. The comparable districts were outlined in the draft UDO chapters presented to the public in the draft UDO (table cells outlined in bold indicate merged districts)

Current UDO District		Reassigned UDO District	
Symbol	Use Category	Symbol	Use Category
R-30	Residential	RR	Rural Residential
R-20	Residential		
R-15	Residential	SR	Suburban Residential
R-10	Residential		
R-8	Residential	NR	Neighborhood Residential
R-MF-8	Multifamily Residential	NCR	Neighborhood Center Residential
R-MF-15	High Density Multifamily Residential	MXR	Mixed-Use Residential
LB	Local Business	NMX	Neighborhood Mixed-Use
TV	Town Village	DMX	Downtown Mixed-Use
CB	Community Business	CB	Community Business
GB	General Business		
OR	Office, Research & Development Park	SP	Special District
BT	Business & Technology	BRT	Business and Research Technology
RT	Research & Technology		
IT	Industry & Technology	HI	Heavy Industrial
No existing district		RMX	Regional Mixed-Use
No existing district		MMX	Innovation Village Mixed-Use

1. Phase 2: Existing Development Adjustments
Verify approved developments or subdivisions have been reassigned to the appropriate zoning district based on approved lot sizes or land uses and reduce instances of neighborhoods or developments with multiple zoning districts.
2. Phase 3: Minimize Nonconformities
Review land uses or developments that would be made nonconforming and determine the comparable zoning district based on the Land Use & Character Plan future land use designation, where appropriate.

Public Comment Summary:

The public comments that have been received on the zoning reassignment can be categorized as follows:

1. General question/inquiry – property owner has contacted staff requesting general information on the project or the proposed reassignment for their property.
2. Concern about how a property was reassigned to a new district but has not specifically requested an alternative zoning district.
3. Concern about how a property was reassigned to a new district and has specifically requested an alternative zoning district or has identified a nonconformity. Seven individuals/groups have been identified in this category.

Alternate Zoning Reassignment Analysis:

Staff anticipated that, with approximately 11,500 impacted parcels, the initial methodology may not capture every adjustment that may be needed for the reassignment. As such, a robust public engagement strategy was designed to help alert property owners and provide opportunity to comment on the reassignment and provide feedback to staff where the reassignment may not have been appropriate for a specific property. Seven individuals/groups have requested their property be reassigned to a district other than the district reassigned to them using the initial reassignment methodology.

Staff has reviewed the properties and reapplied the methodology to each property with any additional information provided through the public comment process to verify if the reassignment was appropriate. The second review process was completed as follows:

1. Staff verified the current zoning was reassigned to the correct comparable district.
2. Staff verified the reassigned district was appropriate based on any existing development on the property.
3. Staff verified the reassigned district was appropriate based on any nonconformities.
4. Staff verified the Future Land Use designation of the property.

Staff considered the Future Land Use designation of the property. Where the Future Land Use designation indicated a more intense use category (residential density) or different use category (residential vs. commercial) for future development, staff concluded that a separate rezoning petition submitted by the property owner would be a more appropriate path forward. This would allow the Town Council to consider this request outside of the reassignment process and provide adjacent property owners the ability to provide feedback on the proposed zoning.

It is important to note that staff did not review the reassignment of the seven areas/properties in a manner that would result in a proactive rezoning to a new land use category (i.e. existing residential property being assigned to a higher density residential district or non-residential district, except as outlined in phase 2 or 3 in the methodology), as the reassignment effort is not meant to serve as a development based rezoning and is focused on reassigning the parcel to the most comparable new district.

Next Steps:

1. Town Council Public Hearing
 - a. The Town Council will hold a public hearing on the zoning reassignment on March 1, 2022. The public hearing has been noticed as required by NCGS 160D-602:
 - i. Notice of Public Hearing posted in News and Observer by half page ad on February 11 and February 18, 2022
 - ii. Mailed notice to impacted and adjacent property owners outside of the newspaper circulation area (Wake County).
 - iii. Posting of public hearing signs around town.
 - b. Additional notifications in addition to the minimum requirements of NCGS 160D-602:

- i. Mailed notice to all impacted owners for open house/information sessions on January 26 and 27 and notification of March 1st Public Hearing.
- ii. Posted notice on the Town website.

STAFF RECOMMENDATION TO THE PLANNING BOARD

PLAN CONSISTENCY STATEMENT:

Amending the Official Zoning Map is consistent with Vision Holly Springs: Town of Holly Springs Comprehensive Plan as the proposed Zoning Map implements the zoning districts of the Unified Development Ordinance (UDO) and provides the Town of Holly Springs the necessary tools, policies, and development standards to implement Vision Holly Springs. Specifically, the proposed Zoning Map implements the UDO's character based land use approaches outlined in the Land Use & Character Plan (Section 1) adopted in 2019 and provides opportunities for more mixed-use activity centers thought Holly Springs, provides context sensitive infill opportunities, and provides increased opportunities to diversify home & neighborhood choices in the community; the proposed Zoning Map establishes the zoning districts necessary to implement the goals and objectives stated in the Plan; and the proposed amendment to the Official Zoning Map is reasonable and in the public interest by maintaining existing neighborhoods, providing opportunities to expand the nonresidential tax base, generate economic activity for the community, and provide a unique and integrated development.

ZONE MAP CHANGE PETITION MOTION:

Motion that the Planning Board recommend the Town Council adopt the zoning reassignment map, rezoning #22-REZ-01 as submitted by the Town of Holly Springs, with the following recommended map adjustments (if any):

- **Specify recommended adjustments (if any)**

Agenda Item Completeness Checklist				
Staff Member	Approved for Distribution			Comments
	Yes	No	Initials	
Sean Ryan	X			

Adjustment Request #1:

Property Location: 4300 Sunset Lake Road

PIN: 0750303969

Current Zoning: R-20

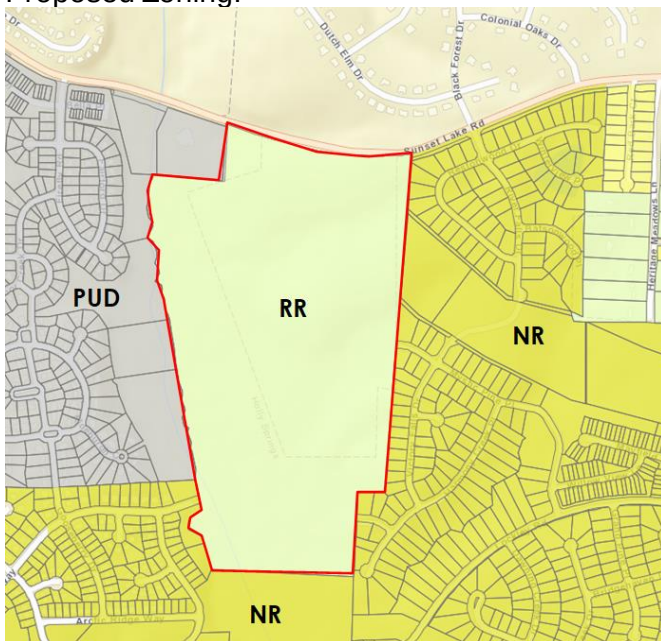
Reassigned Zoning: RR Requested Zoning: SR

Recommended adjustment: No. The property exceeds the minimum lot size requirements in RR (2 acre minimum) and is undeveloped. The Future Land Use designation is Mixed Residential Neighborhood which suggests a more intense district may be appropriate for future development.

Aerial Image:



Proposed Zoning:



Adjustment Request #2:

Property Location: 2536 & 2624 Avent Ferry Road

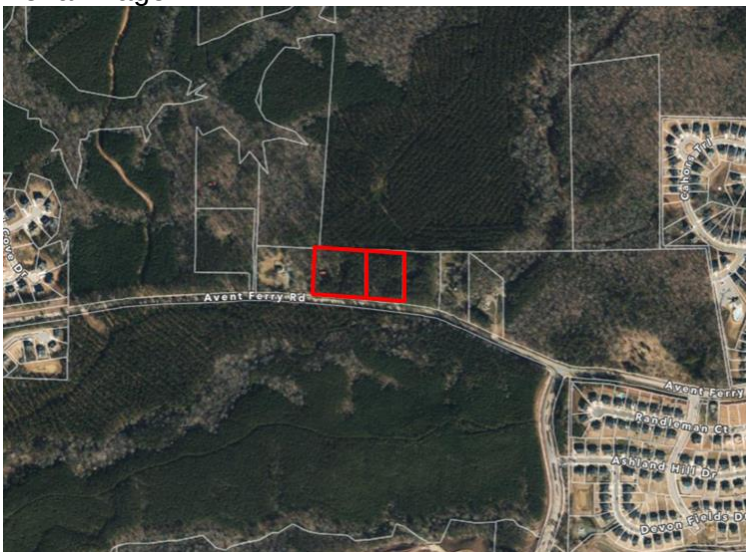
PIN: 0638424734; 0638421707

Current Zoning: R-30

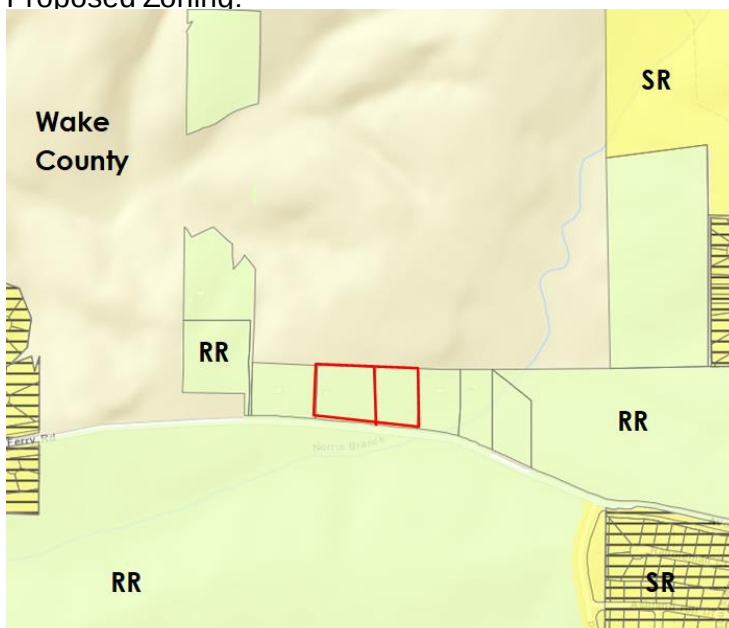
Reassigned Zoning: RR Requested Zoning: SR

Recommended adjustment: No. The properties exceed the minimum lot size requirements in RR (2 acre minimum). One property contains a detached residential dwelling and the other is undeveloped. The SR district is not consistent with adjacent properties. The Future Land Use designation is Conservation Neighborhood which suggests a more intense district may be appropriate for future development.

Aerial Image:



Proposed Zoning:



Adjustment Request #3:

Property Location: 602 Grigsby Avenue

PIN: 0648997871

Current Zoning: R-10

Reassigned Zoning: SR Requested Zoning: NR

Recommended adjustment: No. The property exceeds the minimum lot size requirements in SR (15,000 sq. ft. minimum) and is undeveloped. The NR district is not consistent with adjacent properties. The Future Land Use designation is Downtown Village District which suggests a more intense district may be appropriate for future development

Aerial Image:



Proposed Zoning:



Adjustment Request #4:

Property Location: Logging Road and Happy Hunting Hills assemblage

PIN: 0648373384; 0648473373; 0648477811; 0648573453; 0648565823; 0648576262; 0648388063

Current Zoning: R-20

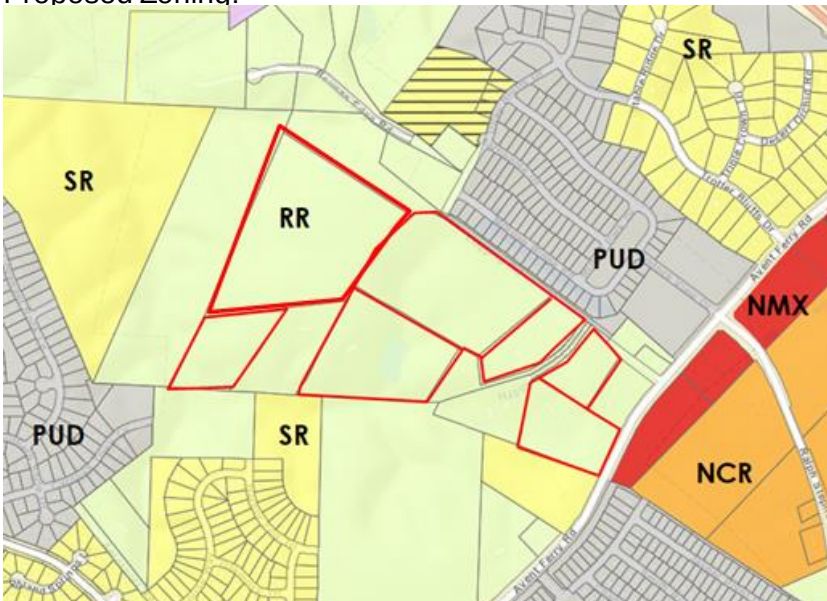
Reassigned Zoning: RR Requested Zoning: NR or NCR

Recommended adjustment: No. The properties exceed the minimum lot size requirements in RR (2 acre minimum) and contain detached residential dwelling units. A higher intensity residential district would generally be consistent with area development patterns. The Future Land Use designation is Mixed Residential Neighborhood which suggests a more intense district may be appropriate for future development.

Aerial Image:



Proposed Zoning:



Adjustment Request #5:

Property Location: 9748, 9752 & 9756 Holly Springs Road

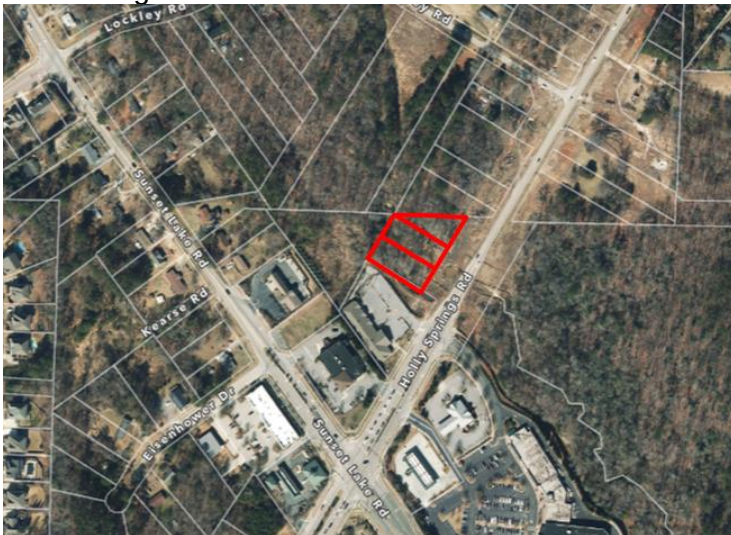
PIN: 066980474; 0669080592; 0669081559

Current Zoning: R-20

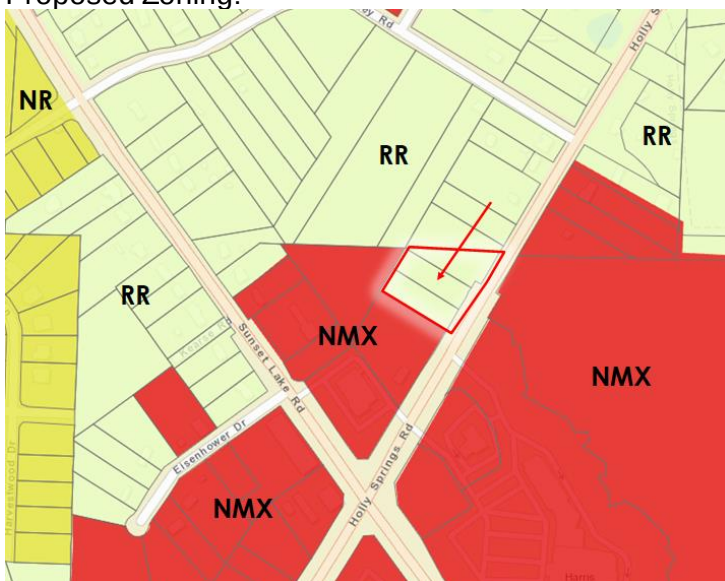
Reassigned Zoning: RR Requested Zoning: SR or NMX

Recommended adjustment: No, although lots would be nonconforming in RR since they do not meet the minimum 2 acre lot size (lots are currently nonconforming). The properties are currently undeveloped. Nonconforming lots may be developed as long as structures meet minimum setback requirements. The new RR setback requirements are the same as the R-20 setback requirements. The SR district is not consistent with adjacent zoning districts while NMX is consistent. The Future Land Use designation is Natural Area and Regional Center which suggests a more intense district may be appropriate for future development.

Aerial Image:



Proposed Zoning:



Adjustment Request #6:

Property Location: 4821, 4825, and 4829 Optimist Farm Rd

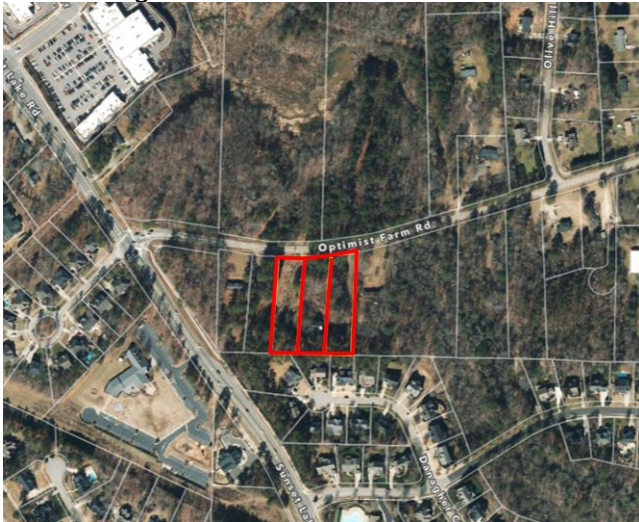
PIN: 066980474; 0669080592; 06690815590669159811; 0669157811; 0669158811

Current Zoning: R-30

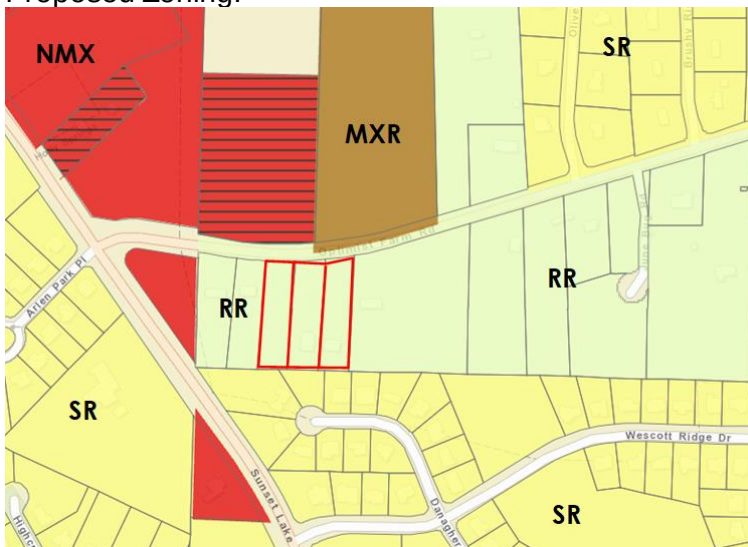
Reassigned Zoning: RR Requested Zoning: SR

Recommended adjustment: No, although lots would be nonconforming in RR since they do not meet the minimum 2 acre lot size, however do meet minimum 100 foot frontage requirement (lots are currently nonconforming for lot width). Two of three properties have detached dwellings and one property is undeveloped. Nonconforming lots may be developed as long as structures meet minimum setback requirements. The new RR setback requirements are less than the R-30 setback requirements. The SR district would be consistent with zoning to the south but other properties along Optimist Farm Road will be RR. The Future Land Use designation is Residential Neighborhood which suggests a more intense district may be appropriate for future development.

Aerial Image:



Proposed Zoning:



Adjustment Request #7:

Property Location: 3957 Circle Drive; 3961 Circle Drive; 4629 Lockley Road; 3953 Circle ; 4000 Clyde Drive; 9732 Holly Springs; 9720 Holly Springs Road; 9716 Holly Springs Road; 0 Holly Springs Road

PIN: 0659795377; 0659994042; 0669082856; 0669092571; 0669094251; 0669092410; 0669095208; 0669094124; 0669093634

Current Zoning: R-20

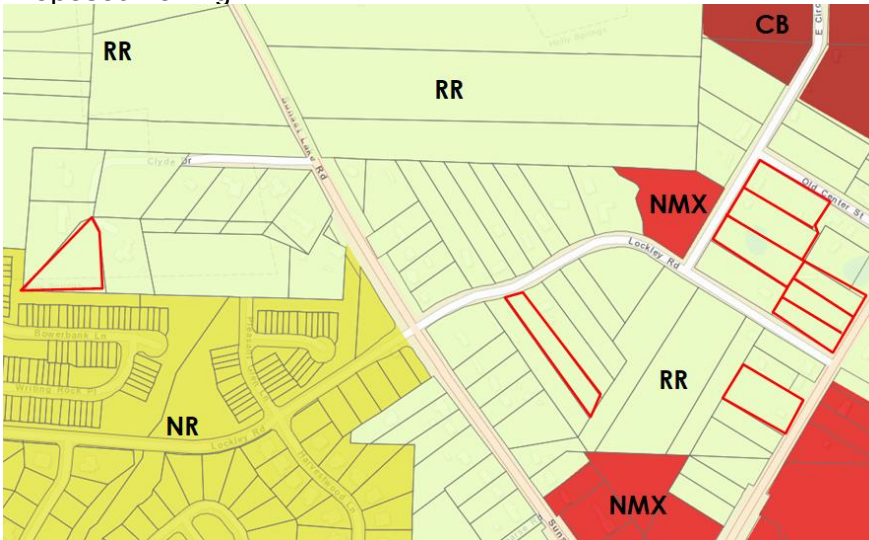
Reassigned Zoning: RR Requested Zoning: SR

Recommended adjustment: No, although some lots would be nonconforming in RR since they do not meet the minimum 2 acre lot size. Nonconforming lots may be developed as long as structures meet minimum setback requirements. The new RR setback requirements are the same as the R-20 setback requirements. The SR district is not consistent with adjacent zoning districts and would create a patchwork of different zonings. The Future Land Use designation is Natural Area, Mixed Residential Neighborhood, and Regional Center which suggests a more intense district may be appropriate for future development.

Aerial Image:



Proposed Zoning:



Adjustment Request #8:

Property Location: 225 Douglass Street

Withdrawn at request of owner

Adjustment Request #9: (received after Planning Board Packets sent to Planning Board)

Property Location: 9729, 9733, and 9737 Holly Springs Road

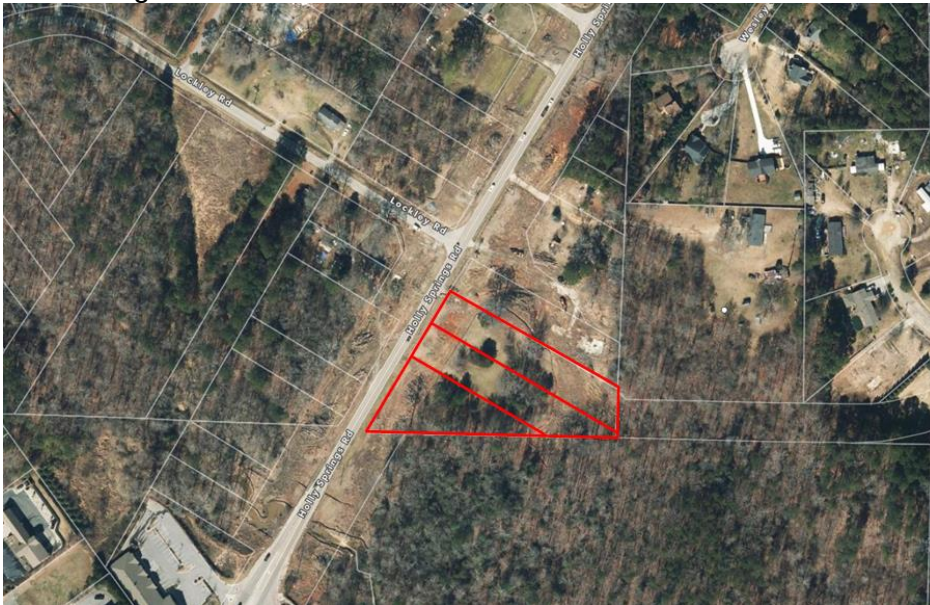
PIN: 0669086724, 0669086860, and 0669084669

Current Zoning: LB Local Business

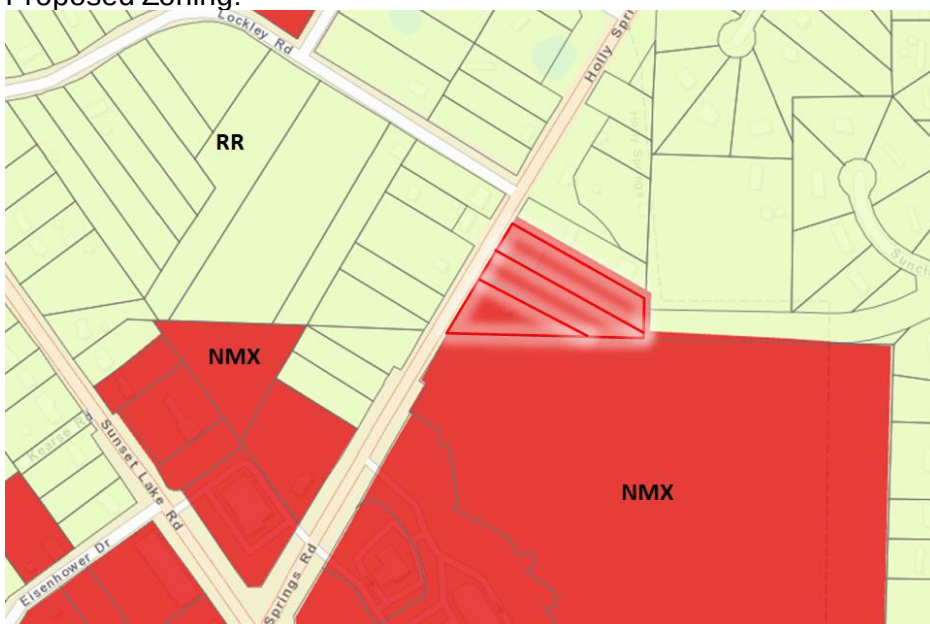
Reassigned Zoning: NMX Requested Zoning: CB or RMX

Recommended adjustment: No, the lots are currently vacant and no nonconforming uses have been identified. The Future Land Use designation is Mixed Residential Neighborhood suggesting that a more intense commercial district, such as CB or RMX, would not be appropriate.

Aerial Image:



Proposed Zoning:



Adjustment Request #10: (received after Planning Board Packets sent to Planning Board)

Property Location: 975 Avent Ferry Road

PIN: 0648678697

Current Zoning: LB Local Business

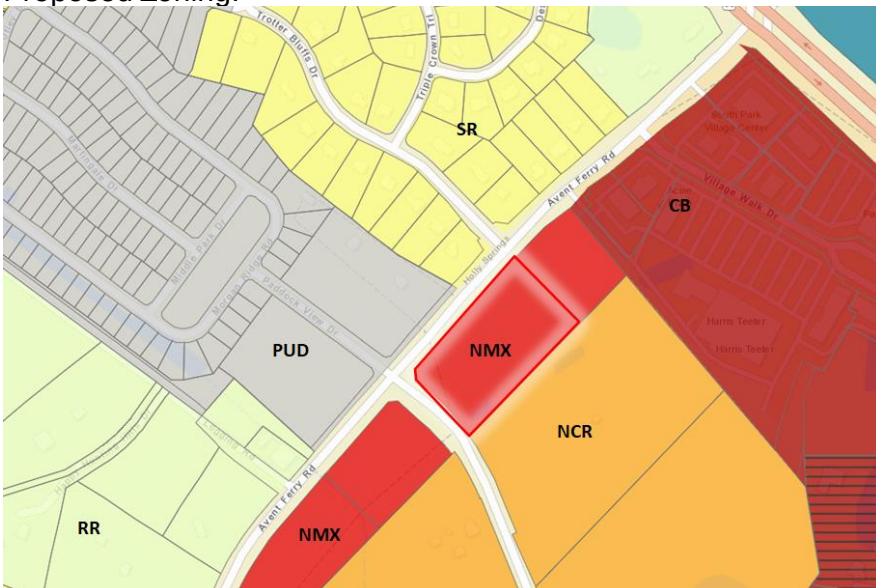
Reassigned Zoning: NMX Requested Zoning: CB or RMX

Recommended adjustment: No, the lot is currently vacant and no nonconforming uses have been identified. The Future Land Use designation is Mixed-Use Center suggesting that NMX, CB, or RMX may be appropriate, although RMX is intended for more regional centers such as the NC 540 area. NMX zoning is located northeast of the property with CB zoning located further northeast along Avent Ferry Road.

Aerial Image:



Proposed Zoning:



Open House Sign-in Sheet - January 27, 2022



Zoning Reassignment Please Sign-In

January 27, 2022

About 65

*Some People didn't
Sign-in*

Name	Full Mailing Address	E-Mail	Phone
1. Duane Larick	12405 Holly Springs - New Hill Rd	duane.larick@gmail.com	919 630 9898
2. Steve Macar	2305 Avenet Ferry		
3. Dennis Harris	9646 Holly Springs Rd	dleharris48@gmail.com	919 815-8686
4. Phillip O. Yates	3948 Circle DR	JOJOE221948@gmail.com	919 815-8686
5. Willis Lunsford	3225 - Brookst	NO	919-5673073
6. William Durt	5717 Hilltop Rd Fuquay-Varina, NC		919-524-6274
7. James Adam	113 W. maple Ave Holly Springs		919 552-9101
8. Charles Burt			919 964 3866
9. Jon Harrison	208 Pine Orchard Ct. Holly Springs	harrison.billpay@yahoo.com	(919) 332-4649
10. Lizzie N. Bass	500 Grigsby Ave, Holly Springs	lizzie.bass@bassbass@gmail.com	(919) 524-8584
11. Tamara Smith		temarasmitthreth@gmail.com	919 441-7401
12. Robert Forcum	1001 1066 NE RD. HS	forsprink@comcast.net	919 285 9101
13. Dan Riley	1225 Happy Hunting Hills HS	brunhater23@aol.com	
14. Anya	1212 Happy Hunting Hills	ANYANCE@gmail.com	919-444-7691



Zoning Reassignment Please Sign-In

January 27, 2022

Name	Full Mailing Address	E-Mail	Phone
1. James & C.L. Michael	4216 New Hill - Hollenys Rd	UNEKARE find farm @ EarthLink.net	919-3664515
2. Ray & Pam Thaxton	945 Logging Rd.	prothaxton@earthlink.net	919-402-5885
3. Mervyn Wilson Sr.	P.O. Box 523	REVAWIL@bellsouth.net	919-924-6002
4. Glenn Futrell	150 Tower View Court Cary, N.C.	gfutrell@JCS Corp.com	919-612-5245
5. Kevin & Raquel Bergeron	104 Cherry Branch Ct. 27516	KEVINBERGERON@yahoo.com	973-349-2690
6. Danny Norio	5512 Quail Glen Dr	Norio's boys 2 yds.com	919-418-6273
7. Robert Blake	321 Sycamore Creek Dr	RLAKE1@nc.rr.com	919-577-9794
8. Jeffrey W. Vanover	204 Holbrook Hill Lane	jwvanover@gmail.com	630-677-3204
9. Joe Peacock	5524 Brushy Meadows Dr FV	JANPEACOCK@aol.com	919-818-0214
10. Kathryn Bunn	7928 Twin Pines Way, FV	kathryn@nclegisl.com	919-796-1678
11. Amon Afwater	412 Holly Spg Holly Spg NC		919-552-0706
12. Yolanda Masu		Ywilsonrealtor@gmail.com	919-848-9108
13. Alan Jones	3128 AVENT FERRY RD	abjco2@yahoo.com	919-971-7404



Zoning Reassignment Please Sign-In

January 27, 2022

Name	Full Mailing Address	E-Mail	Phone
1 Ken Jarvis	716 Avenet Ferry Rd.	kjarvis@nc.rr.com	919/630-7552
2 Gromafin	4143 Kings Fork Rd, Cary	climatic@qoi.com	919 469 2291
3 J.C. HAMPTON	9409 HOLLY SPRINGS RD. APEX 27539	---	919 625 0714
4 Bill + Pat Berman	5316 Impatiens Ct HS	wberman@bellsouth.net	919-303-9114
5 DON SCHOCUP	213 W ELM AVE	donschocully@gmail.com	814-243-2150
6 Elizabeth Stricker	416 Cottonwood Ln HS	lizstrycker@gmail.com	408-483-1517
7 Sean Stricker	416 Cottonwood Ln. HS	seanfact@gmail.com	408-661-0901
8 Aubrey Flamin	316 Wescott Ridge Dr HS	atcountse@yahoo.com	919-307-4295
9 Amanda Davis	4704 Linkeland Dr HS	amanda@freeshoecorality.com	919-633-7562
10 Gail Banks	304 Ash Ct HS	joliblanks@gmail.com	980 253 5452
11 JOHN MYERS	7208 FALLS OF WESSE RD STE 101 RALEIGH, NC	JOHN@JPM5077.COM	919 306-3330
12 Scott Ohara	2624 Avenet Ferry Rd HS	scotthara1@yahoo	9199710869
13 Mary Rossini	236 Springside Drive	jtfan99@hotmail.com	919 552 4013
14 DON BARLOW, DIANE STALLON	5724 SALINAS CT	zeezee00@gmail.com	---



Zoning Reassignment Please Sign-In

January 27, 2022

Name	Full Mailing Address	E-Mail	Phone
1. John + Barbara Keating	101 Triple Crown Trail	barbara.keating@ycyaho.com	(707) 479-0540
2. Lew Coleman	143 gremar Dr	lcolemans@ycyaho.com	416.762.7277
3. Ramesh Patel	200, Copeside Ave.	ramesh_village - Inn @ yahoo.com	
4. Scott Bahr	7025 MEADOW RARE	osmail.com	cell # 443-848-9333
5. Gina Crapp	229 Cobblepoint Way HS	scott@apermarine.com	919-303-0198
6. Rick Jones	225 Old Rider Dr	gina@clappvealestate.com	919 818 3916
7. Bill Barry	401 W Ballantine St	AT6116@yahoo	919 552-2879
8. Harry Gray	208 Advent Meadows Ln	SPARLYSTED@gmail	919 567 1657
9. Thomas McCrity	132 Virginia Creek Drive	Hegray@Live.com	919 346-1310
10. Jeff Rider	4034 BERMUDA EDGE RD	tanajul@ycyaho.com	910.213-4409
11. John Adcock	7429 Rouse Holly Springs	SUTTONNISE@gmail.com	919.369.7910
12. Matt Mason	887 Howell Mill, Suite 3300 Atlanta	john.adcock@live.com	919 616 0527
13. George Kimble	237 Bass Lake Rd	mmason@gatewayventures.com	678 778 6288
		Kimble.george@gmail.com	919-868-9418



Zoning Reassignment
Please Sign-In

January 27, 2022

Name	Full Mailing Address	E-Mail	Phone
1. Virginia Kornblith	2804 Mills Lake Wynd, HS.	matte@SoldMyListing.com	919-795-0146
2. Matt Vance	5705 Kasha Drive	claudiacofield@gmail	919-818-1839
3. Claudia Cofield	5636 Easton St	shamad@tr.landproperty.com	919-971-4286
4. Rehab Hamad	1000 Crescent Green Suite 101 Cary NC	glennk@hotmail.com	856-261687
5. Glenn Koduka	413 W. Ballentine		
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			

Adjustment Request #1:

Property Location: 4300 Sunset Lake Road



Zoning Reassignment Comment Card

Sean Ryan
(SR District)

I am requesting SR for 4300 Sunset Lake Road, Apex
the Mota Family LLC ~ 94 acres

Meeting Date:

Jan 27, 2022

Name:

Elizabeth Mota, manager Mota Family LLC

Address/City/ZIP:

643 Kingsfork Rd, Cary, NC

E-mail:

climata@aol.com

Questions or additional comments?

e-mail us at: development@hollyspringsnc.gov

Adjustment Request #2:

Property Location: 2536 & 2624 Avent Ferry Road



Zoning Reassignment Comment Card

Please consider Rezoning 2624+2536 Aventerry Rd to SR from RR IN new Zoning proposal. there is enough ROAD frontage to allow for ⑤ Additional .8 Acre lots to be Allowed under SR where AS only ① addition House under RR. Neither lot has additional perk sites to build on and will need to connect to sewer system near Existing pump house. It is Not cost effective to connect ① house/lot whereas ⑤ lots + houses becomes cost effective. Plan would be to ~~separate~~ Move lot line on Existing house + Divide Remaining

Meeting Date:

1/27/22

Name:

Scott O'Hara

Address/City/ZIP:

2624 Aventerry Rd + 2536 Aventerry Rd AS 27540

E-mail:

Scott.ohara-1@yahoo.com

Questions or additional comments?

e-mail us at: developmentsservices@hollyspringsnc.gov

Future plan is Conservation Neighbor hood.

Adjustment Request #3:

Property Location: 602 Grigsby Avenue



Zoning Reassignment Comment Card

602 Grady Avenue

Rezone to NR to accommodate attached
dwellings

Meeting Date: 1/27/22

Name: Joe Coleman

Address/City/ZIP: 163 Gramer Dr.

E-mail: jcolem@hollyspringsnc.com

Questions or additional comments?

e-mail us at: development@hollyspringsnc.gov

Adjustment Request #4:

Property Location: Logging Road and Happy Hunting Hills assemblage



Zoning Reassignment Comment Card

With new deer neighborhood - Morgan Park &
Holly Glen we should at least be SR Zoning.

This RR designation devalues our property.

Meeting Date: 1-27-22

Name:

Ruth Thornton

Address/City/ZIP:

945 Loxins Rd, HS 27540

E-mail:

prthornton@comcast.net

Questions or additional comments?

e-mail us at: development@hollyspringsnc.gov



Zoning Reassignment Comment Card

Due to surrounding properties, ie, Morgan Park & Holly Glen - we would be better suited to SR zoning, allowing us to sell to developers if possible. This current allocation is devaluing our property & makes our property more difficult to sell.

Meeting Date: 1/27/2022

Name: ~~Pam~~ Pam Thaxton

Address/City/ZIP: 945 Loxing Rd HS 27540

E-mail: pthaxton@embaymail.com

Questions or additional comments?

e-mail us at: development@hollyspringsnc.gov



Zoning Reassignment Comment Card

We request exclusion from the RR zoning and that our zoning change to SR. RR zoning significantly adversely affects the value of our 10.5 acres. We would lose a vast sum of money in potential value. We are surrounded by dense residential + commercial develop. and need a zoning more consistent with our surroundings. We are definitely not located in an agricultural area. Two developers have already tried to get approval to develop our property. If RR zoning will eliminate our chance

Meeting Date: 01/27/2022

Name: ROBERT + LINDA FORCUM

Address/City/ZIP: 1001 LOSSING RD HTS 27540

E-mail: forsprink@comcast.net

Questions or additional comments?

e-mail us at: development@hollyspringsnc.gov



Zoning Reassignment

Comment Card

Town 20 acres along Loggin Rd Happy Hunting Hills
I now have 1300+ sq ft of new building on the side of the hill in
back. I can walk to town thru the forest in the street
firehouse is my neighbor. Conversion to R seems
completely ridiculous. SR is the only thing that makes
sense. The RR designation completely devalues my
property.

Meeting Date:

1/27/22

Name:

ANVA MCGUIRK

Address/City/ZIP:

1212 Happy Hunting Hills Dr

ILs 27540

E-mail:

ANVAMEG@Gmail.com

Questions or additional comments?

e-mail us at: development@hollyspringsnc.gov



Zoning Reassignment Comment Card

Requesting SR in New Zoning
The cul-de-sac surrounded by Morgan Park
or Holly Glenn

Meeting Date: 1-27-2022

Name: DAN RIDLEY

Address/City/ZIP: 1225 Happy Hunt in Hills Dr, Holly Springs

E-mail: danhunter2031@yahoo.com

Questions or additional comments?

e-mail us at: developmentservices@hollyspringsnc.gov

Sean Ryan

From: Anya <anyamcg@gmail.com>
Sent: Tuesday, February 15, 2022 10:14 AM
To: Kathy Carlisle; Sean Ryan
Cc: Pam & Ray Thaxton; Ron Hobbs; Janet Hobbs; Dan Ridley; Linda Forcum; forsprink
Subject: --[EXTERNAL]--Planning Board Letter
Attachments: Future-Land-Use-Plan-Map.pdf; UDOTableHighlited.pdf; Table1--ComparisonTableofZoningDistricts.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

To: Ms. Kathy Carlisle, Development Review Coordinator, Town of Holly Springs

Ms. Carlisle,

Please forward the letter below and 3 attachments to the Planning Board members for their consideration at the February 22, 2022 meeting.

Please confirm receipt of this email and that the materials have been received by the Planning Board members.

Thank you.

cc: Mr. Sean Ryan, Planning Manager, Town of Holly Springs

February 15, 2022

To: Planning Board, Town of Holly Springs

Planning Board Members:

We recently learned that the town intends to update its zoning map to reflect changes made to the Town's UDO and Future Land Use Map (FLUM). The Town has informed us that it intends to change our zoning from R20 to Rural Residential. Our properties are just off Avent Ferry, along Logging Road.

We object to the Town's intention to rezone our properties Rural Residential and request a zoning change to Neighborhood Residential or Neighborhood Center Residential for the following reasons:

In July 2018, property owners in our neighborhood presented to the Town Council reasons why we opposed changes to Comprehensive Plan Amendment 18-CPA-04. We successfully convinced the Town Council that our properties should be designated Mixed Residential Neighborhood and NOT Rural Residential. The current

FLUM (attached--with our properties outlined in Blue) reflects the changes approved by the Town Council on Aug 7, 2018, and shows our properties currently designated as Mixed Residential Neighborhood.

In November 2021, the Town of Holly Springs adopted a new Unified Development Ordinance (UDO) which goes into effect March 1, 2022. The new UDO dictates how new zoning districts will correlate with the FLUM designations. According to the UDO, properties designated as Mixed Residential Neighborhood should be zoned either **Neighborhood Residential (NR)** or **Neighborhood Center Residential (NCR)**. (See UDO, Section 2, table 2.1 also attached) The current zoning proposal of Rural Residential is inconsistent with both the FLUM and the UDO.

In addition to a zoning of NR or NCR being consistent with the town's UDO and FLUM, they are also consistent based on our location:

- We have dense residential development on either side: Holly Glen and Holly Glen Overlook to our West and Morgan Park immediately adjacent to our East. Autumn Park is across Avent Ferry from us, and much of the neighboring properties on Avent Ferry are zoned for Local Business. We now even have a Sheetz gas station in the neighborhood.
- Nearby is a large "mixed use" designated track including significant commercial development: Harris Teeter, Good Will, and the many other establishments in that shopping center are within easy walking distance.
- From Logging Road to the stop light leading into the shopping center is 1460 feet.

Finally, attached is Table 1 which compares three of the Town's zoning descriptions to the properties located on Logging Road. From the comparisons in this table, it is clear that zoning our properties Rural Residential is inconsistent with the Town's UDO and Future Land Use plan. A Rural Residential designation does not reflect the reality of where we live. The Rural Residential designation is not only inappropriate, but it is detrimental to the value of our properties.

We hope that the misalignment of the new proposed zoning on our properties with the FLUM and UDO was an oversight and will be remedied before the new Zoning Map updates are accepted.

We request the Planning Board vote to exempt our properties from a Rural Residential zoning, and consistent with the Town's UDO and FLUM, vote to assign our properties a zoning of Neighborhood Residential or Neighborhood Center Residential.

Thank you for your consideration.

Anya McGuik, 1212 Happy Hunting Hills Dr., Holly Springs, NC 27540

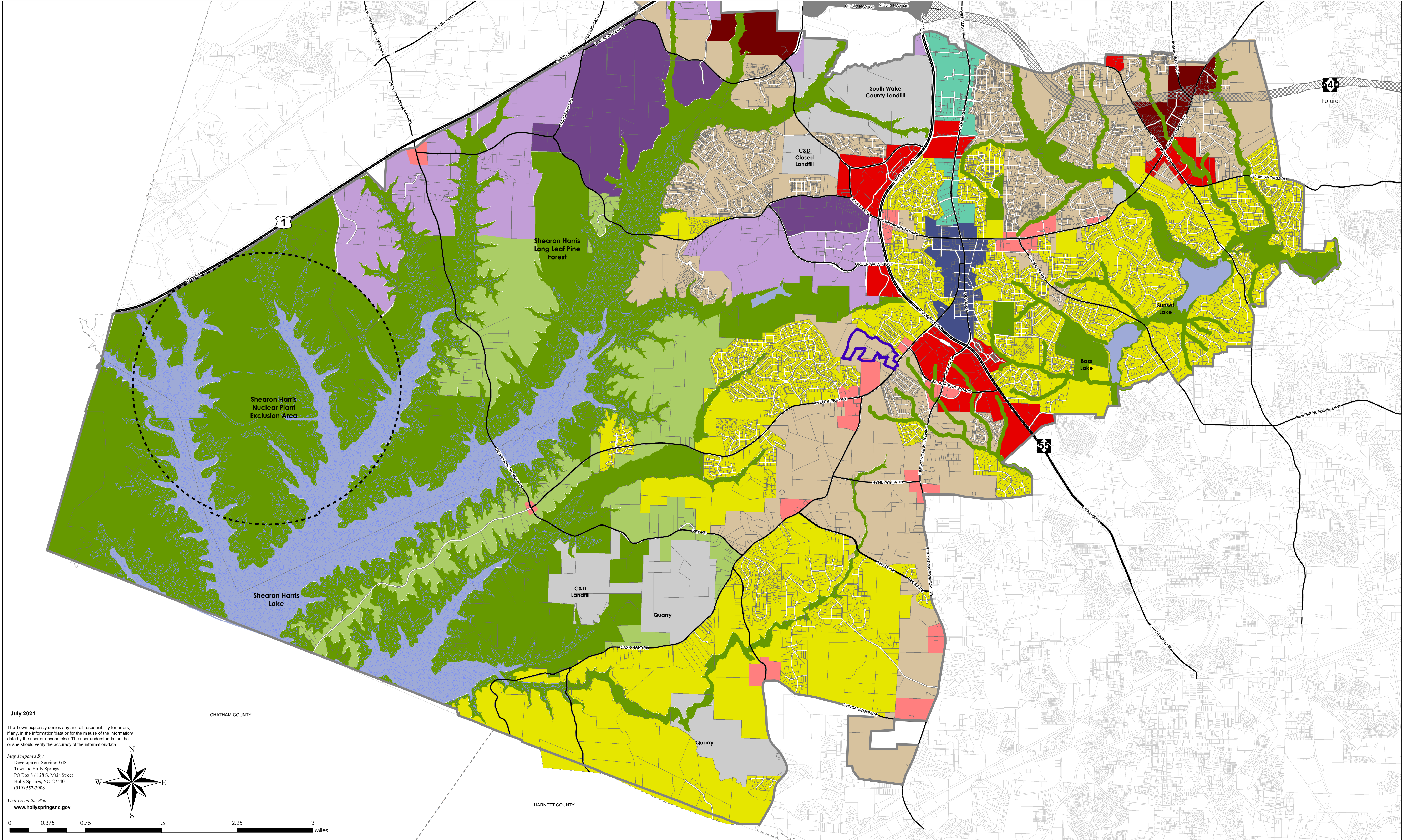
Ronald and Janet Hobbs, 201 Trelawney Ln., Cary, NC 27519

Ray and Pamela Thaxton, 945 Logging Rd. , Holly Springs, NC 27540

Dan Ridley, 1225 Happy Hunting Hills Dr., Holly Springs, NC 27540

Robert and Linda Forcum, 1001 Logging Rd., Holly Springs, NC 27540

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.



PLACES TO PRESERVE

- Natural Area
- Water
- High Lake Level

PLACES TO ENHANCE

- Conservation Neighborhood
- Residential Neighborhood
- Mixed Residential Neighborhood

PLACES TO TRANSFORM

- Business & Industrial
- Special Use
- Neighborhood Center
- N. Main Street District
- Downtown Village District
- Mixed-Use Center
- Regional Center
- Innovation Village

**Vision Holly Springs
Land Use & Character Plan**

Future Land Use



TABLE 2.1 ZONING - FUTURE LAND USE DESIGNATIONS (N1)

		CHARACTER AREA & FUTURE LAND USE MAP DESIGNATIONS											
		Natural Area (N2)	Conservation Neighborhood (N3)	Residential Neighborhood	Mixed Residential Neighborhood	Neighborhood Center	N. Main Street District	Downtown Village District	Mixed-Use Center	Regional Center	Innovation Village	Business & Industrial	Special Use
ZONING DISTRICT	RR - Rural Residential		X	X									
	SR - Suburban Residential		X	X									
	NR - Neighborhood Residential		X	X	X								
	NCR - Neighborhood Center Res.				X	X	X						
	MXR - Mixed-Use Residential					X	X						
	NMX - Neighborhood Mixed-Use					X	X		X				
	DMX - Downtown Mixed-Use							X					
	RMX - Regional Mixed-Use								X	X			
	CB - Community Business						X		X				
	SP - Special District										X	X	X
	IVMX - Innovation Village Mixed-Use										X		
	BRT - Business & Research Technology											X	
	HI - Heavy Industrial											X	X

TABLE 2.1 - NOTES

N1	The Future Land Use Map provides general guidance on where particular base zoning districts are appropriate in the Town, however in some cases base zoning districts may differ from the character area designation identified in this table.
N2	All districts may have natural areas, but they are not required.
N3	Subdivisions in the SR and NR districts when using Conservation Subdivision option.

Town's Descriptions of Zoning Districts Compared to Logging Road Properties

Town's Description of Rural Residential District	Logging Road Properties
Allows agriculture uses, rural residential uses, preserves prime agriculture land, and protects open areas and other rural areas from the encroachment of scattered urban type uses that may inhibit the overall development of the community in accordance with the Comprehensive Plan.	Our properties are located adjacent to Morgan Park and Holly Glen subdivisions. Our properties are not "prime agricultural land" and the suggestion they are suitable for agricultural use is absurd.
Not expected to be developed or supported with public water and sewer in the short-term and may accommodate very low-density residential land use including conservation subdivisions and limited public and institutional uses.	Our properties are highly desirable and have received significant interest from developers.
Located near the periphery of the jurisdictional boundary and in the Town's Extraterritorial Jurisdiction.	We are not located near the periphery of a jurisdictional boundary. Our properties are completely within the Town's city limits and bordered by Morgan Park and Holly Glen subdivisions.
Types of uses permitted: detached homes, manufactured homes, bed and breakfasts, animal boarding and kennels, funeral homes, veterinary clinics.	Other than detached homes, it is highly improbable that the Town would approve a development of manufactured homes for our properties. None of the current property owners have any interest in our properties being used for animal boarding, kennels, funeral homes or veterinary clinics. Due to our location these types of uses would be undesirable.

Town's Description of Neighborhood Residential District	Logging Road Properties
Protect, promote, and maintain the development of detached and attached dwellings on different lot sizes that vary enough to provide a range of home choices in the same neighborhood	Because our properties are bordered by Morgan Park and Holly Glen, they are highly suitable for this type of development.
Expected to be compact in form and utilize a connected street and open space network and a variety of lot and house sizes within the block.	There is already in place a stub out connection to Morgan Park from Logging Road. Although Logging Road is a private road, the Town has also indicated an intention to use Logging Road as a connector road. Based on developer interest, our properties are suitable for this type of use.
For those properties in walking and biking distance to Commercial & Mixed- Use Districts, this district is expected to orient its highest densities towards those areas	We can walk or bike to commercial properties, such as Sheets, Goodwill, ABC Store, Harris Teeter, CVS, restaurants, banks etc.
Types of uses permitted: attached and detached dwellings, family care homes, bed and breakfasts, recreation facilities	Our properties are highly suitable for this type of development.

Town's Description of Neighborhood Center Residential District	Logging Road Properties
Encourages the creation of highly walkable neighborhoods in proximity to Commercial & Mixed-Use Districts with a range of predominately residential types including detached and attached dwellings, small-scale apartment dwellings, and limited public and institutional uses.	Our properties have the potential to meet all the characteristics of this zoning description.
When adjacent to lower density neighborhoods the intensity of development should be compatible with the edge conditions.	We are not located adjacent to low density development.
Supports infill dwellings on small pockets of undeveloped land adjacent to existing development. In these cases, the types of housing introduced should be compatible with the adjacent neighborhoods, and appropriate transitions should be provided between different housing types	Combined, are properties are a "small pocket of undeveloped land adjacent to existing development". In accordance with this zoning, they should be developed compatible with Holly Glen or Morgan Park subdivisions.
Compact in form and utilize a connected street and open space network and provide a variety of housing options	Our properties have the potential to meet all the characteristic of this zoning description.
Types of uses permitted: attached, detached and apartment dwellings, bed and breakfasts, civic buildings and churches	Our property would be highly suited to attached and detached residential development.

It is clear that Logging Road properties fail to meet the characteristics of the Town's Rural Residential zoning and would be more suitably zoned as either Neighborhood Residential or Neighborhood Center Residential.

Sean Ryan

From: RobertLindaForcum <forsprink@embarqmail.com>
Sent: Wednesday, February 2, 2022 11:05 AM
To: Sean Ryan
Subject: --[EXTERNAL]--Follow Up to Our Conversation

Follow Up Flag: Follow up
Flag Status: Flagged

Sean,

I contend, based on the Town's own admission, that our properties have been incorrectly designated for future rezoning as Rural Residential.

The Town's Zoning Map Update webpage states:

For most residential subdivisions, the zoning map update reflects a comparable residential zoning category and will not impact the use of your property.

Over a more than two-year period, residents, property owners and businesses worked together to update the town's Land Use & Character Plan, a document that guides decisions on future land use, transportation, open space, community character, business development and more. The updated plan reflects their vision for the future of Holly Springs and addresses growth in a way that provides, protects and improves on a high quality-of-life for all citizens.

Because the Land Use & Character Plan, part of the town's Comprehensive Plan, has been updated, the zoning map is being updated to also reflect these changes and the recently streamlined Unified Development Ordinance.

Happy Hunting Hills is a residential subdivision. The Future Land Use Plan map designates the properties in our subdivision, as Mixed Residential Neighborhood.

The Town intends to rezone our subdivision to Rural Residential. How is it that a Rural Residential zoning designation "reflects" the same meaning as Mixed Residential Neighborhood. They could hardly be any more inconsistent.

As you meet and discuss the comments received from the public, please point this out.

My wife and I should not have to spend our time, energy and other resources to contest these types of changes especially when they are applied inconsistently by the Town's own standards.

I renew my request that our rezoning designation be changed immediately to Suburban Residential, which is consistent with the Town's Future Land Use Plan.

I also note that I live in the Town's ETJ and we have no representation on the Planning Board or Town Council and cannot vote in town elections.

Thank you for your time,

Robert & Linda Forcum
1001 Logging Rd.
Holly Springs, NC

Adjustment Request #5:

Property Location: 9748, 9752 & 9756 Holly Springs Road



Zoning Reassignment Comment Card

I own 9756 - 9752 - 9748 on Holly
Springs Rd. RR zoning and the street
would put me @ a disadvantage in selling
my property. I believe the SR zoning should
be in my and other owners favor by an
our best interest.

Meeting Date: 1-27-2022

Name: JOSEPH PEACOCK

Address/City/ZIP: 5524 Brushy Meadows Dr. F.V. N.C. 27526

E-mail: jandpeacock@aol.com

Questions or additional comments?

e-mail us at: development@hollyspringsnc.gov



Zoning Reassignment
Comment Card

10

~~THE~~ individual ^{most} owns our the lots (vacant)

Surrounded by Luckley, Sunset and Holly Springs Roads. Majority of these lots are less than an acre. In addition the Stream makes it more difficult to have large lots. Lots are currently on the market. Only portions of some lots may be sold. SR zoning will make it hard for these remaining small lots to be sold. Therefore SR zoning is requested if not ~~that~~ NML. Thank you.

Meeting Date: Jan 27, 2022

Name:

Katrina Bunn, KW Realtor

Address/City/ZIP:

7428 Twin Pines Way, Fuquay Varina NC

E-mail:

Katyna@nclegacy.com

Questions or additional comments?

e-mail us at: development@hollyspringsnc.gov

Adjustment Request #6:

Property Location: 4821, 4825, and 4829 Optimist Farm Rd

Sean Ryan

From: Bronwyn Bishop
Sent: Tuesday, February 8, 2022 1:15 PM
To: Sean Ryan
Subject: FW: --[EXTERNAL]--4821, 4825, 4829 Optimist Farm Rd - Town Council Reconsideration Request
Attachments: 4821 Optimist Farm Road Holly Springs Survey Map-181114.pdf
Follow Up Flag: Follow up
Flag Status: Flagged

Hi Sean,
Please see the zoning request below from Parm.

Thanks!



Bronwyn Bishop | Planner I

Town of Holly Springs Development Services
PO Box 8 | 128 S Main St | Holly Springs, NC 27540
Office: (919) 557-3903 | www.hollyspringsnc.gov

From: Parm Sandhar <parmsandhar@gmail.com>
Sent: Tuesday, February 8, 2022 11:28 AM
To: Brett Gosney <Brett.Gosney@hollyspringsnc.gov>; Bronwyn Bishop <bronwyn.bishop@hollyspringsnc.gov>; Beth Trautz <beth.trautz@hollyspringsnc.gov>; Michael Stokes <mike@stokes-surveying.com>
Subject: --[EXTERNAL]--4821, 4825, 4829 Optimist Farm Rd - Town Council Reconsideration Request

Hello,

I would like to request the Holly Springs Town Council to reconsider the proposed zoning change for 4821, 4825, and 4829 Optimist Farm Rd, Holly Springs, NC, 27540. Currently, the properties are zoned R-30, and the new UDO has the lots changing over to Rural Residential (RR).

I believe that these lots should be zoned *Suburban Residential*(SR) for the following reasons:

1. Per the new UDO, the RR district was established to allow agricultural uses and is not expected to be supported by public water and sewer in the short term. In my opinion, this description does not suit 4821 Optimist Farm Rd. as the properties are already residential properties with established sewer and water available. Additionally, the properties backs up to and are surrounded by neighborhoods and residential properties with no farming/agriculture in its vicinity.
2. 4821, 4825, and 4829 Optimist Farm Rd. are well within walking/biking distance (~0.5miles) to Commercial & Mixed-use districts (i.e., the Planet Fitness shopping center and Harris Teeter). This aligns best with the purpose of the suburban residential district in the new UDO.

Please see an attached survey showing the 3 parcels on Optimist Farm Rd, and let me know if you have any questions.

--

Sincerely,

Parm Sandhar

Karingus Insurance Group

Cell:919-924-2154

Email: parmsandhar@gmail.com

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Sean Ryan

From: Bronwyn Bishop
Sent: Tuesday, February 8, 2022 10:56 AM
To: Sean Ryan
Cc: Brett Gosney
Subject: FW: --[EXTERNAL]--4821 Optimist Farm Road Town Council Re-consideration Request

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Sean,
Please see Mr. Patel's request below:



Bronwyn Bishop | Planner I

Town of Holly Springs Development Services
PO Box 8 | 128 S Main St | Holly Springs, NC 27540
Office: (919) 557-3903 | www.hollyspringsnc.gov

From: Juhin <juhin.patel@gmail.com>
Sent: Tuesday, February 8, 2022 10:53 AM
To: Brett Gosney <Brett.Gosney@hollyspringsnc.gov>; parmsandhar@gmail.com; Bronwyn Bishop <bronwyn.bishop@hollyspringsnc.gov>
Subject: --[EXTERNAL]--4821 Optimist Farm Road Town Council Re-consideration Request

Hello,

I would like to ask the Holly Springs Town Council to reconsider the proposed zoning change for 4821 Optimist Farm Rd, Holly Springs, NC, 27540. Currently, the property is zoned R-30, and the new UDO has the lot changing over to Rural Residential (RR).

I believe that this lot should be zoned *Suburban Residential*(SR) for the following reasons:

1. Per the new UDO, the RR district was established to allow agricultural uses and is not expected to be supported by public water and sewer in the short term. In my opinion, this description does not suit 4821 Optimist Farm Rd. as the properties are already residential properties with established sewer and water available. Additionally, the property backs up to and is surrounded by neighborhoods and residential properties with no farming/agriculture in its vicinity.
2. 4821 Optimist Farm Rd. is well within walking/biking distance (~0.5miles) to Commercial & Mixed-use districts (i.e., the Planet Fitness shopping center and Harris Teeter). This aligns best with the purpose of the suburban residential district in the new UDO.

Thank you,

Juhin

--

Juhin S. Patel, PharmD, RPh
(910)-736-5723

juhin.patel@gmail.com

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Adjustment Request #7:

Property Location: 3957 Circle Drive; 3961 Circle Drive; 4629 Lockley Road; 3953 Circle ; 4000 Clyde Drive; 9732 Holly Springs; 9720 Holly Springs Road; 9716 Holly Springs Road; 0 Holly Springs Road

Sean Ryan

From: Bronwyn Bishop
Sent: Wednesday, February 9, 2022 9:23 AM
To: Sean Ryan; Cheryl Caines
Subject: FW: --[EXTERNAL]--Request for rezoning the lots

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Sean –

I wonder if this might have been circling on social media or something the past day. Here is another request to the Town Council to reconsider zoning.

Thanks,



Bronwyn Bishop | Planner I

Town of Holly Springs Development Services
PO Box 8 | 128 S Main St | Holly Springs, NC 27540
Office: (919) 557-3903 | www.hollyspringsnc.gov

From: Bharat Patel <bharat_1959@yahoo.com>
Sent: Tuesday, February 8, 2022 7:36 PM
To: Cheryl Caines <cheryl.caines@hollyspringsnc.gov>; Bronwyn Bishop <bronwyn.bishop@hollyspringsnc.gov>
Subject: --[EXTERNAL]--Request for rezoning the lots

My name is Bharat Patel. I own the following lots:

- (1) 3957 Circle Drive, Apex, NC 27539
- (2) 3961 Circle Drive, Apex, NC 27539
- (3) 4629 Lockley Road, Apex, NC 27539

I also own the following lots under BPNR LLC and/or Lockholly LLC:

- | | |
|--|--|
| (1) 3953 Circle Drive Apex, NC 27539 | (BPNR LLC) |
| (2) 4000 Clyde Drive Apex, NC 27539 | (BPNR LLC) |
| (3) 9732 Holly Springs Road Apex, NC 27539 | (Lockholly LLC) |
| (4) 9720 Holly Springs Road Apex, NC 27539 | (Lockholly LLC) |
| (5) 9716 Holly Springs Road Apex, NC 27539 | (Lockholly LLC) |
| (6) 0 Holly Springs Road Apex, NC 27539 | Real Estate ID #20963 (Lockholly LLC) |

I was not able to attend the Open House last week. However, I would like the Town of Holly Springs to reconsider rezoning the lots within the area bordered by Sunset Lake, Lockley and Holly Springs Roads to Suburban Residential (SR) instead of Rural Residential (RR). This zoning is more appropriate since all owners in this area, except St. Mary's Freewill Baptist Church, own less than two acre parcels. RR zoning results in the owners having to apply for development exceptions when we want to build and make our property harder to sell. Thanks in advance for your consideration. If you have questions, please call me at 919 - 210 - 2474

Thank You

Bharat Patel

Adjustment Request #8:

Property Location: 225 Douglass Street

Withdrawn at request of owner

Sean Ryan

From: Chris Hills
Sent: Thursday, January 27, 2022 9:30 AM
To: Sean Ryan
Cc: Elizabeth Goodson
Subject: UDO Rezoning Comment - 225 Douglas Street

Follow Up Flag: Follow up
Flag Status: Completed

Hi Sean,

I received a comment for the rezoning related to 225 Douglas Street which is a Triplex. The comments relates to the new designation which would make this parcel an existing non-conformity. Can we please take a look at this and determine if it is consistent with what is around it/the LU&C Plan?

Thanks!

Chris



Chris Hills, AICP, CZO | Development Services Director

Development Services | Town of Holly Springs
PO Box 8 | 128 S Main St | Holly Springs, NC 27540
Office: (919) 557-3928 |
www.hollyspringsnc.gov

Town of Holly Springs emails are switching to **.gov** addresses. Please make sure to update my contact information to chris.hills@hollyspringsnc.gov before Jan. 31, 2022.

To stay informed about Development Services, please subscribe to the Development Services Notify Me: [Notify Me](#) • [Holly Springs, NC](#) • [CivicEngage \(hollyspringsnc.gov\)](#)

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Adjustment Request #9:

Property Location: 9729, 9733, and
9737 Holly Springs Road

Sean Ryan

From: Randy Harrington
Sent: Friday, February 18, 2022 11:03 AM
To: Timothy Forrest
Cc: Town Council_ Mayor and Support Staff; Chris Hills; Sean Ryan
Subject: Re: --[EXTERNAL]--Holly Springs UDO Adoption: REID # 0047151, 0028813 and 0028812

Follow Up Flag: Follow up
Flag Status: Completed

CM Forrest, thanks for forwarding. I've added Chris and Sean to see if they can add any additional information on Mr. Ta's situation, request, and outreach efforts.

Thx,
Randy

Randy Harrington, ICMA-CM
Town Manager
Town of Holly Springs, NC

Sent from my iPhone

On Feb 17, 2022, at 4:49 PM, Timothy Forrest <Timothy.Forrest@hollyspringsnc.gov> wrote:

Randy, and team,

The below email represents a growing concern over our new UDO. As discussed in the recent Town Council meeting, I am concerned over the "speed" at implementation and an apparent issue with many properties. I do not believe this is ready for implementation.

v/r,
Tim



Timothy D. Forrest
Town Councilmember
Town of Holly Springs
PO Box 8 | 128 S Main Street | Holly Springs, NC 27540
Cell: (919) 802-2377 | Timothy.Forrest@hollyspringsnc.gov

From: Jim Ta <jim.ta@hotmail.com>
Sent: Thursday, February 17, 2022 6:43 PM
To: Timothy Forrest <Timothy.Forrest@hollyspringsnc.gov>; Sean Mayefskie <Sean.Mayefskie@hollyspringsnc.gov>

Cc: Chris Taft <ctaft@csere.com>; Louis Ta <louis.ta@mutalaw.com>

Subject: --[EXTERNAL]--Holly Springs UDO Adoption: REID # 0047151, 0028813 and 0028812

Dear Council Member Mr. Timothy Forrest,

I applaud you for standing up for property owners like myself that could not attend or did not fully understand how our properties were going to be affected by the adoption of the New Unified Development Ordinance.

I was very impressed with your comments, however, I write for the 2nd time to express my strong opposition to the Town's process for the adoption of the new UDO. The proposed adoption, which is a rezoning, changes the zoning designations for my property and others' without fair notice or input. The town is not accurately telling the entire story on how properties will be affected, but instead is just flashing note cards on what the current zoning is and what the new zoning will be.

As I mentioned in my previous letter, my property was rezoned to Local Business in 2008 and now my property is slated for a zoning change to Neighbor Mixed Use, which impacts the potential uses allowed for my property at 9733 Holly Springs Rd, the SEQ of Lassiter Road and Holly Springs Road (REID # 0047151, 0028813 and 0028812). For example, a developer has had my property under contract for the last 12 months and was getting ready to submit for a special exception in February but could not because the town decided not to accept zoning submittals in February. Instead under the new UDO they will now need to submit for a rezoning instead of just a special exception.

My developer was not aware of the UDO change until January, the same time the town cancelled submittals for the month of February. Ironically, my developer had a Teams call with the town in August and it was never mentioned during the call the town was adopting a new UDO (they were aware of the Gateway Plan). So it feels like this entire process is being pushed through too quickly and without accurately notifying the public or developers. Now, the developer who has my property under contract is unaware if they can move forward. I was completely shocked to hear the town thinks notifying citizens on Facebook is an appropriate process for providing notices to its property owners too.

Just as surprising, there were 6 stars on the slide identifying property owners who reached out to the town but only one of the property owners was identified during the February 15th meeting. I know the town got my letter because there was a star on my property but my concerns were not addressed at last night's meeting

We're excited for the changes that are coming to Holly Springs but our property rights are being violated so I am asking that you please consider changing my property zoning to RMX or CB. Please contact me with any questions.

Thank you for your continued service and support of our communities.

Regards,

Jim Ta

919-434-6080

Additional Comments Received



Zoning Reassignment Comment Card

My wife & I own The Rev. Henry Norris House across from
WNC Rex Healthcare.

Sean Ryan briefed me on the town's plans to soon update
The Village District Plan.

Any, why you can provide in the future would be appreciated.
Currently I own Ken Jarvis Consulting & am a commercial
real estate broker, business broker & franchise development
consultant. In the past I have served the town as a member
of the Bd of Adjustments in the early 80's, the Regional Wide South
Regional Airport Authority & in 2016/17 Advisory Bd. I was Comp. absent.

and yes I am -- If you need a volunteer
fell free to call on me -- Thanks
Ken

Meeting Date:

1-27-22

Name:

Ken Jarvis

Address/City/ZIP:

716 Avent Ferry Rd • Holly Springs, NC 27540

E-mail:

Kjarvis@nc.rr.com

Questions or additional comments? 919-630-7552

e-mail us at: development@hollyspringsnc.gov



Zoning Reassignment Comment Card

Excellent presentation. Great maps. Very informational & set my mind at ease about pretty significant changes.
Thank you!

Meeting Date: 11/27/22

Name:

Elizabeth Stryker

Address/City/ZIP:

416 Cottonwood Ln, HS

E-mail:

lizstryker@gmail.com

Questions or additional comments?

e-mail us at: development@hollyspringsnc.gov

January 30, 2022

From: James F. Kenney, Trustee
Hattie A. Mims Living Trust
172 Mooring Buoy
Hilton Head Island, SC 29928

To: Holly Springs Development Services
P.O. Box 8
Holly Springs, NC 27540

Regarding: Change in Zoning Map

Hattie A. Mims Living Trust owns a 15-acre parcel, Account Number 047597, Pin Number 0648 83 7540 000, at 829 Piney Grove Wilbon Road, Holly Springs, NC. I, James F. Kenney, Trustee, of the Hattie A. Mims Living Trust, vigorously oppose the zoning change for this property and other nearby properties.

It is proposed by your office to change the zoning of this parcel and nearby parcels from R-30 Residential District to RR Rural Residential District. This area has been zoned R-30 Residential for at least 20 years. I vigorously object to this rezoning. This land is in an area that is already highly developed with suburban residential single family homes and commercial businesses, office and professional buildings. There is a large number of homes in Brayton Park directly across from 829 Piney Grove Wilbon Road, nearby is the Wildwood Subdivision, Autumn Subdivision, Garrison Subdivision, and a large Home Depot, a large WalMart, and other stores a very short distance away. Homes in Brayton Park sell for \$400,000 to more than \$600,000. There are at least four large parcels adjacent to the Mims Trust Parcel ready for residential development that will make this a wonderful suburban residential neighborhood. One parcel sold recently and others are in the for-sale market.

There is a sewer line already installed and connected to the Vaughn Pump Station on the parcel at 829 Piney Grove Wilbon Road for at least five years.

The properties adjacent and nearby 829 Piney Grove Wilbon Road should be excluded from the zoning change. Hattie A. Mims Living Trust vigorously objects to the change in zoning. This zoning change will definitely lower the value of all the parcels nearby and along the Piney Grove Wilbon Road neighborhood. The Trust will suffer large financial damages.

This zoning change from R-30 Residential to RR Rural Residential will increase the home lot size to up to two acres. This is more than the lot size in the already established neighborhood. The zoning change will lower the housing density beyond the existing neighborhood.

The zoning change to RR-Rural Residential does not permit connecting to Town water and sewer which is a major disadvantage to parcel owners in this neighborhood. This neighborhood is not rural. It is suburban and to allow housing trailers to be installed and manufactured homes are wholly unacceptable.

This neighborhood is too close to the developed areas of Holly Springs to now revert to RR-Rural Zoning.

Please reconsider changing this neighborhood from R-30 Residential to RR Rural Residential. If you must change the zoning, I don't know any reason why a change is necessary, please exclude the growth neighborhood around 829 Piney Grove Wilbon Road. Thank you for this consideration.



James F. Kenney, Trustee
Hattie A. Mims Living Trust
172 Mooring Buoy
Hilton Head Island, SC 29928

Email *kenneyjimf@gmail.com*
843-842-3641
Cell 904-294-2782

Sean Ryan

From: Sean Ryan
Sent: Tuesday, February 8, 2022 4:59 PM
To: Peter Cabrera; Kathy Carlisle
Cc: Bill Aucoin (Avison Young); Brett Gosney; jbarron@morningstarlawgroup.com
Subject: RE: --[EXTERNAL]--Re-Zoning Questions

Good afternoon,

Yes, we can certainly help you with the process to request a zoning change that would allow for townhomes or commercial use. Our staff is available to meet with you and discuss the process and requirements for development of the property. Please request a general inquiry meeting at this link and we will schedule you to meet with our staff:

<https://app.smartsheet.com/b/form/48016bbe813d4692a923e07f1515e641>

Thanks,



Sean Ryan, AICP | *Planning Manager*
Town of Holly Springs | Development Services – Land Development
PO Box 8 | 128 S Main St | Holly Springs, NC 27540
Office: (919) 557-2903
Email: sean.ryan@hollyspringsnc.gov
www.HollySpringsNC.gov/DevelopmentServices

Town of Holly Springs emails are switching to .gov addresses. Please make sure to update my contact information to sean.ryan@hollyspringsnc.gov before Jan. 31, 2022.

Warning: This email is subject to disclosure under the North Carolina Public Records Law (NCGS 132-1).

From: Peter Cabrera <pete@nccpaoffice.com>
Sent: Tuesday, February 8, 2022 4:22 PM
To: Sean Ryan <sean.ryan@hollyspringsnc.gov>; Kathy Carlisle <kathy.carlisle@hollyspringsnc.gov>
Cc: Bill Aucoin (Avison Young) <bill.aucoin@avisonyoung.com>; Brett Gosney <Brett.Gosney@hollyspringsnc.gov>; jbarron@morningstarlawgroup.com
Subject: --[EXTERNAL]--Re-Zoning Questions

Good afternoon Mr. Sean,

All the information requested was on my prior email; as well as to my comments regarding my specific location of my land and why it does not sense to me to zone it RR when that whole are of Sunset Lake road is developed or in the process of being developed. You mentioned of changes made in 2021 to the Zoning map, etc....I was never made aware of any changes.

The Address for my 2 adjoining lots are; **4724 Sunset Lake Rd. & 4721 Edwards Dr. (under Limited NC Properties, LLC)**

See attachment. Note that in 2017 a Variance of Zoning was granted right across Sunset Lake Road **#17-VARTC-01**. They granted a multi-use variance to include retail use and an apartment complex to be built. I believe per the flyer that you were the Project Planner involved.

I want to proceed to with an application to increase my R-20 to a higher density zoning for the purpose of building multifamily housing or for commercial use.

I am CPA by trade and profession, so my question is how do I properly go about the process of rezoning my land as mentioned? Can your office help me with this process ?

I tried figuring out why my land zoning would be changed to RR – but in my analytical mind it does not stand to reason.

Frankly I am rather annoyed that I need to deal with this issue when it does not make any sense on multiple fronts. This is not a rural area...

Sincerely,

Peter R Cabrera

From: Sean Ryan [mailto:sean.ryan@hollyspringsnc.gov]

Sent: Tuesday, February 8, 2022 3:29 PM

To: Peter Cabrera; Kathy Carlisle

Cc: Bill Aucoin (Avison Young); Brett Gosney

Subject: RE: --[EXTERNAL]--RE: Zoning Questions (

Good afternoon, Mr. Cabrera,

Thank you for reaching out to me regarding your concern about the proposed reassignment of your property from R20 to RR.

In November 2021, the Town Council adopted a new Unified Development Ordinance which established new zoning districts. This UDO takes effect on March 1, 2022. Most of the existing zoning districts, such as R-20, are being eliminated and properties will need to be reassigned to a new district. As part of the UDO writing process, it was determined that properties currently zoned R20 would be reassigned into the new RR district.

The purpose of reassigning properties to a comparable district in the new UDO was to ensure that properties could continue to be used as they are currently. The reassignment process was not used to proactively zone properties to a new land use category or to a higher density category. I understand you are interested in developing the property for townhomes or commercial uses. You can still seek a rezoning to the property to a different zoning district through the normal rezoning process.

If you believe that your property was improperly reassigned to the RR district, please respond to this email with the specific property (PIN or address) and the district that you believe it should have been reassigned to for staff to further evaluate.

Thank you,



Sean Ryan, AICP | *Planning Manager*
Town of Holly Springs | Development Services – Land Development
PO Box 8 | 128 S Main St | Holly Springs, NC 27540
Office: (919) 557-2903
Email: sean.ryan@hollyspringsnc.gov
www.HollySpringsNC.gov/DevelopmentServices

Town of Holly Springs emails are switching to .gov addresses. Please make sure to update my contact information to sean.ryan@hollyspringsnc.gov before Jan. 31, 2022.

Warning: This email is subject to disclosure under the North Carolina Public Records Law (NCGS 132-1).

From: Peter Cabrera <pete@nccpaoffice.com>
Sent: Tuesday, February 8, 2022 12:17 PM
To: Kathy Carlisle <kathy.carlisle@hollyspringsnc.gov>
Cc: Sean Ryan <sean.ryan@hollyspringsnc.gov>; Bill Aucoin (Avison Young) <bill.aucoin@avisonyoung.com>; Brett Gosney <Brett.Gosney@hollyspringsnc.gov>
Subject: RE: --[EXTERNAL]--RE: Zoning Questions (
Importance: High

Kathy,

Thank you for your response.

I will then await to here from Mr. Ryan at his earliest convenience.

Sincerely,

Peter Cabrera
919-413-2010

From: Kathy Carlisle [mailto:kathy.carlisle@hollyspringsnc.gov]
Sent: Tuesday, February 8, 2022 12:11 PM
To: Peter Cabrera; Brett Gosney
Cc: Bill Aucoin (Avison Young)
Subject: RE: --[EXTERNAL]--RE: Zoning Questions (

Good afternoon, Mr. Cabrera, thank you for your email. I am reaching out to our Planning Manager, Sean Ryan, to ask if he can contact you directly and have forwarded your email onto him. I believe he is the best person to speak to with regard to your concerns. Mr. Ryan can be reached at sean.ryan@hollyspringsnc.gov. Please allow 24-48 hours for a response. Thank you!

Please know that the Town now has a new plan review software – CityView. We encourage you to register on the portal. You will need to create a user login on our CityView system so that you will be able to make payments. There is a brief video on how to use the system and can be watched here:
<https://www.hollyspringsnc.us/2170/Development-Services>

You can create a login here: <https://cityview.hollyspringsnc.us/portal>

Respectfully,
Kathy



Kathy Carlisle | Development Review Coordinator

Development Services | Town of Holly Springs
PO Box 8 | 128 S Main St | Holly Springs, NC 27540
Office: (919) 577-3228
www.hollyspringsnc.gov

NEW DEVELOPMENT PORTAL:

Development Services is pleased to announce the launch of our new permitting software, CityView. To register for a user account in order to submit development requests, please visit our CityView portal here: <https://cityview.hollyspringsnc.us/portal>

For operational changes associated with the Town of Holly Springs – Development Services COVID-19 response please visit: <http://www.hollyspringsnc.us/1848/Development-Services>.

To stay current on the latest news and updates posted to the Town's website, please subscribe to the Notify Me Lists that interest you here: <http://www.hollyspringsnc.us/list.aspx>

From: Peter Cabrera <pete@nccpaoffice.com>
Sent: Tuesday, February 08, 2022 12:07 PM
To: Brett Gosney <Brett.Gosney@hollyspringsnc.gov>; Kathy Carlisle <kathy.carlisle@hollyspringsnc.gov>
Cc: Bill Aucoin (Avison Young) <bill.aucoin@avisonyoung.com>
Subject: --[EXTERNAL]--RE: Zoning Questions (
Importance: High

Kathy & Brett,

I have not received a reply to my email.

I do not want my land re-zoned to RR. You would be de-valuing my land that has full access to City Water & Sewer. How is my property considered Rural ?

Literally across the street from my land the City approved a High Density Mixed use project.

I do not understand the rationale to re-zoning a piece of land that I have an interest in building either a Townhouse development on or a Commercial property.

I reviewed the proposed changes of the map – seems very broad stroke to me. I understand where some outlying areas maybe be considered Rural; I do not see my land being classified as rural.

Please contact so that I can defend my property rights. **I do not want to go through the needless effort of hiring an expensive zoning attorney.** I work hard for my money.

Peter Cabrera

919-413-2010

From: Peter Cabrera [mailto:pete@nccpaoffice.com]
Sent: Friday, January 28, 2022 8:13 PM
To: Brett Gosney
Cc: Bill Aucoin (Avison Young); Albert Cabrera
Subject: Zoning Questions

Hi,

Across the street rezoning was approved for apartment units and retail on the lower level.

I am interested in building a townhouse development on my land. I think it would be in keeping with past rezoning approvals. I would possibly entertain building to assist in meeting your moderate income family ownership goals expressed by the city.

Furthermore my financial interest in my land would be diminished significantly by having the zoning changed in such an arbitrary manner. My land has complete access to city water and sewer.

Let me know what steps I need to take to resolve this issue.

Sincerely,

Peter R Cabrera
Limited NC Properties, LLC

On Friday, January 28, 2022, Brett Gosney <Brett.Gosney@hollyspringsnc.gov> wrote:

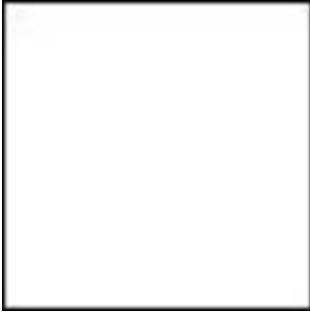
Good Afternoon,

Thank you for reaching out regarding 4721 [Edwards Drive](#) & [4724 Sunset Lake Road](#) and the Town wide rezoning.

These properties are both currently zoned as [R-20 Residential](#) with the proposed new rezoning of Rural Residential. You can view the changes between the two districts [here](#). The properties were changed over to the most compatible new zoning district to try to limit the amount of changes that would occur. Would you like to request that these properties be looked at to be changed to possibly a different compatible district such as the Suburban Residential District? If so, please let me know. We will take these requests to the Planning Board on February 22 so they can give their recommendation to Town Council who will make the decision on March 1 to adopt the new zoning map. You are also welcome to attend these meeting and sign up to speak during the public comment period to also let them know of your request.

If you would like to go through a rezoning to a new district such as commercial, please let me know and I will be able to connect you with a planner who will be able to walk you through the steps that would be required to request this.

Thanks!



Brett Gosney | Planning Technician

Development Services | Town of Holly Springs

PO Box 8 | 128 S Main St | Holly Springs, NC 27540

Office: (919) 577-3104 Mobile: (919) 257-9393

www.hollyspringsnc.gov

Warning: This email is subject to disclosure under the North Carolina Public Records Law (NCGS 132-1).

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Sent from Gmail Mobile

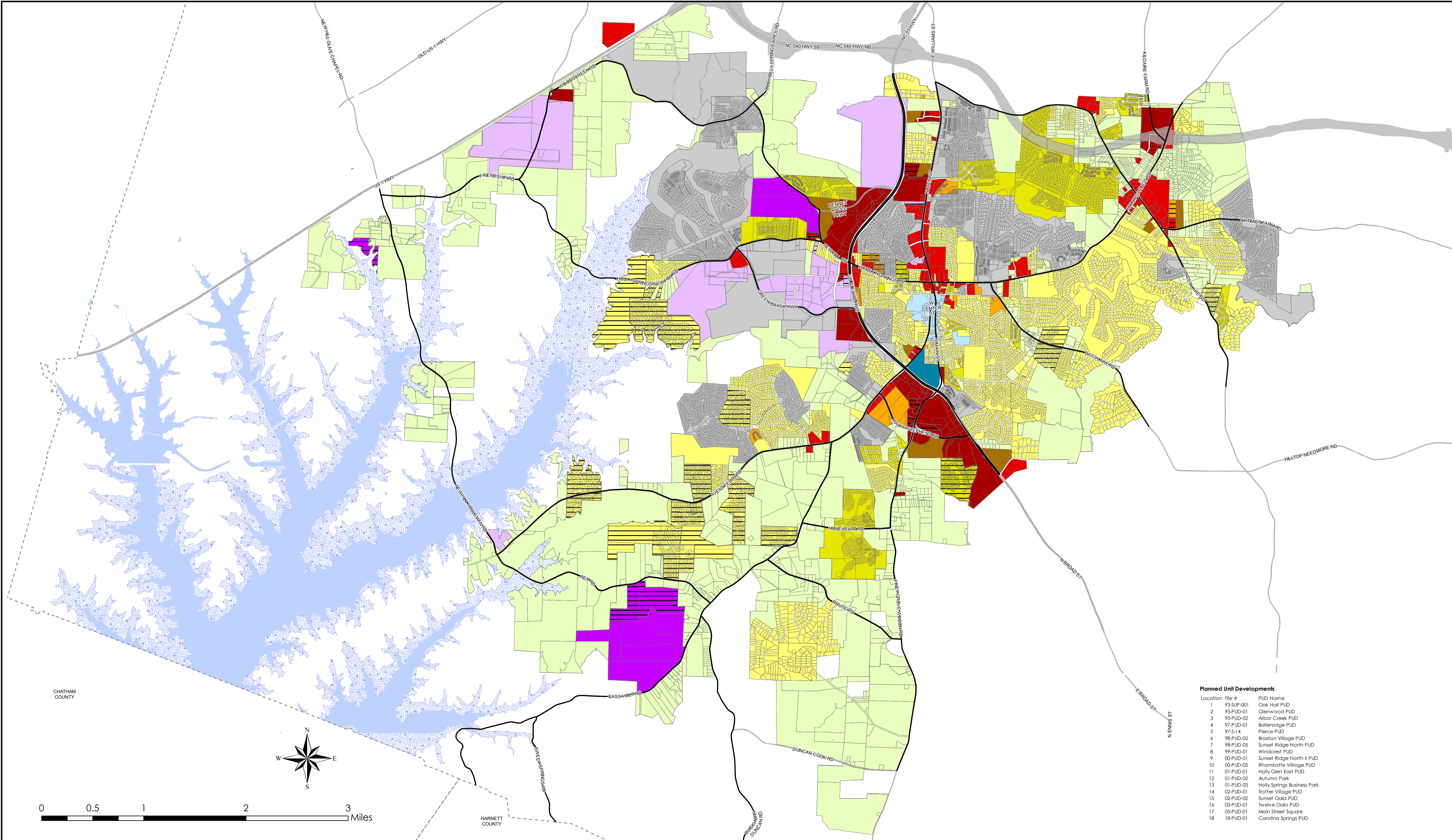
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Warning: This email is subject to disclosure under the North Carolina Public Records Law (NCGS 132-1).

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CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.



Planned Unit Developments

Location	File #	PUD Name
1	93-SUP-001	Oak Hall PUD
2	95-PUD-01	Glenwood PUD
3	95-PUD-02	Arbor Creek PUD
4	97-PUD-01	Balleridge PUD
5	97-S-14	Pierce PUD
6	98-PUD-02	Braxton Village PUD
7	98-PUD-05	Sunset Ridge North PUD
8	99-PUD-01	Windcrest PUD
9	00-PUD-01	Sunset Ridge North II PUD
10	00-PUD-05	Rhamkatte Village PUD
11	01-PUD-01	Holly Glen East PUD
12	01-PUD-02	Autumn Park
13	01-PUD-03	Holly Springs Business Park
14	02-PUD-01	Trotter Village PUD
15	02-PUD-02	Sunset Oaks PUD
16	03-PUD-01	Twelve Oaks PUD
17	05-PUD-01	Main Street Square
18	18-PUD-01	Carolina Springs PUD

Parcels

Conditional Use

RR Rural Residential

NCR Neighborhood Center Res

DMX Downtown Mixed Use

SP CU Special District

Shearon Harris Lake

SR Suburban Residential

MXR Mixed Use Residential

PUD Planned Unit Development

BRT Business Research Technology

Proposed Shearon Harris Lake Level

NR Neighborhood Residential

NMX Neighborhood Mixed Use

CB Community Business

HI Heavy Industrial

The Town expressly denies any and all responsibility for errors, if any, in the information/data or for the misuse of the information/data by the user or anyone else. The user understands that he or she should verify the accuracy of the information/data.

Map Prepared By:
Development Services GIS
Town of Holly Springs
PO Box 8 / 128 S. Main Street
Holly Springs, NC 27540
(919) 557-3908

Visit Us on the Web:
www.hollyspringsnc.gov

Town of Holly Springs

Zoning Map



Town of Holly Springs, NC Zoning Reassignment Public Open House

Stantec's Urban Places
January 26-27, 2022



Open House Agenda

1. Presentation

- a) Introduction and Purpose of the Open House
- b) What is a Zoning Map and a UDO?
- c) Why change the Zoning Map?
- d) What is changing and what is not
- e) Details on new districts
- f) FAQs

2. Q&A, discussion

3. Break



How to Participate in the Virtual Open House

- Type questions in the chat box, and a staff member or consultant will respond
- We will monitor the chat and pose your questions to the presenters



Introduction and Purpose of the Open House

- Provide information about what is changing about land regulations
- Answer questions from property owners and neighbors
- Provide information about next steps
- Hear any concerns about the proposed zoning of any specific properties
 - (these may result in changes to the proposed zoning map)



Introduction and Purpose of the Open House

- NOTE: this forum will be general in nature. If you have more specific questions that are not answered here, please contact us at:

- **(919) 557-3908**
- **developmentservices@hollyspringsnc.gov**
- Or attend the in-person open house:

Thursday January 27, 9am – 1pm
Holly Springs Cultural Center



What is a Zoning Map and a “UDO”?



UDO = Unified Development Ordinance

- Establishes regulations for the development or use of property
- Establishes districts that cover every property
- Districts include:
 - Allowable uses
 - Where buildings and structures can be located
 - Design standards



2 DISTRICTS

2.1 BASE DISTRICTS

- Base Districts Established.** The properties within the Corporate Limits and Extraterritorial Jurisdiction (ETJ) of the Town are divided into zoning districts (i) to apply the goals, objectives, and policies of the Town's Comprehensive Plan and (ii) to recognize, promote, and protect the planned land uses and character of specific areas, corridors, and neighborhoods. The districts and their boundaries are depicted on the Town's zoning map (See Section 1.7).
- Base Districts by Use Categories.** The Town's base zoning districts are established and characterized by individual use categories including Residential Use, Commercial/Mixed-Use, and Employment/Campus Use. Each use category includes multiple base districts that allow for land use and property development at various scales and intensities – these are controlled through the allowable land uses, development standards, and density limitations.
- Base District Descriptions.** The following subsections establish the descriptions including the intended land use and character for each base district.
- Land Use Allowance and District Standards for Base Districts.** Chapter 3 – Table 3.2 – Table of Permitted Uses lists the allowable land uses and activities that may occur within each base district. Section 2.2. establishes the development standards for each base district in terms of maximum building height, minimum (and maximum) building setbacks, and minimum lot configurations.
- Base Districts Corresponding to Land Use Designations.** Each base district corresponds to particular character area designation(s) on the Future Land Use Map as shown in Table 2.1. The future land use map provides guidance on where a particular base zoning district may be appropriate in the Town.

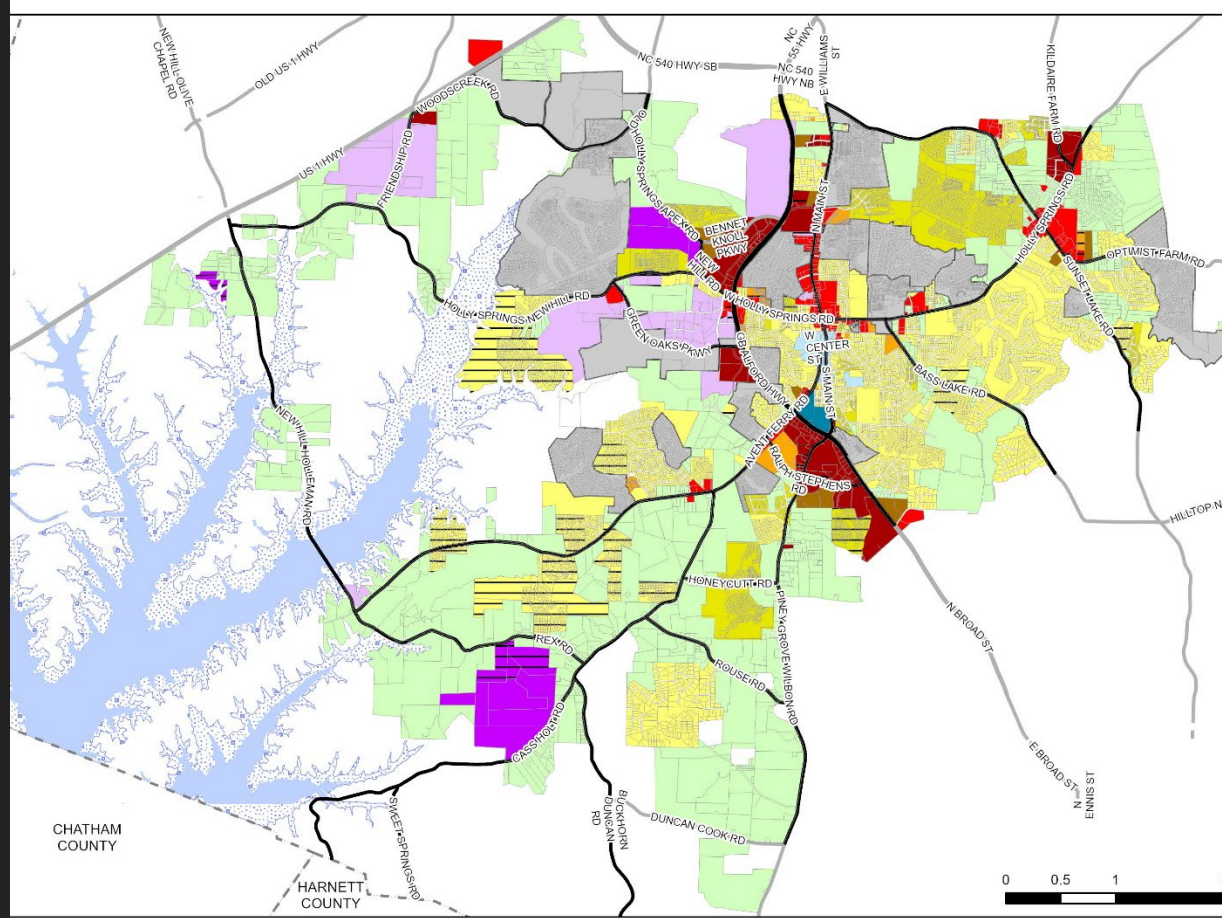


CONTENTS

2.1	BASE DISTRICTS	13
2.2	DISTRICT STANDARDS	17
2.3	APPLICATION AND INTERPRETATION OF DEVELOPMENT STANDARDS	24
2.4	CONDITIONAL ZONING DISTRICTS	27

Zoning Map

- Assigns a district to every property in the Town
- New districts were assigned based on the current district that most closely matches the new one



RR - Rural Residential	MXR - Mixed-Use Residential	BRT - Business & Research Technology
SR - Suburban Residential	NMX - Neighborhood Mixed-Use	BRT - Conditional Use
SR - Conditional Use	NMX - Conditional Use	HI - Heavy Industrial
NR - Neighborhood Residential	DMX - Downtown Mixed-Use	HI - Conditional Use
NR - Conditional Use	CB - Community Business	PUD - Planned Unit Development
NCR - Neighborhood Center Residential	CB - Conditional Use	
NCR - Conditional Use	SP - Special District - Conditional Use	

Harris Lake
d Shearon Harris Lake Level

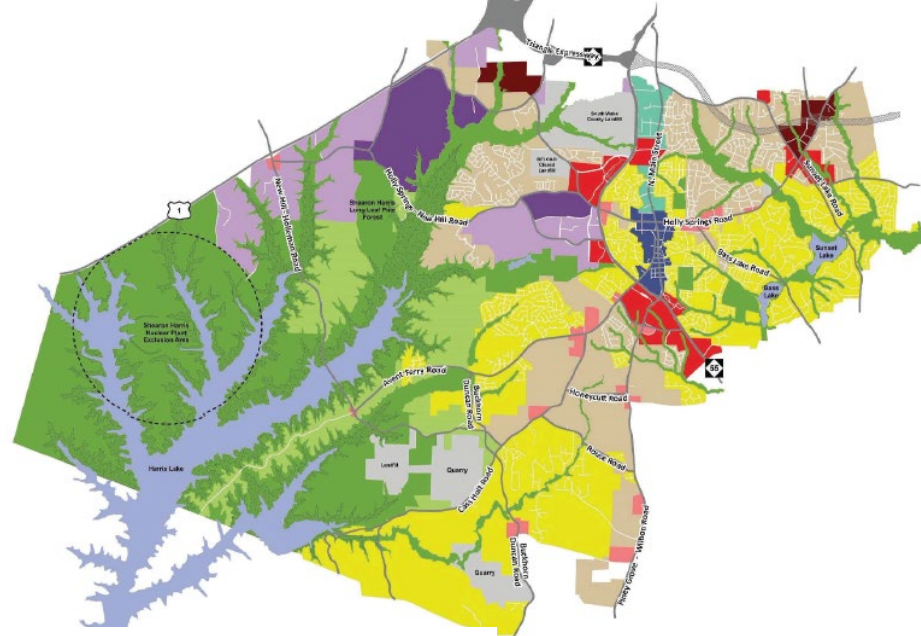


Town of Holly Springs
Zoning

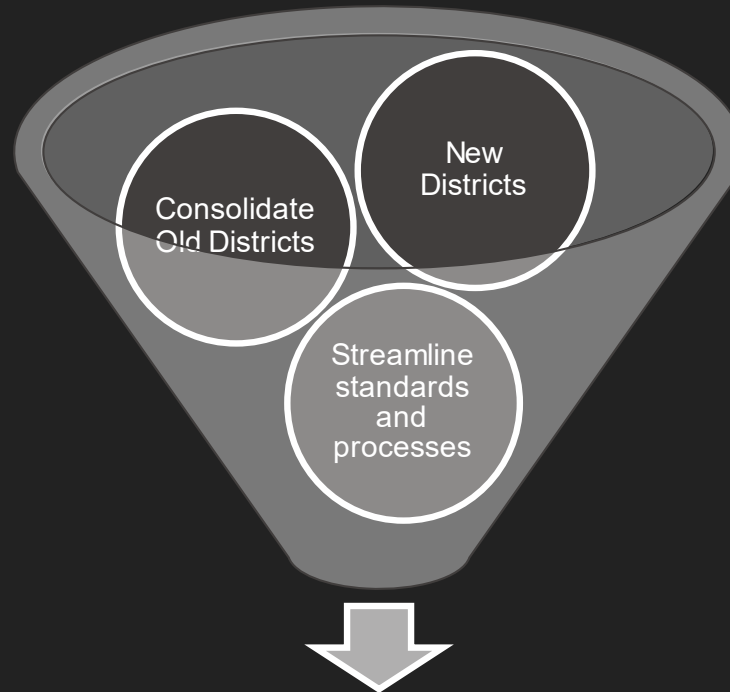
Why Change the Zoning Map



- **Future Land Use (FLU) Map, establishes locations to focus policy changes**
- **Recommendations in the LU&C Plan correlate with potential changes to ordinances**
- **Mixed-use character areas, places to transform**

Page 515 of 1043

Unified Development Ordinance Revision



New Zoning Map



What is Changing...

- District descriptions
- Some permitted uses (mostly in mixed use, commercial and industrial areas)
- Densities and minimum lot sizes
- Setback requirements (generally more permissive)



What is NOT Changing...

- How you currently use your property: current uses are allowed to continue
- Planned Unit Developments (PUDs) remain unchanged
- In residential areas, the general types of uses that are allowed

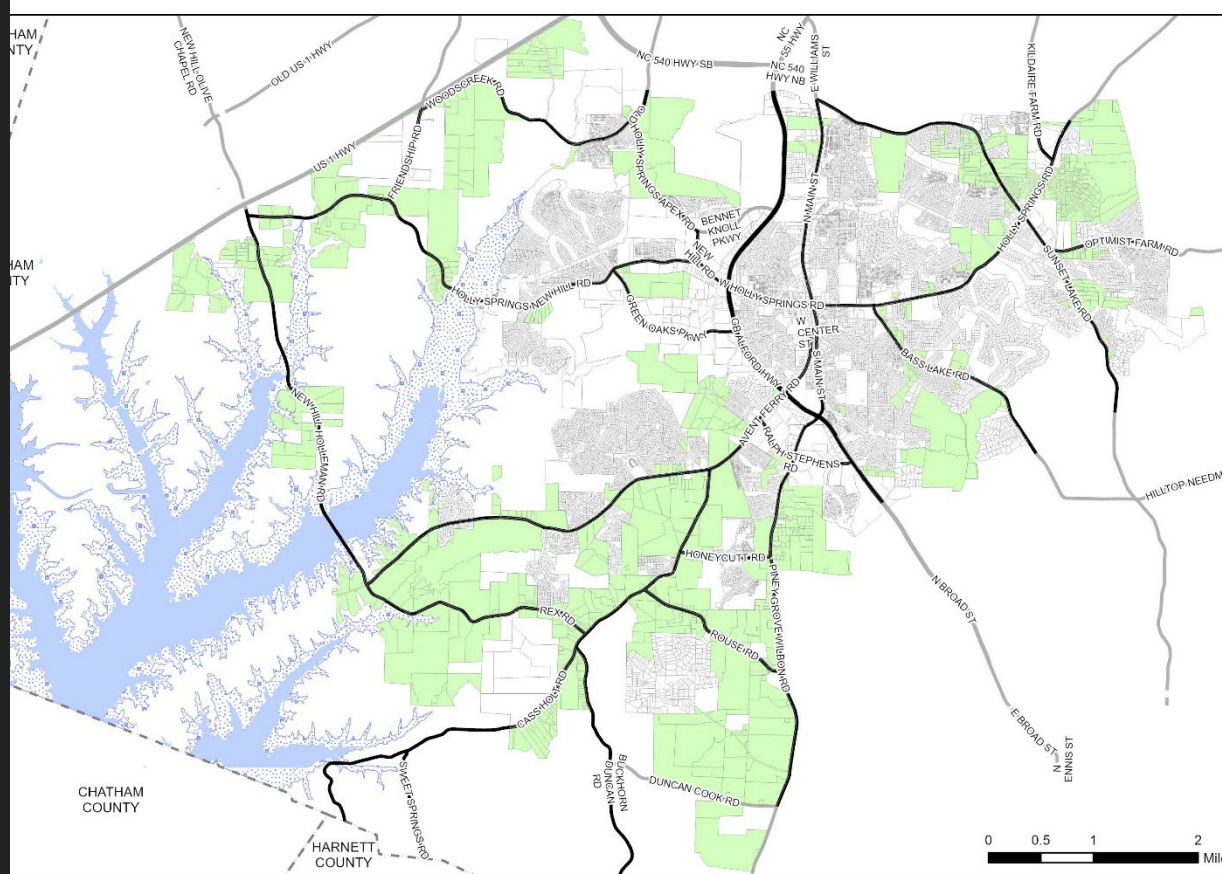


Details on New Districts



Rural Residential

- Formerly R-30 or R-20
- Maximum density: 1 unit per 2 acres
- Smaller lots allowed in Conservation Subdivisions
- Reduced rear setback (25' from 50')



roots
near Harris Lake
proposed Shearon Harris Lake Level

RR - Rural Residential
SR - Suburban Residential
SR - Conditional Use
NR - Neighborhood Residential
NR - Conditional Use
NCR - Neighborhood Center Residential
NCR - Conditional Use

MXR - Mixed-Use Residential
NMX - Neighborhood Mixed-Use
NMX - Conditional Use
DMX - Downtown Mixed-Use
CB - Community Business
CB - Conditional Use
SP - Special District - Conditional Use

BRT - Business & Research Technology
BRT - Conditional Use
HI - Heavy Industrial
HI - Conditional Use
PUD - Planned Unit Development



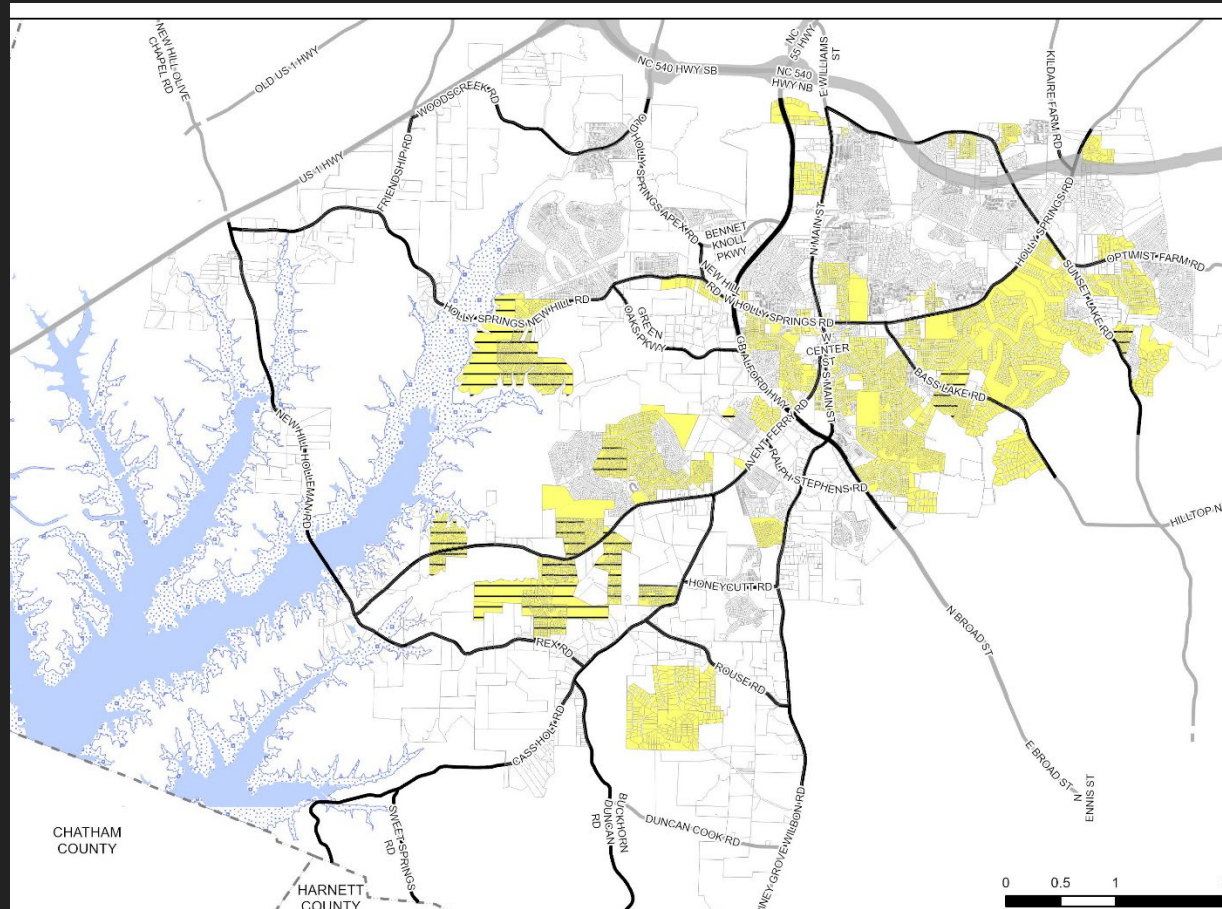
Town of Holly Springs
Zoning Map

The Town expressly denies any and all responsibility for any inaccuracy or for the misuse of data by the user or anyone else. The user understands and agrees to verify the accuracy of the data.



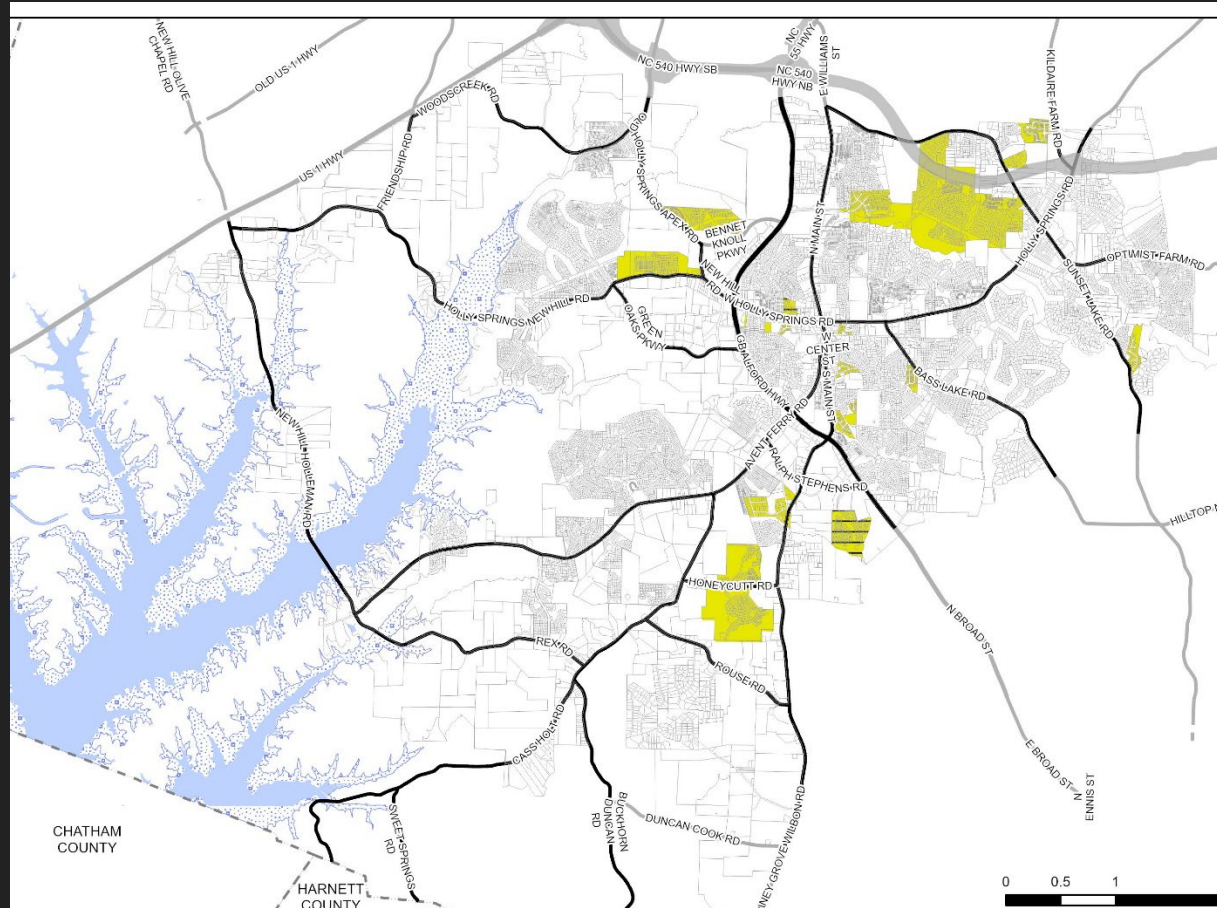
Suburban Residential

- Formerly R-15 or R-10
- Larger min. lot sizes, but more flexibility with Conditional District
- Reduced min. lot width
- Increased side setbacks for principal structures



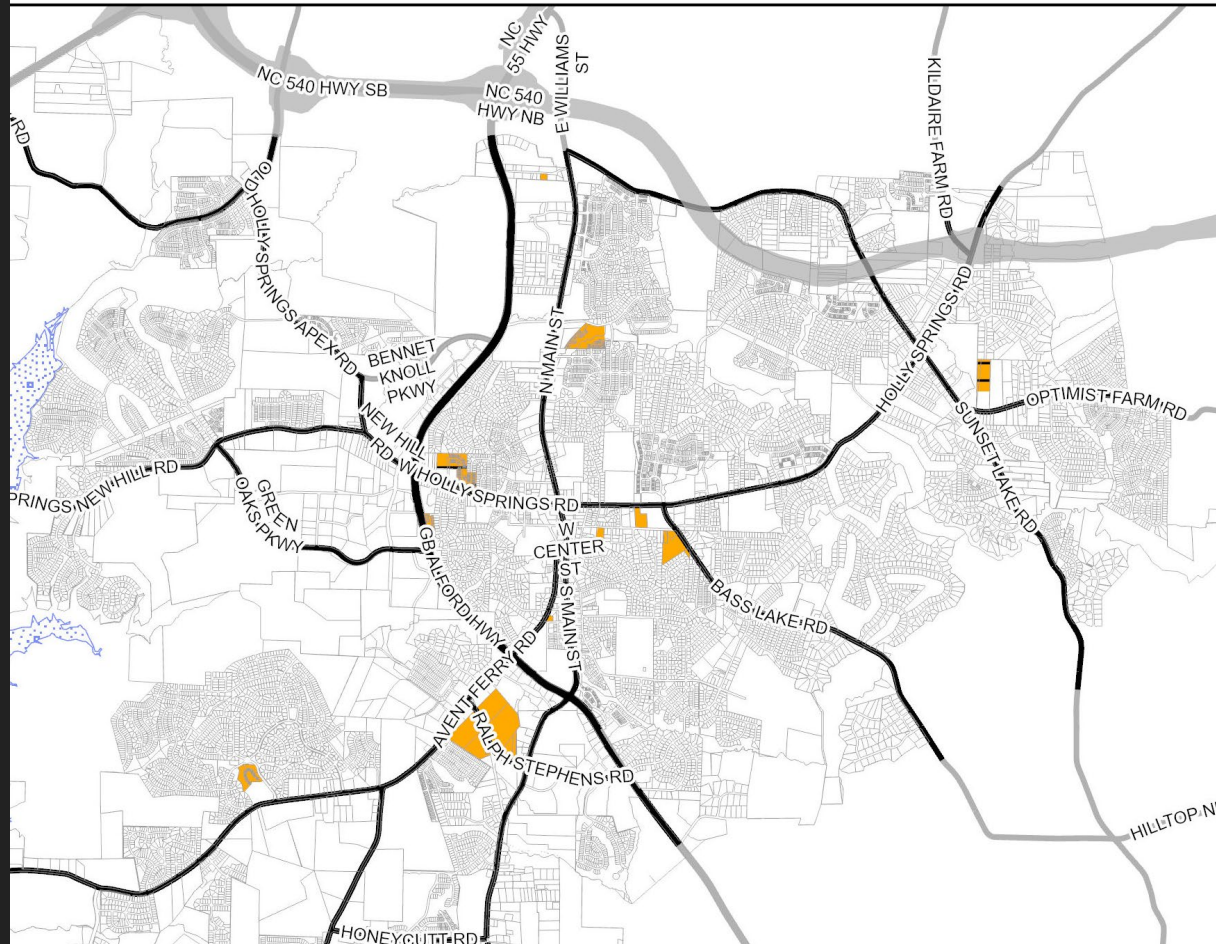
Neighborhood Residential

- Formerly R-8
- Slightly smaller minimum lot sizes/slightly more density allowed
- Reduced min. lot width
- Reduced setbacks
- Attached and detached dwellings allowed



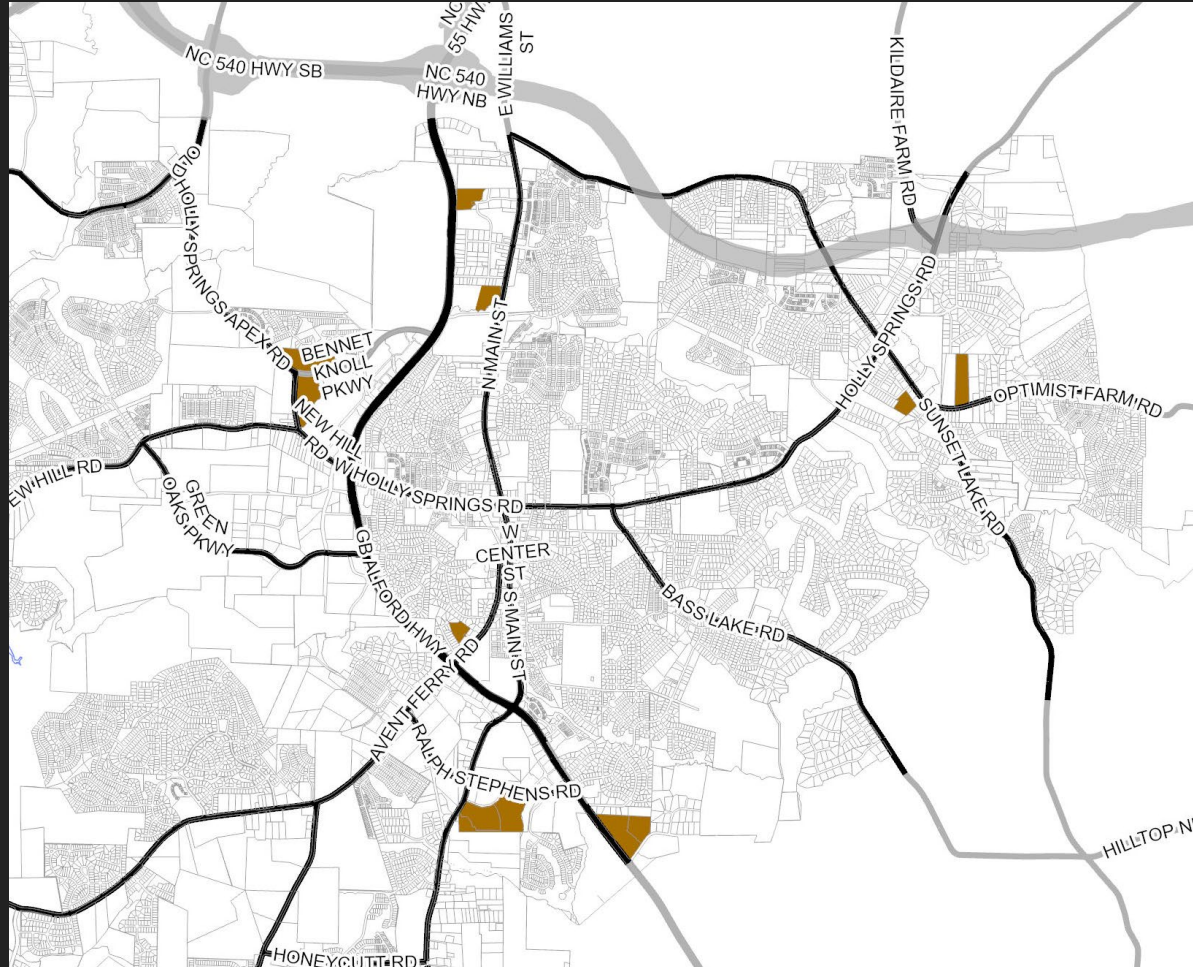
Neighborhood Center Residential

- Formerly R-MF-8
- Reduced front, side and rear setbacks
- Allows detached, attached dwellings and apartments



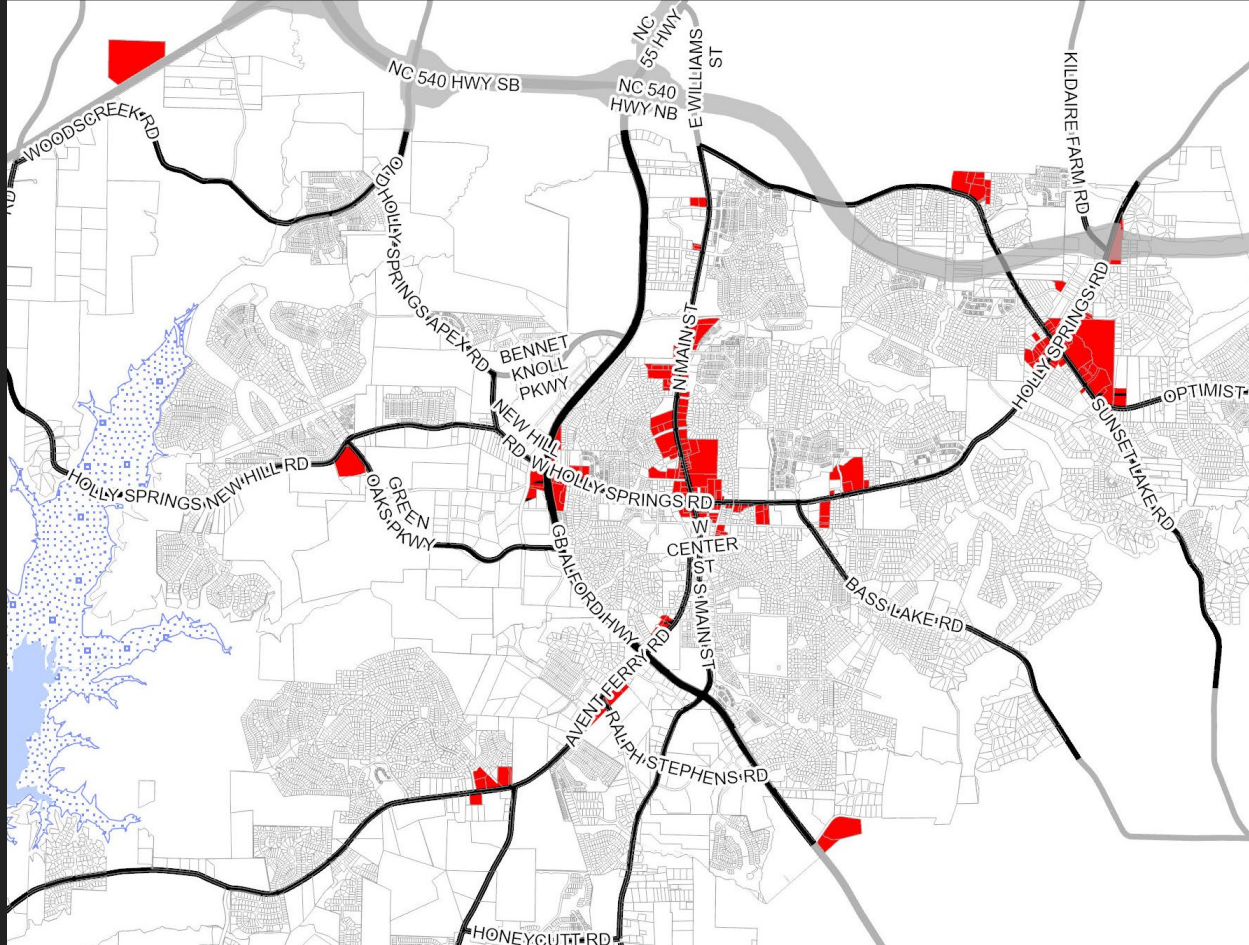
Mixed Use Residential

- Formerly R-MF-15
- Reduced front, side and rear setbacks
- Allows detached, attached dwellings and apartments
- Retail also allowed



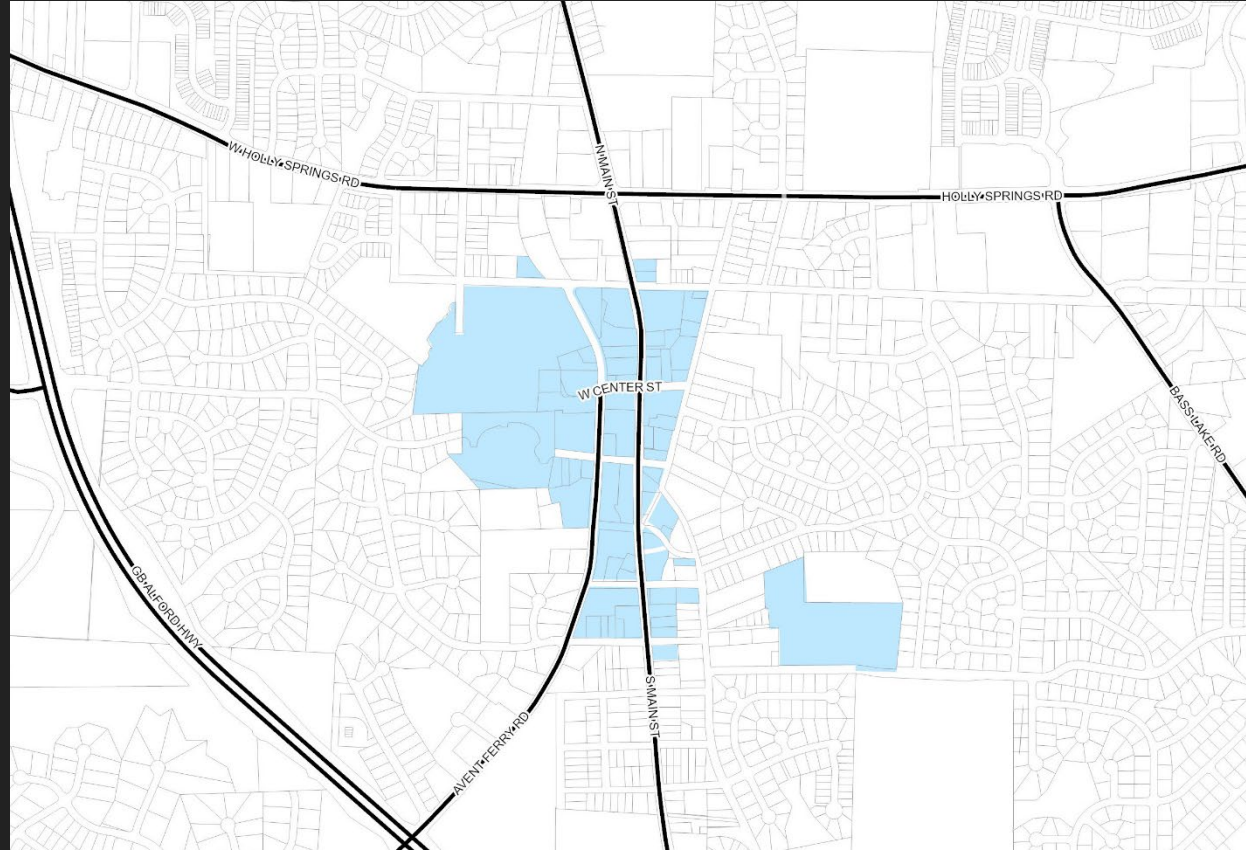
Neighborhood Mixed Use

- Formerly LB Local Business
- Allows detached, attached dwellings
- Allows retail, restaurant, offices and services
- Reduced front, side and rear setbacks



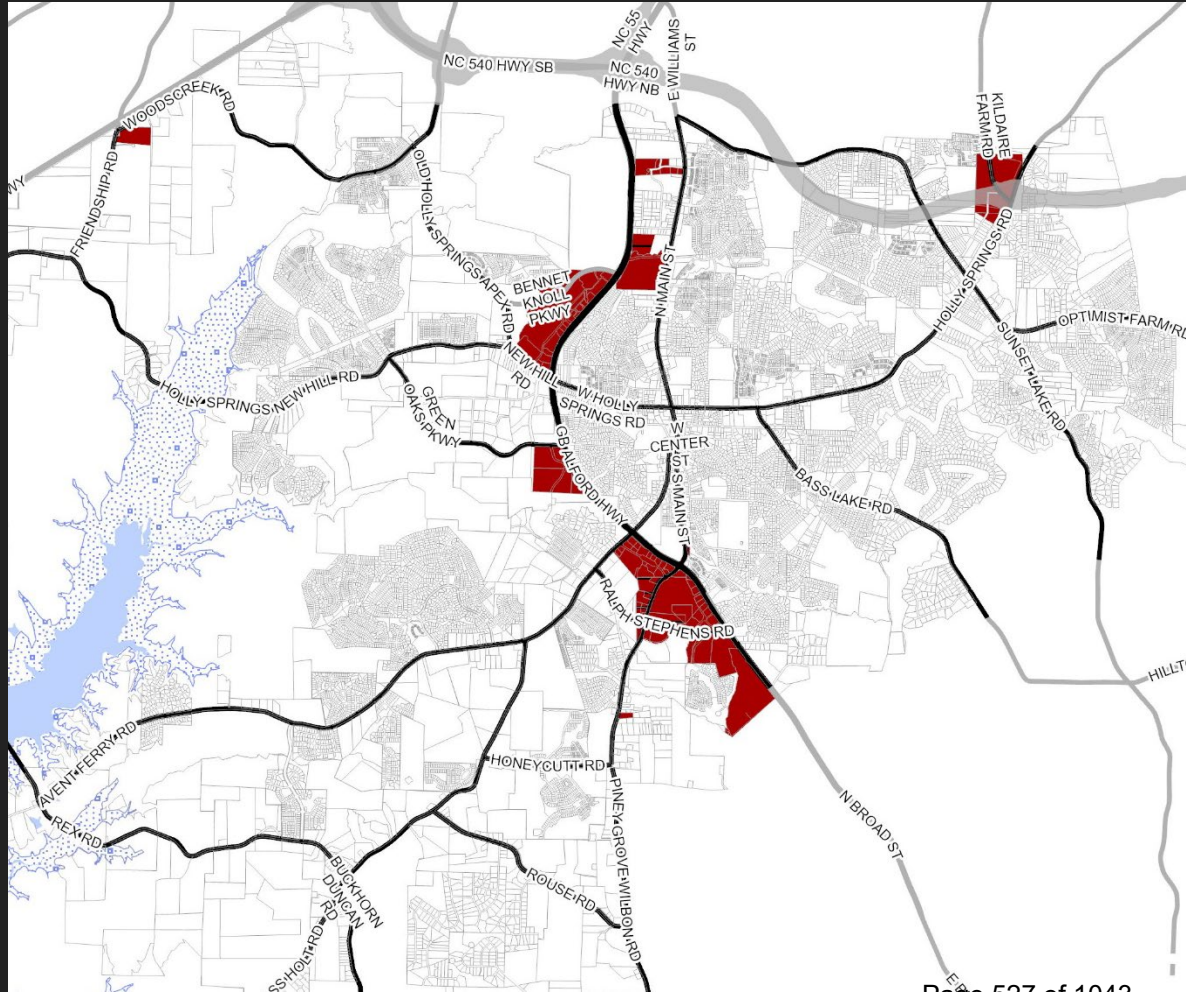
Downtown Mixed Use

- Formerly TV Town Village
- Allows attached dwellings and apartments
- Allows retail, restaurant, offices and services, hotels
- Small changes to setbacks



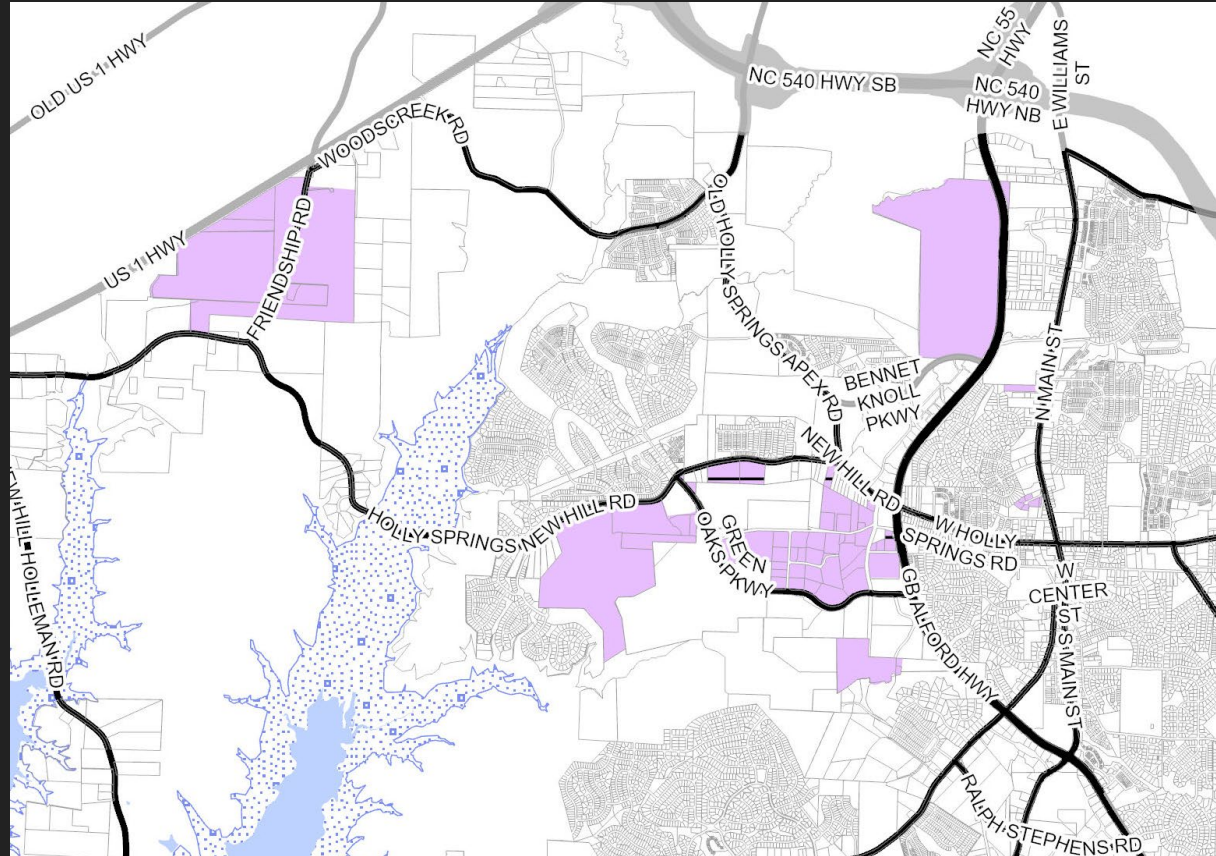
Community Business

- Formerly CB Community Business and GB General Business
- Incorporates most of the uses allowed in each former district
- Allows attached dwellings and apartments
- Reduced setbacks
- Increased height



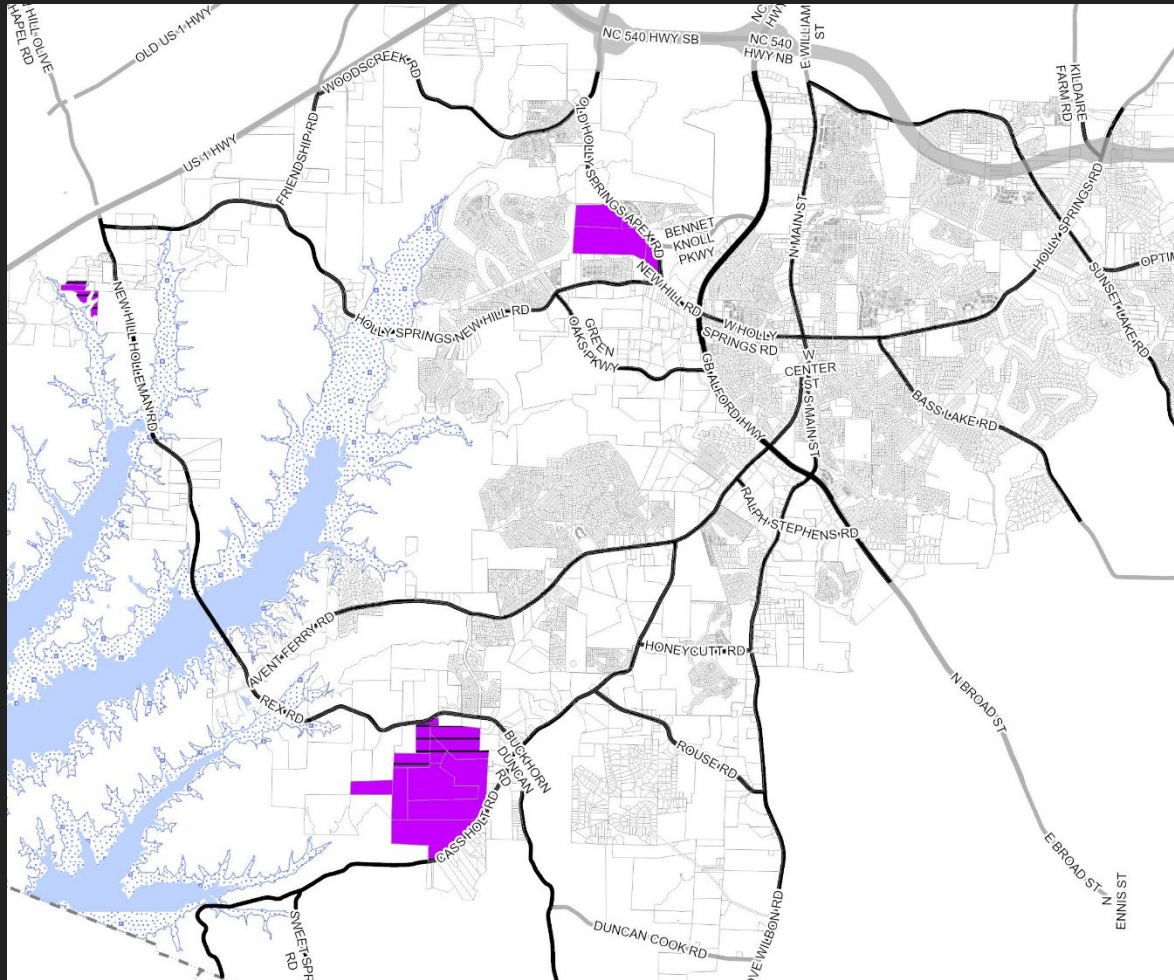
Business, Research and Technology

- Formerly BT Business Technology and RT Research Technology
- Incorporates most of the uses allowed in each former district
- Reduced side and rear setbacks (not next to residential)
- Increased height



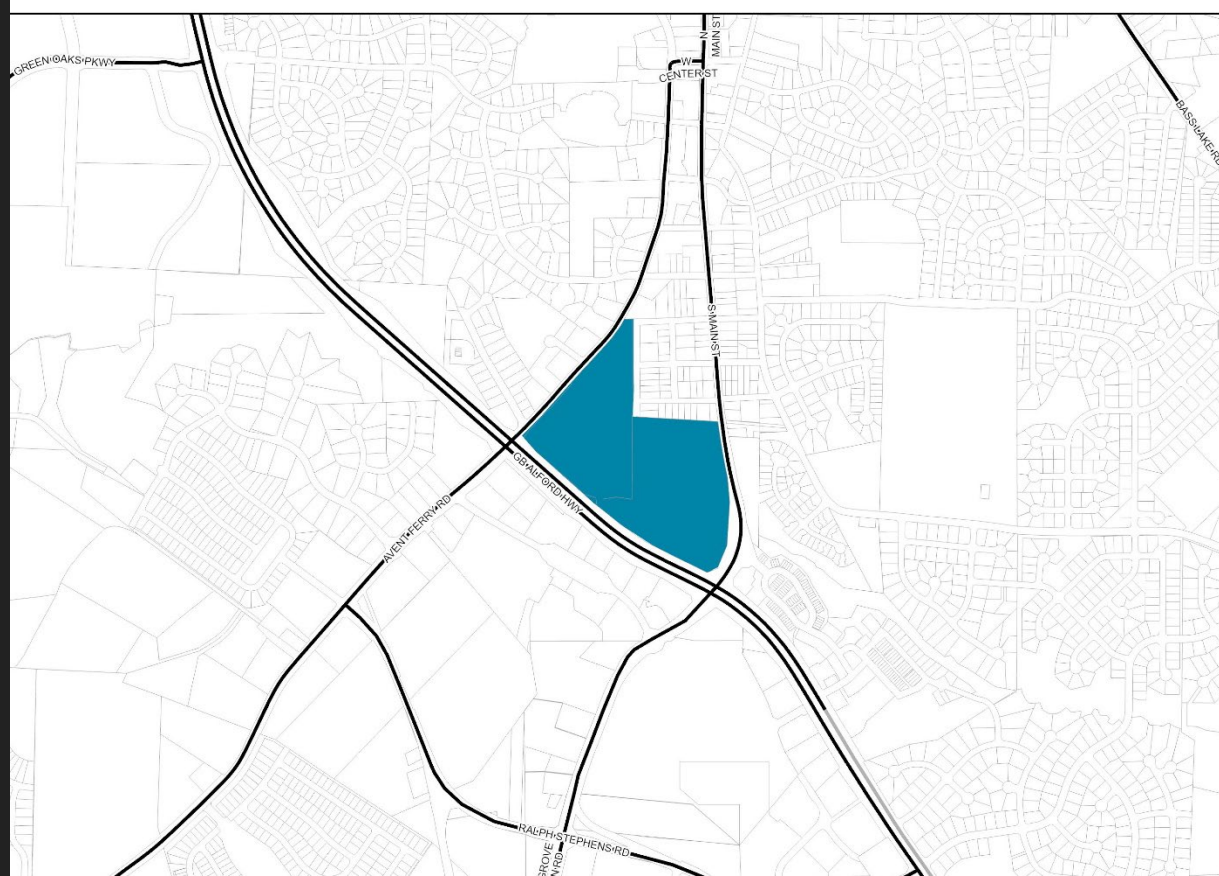
Heavy Industrial

- Formerly IT Industry and Technology
- Manufacturing, industrial processing, outdoor storage, data centers
- Separated by large tree preservation areas



Special District

- Formerly OR Office/
Research & Development
Park
- Employment centers,
office campus, hospitals
- Reduced setbacks
- Larger perimeter buffers
- Only allowed with
Conditional Zoning



Innovation Mixed Use

- New district
- Next generation business park
- Allows industrial, offices, services, research and technology, retail

**New District
Not on the Map**



Next Steps

Milestone	Timeframe
Public Open House (virtual)	Jan. 26
Public Open House (in-person)	Jan. 27
Planning Board Recommendation	Feb. 22
Town Council Public Hearing & Adoption	March 1



Frequently Asked Questions



FAQs

Q: How can I find out if my zoning is changing?

A: Visit our website at www.hollyspringsnc.us/Zone and search for your property on the interactive map.



ZONING MAP UPDATE

The Town of Holly Springs is updating its zoning map. The zoning map outlines the different zoning districts in the town's jurisdiction, showing where different kinds of buildings can be constructed and how buildings can be used (as homes, shops, offices, etc.).

For all developed properties and farms, the current use of the property will be permitted to continue. For most residential subdivisions, the zoning map update reflects a comparable residential zoning category and will not impact the use of your property.



Click Here

MAP IT!

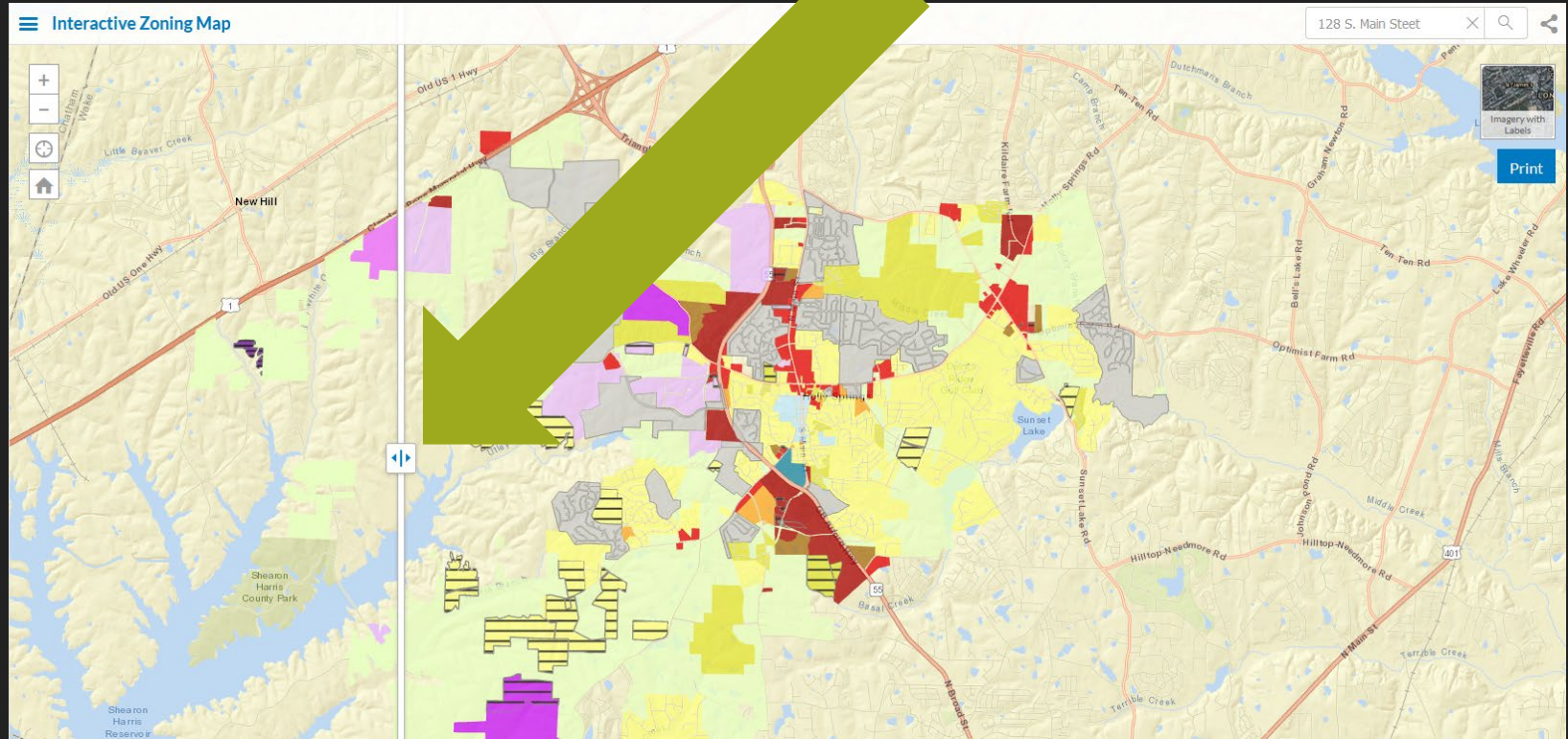
Look up your property on
an interactive map.

- [Click here to look up your property's zoning on an interactive map.](#) Links on the map provide detailed information about your property's current and proposed zoning.
- Or, call Holly Springs Development Services at (919) 557-3908.

Prior to the Town Council Public Hearing scheduled for March 1, the Town is hosting two public information sessions to allow property owners to learn more about this proposal.

FAQs

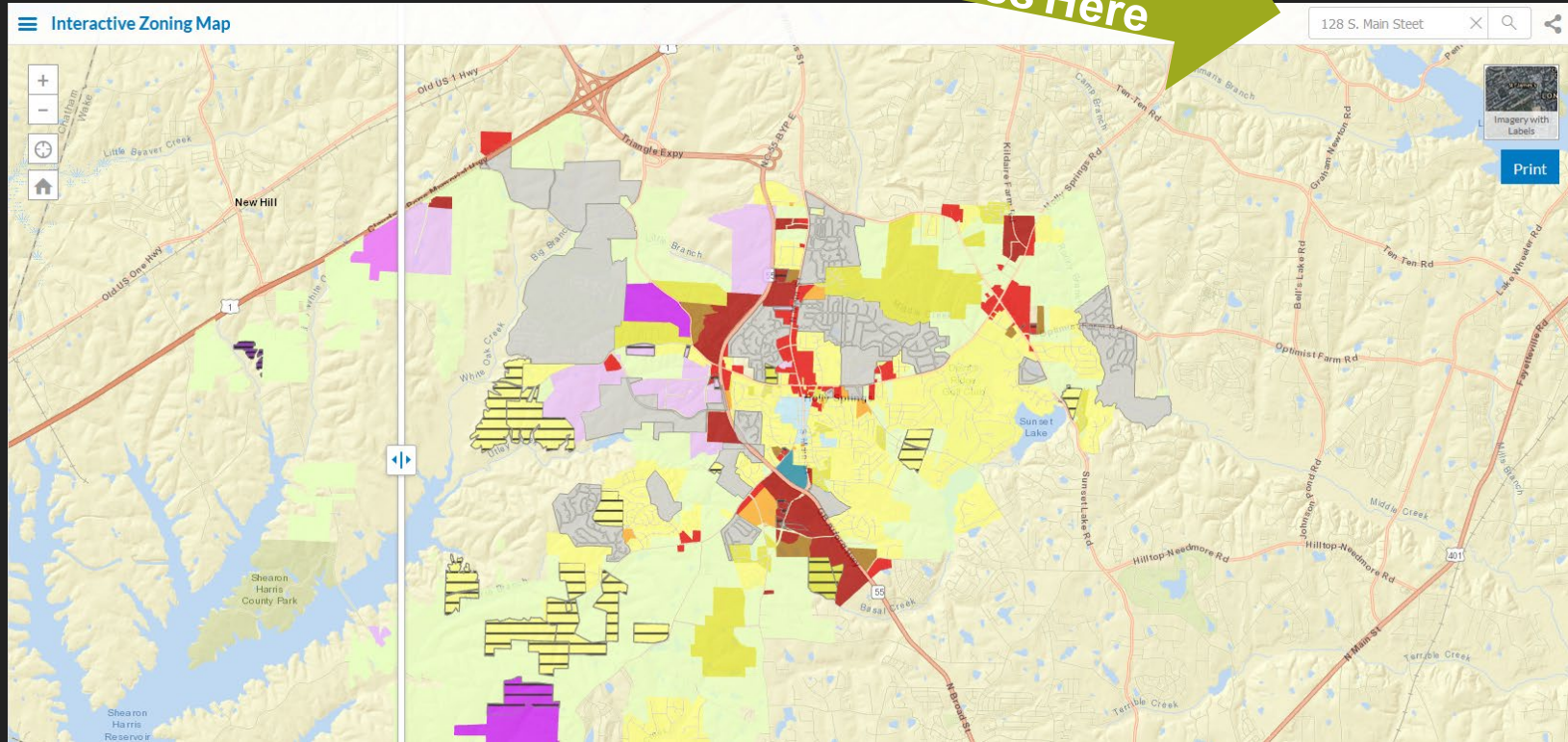
Move the slide bar to see the current vs proposed zoning map



www.hollyspringsnc.us/Zone

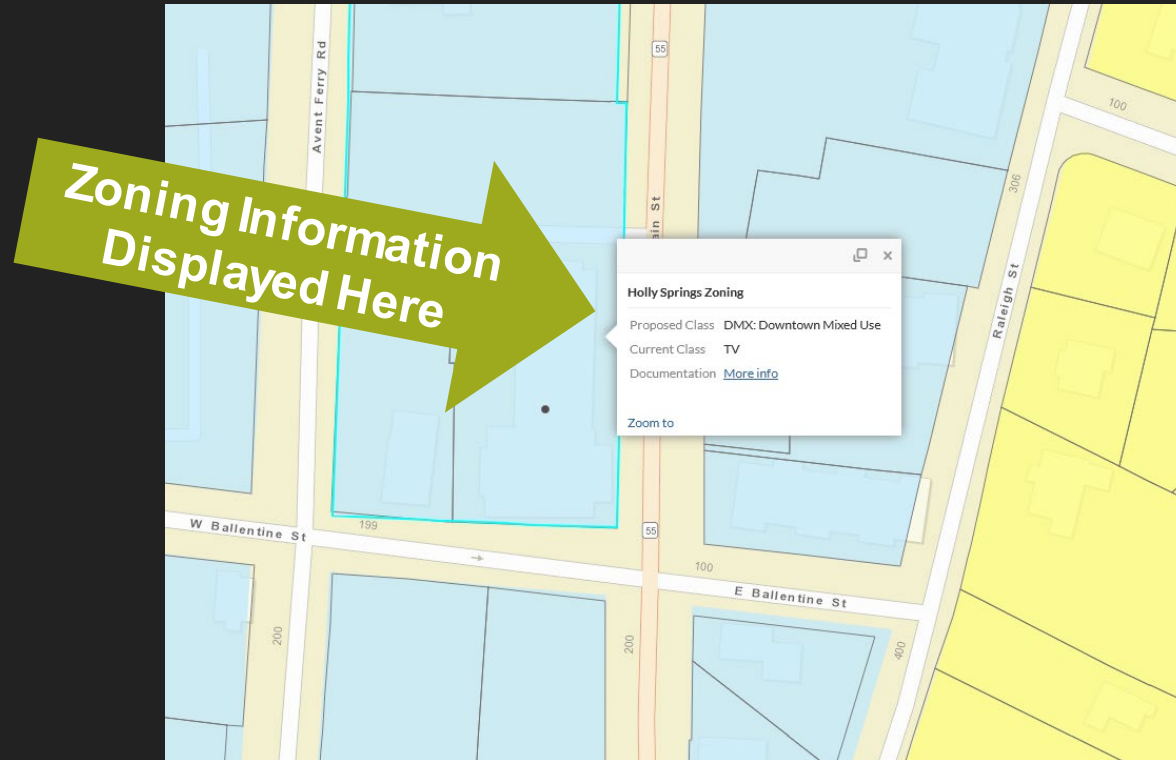
FAQs

Search Your
Address Here



www.hollyspringsnc.us/Zone

FAQs



www.hollyspringsnc.us/Zone

FAQs

Q: Is the zoning reassignment specific to just my property, or are all properties being reassigned?

A: All properties in Town, with the exception of Planned Unit Developments (PUDs), are being reassigned to a new zoning district that is the most comparable to the current zoning district.

FAQs

Q: Can I keep my current zoning district?

A: No. All the current zoning districts have been modified with the new Unified Development Ordinance and all parcels, with the exception of Planned Unit Developments, will need to be reassigned to a new district.



FAQs

Q: Are the permitted uses in each district changing?

A: Some uses are changing, mainly in mixed-use, commercial and industrial districts. In residential districts, the general types of uses that are allowed are not changing (detached, attached, and multifamily uses).

FAQs

Q: Will my building setbacks change? And if so, what about my current home/structures?

A: For the most part, setback requirements in the new districts are comparable or less restrictive than the current districts. Structures that sit within a required setback are allowed to remain and can be repaired and maintained. Any expansions or alterations will need to meet the new setback requirements.



FAQs

Q: Will the new zoning district change the tax rate on my property?

A: No. The property tax rate is established annually by the Town Council and is not based on the zoning district of a property.



FAQs

Q: If I am not in the Town limits, will I have to be annexed?

A: No. The zoning reassignment does not impact whether you are in the Town limits.



FAQs

Q: When is the public hearing?

A: March 1 at 7:00 pm at Town Hall. Visit the project website for details and updates:

<https://www.hollyspringsnc.us/Zone>

Questions and Discussion



How to Participate in the Virtual Open House

- Type questions in the chat box, and a staff member or consultant will respond
- We will monitor the chat and pose your questions to the presenters
- If you have more specific questions that are not answered here, please contact us at:
 - **(919) 557-3908**
 - **developmentsservices@hollyspringsnc.gov**
 - Or attend the in-person open house:

Thursday January 27, 9am – 1pm
Holly Springs Cultural Center



We are taking a break.
We will return at 30
minutes after the hour

Presentations start at
4:30, 5:30, 6:30 and 7:30

Town of Holly Springs, NC
Zoning Reassignment
Public Open House





Ordinance No. RZ22-02

Date Submitted: March 1, 2022

Date Adopted:

**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*; and

WHEREAS, the Town of Holly Springs Town Council has reasonably maintained *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* with periodic updates in 2019 by adopting Section 1: Future Land Use & Character Plan; and in 2020 by adopting Section 3: Parks, Recreation and Greenways Master Plan; and

WHEREAS, the Town of Holly Springs Town Council adopted a new Unified Development Ordinance in November, 2021 with an effective date of March 1, 2022 in order to implement *Vision Holly Springs: Town of Holly Springs Comprehensive Plan*; and

WHEREAS, the existing zoning districts are no longer best suited to carry out *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* and the Unified Development Ordinance proposes new zoning districts; and

WHEREAS, the Town of Holly Springs Town Council seeks to apply the new zoning districts to properties in its territorial jurisdiction; and

WHEREAS, the Town of Holly Springs sent mailed notice to each property owner subject to the rezoning notifying them of the proposed changes to the zoning map for their property and provided opportunity to submit comment; and

WHEREAS, in accordance with NCGS § 160D-601, the Town of Holly Springs held a legislative hearing on March 1, 2022 to consider the proposed changes to the zoning map; and

WHEREAS, in accordance with NCGS § 160D-602, the Town of Holly Springs elected to publish notice of the hearing as required by G.S. 160D-601 by one-half of a newspaper page ad in the News and Observer which was given in two successive calendar weeks; and

WHEREAS, in accordance with NCGS § 160D-602 owners of affected parcels of land and the owners of all parcels of land abutting those parcels of land who reside outside of the newspaper circulation area for the News and Observer, according to the address listed on the most recent property tax listing for the affected properties, have been provided mailed notice of the hearing on the proposed zoning map amendment by first-class mail; and

WHEREAS, the Holly Springs Planning Board reviewed the proposed zoning map at a Public Meeting on February 22, 2022 and recommended **approval** by a vote of **X-X**; and

WHEREAS, after considering the recommendation of the Holly Springs Planning Board and the public input offered in a public hearing before the Town Council, the Town Council finds amending the Official Zoning Map is consistent with Vision Holly Springs: Town of Holly Springs Comprehensive Plan as the proposed Zoning Map implements the zoning districts of the Unified Development Ordinance (UDO) and provides the Town of Holly Springs the necessary tools, policies, and development standards to implement Vision Holly Springs. Specifically, the proposed Zoning Map implements the UDO's character based land use approaches outlined in the Land Use & Character Plan (Section 1) adopted in 2019 and provides opportunities for more mixed-use activity centers thought Holly Springs, provides context sensitive infill opportunities, and provides increased opportunities to diversify home & neighborhood choices in the community; the proposed Zoning Map establishes the zoning districts necessary to implement the goals and objectives stated in the Plan; and

WHEREAS, the Town of Holly Springs Town Council finds the proposed amendment to the Official Zoning Map is reasonable and in the public interest by maintaining existing neighborhoods, providing opportunities to expand the nonresidential tax base, generate economic activity for the community, and provide a unique and integrated development; and

THEREFORE, BE IT ORDAINED by the Holly Springs Town Council of the Town of Holly Springs, North Carolina, that the Unified Development Ordinance of the Town is amended as follows:

Part 1: Amend Unified Development Ordinance Section 1.7 Official Zoning Map, as specified on the map in Appendix A of this ordinance, map dated February 22, 2022, with the following additional changes:

PIN	Current Zoning	New Zoning
0638824248, 0638810828, 638716449, 0638814177, 0638802381, 0639633688, & 0638707772 (portion), as described in RZ22-01, also known as "Norris Crossing"	R-10 CU	SR CU
N/A	N/A	N/A

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, or application of this Ordinance to any one parcel or group of parcels is for any reason held or declared to be unconstitutional, inoperative or void, such holdings shall not affect the remaining portion of this Ordinance or application of this Ordinance to other parcels and it shall be construed to have been the legislative intent to pass the Ordinance without such unconstitutional, invalid or inoperative part therein, and the remainder of this Ordinance after the exclusion of such part or parts shall be deemed to be held valid as if such part or parts had not been included therein, or if this Ordinance or any of the provisions

thereof shall be held inapplicable to any person, group of persons, property, kind of property, circumstances, or set of circumstances, such holdings shall not affect the applicability thereof to any other person, property or circumstances.

Part 4: INCLUSION IN 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 March 1, 2022 in accordance with the laws of the State of North Carolina.

Adopted this, the 1st day of March 2022.

Town of Holly Springs by

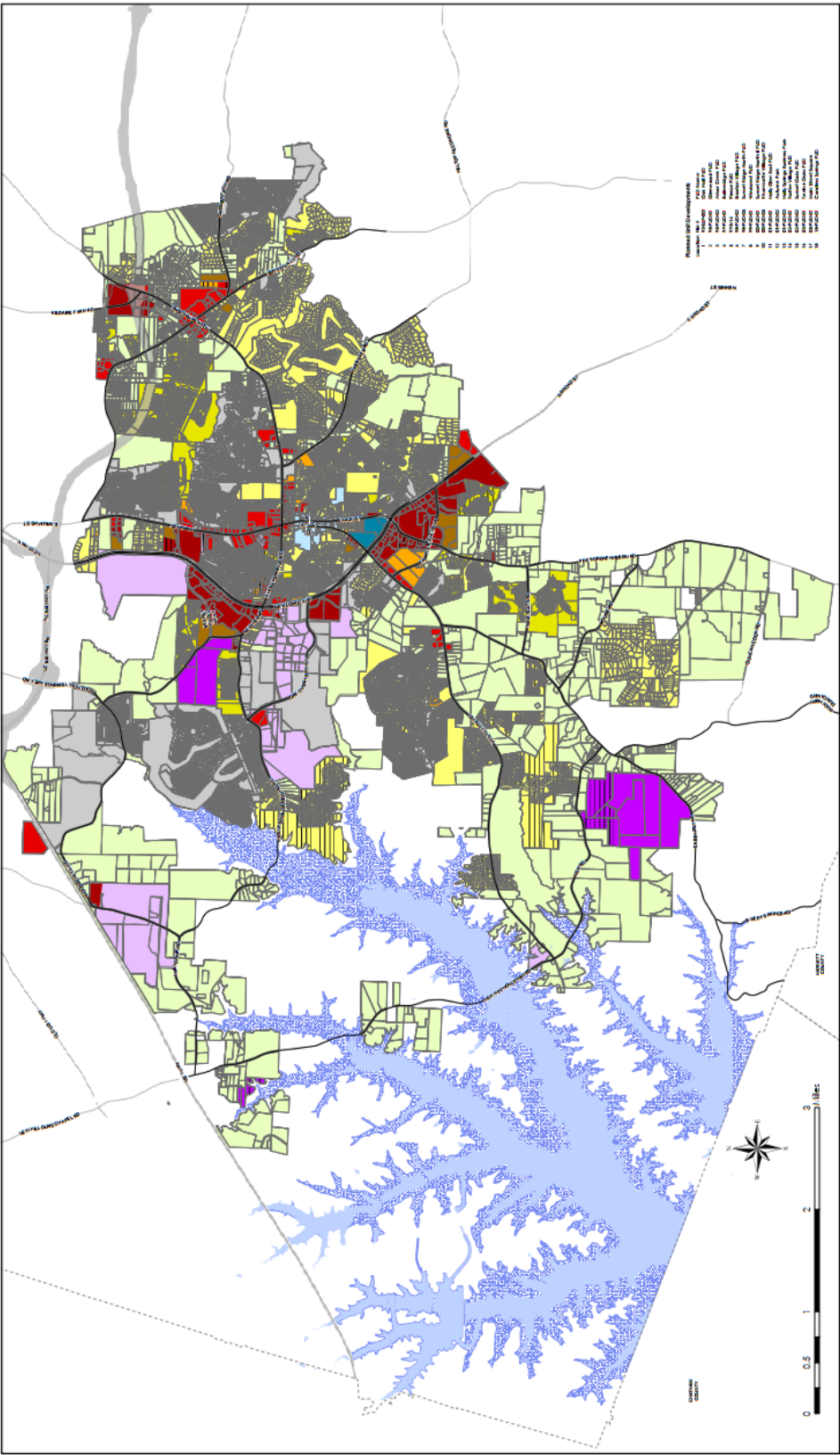
Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk



Appendix A – Zoning Map



Town of Holly Springs **Zoning Map**

Updated: February 22, 2022



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 14.

Public Hearings

Title: UDO Text Amendment 22-UDO-01 Planning Board and Board of Adjustment

Strategic Priority Area: Responsible & Balanced Growth

Organizational Excellence

Economic Prosperity & Diversity

Staff Resource: Sean Ryan, Development Services, Linda McKinney, Town Clerk

Action(s):

1. Conduct Legislative Public Hearing
2. Adopt Ordinance 22-04 to adopt statement of compatibility and to approve UDO Text Amendment separating Planning Board and Board of Adjustment, including duties and responsibilities.
3. Assign three new members appointed in January 2022 to the Planning Board
4. Assign two new members appointed in January 2022 to the Board of Adjustment
5. Appoint two new members, one to a full term and one to a partial term on the Board of Adjustment

Explanation:

- This ordinance contains the changes necessary to allow the Planning Board and Board of Adjustment to remain separate boards.
- In order to maintain the Planning Board as a board that only makes recommendations on legislative actions (UDO amendments, rezoning, comprehensive plan amendments, etc.), this ordinance transfers Special Use Permit decisions from the Planning Board to the Board of Adjustment.
- This change creates two distinct boards – a Planning Board that makes recommendations to the Town Council on legislative decisions and a Board of Adjustment that makes quasi-judicial decisions that may be appealed to Superior Court.

Planning Board Recommendation:

The Planning Board discussed the following issues and concerns on 02/22/2022:

- The qualifications for members of the Planning Board. The existing UDO text, which is not being amended by this ordinance change, highlights specialties/interests that the Town Council should consider when making appointments. Suggested additions include economic development, renewable energy, and transportation. It was also suggested there may need to be limitations, such as real estate professionals.

Planning Board Recommendation:
The Planning Board recommended approval (7-1-1)

Those voting against the motion were:

- Mr. Madoni, having served on the Board of Adjustment before serving on the Planning Board, believed the merged board was appropriate given the light workload of the Board of Adjustment.

Appointments:

- In January, Council appointed five members to the newly combined Planning Board/Board of Adjustment and recommended one ETJ member be appointed by the Wake County Board of Commissioners.
- After those appointments, there were openings that were not filled in anticipation of the combined board's reduction in size.
- Staff reached out to the appointees and all requested Planning Board.

Background:

- In November 2021, the Town Council adopted the new Unified Development Ordinance (UDO) and set an effective date of March 1, 2022.
- The new UDO proposed a merger of the Planning Board and Board of Adjustment to consolidate quasi-judicial decision making into a single board.
- Following discussion at the Town Council Annual Retreat in February, the Town Council directed that the two boards remain separate.

Appointments:

- Council received 28 applications from in-town residents for the openings which were filled at the January 18, 2022 meeting.
- The remainder of those applications are attached for reference.

Funding Source(s):

N/A

Attachment(s):

1. 22UDO01_PB_BOA_Changes_StaffReport
2. 22UDO01_PB_BOA_Changes_ORD2204
3. Memo to Council
4. Applicant List
5. Combined applications
6. 2022_BoardAppointment Map



Town of Holly Springs Staff Report to the Planning Board

REQUEST FOR UDO TEXT AMENDMENT Chapter 11: Planning Board and Board of Adjustment 22-UDO-01

PETITIONER(S):

Town of Holly Springs
P.O. Box 8
Holly Springs, NC 27540

ANTICIPATED REVIEW SCHEDULE:

Planning Board: February 22, 2022
Public Hearing and Town Council Action: March 1, 2022

STAFF CONTACTS: Sean Ryan, Planning Manager

ATTACHMENTS:

Draft UDO Ordinance Amendment

STAFF ANALYSIS

OVERVIEW

In November 2021, the Town Council adopted the new Unified Development Ordinance (UDO) and set an effective date of March 1, 2022. Included in the new UDO was a merger of the Planning Board and Board of Adjustment to consolidate quasi-judicial decision making into a single board. Following discussion at the Town Council retreat in February, the Town Council has requested that the two boards remain separate. This ordinance contains the changes necessary to allow the Planning Board and Board of Adjustment to remain separate boards. In order to maintain the Planning Board as a board that makes recommendations on legislative actions (UDO amendments, rezoning, comprehensive plan amendments, etc.) this ordinance transfers Special Use Permit decisions from the Planning Board to the Board of Adjustment. This change creates two distinct boards – a Planning Board that makes recommendations to the Town Council on legislative decisions and a Board of Adjustment that makes quasi-judicial decisions that may be appealed to Superior Court.

Suggested Motions:

Consistency Statement:

The proposed UDO text amendment is consistent with the Vision Holly Springs: Town of Holly Springs Comprehensive Plan as follows: The proposed Unified Development Ordinance (UDO) provides the Town of Holly Springs the necessary Boards and Committees, tools, policies, and development standards to implement Vision Holly Springs. Specifically by providing the processes, standards and tools necessary for staff and the development community to implement the goals and objectives stated in the Plan; and that it is in the public interest to maintain a separate Board of Adjustment for quasi-judicial decisions and Planning Board for legislative recommendations and the proposed UDO text amendment provides additional opportunities for resident engagement and participation in the planning process.

UDO Text Amendment:

Motion that the Planning Board recommend the Town Council **approve / deny** UDO Text Amendment 22-UDO-01 as submitted by the Town of Holly Springs.

Agenda Item Completeness Checklist				
Staff Member	Approved for Distribution			Comments
	Yes	No	Initials	
Sean Ryan	X			



Ordinance No. 22-04

Date Submitted: March 1, 2022

Date Adopted: March 1, 2022

**AN ORDINANCE TO AMEND SECTIONS OF THE CODE OF ORDINANCES
TO MODIFY APPENDIX A: UNIFIED DEVELOPMENT ORDINANCE
AND ADOPT THE COMPATIBILITY STATEMENT REQUIRED BY
NORTH CAROLINA GENERAL STATUTES 160D**

WHEREAS, the Town of Holly Springs Town Council adopted *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* in November 2007; and

WHEREAS, the Town of Holly Springs Town Council has maintained and updated *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* by adopting *Section 1: Land Use & Character Plan* in 2019; *Section 3 Parks, Recreation and Greenways Master Plan* in 2021; and is currently updating *Section 2: Comprehensive Transportation Plan*; and

WHEREAS, Town of Holly Springs desires to amend the Unified Development Ordinance in accordance with the goals and policies contained within *Vision Holly Springs: Town of Holly Springs Comprehensive Plan*; and

WHEREAS, the Town Holly Springs Planning Board has reviewed this request at a Public Meeting and recommended approval; and

WHEREAS, an opportunity for public input into the suggested amendment has been offered in a public hearing before the Town Council; and

WHEREAS, the Holly Springs Town Council finds that the proposed UDO text amendment is consistent with the *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* as follows: The proposed Unified Development Ordinance (UDO) provides the Town of Holly Springs the necessary Boards and Committees, tools, policies, and development standards to implement Vision Holly Springs. Specifically by providing the processes, standards and tools necessary for staff and the development community to implement the goals and objectives stated in the Plan; and

WHEREAS, the Holly Springs Town Council finds that it is in the public interest to maintain a separate Board of Adjustment for quasi-judicial decisions and Planning Board for legislative recommendations and the proposed UDO text amendment provides additional opportunities for resident engagement and participation in the planning process ; and

THEREFORE, BE IT ORDAINED by the Holly Springs Town Council of the Town of Holly Springs, North Carolina, that the Code of Ordinances Appendix A: Unified Development Ordinance of the Town is amended as follows:

Part 1: Chapter 11 Administration & Decision-Making Bodies; Section 11.3.3 Planning Board:

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to Section 11.3.3 Planning Board to modify the roles of the Planning Board as follows:

11.3.3 PLANNING BOARD

A. Establishment. The Planning Board is established to be advisors to the Town Council on long-range planning activities and subject to the duties outlined in the NCGS § 160D-301. The Planning Board shall provide review and technical recommendations to Town Council on all matters relating to land use policy, zoning map designations, UDO text, and development standards. ~~The Planning Board is also established to conduct hearings and take action on Special Use Permits and certain UDO applications/permits that possess the potential for substantial impacts on the Town and the natural environment.~~ This is in addition to the powers and duties established in Chapter 2, Article IV of the Code of Ordinances (and as amended).

B. Composition/Membership. The Planning Board shall consist of 9 members, 8 of whom shall be residents living within the corporate limits of the Town and ~~one~~ **1** who resides within the Town's Extraterritorial Jurisdiction.

1. Appointments. Members shall be appointed to serve on the Planning Board for ~~three-~~ **3-year** terms. The Town Council shall appoint residents residing within the corporate limits. The Wake County Board of Commissioners shall appoint the 1 member who resides outside the corporate limits but within the Town's Extraterritorial Jurisdiction. Whereas, if the County fails to appoint the member within 90 days of a vacancy, the Town Council shall make the appointment.

a. Terms for members shall expire on the last day of February. Town Council shall schedule the appointments so that terms overlap and do not create ~~four~~ **4** or more vacancies when individual tenures expire.

b. All Planning Board members may serve until the expiration of their terms or until their successors have been appointed.

c. The Town Council reserves the right to remove members at any time based on a pattern of absenteeism, or poor ethical performance.

2. Vacancies, Reappointment, and Extensions. When a Planning Board member's term expires, the Town Council may choose to reappoint said member or appoint a new individual to fill the vacancy pursuant to the limitations outlined above. The Town Council may extend the appointment for any Planning Board member after their term expires to avoid vacancies. The Town Council shall employ notice and procedures to recruit potential Planning Board members.

3. Representation. To the greatest extent practicable, the Town Council shall appoint a diverse Planning Board membership who collectively possess expertise/experience in the following town planning-related topics: architecture, urban design, historic preservation, land use policy, land use law, environmental protection, housing, equity/social justice, and engineering/land development. Attendance at the Citizen's Academy or equivalent training is a prerequisite ~~et~~ **to** being appointed to the Planning Board.

4. Compensation. The Planning Board members shall be appointed without compensation. However, the Town may reimburse members for Town-related expenses and continuing education events. Said reimbursement activities shall be preapproved by the Administrator.

~~5. UDO Transitional Composition. Upon the effective date of this UDO, the Planning Board composition/membership shall be expanded to 17 members, 14 of whom shall be residents living within the corporate limits of the Town and 3 who reside within the Town's Extraterritorial Jurisdiction. As individual terms expire, the membership will be reduced to 9 members and outlined below.~~

~~a. By March 1, 2023, 13 members, 11 of whom shall be residents living within the corporate limits of the Town and 2 who reside within the Town's Extraterritorial Jurisdiction.~~

~~b. By March 1, 2024, 9 members as outlined in subsection 11.3.3.B.~~

C. Duties and Authority. This UDO grants the Planning Board the following duties and authority.

1. Planning Board-authorized UDO applications/permits. The Planning Board shall review and act on UDO applications/permits as authorized by this UDO and pursuant to Table 11.4-A: Review Matrix of this Chapter. Where authorized, the Planning Board may move to approve, approve with conditions, or deny an application/permit based on the provisions of this UDO.

2. Review and Recommend UDO Applications/Permits, Town Policies, and Ordinances. The Planning Board shall review and provide recommendations to Town Council for certain UDO applications/permits pursuant to Table 11.4-A: Review Matrix of this Chapter, and Legislative Actions involving text/map amendments.

3. Special Studies. The Planning Board shall review and make recommendations pertaining to special studies and town planning-related subjects to the Town Council (as directed).

~~4. The Planning Board may sit as a Board of Adjustment to review and take action on variance requests that are associated with a concurrent Development plan, Special Use permit, Subdivision, or major modification application.~~

D. Planning Board Meetings.

1. Frequency. The Planning Board shall hold at least ~~one~~ 1 meeting monthly unless there is no business to be discussed or acted upon. All its meetings shall be in accordance with NCGS §143-318.9 through NCGS §143-318.18, and NCGS §160D-308. The Administrator may authorize additional monthly meetings to accommodate the Planning Board's workload.

2. Quorum. A quorum shall consist of at least half of the regular members for the purpose of taking any official action required by this UDO.

3. Chairperson and Vice Chair Appointments. Each March, the Planning Board shall hold an organizational meeting and elect a Chairperson and Vice Chairperson to conduct meetings. The terms for both individuals shall be 1 year or until successors have been elected and installed, with eligibility for reelection.

4. Rules of Transaction. The Planning Board shall adopt rules of transaction of its business and shall keep a record of its members' attendance and of its resolutions, discussions, findings, and recommendations. The Planning Board may direct the Administrator to conduct these duties on its behalf.

5. Member Participation. All regular members shall have the authority to participate in discussions of the Planning Board and shall have voting power on all matters of business.

~~6. The meetings of the Planning Board shall include a segment dedicated to the Board of Adjustment for Type 4 Actions and other items as required by this Ordinance. This portion of the meeting shall precede all other Planning Board actions on the agenda. A separate record of minutes and attendance shall be kept of all segments of Planning Board meetings dedicated to the Board of Adjustment.~~

Part 2: Chapter 11 Administration & Decision-Making Bodies; Section 11.3.4 Board of Adjustment:

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to Section 11.3.4 Board of Adjustment to modify the roles of the Board of Adjustment as follows:

11.3.4 BOARD OF ADJUSTMENT (BOA)

A. Establishment. The Board of Adjustment (BOA) is established to conduct hearings and take action on ~~variances and~~ certain **quasi-judicial** UDO applications/permits as outlined in this UDO to ensure compatibility with surrounding land uses and natural environments. The **BOA Board of Adjustment** is also established to take action on applicant-initiated appeals of administrative decisions.

~~B. Composition/Membership. A portion of the Planning Board membership shall serve as the Board of Adjustment for Type 4 Actions. Each March, the Planning Board shall elect 5 members to serve as the BOA, 4 of whom shall be residents living within the corporate limits of the Town and 1 who resides within the Town's Extraterritorial Jurisdiction. The remaining members of the Planning Board shall serve as BOA alternate members. The terms shall be 1 year or until successors have been elected and installed, with eligibility for reelection.~~ **The Board of Adjustment shall consist of 5 regular members and 3 alternate members, of which 4 of the regular members and 2 of the alternate members shall reside within the corporate limits of the Town of Holly Springs and 1 regular member and 1 alternate member shall reside within the Town's Extraterritorial Jurisdiction.**

1. Appointments. Members shall be appointed to serve on the Board of Adjustment for 3-year terms. The Town Council shall appoint the 4 regular members and 2 alternate members residing within the corporate limits. The Wake County Board of Commissioners shall appoint the 1 regular member and 1 alternate member who reside outside the corporate limits but within the Town's

Extraterritorial Jurisdiction. Whereas, if the County fails to appoint a member within 90 days of a vacancy, the Town Council shall make the appointment.

a. Terms for members shall expire on the last day of February. Town Council shall schedule the appointments so that terms overlap and do not create 4 or more vacancies when individual tenures expire.

b. All Board of Adjustment members may serve until the expiration of their terms or until their successors have been appointed.

c. The Town Council reserves the right to remove members at any time based on a pattern of absenteeism, or poor ethical performance.

d. An alternate member appointed from within the corporate limits of the Town of Holly Springs may serve on the Board of Adjustment as a regular member only in the absence, temporary disqualification, or to fill a vacancy pending appointment of a regular member appointed from within the Town of Holly Springs' corporate limits. The alternate member from the Town of Holly Springs' Extraterritorial Jurisdiction may serve on the Board of Adjustment as a regular member only in the absence, temporary disqualification, or to fill a vacancy pending appointment of the regular member from the Town of Holly Springs' Extraterritorial Jurisdiction.

2. Vacancies, Reappointment, and Extensions. When a Board of Adjustment member's term expires, the Town Council may choose to reappoint said member or appoint a new individual to fill the vacancy pursuant to the limitations outlined above. The Town Council may extend the appointment for any Board of Adjustment member after their term expires to avoid vacancies. The Town Council shall employ notice and procedures to recruit potential Board of Adjustment members.

3. Representation. To the greatest extent practicable, the Town Council shall appoint a diverse Board of Adjustment membership who collectively possess expertise/experience in the following town planning-related topics: architecture, urban design, historic preservation, land use policy, land use law, environmental protection, housing, equity/social justice, and engineering/land development. Attendance at the Citizen's Academy or equivalent training is a prerequisite to being appointed to the Board of Adjustment.

4. Compensation. The Board of Adjustment members shall be appointed without compensation. However, the Town may reimburse members for Town-related expenses and continuing education events. Said reimbursement activities shall be preapproved by the Administrator.

C. Duties and Authority. This UDO grants the BOA **Board of Adjustment** the following duties and authority.

1. **BOA Board of Adjustment** -authorized UDO applications/permits. The **BOA Board of Adjustment** shall review and act on UDO applications/permits as allowed by this UDO and pursuant to Table 11.4-A: Review Matrix of this Chapter – these items include **Special Use Permits and Variances**. **The Board of Adjustment may review and take**

action on Variance requests that are associated with a concurrent quasi-judicial UDO application/permit pursuant to Table 11.4-A: Review Matrix of this Chapter.

Where authorized, the BOA **Board of Adjustment** may move to approve, approve with conditions, or deny a UDO application/permit based on the provisions of this UDO. The **BOA Board of Adjustment** shall apply any applicable UDO criteria in making its decision and provide findings thereof.

2. Appeals. The BOA **Board of Adjustment** shall review and take action on appeals of administrative decisions (including those actions from the Administrator and/or the DRC). The **BOA Board of Adjustment** may move to approve, approve with modifications/limitations, or deny the request for appeal.

D. BOA **Board of Adjustment** Meetings.

~~1. General. The BOA meetings shall be held and conducted pursuant to subsection 11.3.3.D.~~ **Frequency. The Board of Adjustment shall hold at least 1 meeting monthly unless there is no business to be discussed or acted upon. All its meetings shall be in accordance with NCGS §143-318.9 through NCGS §143-318.18, and NCGS §160D-308. The Administrator may authorize additional monthly meetings to accommodate the Board of Adjustment's workload.**

2. Quorum. A quorum shall consist of at least half of the regular members for the purpose of taking any official action required by this UDO.

3. Chairperson and Vice Chair Appointments. Each March, the Board of Adjustment shall hold an organizational meeting and elect a Chairperson and Vice Chairperson to conduct meetings. The terms for both individuals shall be 1 year or until successors have been elected and installed, with eligibility for reelection.

4. Rules of Transaction. The Board of Adjustment shall adopt rules of transaction of its business and shall keep a record of its members' attendance and of its resolutions, discussions, findings, and recommendations. The Board of Adjustment may direct the Administrator to conduct these duties on its behalf.

5. Member Participation. All regular members or alternate members, when serving as a regular member, shall have the authority to participate in discussions of the Board of Adjustment and shall have voting power on all matters of business.

Part 5: Chapter 11 Administration & Decision-Making Bodies; Section 11.3.5 Town Council:

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to Section 11.3.5 Town Council to modify the roles of the Town Council as follows:

11.3.5 TOWN COUNCIL

A. Introduction and Acknowledgement. To effectuate the purpose of this UDO, the Town Council shall have all the power vested by GS § 160D, et. seq. regarding the implementation of the Comprehensive Plan and this UDO, including but not limited to the powers set forth in this Chapter, other provisions of this UDO, and applicable law.

B. UDO-related Duties and Authority. This UDO outlines Town Council's role and duties to review and take action on certain UDO applications/permits and long-range Town planning activities. This UDO assigns the following duties and authority to Town Council.

1. Town Council-authorized UDO applications/permits. The Town Council shall review and act on UDO applications/permits as authorized by this UDO and pursuant to Table 11.4-A: Review Matrix of this Chapter. These items include, but not limited to, Annexations, Comprehensive Plan amendments, special planning initiatives, zoning map changes, UDO text amendments, certain Major Modifications, Major Subdivisions, Zoning Vested Right and Development Agreements. Where authorized, the Council may move to approve, approve with conditions/limitations, or deny a UDO applications/permits based on the provisions of this UDO.

2. Special Studies. The Town Council may initiate Long-range Plans, special studies, and other Town planning-related subjects. The Council may direct such studies to the Administrator to implement.

3. ~~Board of Adjustment Duties~~ **Variances**. The Town Council may ~~sit as the Board of Adjustment (BOA)~~ to review and take action on Variance requests that are associated with a concurrent **quasi-judicial** UDO application/permit **pursuant to Table 11.4-A: Review Matrix of this Chapter**, ~~and/or zoning map amendment application.~~

Part 4: Chapter 11 Administration & Decision-Making Bodies; Section 11.4 Review Matrix:

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to Section 11.4 Review Matrix, Table 11.4-A Review Matrix, to modify the roles of the roles of the Planning Board, Board of Adjustment, and Town Council as follows:

Review Type Application/Petition Types	Application/Petition Types	Review and Recommendation Body	Applicant Neighborhood Meeting	Sketch Plan Review	Final Decision Making Body	Appeal Authority
Type 3 – Quasi-judicial Action (planning Board review)	• Special Use Permit • Major Modifications (involving previously approved Type 3 applications/petitions) • Variance (involving concurrent Type 3 applications/petitions)	Town Staff / Various Departments	Not Required	Required	Planning Board Board of Adjustment (*H)	Superior Court
Type 4 – Quasi-judicial Action (Board of adjustment review)	• Appeals of Administrative Decisions • Variance (1)	Town Staff / Various Departments	Not Required	Not Required	Board of Adjustment (*H)	Superior Court

Type 5 – Quasi-judicial Action (Town Council Review)	• Development Plans (involving properties in the DMX, and/or buildings over 40,000-sf) • Major Subdivisions (Preliminary Plats) • Major Modifications (involving previously approved Type 5 applications/petitions) • Variance (involving concurrent Type 5 applications/petitions)	Town Staff / Various Departments and Planning Board	Required (see Section 11.5 and Table 11.5-a)	Required	Town(*H) Council	Superior Court
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Part 5: Chapter 11 Administration & Decision-Making Bodies; Section 11.12 Special Use Permits:

Add text as indicated in **bold** and remove text as indicated in ~~strike through~~ to Section 11.12 Special Use Permits, Procedures to modify the roles of the Planning Board as follows:

E. Procedures. The following provisions establish the review procedures for Special Use Permit applications.

1. The ~~Planning Board~~ **decision-making body** shall review and take action on Special Use Permit applications pursuant to Table 11.4-A: Review Matrix of this Chapter as a Type 3 Review.
2. Applicants shall provide the submittal items listed in 11.12.B of this Chapter.
3. The Administrator will review the Special Use Permit application and provide written technical comments to the applicant based on the proposal's compliance with the applicable UDO standards and the review criteria. The Administrator (through their written comments) may require revisions to the proposal to achieve compliance with the UDO. The applicant shall revise its submittal to respond to the Administrator's comments. The Administrator will direct a staff member to write a staff report. The Administrator will forward the revised application materials and its staff report to the ~~Planning Board~~ **decision-making body** for action.
4. The ~~Planning Board~~ **decision-making body** shall conduct a public hearing and vote to approve, approve with conditions, or deny the Special Use Permit application.

Part 6: Chapter 11 Administration & Decision-Making Bodies; Section 11.13.1 Variances and Administrative Adjustments, Variances:

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to Section 11.13 Variances and Administrative Adjustments, Variances, Procedures to modify the roles of the Board of Adjustment as follows:

B. Procedures. The following provisions establish the review procedures for Variance applications.

1. The ~~Board of Adjustment (BOA)~~ **decision-making body** shall review and take action on Variance applications pursuant to Table 11.4-A: Review Matrix of this Chapter ~~as a Type 4 Review~~.
2. Applicants shall provide the submittal items listed in 11.13.C of this Chapter.
3. The Administrator will review the Variance application and provide written technical comments to the applicant based on the proposal's compliance with the applicable UDO standards and the review criteria. The Administrator (through their written comments) may require revisions to the proposal to achieve compliance with the UDO. The applicant shall revise its submittal to respond to the Administrator's comments. The Administrator will direct a staff member to write a staff report. The Administrator will forward the revised Variance application materials and its staff report to the BOA **decision-making body** for action.
4. The BOA **decision-making body** shall conduct a public hearing and vote to approve, approve with conditions, or deny the Variance request.
5. ~~As an alternative to the procedures listed above, the Planning Board or Town Council~~ **The decision-making body** may review **and take action on** Variance requests as a quasi-judicial action that are associated with a concurrent ~~Special Use Permit, Major Subdivision, Development Plan, Major Modification, and/or Zoning Map Amendment~~ application **quasi-judicial UDO application/permit** pursuant to Table 11.4-A: Review Matrix of this Chapter. ~~In those situations, the BOA will not be the decision-making body for that Variance application.~~

Part 7: REPEAL OF CONFLICTING ORDINANCES

All ordinances or parts of the UDO of the Town of Holly Springs conflicting or inconsistent with the provisions of this Ordinance are hereby repealed.

Part 8: 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 9: INCLUSION IN CODE

It is the intention of the Town Council entered as hereby ordained, that the provisions of this Ordinance shall become and be made part of the Unified Development Ordinance of the Town of Holly Springs, North Carolina; that the Section(s) of this Ordinance may be renumbered or relettered to accomplish such intention, and that the word "Ordinance" may be changed to "Section, or "Article" or other word.

Part 10: EFFECTIVE DATE

The provisions of this ordinance shall become effective March 1, 2022 in accordance with the laws of the State of North Carolina.

Adopted this, the 1st Day of March 2022.

Town of Holly Springs by

ATTEST:

Sean Mayefskie, Mayor

Linda McKinney, Town Clerk





To: Mayor Mayefskie and
Town Council Members

From: Linda McKinney
Town Clerk

Date: February 15, 2022

Re: Annual Board of Adjustment and Planning Board Appointments

Mayor and Council,

Below please find lined out the current board members, listed according to the board they were appointed to originally, the members appointed in January with staff recommendations where appropriate, and the number and type of openings that require new appointees to get the boards to full membership.

People appointed to the Planning Board prior to January 2022:

Name	Term ends
Van Crandall	2/28/2023
Chris Deshazor	2/28/2023
Joanna Holder	2/29/2024
Rick Madoni	2/29/2024
Courtney Patterson	2/29/2024

Need four members (including one ETJ member) to get to full membership.

People appointed to the Board of Adjustment prior to January 2022:

Name	Term ends	Notes
Jeff Jones	2/29/2024	ETJ
Elaine Crigger	2/28/2023	ETJ alternate
Cody Loughridge	2/29/2024	In-town
Jayson Greene	2/28/2023	In-town Alternate

*Need three in-town regular and one in-town alternate to get to full membership. Terms would end 2/28/25 **except** one in-town partial term, ending 2/28/23.*

People appointed to the combined board in January 2022:

Name	Term ending	Notes
Ernie Carpico	2/28/2025	Planning Board incumbent
Thomas Urquhart	2/28/2025	Planning Board incumbent
Duane Hansen	2/28/2023	ETJ – Wake Co. appointed to Planning Board
Chanel Wilkins	2/28/2025	
Josh Prizer	2/28/2025	
Danielle Hewetson	2/28/2025	

Staff recommends that Mr. Carpico and Mr. Urquhart be assigned to Planning Board, since they are incumbents, and that Mr. Hansen be assigned to Planning Board as that is the action Wake County took at their meeting.

That leaves one opening on Planning Board and four on the Board of Adjustment to be filled by the three January appointees, Ms. Wilkins, Mr. Prizer, and Ms. Hewetson, and two additional appointees. Staff recommends choosing the two additional from the list of applicants from January to expedite the process, one for a full term and one for the partial term ending in 2023.

The following appointees have reached out to express their preference of appointment:

- Mr. Prizer prefers Planning Board, but will serve at the will of the Mayor and Council;
- Ms. Hewetson prefers Planning Board
- Ms. Wilkinson prefers Planning Board

Applicant List – Planning Board

In-Town Applicants (Appoint 1 for partial term)

Note: Those in Bold have PB as a preference over BOA; Those in red were appointed on January 18th

* means applicant is an incumbent seeking reappointment

1. Dennis Doty (BOA, PB)
2. **Robert Rubin (PB, BOA)**
3. **Devin Cofield (PB, BOA)**
4. **Brian McCormick (PB)**
5. **Josh Prizer (PB)**
6. **Brooke Little (PB)**
7. **Robert D. Smith (PB, BOA)**
8. **Danielle Hewetson (PB, BOA)**
9. **Jonathan Wissler (PB, BOA)**
10. **Carissa Vandermeij (PB, BOA)**
11. **Kelly Flanagan (PB)**
12. **Jo Cimino (PB, BOA)**
13. **Ernie Carpico (PB)***
14. **Chris Evangelista (PB, BOA)**
15. **Carl Pautlitz (PB, BOA)**
17. **Jenille Hess (PB, BOA)**
18. Prashant Nema (BOA, PB)
19. **Padmavathi Pallela (PB, BOA)**
20. **Kent Jackson (PB, BOA)**
21. **Eric Dean (PB, BOA)**
22. **David Tamplen (PB, BOA)**
23. **Thomas Urquhart (PB)***
24. Ben Copeland (BOA, PB)
25. **Rich Roberts (PB)**
26. **Kevin Bergeron (PB)**
27. **Jeffrey Milligan (PB, BOA)**
28. **Chanel Wilkins (PB)**



Town of Holly Springs

1

Board of Adjustment & Planning Board Application

For Office Use only: Appointed to ☐ Board of Adjustment ☐ Planning Board
Date: _____ Term Expires: _____

Applicant Name: Dennis Doty E-Mail Address: Thefam060bell@earthlink.net

Address: 113 Hartness Drive Zip: 27540

How long have you lived in Holly Springs: 5 yrs Name of Neighborhood: Brook Manor

Home/Cell Phone: (919) 606-9498 Work Phone: (—)

Current Employer: Retired Job Title/Occupation: Former City Planner

I reside within the ☒ Corporate Limits of Holly Springs ☐ Extraterritorial Jurisdiction (ETJ) of Holly Springs

List below in priority order the Board on which you wish to serve:

First Choice: Board of Adjustment

Second Choice: Planning Board

List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.

As staff, presented cases to BOA in Garner, Cary + Durham
Served 6 years on Apex BOA, 3 as chairman

List any current or past volunteer activities in which you are/were involved.

Front desk volunteer - HS Town Hall

What do you see as the responsibilities of this Board and what do you hope to accomplish if appointed?

BOA - grant relief when strict application of the ordinance
will cause a hardship

Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived) if you are appointed?

☒ No ☐ Yes If yes, please explain:

Have you taken the opportunity to attend any previous Board meetings prior to the notice of this vacancy?

☒ No ☐ Yes Not in Holly Springs

By submission of this application, I certify that all of the information contained herein is true to the best of my knowledge, and I understand that this application shall be active for two years. I also understand that I will be required to be available to attend meetings of the Board as assigned.

Signature of Applicant: [Signature] Date: 10/11/2021

* Please note, original signature is required in order to be considered. This information along with other material may be used by the Town Council in making appointments and in the event you are appointed, it may be used as a basis for a news release to identify you to the community.

How did you find out about these opportunities? _____

Application to Serve on a Board or Committee

Applicant Name	Robert Rubin
E-mail	robrubin75@gmail.com
Address	Street Address: 200 Holmby Court City: Holly Springs State: NC Zip Code: 27540
How long have you lived in Holly Springs?	15 years
Name of neighborhood	Arbor Creek
Home phone	(919) 880-1750
Work phone	(919) 880-1750
Current employer	TransUnion
Job title / occupation	Senior IT Manager
I reside within the	Corporate limits of Holly Springs
First choice:	Planning Board
Second choice:	Board of Adjustment
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	Bachelors Degree from Rutgers University.
List any current or past volunteer activities in which you are / were involved.	Coached T-Ball in Holly Springs Rec League. Helped raise money for Second Chance Pet Adoptions

3 years volunteering for the Holly Springs Half Marathon

What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?

I see the main responsibilities as helping to advise on future development within the town that adds beneficial services/retail while ensuring growth happens at a modest pace and continuing to make Holly Springs have a “small town” feel.

Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?

No

Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?

No

Signature



Date & time

10/18/2021 2:29 PM

How did you find out about these opportunities?

Email

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Application to Serve on a Board or Committee

Applicant Name	Devin Cofield
E-mail	nishea_1@yahoo.com
Address	Street Address: 224 Bass Lake Rd City: Holly Springs State: NC Zip Code: 27540
How long have you lived in Holly Springs?	43 years
Name of neighborhood	Devin N Cofield
Home phone	(919) 924-2733
Current employer	UNC Health
Job title / occupation	Recruiter
I reside within the	Corporate limits of Holly Springs
	Devin Cofield Updated Resume-2.docx
First choice:	Planning Board
Second choice:	Board of Adjustment
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	BS Business Management/Human Resource Management
List any current or past volunteer activities in which you are / were involved.	Dress For Success Partners Read Program (Wake County Public Schools) Cary Theater

Road Race Volunteer (Holly Springs Half, BullCity Half, Race 13.1)

What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?

I believe the responsibilities are to help plan how the land should be utilized for the Town

Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?

No

Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?

No

Signature



Date & time

10/19/2021 9:34 AM

How did you find out about these opportunities?

Town website

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Devin N. Cofield

Phone: 919-924-2733

E-mail: nishea_1@yahoo.com

Objective

Seasoned and efficient professional seeking a position as a Human Resources Professional. Bringing extensive experience in staffing and coordinating activities; recruiting, screening and interviewing with a demonstrated ability to perform a wide range of generalist duties.

Education

1996-2001 NC Bachelors of Science in Business Management; Human Resources	North Carolina State University	Raleigh,
2008-2009 NC Certification Esthetics Technology	Miller Motte College	Cary,

Experience

June 2016- present Morrisville, NC	UNC Healthcare
---------------------------------------	----------------

HCS Recruiter/Recruitment Screener/HCS HR Specialist

- Extend offers to new hires
- Negotiate salaries
- Onboarding of new hires
- Initiate reference checks
- Initiate drug testing
- Verify licensure/certifications
- Lead & organized I9 project
- Calculate salaries for prospective employees
- Collaborated with HRIS ATS (Taleo) project
- Prescreen and qualify candidates
- Conduct phone interviews when needed
- Provide support in other areas of Recruitment team □ Attend various job/vendor fairs

December 2015-June 2016 NC	Department of Public Safety	Raleigh,
-------------------------------	-----------------------------	----------

Processing Assistant (Contract position)

- Scheduled interviews and COPAT testing for potential Correctional Officers
- Maintained filing system
- Maintained training spreadsheet

Devin N. Cofield

July 2015- November 2015
NC

Skilled Talent

Raleigh,

Recruitment Manager/HR Assistant

- Managed small group of recruiters (in office and virtual)
- Sourced recruiters and other in office personnel
- Lead daily Recruiter's call
- Distributed requisitions amongst recruiting team
- Coordinated various training sessions for recruiting team
- Submitted candidates into the RealSoft Vendor Management System (VMS)
- Worked closely with Management Team
- Conducted Onboarding process for in house Recruiters

December 2014- July 2015
NC

Xerox Corporation

Cary,

Benefits Agent (Call Center)

- Top performer on "elite" team (averaged 98% productivity)
- Provided accurate benefit information to current health care members
- Spoke with facility billing departments on the member's behalf if needed
- Spoke with members concerning claims information

April 2008- January 2016

Serving Multiple Locations

Apex,NC Esthetician/Consultant (part-time)

- Provided full service cosmetic consultation services for client base
- Educated guests on proper skin care techniques and products to maintain healthy lifestyle
- Conducted intense new hire orientation and training
- Informed customers on increased health benefits of consistent massage regimen
- Maintained working knowledge of industry led best practices for beautifying skin □ Created aromatic environment for visitors

January 2007- January 2008

Research Triangle Institute

RTP, NC

Sourcing Specialist (contract position)

- Sourced and screened via resume mining for local and international executive level placement of qualified candidates □ Navigated various social media outlets to attract top talent
- Worked effectively with senior level recruitment team to drive sourcing processes
- Posted job descriptions on various employment search engines

September 2005-September 2006

Belcan

Raleigh,

NC Jr. Recruiter

- Recruited, interviewed, tested and selected employees to fill vacant positions
- Conducted new employee orientation to foster positive attitude towards company goals
- Provided guidance and oversight for efficient staffing needs
- Facilitated continuous improvement of recruitment process with hiring managers
- Updated applicant tracking system accurately to reflect status through recruitment cycle

September 2003-September 2005

American Residential Services
Raleigh, NC

Human Resources Generalist

- Conducted new employee orientation inclusive of I-9 evaluations and benefits enrollment.
- Responded to inquiries regarding policies, procedures and programs from hiring managers.
- Executed personnel file audits to ensure compliance of staffing agency regulations.
- Delivered companywide trainings relevant to clientele professional development credentials.

Professional Skills

Project management, Human Resources, telephone protocol, sourcing techniques, recruiting, on-boarding, candidate preparation, screen preparation for offer letters, requisite skills, resume mining, background checks, tracking, report development, customer service skills, MS/Windows, Word, Excel, PowerPoint, Scheduling, Correspondence, Office Procedures, Word Processing, Data Entry, Medical Terminology, interpersonal skills, Smart Search (ATS), PeopleSoft (ATS) and Social Media Navigator.

Application to Serve on a Board or Committee

Applicant Name	Brian McCormick
E-mail	brian@mean-aversion.com
Address	Street Address: 100 Brightling Way City: Holly Springs State: NC Zip Code: 27540
How long have you lived in Holly Springs?	4.5 years
Name of neighborhood	Wescott
Home phone	(910) 640-7916
Current employer	Research Square
Job title / occupation	Chief Strategy Officer
I reside within the	Corporate limits of Holly Springs
	Brian McCormick Resume.pdf
First choice:	Planning Board
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	After spending 9+ successful years in the investment banking industry (beginning in RTP before relocating to NYC), I've spent the last 5+ years with two early stage companies in the Triangle region as a Finance and Strategy executive (sports-tech, publishing-tech), and I have an MBA from Syracuse University and Bachelors degree from UNC-Wilmington, both with concentrations in Finance. From a personal perspective, I have a young family (including a daughter in 4rd grade at Middle Creek

Elementary) and I've resided in Holly Springs for nearly 5 years now, where I plan to maintain my primary residence for the foreseeable future.

List any current or past volunteer activities in which you are / were involved.

Like many professionals I've taken part in various philanthropic events over the years, particularly group events organized through my employer(s).

Organizations that I've done work with in the past include Junior Achievement (Wilmington), Habitat for Humanity (Triangle region), City Harvest (NYC), and the BARC Shelter (Brooklyn) among others. I've also had the opportunity to mentor young professionals through programs led by my employers and other organizations.

That said, I am seeking to become more intentional with respect to my involvement in my community, taking an active role in its development and growth. I believe an opportunity such as the Planning Board for Holly Springs is an excellent chance to "give back" some of the skills and professional experience that I've been fortunate to obtain over the course of my career while also becoming a better-educated and more meaningful contributor to our town and its success.

What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?

As noted in the previous question, I see the Planning Board as an integral part of our community's growth and development and I would love the opportunity to not only contribute the skills and experience that I've gained as a professional and parent, but I am also seeking the chance to become a more informed member of our community and play a role in its continued growth and success.

Holly Springs has clearly been in hyper-growth mode for a while now, and while such a situation presents incredible opportunity, I know that it can also present many challenges – I've seen this first hand as an executive in rapidly growing startups and early stage companies. Just as I try to do professionally, I would love to bring a holistic, well-informed and highly thoughtful approach to the Planning Board for Holly Springs, in an effort to not only maintain our current growth trajectory, but ensure that we're facilitating sustainable growth for our community and all who are a part of it.

Do you have any personal or business interest(s) that could create a conflict of

No

interest (either real or perceived if you are appointed?

Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy? No

Signature



Date & time 10/19/2021 9:17 PM

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Brian P. McCormick

brian@mean-aversion.com | 910.640.7916 | Holly Springs, North Carolina

SUMMARY

Two-time tech start-up and early-stage executive (Chief Strategy Officer, VP Finance) with nearly a decade of prior investment banking experience. 14+ years of overall experience and a proven track record of being recruited to lead strategic initiatives across individual teams, corporate divisions, and entire organizations. A committed leader who is regularly seeking opportunities to apply the diverse experience and innovative skills obtained while working with c-level executives in the fast-paced environments of Wall Street and start-ups. 10+ years of managing teams of up to 20 employees, and hands on experience with virtually all functions across the Finance, Accounting, Administrative (Legal, Compliance, Tax, HR, IT, Corporate Communications, Facilities), and Investor Relations spectrum, as well as lead roles in corporate strategy, board of directors management, fundraising (debt and equity) and M&A transactions (buy and sell side).

EXPERIENCE

RESEARCH SQUARE COMPANY – Durham, NC

(03/2020 – Present)

Chief Strategy Officer

(05/2021 – Present)

Vice President, Strategy & Planning

(03/2020 – 05/2021)

Research Square Company is a private corporate-backed, ~300 employee organization at the intersection of the scientific publishing and technology industries, consisting of two entities, Research Square AJE, LLC (\$35M+ revenue, 245 FTE) and the Research Square Platform, LLC (\$1M+ revenue, 45 FTE). Recruited to build and lead the Finance, Accounting, Legal, Compliance and IT functions for both businesses, while driving corporate strategy and its core components; (1) integration of the two entities (2) digital disruption of the maturing AJE business via internally developed AI/ML tools and (3) commercialization and growth of the emerging Platform business.

- Promoted to Chief Strategy Officer after ~1 year with the organization, expanded scope of responsibilities to include more formal ownership of strategy as well as corporate communications and facilities. Built the internal team from 2 FTEs to 8 to support demand and centralize previously decentralized/shared functions.
- Provided sell-side support for an \$8M growth-equity investment in the Research Square Platform, LLC business led by AJE's majority owner (closed Sept-2020).
- Developing and implementing the company's new strategic mandate – Product-Led, Customer-Focused, Sustainable Growth – including establishment of a Product team with executive leadership, expansion of traditional customer service into Customer Success to support professional services and emerging SaaS offerings (B2C and B2B), and refresh of the company's employee value proposition to remain competitive and facilitate a publishing -> technology organizational evolution.

TEAMWORKS INNOVATIONS, INC. – Durham, NC

(08/2016 – 03/2020)

Vice President, Finance

(11/2018 – 03/2020)

Director, Finance

(12/2017 – 10/2018)

Finance Manager

(08/2016 – 11/2017)

First Finance/Accounting hire outside of CFO and member of the executive leadership team, role initially created as a result of the company's Series A fundraise in order to address the increasing demands of a private equity-backed, rapidly growing business. Also, the first internal promotion to the executive team. During tenure, grew revenue (ARR) from <\$3M to >\$15M, and employees from 35 to >120. Responsible for leading and scaling (systems, processes, people) Finance, Accounting and related functions while playing a lead role in Strategy and Investor Relations, along with heavy involvement in Tax, Legal and HR operations. Effectively served much of 2019/2020 as "deputy CFO" while acting CFO led the Product Development team.

- As part of a \$25M Series C round of equity financing (led by Delta-v), partnered with CEO for prospective investor calls as well as all on-site investor visits, and led all financial aspects including the development of the company's 5-year financial plan (financing closed in April-20). Member of 4-person Board of Directors Finance

Sub-Committee (CEO, Series A lead investor – Seaport – and Series B lead – General Catalyst) formed as part of governance for the Series C fundraise and a related acquisition (INFLCR).

- Played a key role in the company's \$15M Series B, involved in prospective investor meetings and owned the financial and tax aspects of the fundraise including closing diligence (closed Feb-2018).
- Secured a \$12M (6.5x MRR) 2-year revolving line of credit with a new corporate banking relationship which included notably improved terms compared to the company's previous debt facility (Nov-2019). Previously closed the company's first ever debt facility (also a new banking relationship), a revolving line of credit in the amount of 3x MRR up to \$4M (Oct-2017).
- Along with the CEO, play a key role in securing a highly strategic \$6M all cash acquisition while working as a trusted partner throughout the transaction with the target's CEO. Owned all aspects of the deal including drafting the Merger Agreement, structuring pre-close working capital financing, and sourced/organized all diligence work streams with third party partners (financial, legal and tech), (closed Apr-20).
- Completed a \$2.5M+ acquisition of the company's largest and most direct competitor. Led/executed valuation work, purchase price allocation and business operations integration. Deal consideration included cash, 2-year seller-financed term loan, and 1-year earnout (closed Nov-2016).
- Selected partner (RSM US, LLP) led the engagement for the company's inaugural (and 2nd year) financial statement audit. Improved results from 17 adjustments in year 1 (opening audit) to none in year 2.
- Expanded (direct hires) the Finance/Accounting/Legal team by 4 employees during tenure; Controller (promoted from Accounting Manager), Director of Sales Operations, Financial Analyst, General Counsel.

CREDIT SUISSE SECURITIES (USA), LLC – New York, NY

(06/2007 – 08/2016)

Vice President – Corporate Finance, Investment Banking/Capital Markets

(08/2015 – 08/2016)

Referred by the CFO of the Global Markets Division to join the Capital Markets Division's Corporate Finance team and recruited by the Capital Market's CFO to fill gaps left by the departure of 2 Directors from the team. Worked regularly with the Global CFO and COO of the Division; owned 3 of the 6 functional areas within the Capital Markets Finance group which included industry analytics, performance measurement, and headcount metrics.

Vice President – Corporate Finance/Client Finance, Global Markets – New York, NY

(01/2014 – 07/2015)

Served as the Americas regional "Client CFO" as part of the newly developed Client Finance organization, while reporting to the CFO of the Global Markets Division. Recruited by a previous Director-level manager to lead a new program in Corporate Finance, built and directly managed the 20-employee program comprised of 15 controllers and 5 business analysts.

Assistant Vice President – Client Finance, Global Markets – New York, NY

(01/2011 – 12/2013)

Senior Financial Analyst – Sales Finance, Global Markets – New York, NY

(05/2009 – 12/2010)

Financial Analyst – Sales Finance, Global Markets – Durham, NC

(06/2007 – 05/2009)

EDUCATION

M.B.A., Finance (2015)

Syracuse University, New York

B.S., Business Administration, Finance (2007)

University of North Carolina at Wilmington, North Carolina

Formerly registered Series 7, 63 and 65; (CRD# 5155617)

ADDITIONAL INFORMATION

Select Leadership & Mentorship Opportunities

- RSM US, LLP Pathways panel ('19), Teamworks Academy Mentor ('19/'18), TW G&A Internship Lead ('19/'18'17), Credit Suisse KAM (Key Account Mgmt.) Summer Development Program ('15/'14/'13).

www.SeekingAlpha.com, Freelance Financial Writer/Contributor

- Published 25 articles providing fundamental analysis of small & mid-cap companies, of which 18 were chosen for exclusive publication on the "PRO" platform, paid subscriber content (\$500 per PRO article).

Application to Serve on a Board or Committee

Applicant Name	Brooke Little
E-mail	blittle24@hotmail.com
Address	Street Address: 716 Skymont Dr. City: Holly Springs State: North Carolina Zip Code: 27540
How long have you lived in Holly Springs?	15 Years
Name of neighborhood	Brooke Little
Home phone	(919) 995-0898
Current employer	Wake County Public Schools
Job title / occupation	Educator
I reside within the	Corporate limits of Holly Springs
First choice:	Planning Board
Second choice:	Planning Board
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	I am interested in serving on this committee as both a long-time resident and someone who is very interested in town planning and development. I know that my most notable skills that can contribute to the work of the team will include being detail-oriented, organized, and skilled at working in a team setting. Due to my original degree and the area in which I teach, I am also very familiar in reading various types of zoning, soil, topographic, watershed and additional maps, architectural and engineering drawings, and other data.

List any current or past volunteer activities in which you are / were involved.	I do not have current volunteer activities specifically for the Town of Holly Springs, but am very active in volunteering my time through the activities in which my children are involved and through serving the students and families of my school community. Examples of my volunteering activities include coaching youth soccer, organizing food drives, working at school or community events, working with the neighborhood swim team, supporting the work at polling locations, etc.
What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?	I am very passionate about people and systems and structures. The systems and structures that we create and implement as a town will impact the people of our town now and in the years to come. This board is making and implementing those decisions.
Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?	No
Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?	No
Signature	
Date & time	11/04/2021 2:42 PM
How did you find out about these opportunities?	Social Media via the Town

View [view all your submissions](#) easily.

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Application to Serve on a Board or Committee

Applicant Name	Robert D Smith
E-mail	rdanielsmith@outlook.com
Address	Street Address: 213 OLIVE FIELD DR, HOLLY SPRINGS, NC 27540 Street Address Line 2: 213 OLIVE FIELD DR City: HOLLY SPRINGS State: NC Zip Code: 27540
How long have you lived in Holly Springs?	14
Name of neighborhood	Sunset Oaks
Home phone	(919) 518-6064
Current employer	Capital Partners
Job title / occupation	Managing Director
I reside within the	Corporate limits of Holly Springs
	R. Daniel Smith.pdf
First choice:	Planning Board
Second choice:	Board of Adjustment
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	I am a proven executive with a wide depth of experience in the financial markets and a substantial history of senior executive accomplishments in varied and leading-edge technologies. I am also an entrepreneurial leader experienced in directing global sales and new business development initiatives in competitive, highly technical international markets. Over the years I have developed effective strategic planning

and implementation skills, have delivered targeted revenue growth and many strategic opportunities that have led to over \$500M in new business development revenues with such Companies as Microsoft, BF Goodrich Aerospace, Swearingen, Lockheed Space, Oral-B, Matsushita, and Gillette. Prior to joining Capital Partners, I led or taken part in over \$500 million of capital related transactions while also providing services to several industry-leading companies.

List any current or past volunteer activities in which you are / were involved.

I have served on two national boards, Chairman of AMIkids NC, and Board Member, Justice Love Foundation. I am also currently the President of the Sunset Oaks HOA.

What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?

I believe the board has the responsibility to provide various recommendations and growth initiative ideas for the town council. I would hope my background and leadership experience and natural ability to work in a fast-paced and growing organization with a proven ability to transform strategic concepts, and ideas quickly and effectively into local strategies.

Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?

No

Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?

Yes

Signature



Date & time

11/05/2021 12:44 PM

How did you find out about these opportunities?

Town website

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EXECUTIVE PROFILE

Accomplished Executive leading both domestic and international operations in business development initiatives in competitive highly technical international markets. Decisive leader effective in strategic planning and implementation, including demonstrated superior expertise in building operational infrastructure and managing high growth technology products. Skilled at delivering targeted revenue growth while collaborating with cross-functional teams and alliance partners, opening comprehensive strategic opportunities that have led to “First to Market” wins. Extensive experience in the origination, structuring and execution of equity, debt, and M&A transactions.

EXECUTIVE SKILLS

BUSINESS DEVELOPMENT • STRATEGIC SALES LEADERSHIP • GLOBAL MARKET EXPERIENCE • CORPORATE FINANCE

Vision | Strategy | Growth
Strategic Planning
Organizational Development
Channel & Distribution Planning

Sales Leadership
Resource Optimization
Cross-Functional Collaboration
Business Development

Performance Optimization
Client Engagement
Strategic Partnership Alliances
Aligned Revenue & Product Development

PROFESSIONAL EXPERIENCE

blueDoor Capital Partners

New York, NY | (2013 to 2020)

An advisory firm providing services in the technology and energy space to owners, investors, and lenders in the US and internationally.

Managing Director

Managed the full cycle of transactional execution, including preparing marketing pitches, formulating financial analysis, creating financial models, preparing, and presenting investment memoranda and client presentations.

- Managed over \$600 million in strategic acquisition or divestitures, including multiple international transactions in biofuels, strategic minerals & resources, premium lumber, technology transfers, wind/solar and retail goods.

Equiventure Capital

New York, NY | (2002 to 2013)

Corporate development, M&A, corporate finance, equity investments and capital placement transactions.

Executive Vice President

Provided strategic planning services targeted at growth-oriented firms, as well as functional and industry expertise for developing opportunities centered on capital acquisition, strategy management, market analysis and business planning.

- Managed a software development plan and subsequent investment for a leading cellular maker and digital imaging firm.
- Roll-up of independent manufacturers to a national consumer-bottling corporation, completing \$80 million in additional in-plant modifications and leases, doubled operating capacity, and in addition lowered direct costs by almost 30%.
- Participated in or managed more than \$450 million in acquisition, restructure, or financial transactions and a large M&A transaction for a strategic EHR/PHR applications developer.
- Negotiated for a Global ISV with Dell, Microsoft and a 5,000+-property hotel chain, producing a \$60 million strategic opportunity.

StorLogic Ltd.

Lake Mary, FL | (1998 to 2002)

Leading supplier of Storage Networking Technology, Storage Virtualization and Enterprise Applications.

President and Chief Executive Officer

Developed and defined a strong go to market capability for Enterprise Applications company known as a technology leader in network embedded applications, virtualization, and application servers. Venture funded company.

- Started and managed cross licensing and technology transfer agreements, including source code licensing with Veritas, Panasonic-Fujitsu, Frontier, Intel, and Microsoft.
- Negotiated a partner/distribution channel that extended coverage for the company to over 75% of the potential market. Increased channel in EMEA and APAC by over 50% to thirteen countries and twenty-three distributors.
- Led a design effort with R&D for a third-generation appliance line that allowed various models and options configured near the end of the assembly process. Effort reduced work-in-progress by 64%, reduced labor, unique assemblies, and floor space, dropping overall production costs by over 30%.
- Managed software development program with a staff based ODC and country team resulting in “First to Market” with total GUI management solution for optical data managed over a network and embedded virtualization application software and utilities.

nStor Technologies, Inc.**Lake Mary, FL | (1995 to 1998)**

Leading developer of Fibre Channel, SCSI and SATA configurations NAS/SAN and HPC Enterprise Provider. AMEX: NSO
President and Chief Executive Officer and Board Member

Acquired an R&D division from Seagate Technologies listing the company on AMEX. Built the management team, increased market exposure, developed an operating philosophy and created an infrastructure to support rapid growth.

- Executed strategic sales plans with Gateway, Intergraph, Groupe Bull, Discreet Logic, Unisys, Acer, Cray, and Silicon Graphics, leading to revenue gains of over \$56M.
- Developed and co-copyrighted with Intel the industry standard SAF-TE specification.
- Increased both hardware and software products and services that ranked:
 - 9th in Worldwide Revenue by Supplier (OEM) and 18th in Worldwide Revenue by Supplier (Server).
- First in class “total” GUI application for NT, NetWare, and UNIX, “Smart Cabinet” enclosure technology and multi-platform JAVA tools and Enterprise class virtualization utilities for network and embedded applications.
- Acquired and integrated two target acquisitions generating over \$20M in additional revenue while reducing combined operating expenses by over \$4.3M.

Intelligent Manuf. Systems, Inc.,

Applications Developer for EDC, spread spectrum and data integration for ERP/MRP, Supply Chain and Activity-Based Costing systems.

President**Orlando, FL | (1991 to 1997)**

- Managed more than sixty ERP installations with IP based 2.4 GHz RF application for real-time distributed database access including Tier 1&2 automotive, aerospace, defense, consumer goods, medical and other overly complex manufacturing environments.
- Managed strategic marketing relationships with BF Goodrich Aerospace, Swearingen, Lockheed Space Operations, NASA, Oracle, Multimatic, Oral-B, Matsushita and Gillette resulting in over \$25 million in additional revenues.

Automated Storage & Design, Inc.,**Orlando, FL | (1984 to 1991)**

Developer of ERP/SCM and Logistics systems

Executive Vice President

- Key sales contracts with NASA, Lockheed Space Operations, Boeing Aerospace, General Motors, and Kmart.
- Channel revenue increased by \$28M, training and travel costs dropped by 38% and strategic sales programs drove revenue growth by over 183%, to \$55M.

Republic Steel, Systems Division.**Cleveland, Oh. | (1981 to 1984)**

Integration Services and Logistics Support

Division Manager, Sales & Product Marketing

- P&L responsibility for Westinghouse, Litton and Unimation while increasing channel exposure by 60%, driving over 376% in sales growth, generating over \$50M in new revenue.

SPS Technologies, Inc.**Jenkintown, Pa. | (1980 to 1981)**

Automation and Logistics Systems

Regional Sales Manager

- As Southeastern Regional Manager developed distribution partners and expanded the sales base by over 160%, growing revenue by over \$3M.

Lear Siegler, Inc.**Kalamazoo, MI. | (1978 to 1980)**

Business Equipment Manufacturer

Regional Sales Manager

- Managed US and Latin America; provided training for over 135 resellers, reducing training and field sales costs by almost 50%, driving annual revenue increases by over 150%.

Walt Disney World Companies**Orlando, FL | (1975 to 1978)**

World Entertainment and Theme Park Destination Leader

Division Accounts Manager

- Division Accounts Manager responsible for all credit and guest billings in the \$100M Resorts Division.

Education:**Professional Development:****Community Engagement:**

Bachelor of Science Degree, Jacksonville University

Advanced Manufacturing & Financial Management

AMI Kids North Carolina, Chairman, Board of Trustees

Justice Love Foundation, Board of Directors

GPS Skills

Application to Serve on a Board or Committee

Applicant Name	Jonathan Wissler
E-mail	grant.wissler@gmail.com
Address	Street Address: 301 Cahors Trail City: Holly Springs State: NC Zip Code: 27540
How long have you lived in Holly Springs?	18 months
Name of neighborhood	Jonathan Wissler
Home phone	(717) 917-3388
Work phone	(910) 432-7787
Current employer	US Army
Job title / occupation	Major/ Special Forces officer
I reside within the	Corporate limits of Holly Springs
First choice:	Planning Board
Second choice:	Board of Adjustment
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	masters degree- Naval Postgraduate School I currently serve as the Chief of Staff and of a 620 person battalion, managing multiple directorates as well as the logistical and administration requirements of the organization.
List any current or past volunteer activities in	-Very active in my church - leads Family Readiness Group (provides special

which you are / were involved.	events and service opportunities for soldiers and families) at our battalion
What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?	Determine how to balance the public good with private rights and interests. Be a good listener, work as a team with other committee members, and always seek to ascertain how best to further the interests of the community as a whole. I would seek broad public involvement in the planning process and try to keep the committee's activities open and inclusive. This is an exciting time to be a Holly Springs resident and I'd love to contribute to the community.
Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?	No
Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?	Yes
Signature	
Date & time	11/09/2021 10:12 AM
How did you find out about these opportunities?	town website

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Application to Serve on a Board or Committee

Applicant Name	Carissa Vandermey
E-mail	cavandermey@gmail.com
Address	Street Address: 5301 Gable Ridge Ln City: Holly springs State: NC Zip Code: 27540
How long have you lived in Holly Springs?	1.5 years
Name of neighborhood	Sunset Ridge
Home phone	(301) 538-2406
Current employer	Department of Homeland Security
Job title / occupation	Sr Advisor
I reside within the	Corporate limits of Holly Springs
First choice:	Planning Board
Second choice:	Board of Adjustment
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	During my tenure at DOE and Sandia National Labs, I lead the departments efforts regarding critical infrastructure project and specific energy planning projects.
List any current or past volunteer activities in which you are / were involved.	Big Brothers and Sisters World Vision Youth Soccer and Basketball coach Youth leader Community Shelters Transition Houses

What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?	Work with the Town Council on the future development of Holly Springs. To identify gaps/needs and seek effective and efficient ways to meet those needs on behalf of the town and its residents.
Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?)	No
Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?	No
Signature	
Date & time	11/09/2021 1:56 PM
How did you find out about these opportunities?	Neighbor

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Application to Serve on a Board or Committee

Applicant Name	KELLY FLANAGIN
E-mail	GOLDLEAFINTERIORSLLC@GMAIL.COM
Address	Street Address: 416 ANCIENT OAKS DRIVE City: HOLLY SPRINGS State: NC Zip Code: 27540
How long have you lived in Holly Springs?	SINCE APRIL 4, 2019
Name of neighborhood	12 OAKS
Home phone	(518) 588-8833
Current employer	GOLDLEAF INTERIORS LLC
Job title / occupation	OWNER/ INTERIOR DESIGNER
I reside within the	Corporate limits of Holly Springs
	KELLY FLANAGIN DESIGN RESUME 2021.pdf
First choice:	Planning Board
Second choice:	Planning Board
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	I GRADUATED WITH A BACHELORS OF SCIENCE (BS) FROM EAST CAROLINA UNIVERSITY. THEN I WENT ON TO GRADUATE WITH A MASTERS IN BUSINESS (MBA) FROM CLARKSON UNIVERSITY. I OWN A REAL ESTATE BROKERAGE FIRM IN NEW YORK AND AN INTERIOR DESIGN BUSINESS IN HOLLY SPRINGS, NC. I HAVE BEEN IN THE REAL ESTATE & DEVELOPMENT INDUSTRY SINCE 2010.
List any current or past volunteer activities in	BEFORE MOVING TO HOLLY SPRINGS, NC I SERVED ON THE INDUSTRIAL DEVELOPMENT AGENCY IN

which you are / were involved.

NEW YORK. ADDITIONALLY, I HAVE MANY BOARD OF DIRECTORS POSITIONS I HAVE VOLUNTEERED FOR INCLUDING THE MARCH OF DIMES & UNITED WAY.

What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?

I SEE THE RESPONSIBILITY OF THE BOARD IS TO CONTINUE THE TRAJECTORY OF ECONOMIC GROWTH IN THE COMMUNITY. IN DOING SO THE BOARD NEEDS TO THINK CRITICALLY ON THE RATIO OF INCOMING BUSINESSES TO HOMEOWNERS AND MAKE DECISIONS ON ZONING ON A CASE BY CASE BASIS. WE ARE TO WELCOME ALL GROWTH IN ALL WAYS. WE WILL WORK TOGETHER AS A BOARD AND COMMUNITY TO ENSURE HOLLY SPRINGS FLOURISHES.

Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?

No

Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?

Yes

Signature



Date & time

11/12/2021 1:00 PM

How did you find out about these opportunities?

BOARD MEMBER

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KELLY LANAGIN

INTERIOR DESIGNER

PROFILE

Multi-talented driven professional. Entrepreneurial mindset to drive business, goal oriented, organized, ambitious, and dedicated. \$10+ million in business sales, negotiations and transactions since 2010. 10 years in real estate investment, business development, property management, sales, market research, leasing & interior design. International business exposure in European and Chinese market.

CONTACTS



Holly Springs, NC, 27540



(518) 588-8833



KVincenza@gmail.com



www.GoldLeafInterior.com

EXPERTISE

Decision Making

Leadership

Time Management

Critical Thinking

Spatial Awareness

Creativity

EDUCATION

- 2018 • MBA / MASTERS BUSINESS ADMINISTRATION
Clarkson University/ New York
- 2016
3.72 GPA. Focus in International Business & Project Management. International studies in Shanghai & Beijing, China (2016).
- 2009 • B.S. / HOSPITALITY MANAGEMENT
MINOR BUSINESS ADMINISTRATION
East Carolina University/ North Carolina
- 2005
3.33 GPA. 1.5 years in Interior Design Courses. Eta Sigma Delta International Hospitality Management Honor Society (2009). National Society of Minorities in Hospitality (2008-2009). Chi Omega Sorority (2005- 2009).

EXPERIENCE

- Present • INTERIOR DESIGN ASSISTANT
Love It Or List It/ North Carolina
- 2020
 - HGTV's Love It Or List It Episode 218, 219
- Present • INTERIOR DESIGNER/ OWNER
GoldLeaf Interiors LLC/ North Carolina
- 2019
 - 16% Annual company growth from 2019 to present
 - Full-service design from concept to installation
 - Project management
 - Remote consulting and design services offered due to Covid-19
 - Real estate services
 - Licensed real estate broker
 - Portfolio: <https://www.houzz.com/pro/webuser-883707255/>
- 2019 • CONSULTANT
Industrial Development Agency/ Guilderland, N.Y.
- 2018

Assist in the enhancement and diversity of the economy of the Town of Guilderland by acting in support of projects that create and/or retain jobs and/or promote private sector investment utilizing the statutory powers of the Agency as set forth under the provisions of the laws of the State of New York.

 - Financial & business plan analysis of multi- million-dollar projects
 - Accepted or rejected projects seeking government funding.
 - Opened dual branded hotel, Tru and Homewood Suites by Hilton

PROFESSIONAL SKILLS



LICENSE

2018 | REAL ESTATE BROKER
New York State
Department of State
ID 10491208003

INTERESTS

Tennis	● ● ● ● ●
Charity	● ● ● ● ●
Traveling	● ● ● ● ●
Fitness	● ● ● ● ●
Foodie	● ● ● ● ●

COMMUNITY

2019 - 2018 | BOARD OF DIRECTORS
March of Dimes
Co-Chair 2019 Gala
Exceeded corporate goal of \$85k by raising \$121,000

2018 - 2014 | BOARD OF DIRECTORS
United Way of the Greater Capital Region

2016 | COMMITTEE MEMBER
Open Space Institute
Exceeded goal of \$15k by raising \$20,100

2014 | RURAL WATER SUPPLY EXPANSION
Catholic Relief Services
Opened a Clean Water & Sanitation Project in Dire Dawa, Ethiopia

EXPERIENCE

(continued)

2019 - 2015 | INTERIOR DESIGNER & PROPERTY MANAGER
JNT Development/ Albany, N.Y.

- 113% Company growth from 2015- 2019
- Interior designer & stager for residential homes
- Landlord representation to design furnished apartments
- Manage 25,000sq of commercial & residential properties
- 2-5% Annual revenue growth
- Vendor contract negotiations annually to cut company costs

2018 - 2017 | VP BUSINESS DEVELOPMENT
Carrow Real Estate Services/ Albany, N.Y.

- Commercial real estate associate broker
- \$1.2 Million in gross sales
- LOI & contract writing

2015 - 2010 | NEW CONSTRUCTION DESIGNER & SALES
Brandle Meadows Condominium Community/ Altamont, N.Y.

- \$4.3 Million in gross sales
- Licensed Real Estate Salesperson for New Homes
- Interior Designer for New Home Sales
- Interior Stager for Model Home

2007 | CONSULTANT/ INTERN
Extreme Makeover Home Edition/ Albany, N.Y.

- HGTV season finale episode
- WeatherGuard Roofing Company project consultant

REFERENCES



Jeff Thomas

Owner | JNT Development
JNTDevelopment@gmail.com
(518) 365-4444



Sarah Beeler

Interior Designer | Bassett
ssbeeler@bassettfurniture.com
(276) 732-7595



Don Csaposs

CEO | Industrial Development Agency
CsapossD@togny.org | (518) 928-9418



Susan Fetzer

Client
SGFetzer@gmail.com | (252) 259-5187

Application to Serve on a Board or Committee

Applicant Name	Joe Cimino
E-mail	jocimino2012@gmail.com
Address	Street Address: 317 Crossway lane City: Holly Springs State: NC Zip Code: 27540
How long have you lived in Holly Springs?	3 years
Name of neighborhood	Sunset Ridge
Home phone	(910) 633-1562
Current employer	TAK Communications
Job title / occupation	Sr. Director of Quality, USA
I reside within the	Corporate limits of Holly Springs
	J.Cimino Resume.docx
First choice:	Planning Board
Second choice:	Board of Adjustment
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	I work in the corporate work for telecommunications and have plenty of experience in all day to day operations of multi site locations. I have a very good understanding of easements as well as vendor management.
List any current or past volunteer activities in which you are / were involved.	Little league coach 15 years, travel baseball coach tournament teams. Comcast cares team lead three years this involved community fund raising as well as group clean up activities for public schools and

government agencies. I have also volunteered for a house rehab project in Cary with Spectrum Reach.

What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?

Keeping Holly Springs the best place to live in NC. I just love this town and I am happy to raise my family here and want to make sure the right decisions are made for the town as well as the community. I feel like the team should be built with like minded individuals who aren't afraid to take on a challenge to get the type of growth the town needs. My wife and I fell in love with this town whil I relocated from Philadelphia and just love calling Holly springs out home. I would volunteer for anything this town needs to ensure we keep Holly Springs the best place to live.

Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?

No

Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?

Yes

Signature



Date & time

11/15/2021 11:53 AM

How did you find out about these opportunities?

Nextdoor

View [view all your submissions](#) easily.

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Application to Serve on a Board or Committee

Applicant Name	Chris Evangelista
E-mail	runningmango@gmail.com
Address	Street Address: 104 Channel Cove Drive City: HOLLY SPRINGS State: NC Zip Code: 27540
How long have you lived in Holly Springs?	2 years
Name of neighborhood	Lochridge
Home phone	(360) 798-4709
Current employer	Cisco Systems
Job title / occupation	Cybersecurity Account Manager
I reside within the	Corporate limits of Holly Springs
First choice:	Planning Board
Second choice:	Board of Adjustment
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	IT Program Manager for 10 years, managing large / complex applications, office moves, data center builds.
List any current or past volunteer activities in which you are / were involved.	Adopt a Stream, Boys and Girls club, Eastern Food Bank

What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?

Ensure sustainable growth for the town, ensuring development aligns with the future view of our town. Minimize removal of trees, wetlands. Build a greenway and / or bike path connecting neighborhoods, commercial areas and parks. Ensure this town is somewhere my kids would want to call home when they grow up.

Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?

No

Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?

No

Signature



Date & time

11/16/2021 2:37 PM

How did you find out about these opportunities?

Email from the town

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Application to Serve on a Board or Committee

Applicant Name	Carl Pautlitz
E-mail	cpautlitz@gmail.com
Address	Street Address: 113 Eden Glen Drive City: HOLLY SPRINGS State: NC Zip Code: 27540
How long have you lived in Holly Springs?	2 years
Name of neighborhood	Wescott
Home phone	(757) 291-6883
Current employer	Cisco Systems
Job title / occupation	Finance Manager
I reside within the	Corporate limits of Holly Springs
First choice:	Planning Board
Second choice:	Board of Adjustment
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	Licensed Real Estate Broker in Virginia for over 18 years. Former real estate planner for a developer.
List any current or past volunteer activities in which you are / were involved.	Volunteer youth coach for Cary Pop Warner, YMCA girls volleyball, West Lake Middle School football and lacrosse coach. Served on the board of directors for the Middle Creek High School Stampede Club for 6 years.

What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?	Assisting in the leadership of Holly Springs with current infrastructure and urban resource planning. Review the designs and help the city to adapt plans for population growth and development.
Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed)?	No
Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?	No
Signature	
Date & time	11/16/2021 3:24 PM
How did you find out about these opportunities?	Holly Springs newsletter

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Application to Serve on a Board or Committee

Applicant Name	David Williams
E-mail	diwilliams@outlook.com
Address	Street Address: 113 Sunset Oaks Drive City: Holly Springs State: NC Zip Code: 27540
How long have you lived in Holly Springs?	1 year
Name of neighborhood	Sunset Oaks
Home phone	(336) 414-8773
Current employer	Mann, McGibney & Jordan, PLLC
Job title / occupation	Real Estate Attorney
I reside within the	Corporate limits of Holly Springs
	David Williams Legal Resume 2021.pdf
First choice:	Board of Adjustment
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	I am a licensed attorney with particular experience in transactional residential real estate (but not involving zoning issues).
List any current or past volunteer activities in which you are / were involved.	I have volunteered with the student ministry at the Summit Church since 2012.

What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?

The Board of Adjustment serves as an independent arbiter enforcing the Town's zoning regulations with sufficient stringency for the regulations to be generally valuable but also with enough flexibility to avoid needlessly harsh results. If appointed, I would seek to make all parties involved in a matter feel heard, and would work so that Holly Springs would continue to be a desirable place to live for all of its residents.

Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?

No

Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?

No

Signature



Date & time

11/16/2021 3:00 PM

How did you find out about these opportunities?

Town Newsletter

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DAVID ISAAC WILLIAMS
113 Sunset Oaks Drive, Holly Springs, NC 27540
diwilliams@outlook.com | 336.414.8773

Licensure

North Carolina State Bar	2013
U.S. Patent & Trademark Office	2013
U.S. District Court for the Eastern District of North Carolina	2014

Work Experience

Mann, McGibney and Jordan, PLLC	<i>Cary, NC</i>
Title Attorney	2020–present
• Conduct title searches and produce preliminary title opinions • Train colleagues to assist with title-related activities • Provide title-related expertise and support to the firm	

Shedor Law Firm, PLLC	<i>Cary, NC</i>
Title Attorney	2014–2020
• Handled all pre-closing title matters for the firm’s real estate practice, which included mostly residential and some commercial transactions	

Education

Campbell University School of Law	<i>Raleigh, NC</i>
Juris Doctor	May, 2013
• Earned Book Awards in <i>Evidence</i> and <i>Patent Preparation and Prosecution</i> • Won the 2011 Richard A. Lord Intramural Moot Court Competition • Served as: ○ Comments Editor for the Campbell Law Review ○ Honor Court Justice for the Student Bar Association ○ President and Treasurer for the Christian Legal Society	

University of North Carolina at Chapel Hill	<i>Chapel Hill, NC</i>
Bachelor of Arts (Physics, Mathematics)	May, 2010

Technical Proficiencies

- Microsoft 365 (*Outlook, Office, etc.*)
- SoftPro (*ProForm, ProTrust, Select*)
- Qualia

Whatever you do, do your work heartily, as for the Lord rather than for men,
knowing that from the Lord you will receive the reward of the inheritance.
It is the Lord Christ whom you serve.
Colossians 3: 23-24

Application to Serve on a Board or Committee

Applicant Name	Jenille Hess
E-mail	jenillesheltonhess@gmail.com
Address	Street Address: 324 Chrismill Lane City: Holly Springs State: NC Zip Code: 27540
How long have you lived in Holly Springs?	2 yrs (lived in Cary/Apex for nearly 20yrs)
Name of neighborhood	Sunset Ridge
Home phone	(336) 905-9701
Work phone	(919) 750-5601
Current employer	Olympus, Inc.
Job title / occupation	Medical sales
I reside within the	Corporate limits of Holly Springs
First choice:	Planning Board
Second choice:	Board of Adjustment
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	In my career, I function in a similar capacity to a small business owner. I am responsible for the sales, marketing distribution, and customer service for an approx \$5 million portfolio of surgical devices and equipment. I interact daily with large IDNs and surgical facilities throughout central and eastern NC. My job is to have a relationship with the everyone from the janitor to the CFO. Because of this, I have a solid understanding of municipalities and what drives the medical sectors of local economies. I also have graduate education in

	strategic marketing - understanding how to form intentional relationships that drive results and change behavior.
List any current or past volunteer activities in which you are / were involved.	Church volunteer/mission trips abroad; Youth athletics coaching for the Town of Cary (when we lived there) and volunteer business consultant to both non-profit and for-profit entities.
What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?	The responsibility of this board is to support the citizens and business owners of Holly Springs; and, to support decision-making efforts that attract the right kind of business for economic and cultural growth. Essentially, the board is responsible for growing Holly Springs to it's full potential.
Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?	No
Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?	Yes
Signature	
Date & time	11/16/2021 3:13 PM
How did you find out about these opportunities?	Social Media

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Application to Serve on a Board or Committee

Applicant Name	Prashant Nema
E-mail	Prashant.nema@gmail.com
Address	Street Address: 4713 ridge water ct City: Holly springs State: NC Zip Code: 27540
How long have you lived in Holly Springs?	6 months
Name of neighborhood	Sunset ridge
Home phone	(408) 464-9339
Current employer	Arch capital
Job title / occupation	Chief Information officer
I reside within the	Corporate limits of Holly Springs
First choice:	Board of Adjustment
Second choice:	Planning Board
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	Corporate advisory Board,
List any current or past volunteer activities in which you are / were involved.	Habitat for Humanity,
What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?	Improve the city of Holly springs for its citizens

Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?)	No
Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?	No
Signature	
Date & time	11/16/2021 9:29 PM
How did you find out about these opportunities?	Email

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Application to Serve on a Board or Committee

Applicant Name	Padmavathi Pallela
E-mail	ppadma5@hotmail.com
Address	Street Address: 225 Randleman ct City: holly springs State: NC Zip Code: 27540
How long have you lived in Holly Springs?	3 months
Name of neighborhood	Padmavathi Pallela
Home phone	(405) 473-4324
Current employer	NTT Data SYstems
Job title / occupation	Software Senior Developer
I reside within the	Corporate limits of Holly Springs
First choice:	Planning Board
Second choice:	Board of Adjustment
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	Masters in Computer Science
List any current or past volunteer activities in which you are / were involved.	Worked as a Volunteer in Edison, NJ Vice-President of a condominium Association in Edison, NJ Worked as a PTO Member in Edison School Volunteered in edison public library - friends of library group

What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?	Review various development-related requests, review zoning requests assist town council on the Town's zoning regulations
Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed)?	No
Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?	No
Signature	
Date & time	11/17/2021 3:53 PM
How did you find out about these opportunities?	email

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Application to Serve on a Board or Committee

Applicant Name	Kent Jackson
E-mail	bkjackson68@hotmail.com
Address	Street Address: 525 Ivy Arbor Way City: Holly Springs State: North Carolina Zip Code: 27540
How long have you lived in Holly Springs?	6 years
Name of neighborhood	Twelve Oaks
Home phone	(919) 656-2621
Current employer	Town of Pittsboro
Job title / occupation	Town Engineer
I reside within the	Corporate limits of Holly Springs
First choice:	Planning Board
Second choice:	Board of Adjustment
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	20+ years of local government service in the area of development services, growth management, utilities, engineering, and planning. Board experience including chair experience with Wake County and the State of North Carolina.
List any current or past volunteer activities in which you are / were involved.	Wake County Human Services Board Wake County Affordable Housing Steering Committee State Building Commission HOA Transition Committee 2021

What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?

The planning board is an important advisory board that must reflect the desires of our citizens while balancing the laws, ordinances, and rules of professional planning and the goals of the Town Council. I hope to help maintain the charm and vitality of our downtown, enhance opportunities for continued business growth, and support an affordable and diverse place to live and work.

Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?

No

Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?

Yes

Signature



Date & time

11/17/2021 11:05 PM

How did you find out about these opportunities?

town's website

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Application to Serve on a Board or Committee

Applicant Name	Eric Dean
E-mail	ehdean@outlook.com
Address	Street Address: 113 Apple Drupe Way City: Holly Springs State: NC Zip Code: 27540
How long have you lived in Holly Springs?	6 months
Name of neighborhood	Windcrest
Home phone	(919) 889-0092
Work phone	(919) 268-1760
Current employer	DPR Construction
Job title / occupation	Preconstruction
I reside within the	Corporate limits of Holly Springs
	Eric Dean Work Resume v5.docx
First choice:	Planning Board
Second choice:	Board of Adjustment
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	I have worked extensively in preconstruction as an estimator, purchaser, coordinator, etc, from concept to final build delivery. My career is focused on providing maximum value for the money spent from my clients. This includes comparing parcels of land, and coordinating with architects and engineers to deliver target value design. My goal as a Holly Springs resident is to provide the maximum value of our tax payer dollars, and to be able to

accurately provide a cost-minded focus from planning out the town and zoning decisions. I believe my experience in construction will provide a lot of value to the team, and I have extensive experience in working with team members of various backgrounds.

List any current or past volunteer activities in which you are / were involved.

Camp Luck Camp Counselor / Director - 2011 to current
B
NC Biotech Biomanufacturing and Process Development Steering Committee board member - 2020 to current

What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?

I see the responsibilities of this board to study and review development projects, seek broad public involvement in the process, and try to keep activities open and inclusive. I want to accomplish by hearing all applications, truly figuring out the cost impact, and making sure residents of the town can make the most informed decision with their tax dollars.

Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?

No

Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?

Yes

Signature



How did you find out about these opportunities?

Email from Town

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Eric Dean, PMP

Project Manager/Estimator

113 Apple Drupe Way, Holly Springs, NC 27540 | (919) 889-0092 | ehdean@outlook.com

Summary

Construction Project Manager & Estimator with 5 years of experience with in the semiconductor, biopharmaceutical, and healthcare industry. Successfully completed projects through coordinating trades, developing partnerships, and building positive rapport with engineers, vendors, and clients while maintaining costs. Versed in contract negotiations, project estimating, design management, submittal & document preparation, safety regulations, material purchasing, and site management.

Experience

ESTIMATOR | DPR CONSTRUCTION – RESEARCH TRIANGLE PARK, NC | DECEMBER 1, 2020 – PRESENT

- Estimate projects for Life Science, Advanced Tech, & Healthcare industries.
 - Successfully bid or negotiate projects worth 2 million to 150 million, ensuring projects are completed delivering the best value for clients.
- Coordinate with field workers, clients, and engineers.
- Well versed in emerging and bleeding edge building methods and requirements.
 - Estimated & managed Design of LEED Gold, Net Zero, & Carbon Neutral facilities.
- Hired, scheduled, and supervised subcontractors; developed and enforced company policies, procedures, and project safety regulations.
- Setup and managed preconstruction from concept to construction.
- Identified potential fields and established new contract work

PROJECT MANAGER | MSC-BAHNSON – RALEIGH, NC | NOVEMBER 8, 2016 – DECEMBER 1, 2020

- Oversee all project activities across multiple job sites ensuring budget, schedule, & safety requirements are being met
- Draft and prepare submittals prior to construction
- Purchase, expedite materials, & issue sub-contracts for projects
- Evaluate scope of work constantly, issuing change orders as necessary
- Contacted various suppliers and received pricing for materials to orders
- Prepared submittals for review based on customer criteria

Education

BACHELOR OF SCIENCE | DECEMBER 2015 | UNIVERSITY OF NORTH CAROLINA - CHAPEL HILL | CHAPEL HILL, NC

- Major: Biology |Chemistry

Certifications

PROJECT MANAGEMENT PROFESSIONAL (PMP) | NOVEMBER 2020 | PROJECT MANAGEMENT INSTITUTE

*Project Portfolio Available Upon Request

Computer Skills

- Microsoft Office Suite (Excel, Word, Project, Teams)
- Viewpoint Vista (Project Management & Accounting)
- Bluebeam (Plan development and Drafting)
- Agtek Earthworks (Sitework & Earthwork modeling and calculation)

Additional Skills

- Fluent in Mandarin Chinese
- Good oral and written communication skills
- Ability to develop and acquire new skills quickly
- Good time management skills
- Adept with current and emerging software

Application to Serve on a Board or Committee

Applicant Name	David Tamplen
E-mail	dgtamplen@gmail.com
Address	Street Address: 521 Texanna Way City: Holly Springs State: NC Zip Code: 27540
How long have you lived in Holly Springs?	6 1/2 years
Name of neighborhood	Braxton Village
Home phone	(919) 586-7851
Work phone	(330) 256-1290
Current employer	Wheaton Sprague Building Envelope
Job title / occupation	Sr. Designer / Project Manager
I reside within the	Corporate limits of Holly Springs
First choice:	Planning Board
Second choice:	Board of Adjustment
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	I studied architecture and environmental design at Texas A&M University. I work for an engineering and design company. I have been in the commercial construction industry my entire adult career.
List any current or past volunteer activities in which you are / were involved.	I am active with the Boy Scouts of America and the Knights of Columbus. I am a Sunday school teacher. I served 3 terms on the board of directors

for the Holly Springs Theatre Company at Holly Springs High School.

What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?

I think the board should help guide the growth of Holly Springs. Our town is growing and I feel like I should be of help, if I can.

Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?

No

Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?

No

Signature



Date & time

11/30/2021 2:48 PM

How did you find out about these opportunities?

regular e-mails from the Town

View [view all your submissions](#) easily.

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Application to Serve on a Board or Committee

Applicant Name	Ben Copeland
E-mail	sbencopeland@gmail.com
Address	Street Address: 109 Middlecrest Way City: Holly Springs State: NC Zip Code: 27540
How long have you lived in Holly Springs?	7+ years
Name of neighborhood	Sunset Ridge North
Home phone	(919) 609-4509
Current employer	Peak Fall Protection, LLC
Job title / occupation	Vice President
I reside within the	Corporate limits of Holly Springs
	Ben Copeland Resume PE.pdf
First choice:	Board of Adjustment
Second choice:	Planning Board
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	As a licensed professional engineer with formal engineering education at NC State, I will be able to bring a technical mindset to the board that is often needed when rendering assessments and recommendations. I also have business operation experience that will allow me to see the practical side of various applications of town code and ordinances.
List any current or past volunteer activities in which you are / were involved.	I have formerly volunteered as an EMT for Cary Area EMS providing medical care to the community.
What do you see as the responsibilities of this	After reviewing the online archive files for the board of adjustment, it is clear the board's responsibility is

board and what do you hope to accomplish if appointed?

to make assessments when hearing a concern brought by affiliated parties in order to balance the intent of town ordinances with reasonable requests so long as the town's interests are maintained. The planning board is responsible for reviewing new development and zoning concerns, and for providing recommendations to the town council. As a board member, I hope to utilize my technical and business background to properly and fairly assess each application and weigh the interests of each party with the best interests of the town in mind.

Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?

No

If yes, please explain.

Unfortunately I have not been able to attend a board of adjustment meeting since I received the mailing notification of open positions due to lack of business.

Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?

No

Signature



Date & time

12/05/2021 9:04 PM

How did you find out about these opportunities?

Town mailer

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Experienced operations executive with proven success developing and implementing rapid-growth strategies resulting in corporate expansion and acquisition. Able to drive results through a well-managed approach to process and operations. Dynamic leader able to build, manage and maintain high performing teams.

Experience **Peak Fall Protection**

Vice President of Operations

2017 – present

- Oversee day-to-day operations that includes developing and implementing strategic processes and procedures, training and supporting department managers, directing talent acquisition and retention, monitoring purchasing performance and vendor relationships, managing and utilizing assets and overseeing general business improvement projects.
- Grew gross revenue 360% over 6 years and maintained >25% operating profit YOY.
- Successfully grew team from (12) employees in 2014 to (55) pre-COVID with high retention.
- Completed successful merger and acquisition by private equity in Q4 2019 through attractive EBITDA, company culture and industry stature and reputation.
- Navigated operational difficulties in COVID-19 environment with office, production & field teams while maintaining operating profit >25% and business viability.
- Integrating project management, installation, inspection and safety departments across all three company divisions after acquisition to increase operational efficiencies through standardization.
- Negotiated price concessions and implemented master agreements with material suppliers, equipment vendors, facility services and subcontractors resulting in 10-25% average savings.

General Manager

2016 – 2017

- Managed day-to-day operations and associated tasks to include direct management of installation, production and office team, interviewing and hiring, vendor relationship development, review of quotations and bids, sourcing and maintaining a significant vehicle fleet, and coordinating facility maintenance.
- Modernized operational procedures by developing written policies and programs, implementing software, and strategic staffing to support scalability and exponential growth of 36% YOY.
- Opened multiple satellite offices and relocated corporate facility in 2017 (again in 2020) resulting in expansion of 85% (65% additional in 2020) for office, installation and plant operations.

Project Engineer

2014 – 2016

- Designed fall protection systems utilizing AutoCAD software and preparing detailed calculation packages for structural connections as well as managed projects with the installation team.
- Regularly met with customers to review their needs for fall protection or suspended maintenance systems, and produced professional design development drawings and quotations as deliverables.

Eastern Wake EMS

EMT-Intermediate

2013– 2014

- Responded to 911 emergency calls, providing critical care to patients and stabilizing them for transport to the emergency room.

Tower Engineering Professionals

Civil Engineer

2013

- Prepared professional reports on tower post modification inspections for clients and companies detailing the results of the inspection using current engineering standards and practices.

Education **North Carolina State University, Raleigh, NC**
Bachelor of Science, Civil Engineering, 2012

Credentials Professional Engineer (PE): 2018 – NC, 2021 – VA, GA, TN
Emergency Medical Technician – Advanced (A-EMT), 2012

Application to Serve on a Board or Committee

Applicant Name	Rich Roberts
E-mail	roberts.richard116@gmail.com
Address	Street Address: 104 Skybrook Drive City: Holly Springs State: NC Zip Code: 27540
How long have you lived in Holly Springs?	21 year
Name of neighborhood	Sunset Ridge South
Home phone	(919) 656-2660
Current employer	Self - retired
Job title / occupation	Licensed Architect
I reside within the	Corporate limits of Holly Springs
First choice:	Planning Board
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	I have been a licensed Architect since 1986 (which remains active today), owning my own commercial firm from 1986 through 2014, when I retired. Our work specialized in designing retail stores national wide. Part of my responsibilities included attending Planning Board meetings with my clients to present our projects to the local municipality. It would be nice to sit on the other side of the table, for a new perspective on this process. I have also been a member of our local Sunset Ridge Architectural Review Committee serving as Chair since 2004. We receive over 100 owner submissions annually.

List any current or past volunteer activities in which you are / were involved.	See above for Architectural Review Committee volunteer work....this committee requires extensive collaborative review actions which would serve me well on the Planning Board.
What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?	I see the responsibilities to include facilitating discussions on issues and projects brought before the Board. Understanding and discussing the scopes associated with the various projects, so all members can fully evaluate and make decisions based on facts and issues, not assumptions. Also critical is working in a team setting allowing for all voices of the Planning Board members to be heard.
Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?)	No
Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?	No
Signature	
Date & time	12/06/2021 11:45 AM
How did you find out about these opportunities?	The Source newsletter

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Town of Holly Springs

Board of Adjustment & Planning Board Application

For Office Use only: Appointed to ☐ Board of Adjustment ☐ Planning Board

Date: _____ Term Expires: _____

Scan to apply online



26

Applicant Name: KEVIN BERGERON E-Mail Address: KEVIN.BERGERON@YAHOO.COM

Address: 104 CHERRY BIRCH CT. Zip: 27540

How long have you lived in Holly Springs: 2 mo Name of Neighborhood: TRINITY CREEK

Home/Cell Phone: (973) 349-2690 Work Phone: ()

Current Employer: BLUETEAM RESTORATION Job Title/Occupation: BUSINESS DEVE. MGR.

I reside within the ☒ Corporate Limits of Holly Springs ☐ Extraterritorial Jurisdiction (ETJ) of Holly Springs

List below in priority order the Board on which you wish to serve:

First Choice: PLANNING BOARD

Second Choice: _____

List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.

ENVIRONMENTAL STUDIES, SOLAR BUSINESS OWNER
RESTORATION, CONSTRUCTION WORK EXPERIENCE

List any current or past volunteer activities in which you are/were involved.

MEMBER OF TRIANGLE APARTMENT ASSN. - CURRENT
ASSN MEMBER (HOLLY SPRINGS SMALL BIZ. NETWORK)

What do you see as the responsibilities of this Board and what do you hope to accomplish if appointed?

IMPARTIAL INPUT ON DEVE. PLANS FOR TOWN

Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived) if you are appointed?

☒ No ☐ Yes If yes, please explain:

Have you taken the opportunity to attend any previous Board meetings prior to the notice of this vacancy?

☒ No ☐ Yes

By submission of this application, I certify that all of the information contained herein is true to the best of my knowledge, and I understand that this application shall be active for two years. I also understand that I will be required to be available to attend meetings of the Board as assigned.

Signature of Applicant

Date

12/6/2021

* Please note, original signature is required in order to be considered. This information along with other material may be used by the Town Council in making appointments and in the event you are appointed, it may be used as a basis for a news release to identify you to the community.

How did you find out about these opportunities? EMAIL, WORD OF MOUTH

Application to Serve on a Board or Committee

Applicant Name	Jeffrey Milligan
E-mail	jeffmi1@earthlink.net
Address	Street Address: 500 Redhill Road City: Holly Springs State: NC Zip Code: 27540
How long have you lived in Holly Springs?	4 years
Name of neighborhood	Sunset Oaks
Home phone	(919) 434-7021
Current employer	Prism Specialties of North Carolina
Job title / occupation	Owner
I reside within the	Corporate limits of Holly Springs
	Jeffrey Milligan Executive Profile--2021.pdf
First choice:	Planning Board
Second choice:	Board of Adjustment
Have you served on this board/committee in the past?	No
List any education, work experience or qualifications you have relevant to the Board of Adjustment or Planning Board.	I was a partner in a real estate development company. I have presented before many Planning Boards and have had projects approved in New Hampshire, Connecticut, and North Carolina.
List any current or past volunteer activities in which you are / were involved.	While at my former company, we had a charitable arm that sponsored an orphanage in Haiti. We collected donations and sent them via shipping container. Also while there, we donated our time

working at the Durham Rescue Mission cleaning the grounds, painting rooms, etc.

Since then, my wife and I have raised our two girls and attended years of travel soccer games.

What do you see as the responsibilities of this board and what do you hope to accomplish if appointed?

I view the responsibilities of the board as implementing/approving projects that are consistent with the Town's regulations and Comprehensive Plan. If they are not consistent, then denying projects based on these merits.

Do you have any personal or business interest(s) that could create a conflict of interest (either real or perceived if you are appointed?

No

If yes, please explain.

FYI--I am no longer in the real estate development business. I left that company in 2012 and since then have owned my own insurance restoration business.

Have you taken the opportunity to attend any board meetings prior to the notice of this vacancy?

No

Signature



Date & time

12/06/2021 8:06 PM

How did you find out about these opportunities?

Town of HS Text Message

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Jeffrey M. Milligan

500 Redhill Road

Holly Springs, NC 27540

919-434-7021

jeffmi1@earthlink.net

Leadership / Land Acquisition and Permitting / Marketing and Sales Strategy / Business Development / Relationship Management / Fortune 100 Marketing Strategy / Project Management / Program Execution / Electronics, Artwork and Textile Restoration / Entrepreneurship

Experienced land acquisition and permitting, business development, and marketing professional with over 25 years' experience. Sales and marketing expertise across multiple disciplines from electronics restoration to pharmaceutical to high tech to residential and commercial real estate. Data driven with ability to analyze and capitalize on market trends.

SELECTED ACHIEVEMENTS

Led Southeastern expansion of real estate development company increasing staff from five employees to twelve while growing assets under management by 400%.

Acquired, permitted, and developed over 1,200 residential building lots between New Hampshire and South Carolina with a market value over \$78 million.

Raised over \$5 million of primary and co-investment funds for selected development assets in both the Northeast and Southeast.

Management and fundraising responsibility for investor coalition including execution of 10-year plan. Plan contemplates the acquisition and management of several asset classes across complementary industry sectors.

Recruited to integrate and manage the Merck Pharmaceutical account into the agency including six product lines. Responsible for marketing strategy across multiple channels, geographies, and languages.

CAREER HISTORY

DiMill Enterprises, dba Prism Specialties of NC, Apex, Raleigh, and Charlotte, NC June 2012-Present
Owner/Managing Member

Heading multi-investor consortium that has started three businesses over nine years. These businesses focus on specialty contents restoration work related to insurance losses. Electronic Restoration Services (ERS), Art Recovery Technologies (ART) and Textile Extraction Experts (TEX) have three offices in North Carolina.

LStar Management, Raleigh, NC 2001-2012
Partner

Led acquisition and marketing departments for real estate development company. Managed acquisition, permitting, and marketing of raw land and partially developed residential properties. Have permitted residential projects in New Hampshire, Connecticut, and North Carolina including a marina on Bogue Sound.

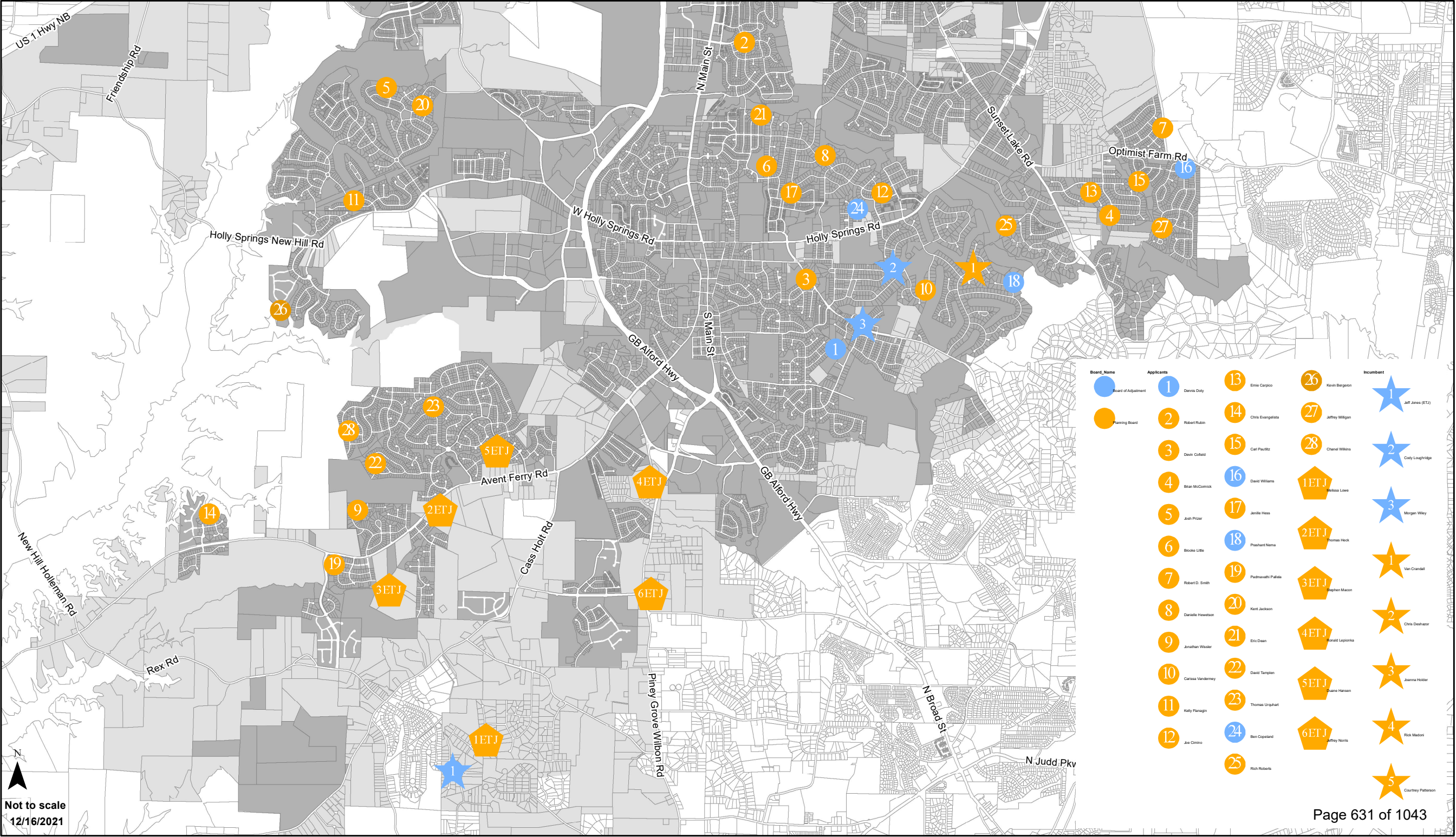
Brann Worldwide, Wilton, CT 1994-2001
Account Supervisor

Developed marketing and communication strategies for Fortune 100 companies including IBM, Compaq Computers, UPS, MCI and Merck.

EDUCATION

Bryant University, Smithfield, RI BSBA, Marketing
Graduated Magna Cum Laude and President of the Delta Mu Delta Honor Society.

Board Applicants





Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 15.

New Business

Title: Land Use Advisory Committee Town Code Amendment

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

Staff Resource: Sean Ryan, Development Services

Action(s):

Adopt Ordinance 22-02 to amend the Town Code and to establish the Land Use Advisory Committee

Explanation:

- This ordinance establishes the Land Use Advisory Committee (LUAC) in the Town Code.
- The membership of the committee will be 9 members and 2 alternates, as follows
 - The Director of Development Services, or their designee.
 - The Executive Director of Utilities & Infrastructure, or their designee.
 - The Director of Economic Development, or their designee.
 - The Director of Parks and Recreation, or their designee.
 - The Town Manager of the Town of Holly Springs, or their designee.
 - The two Assistant Town Managers, or their designees.
 - 1 member of the Planning Board, or the alternate member of the Planning Board, appointed by the membership of the Planning Board.
 - 1 member of the Town Council, or the alternate member of the Town Council, appointed by the membership of the Town Council.
- The purpose of the committee is to provide informal review, technical support, assistance, comment and critique of proposed development. The Committee may offer suggestions on project design layout, or other land use matters based upon their view of the Planning Board and Town Council goals for development in the Town.
- The LUAC will fill the role of the previously established Technical Review Committee (TRC).

Background:

- The Technical Review Committee (TRC) was established in the 2002 Unified Development Ordinance (UDO) to provide technical support and assistance and comment and critique to the development community in the assessment of proposed development projects. The TRC was replaced in the new UDO with the Development Review Committee (DRC).
- The DRC provides technical support and assistance to the development community on proposed projects and was given the authority to approve certain administrative level development projects.
- The DRC membership does not include representatives of the Town Council or Planning Board.
- At the September 2021 Town Council workshop, concern was expressed that the Town

Council and Planning Board would no longer be represented on the DRC. Staff proposed establishing a Land Use Advisory Committee to allow a forum for town staff, representatives of the Town Council, and representatives of the Planning Board the opportunity to comment and critique the development community in the assessment of proposed development projects.

Funding Source(s):

N/A

Attachment(s):

1. 22-02 Create Land Use Advisory Committee



Ordinance No. 22-02

Date Submitted:

Date Adopted:

**AN ORDINANCE TO AMEND THE TOWN CODE OF ORDINANCES OF HOLLY SPRINGS TO
CREATE A NEW SECTION TO CHAPTER 2, ADMINISTRATION, ARTICLE IV BOARDS,
COMMISSIONS, AND COMMITTEES, DIVISION 6**

BE IT ORDAINED by the Holly Springs Town Council of the Town of Holly Springs, North Carolina, that the Code of Ordinances of the Town is amended as follows:

Part 1: Add to Table of Contents:

Part II, Chapter 2, Article IV Boards, Commissions and Committees:
Division 6- Land Use Advisory Committee

Part 2: Add text as indicated to Part II, Chapter 2, Article IV Boards, Commissions and Committees:

Division 6- Land Use Advisory Committee

Sec. 2-291. - Creation; name; number of members.

There is hereby created a committee composed of 9 regular members and 2 alternate members, to be known as the Holly Springs Land Use Advisory Committee (the "Committee").

Sec. 2-292. - Powers and duties.

(a) The Committee shall assume specific duties and responsibilities as follows:

- (1) Provide informal review, technical support, assistance, comment and critique in the assessment of proposed development petitions upon the request of a petitioner for a proposed development; and
- (2) Provide informal review, technical support, assistance, comment and critique in the assessment of proposed development petitions upon the request of the Unified Development Ordinance Administrator when proposed projects are not in strict compliance with the rules and regulations of the Unified Development Ordinance or Comprehensive Plan; and
- (3) Review and make recommendations to the Town Council of studies, plans, or ordinances relating to the regulation of Land Use; and
- (4) Perform any other related duties that the Town Council may direct.

Sec. 2-271. – Committee Membership

(a) The Committee shall consist of the following members:

- (1) The Director of Development Services, or their designee.
- (2) The Executive Director of Utilities & Infrastructure, or their designee.
- (3) The Director of Economic Development, or their designee.
- (4) The Director of Parks and Recreation, or their designee.
- (5) The Town Manager of the Town of Holly Springs, or their designee.
- (6) The two Assistant Town Managers, or their designees.
- (7) 1 member of the Planning Board, or the alternate member of the Planning Board, appointed by the membership of the Planning Board.
- (8) 1 member of the Town Council, or the alternate member of the Town Council, appointed by the membership of the Town Council.

(b) All members shall hold office until their successors are appointed and qualified.

(c) All Committee members are bound by all town policies, including but not limited to the Town's Ethics Policy.

Sec. 2-272. - Officers.

(a) The Chairperson of the Committee shall be the Director of Development Services.

(b) The Vice-Chairperson of the Committee shall be the Executive Director of Utilities & Infrastructure.

(c) The Committee may create and elect such other officers as it may deem necessary. The term of officers shall be 1 year or until successors shall have been appointed and installed, with eligibility for reelection. Vacancies in officers' positions prior to expiration of terms shall be filled for the period of the unexpired term by the Committee.

Sec. 2-273. - Duties of officers.

(a) The Chairperson shall preside at all meetings of the Committee. The Chairperson shall perform the other duties ordinarily performed by that office.

(b) The Vice-Chairperson of the Committee shall, in the absence of the chairperson, perform all duties of the Chairperson.

Sec. 2-274. - Compensation and expenses.

The members of the Committee who are not full-time town employees shall serve without compensation, but shall be entitled to reimbursement for subsistence and travel to professional

meetings, conferences and workshops associated with their Committee membership, with such reimbursement being made in compliance with the general town policies.

Sec. 2-275. - Meetings.

- (a) The Committee shall hold at least 1 meeting monthly unless there is no business to be discussed or acted upon.
- (b) A quorum of the Committee shall be in attendance before action of an official nature can be taken. A quorum is a majority of the number of the regular members.
- (c) All members, including alternate members, shall have the authority to participate in discussions of the Committee. All regular members (alternate members, when acting as a regular member) of the Committee shall have voting power on all matters of business.
- (c) General parliamentary rules shall be observed in conducting meetings.
- (d) All members who are physically present at a meeting shall have voting power on all matters of business. No proxy voting is allowed.
- (e) All meetings shall be public meetings and minutes shall be taken. The minutes and all documents created or received by committee members in furtherance of their work on the Committee are public records.
- (e) The first regular meeting in March will be an organizational meeting for the ensuing year with election of officers.
- (f) The Committee may provide informal review, technical support, assistance, comment and critique of proposed development. The Committee may offer suggestions on project design layout, or other land use matters based upon their view of the Planning Board and Town Council goals for development in the Town. All discussion, comment, or opinion presented by the Committee are not to be construed as a recommendation of Town Staff, the Planning Board, or Town Council to approve or deny any proposed project at time of official determination.

Part 3: 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 4: 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 5: 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 6: EFFECTIVE DATE

The provisions of this ordinance shall become effective November 30, 2021 in accordance with the laws of the State of North Carolina.

Adopted this, the ____ day of March 2022.

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#: 16.

New Business

Title: Cass Holt Road Park - Master Plan Approval

Strategic Priority Area: Engaged, Healthy, & Active Community

Staff Resource: Matt Beard, Parks & Recreation, LeeAnn Plumer, Parks & Recreation

Action(s):

Approve Cass Holt Road Park Master Concept Plan

Explanation:

- Approval of the Cass Holt Park Master Plan indicates the Town Council's endorsement for the conceptual amenities and facility investments envisioned for the park site.
- Approval of the Master Plan does not commit the Council to funding the park investments, but it does provide a basis from which capital and financial planning can begin for development of the park.

Background:

- In December 2019, the Town purchased property totaling 55.9 acres at 5508 Cass Holt Rd. The parcel was annexed into the town limits on September 1, 2020.
- A Request for Qualifications for Master Plan Design of a Park for the site was issued in January 2021 with the Town Council approving the selection of CLH Design, P.A., on May 4, 2021 for plan development and phase one design/construction document services.
- For the past nine months, Town staff with consultants from CLH and Davis Kane, engaged heavily with the community through virtual and in-person events, face-to-face conversations and online surveys. Adjacent property owners were brought together as a community stakeholder group and town staff were assembled as a staff stakeholder group.
- Conceptual plans were brought before the Parks and Recreation Advisory Committee as well as the Planning Board prior to being shared with the Town Council at monthly workshops and the Annual Retreat.
- Once the Master Plan is approved, the town staff will look to re-engage CLH to move forward with the phase of design that was discussed at the Town Council annual retreat.

Funding Source(s):

N/A

Attachment(s):

1. Cass Holt Rd Park - Final Concept

Cass Holt Road Park

Holly Springs, NC

Final Concept





Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 17.

New Business

Title: Bid award for Twelve Oaks Pump Station Expansion & Modifications Project (TP 18-005, Task 2)

Strategic Priority Area: Responsible & Balanced Growth
Safe & Friendly

Staff Resource: Rachel Ingham, Utilities and Infrastructure, Seann Byrd, Utilities and Infrastructure, Kendra Parrish, Utilities and Infrastructure

Action(s):

Approve a sole source exception of purchase of certain materials pursuant to NCGS § 143-129(e)(6) and award the Twelve Oaks Pump Station Expansion & Modifications Project (\$1,149,000) to Eberhart Construction, Inc.

Explanation:

- The Twelve Oaks Pump Station, located at 779 Ancient Oaks Drive, is in need of improvements to increase capacity to serve future development projects in the drainage basin.
- Four bids were opened on February 9, 2022 and ranged from \$1,149,000 - \$2,461,900.
- Staff recommends awarding the contract to the lowest responsible bidder in the amount of \$1,149,000 including the sole sourcing of materials.
- Certain materials must be brand specified to maintain compatibility with town systems. When doing so in a public bid, the town council must approve of such sole sourcing. These materials are :
 - Allowance Item No. 1: For Soil and Concrete Testing and Vibration Monitoring by the Geotechnical Firm selected by the Town. (\$10,000)
 - Allowance Item No. 2: For Submersible Pumps No. 3 and 4 and Reduced Voltage Solid State combination starters No. 3 and 4 in enclosures, as provided by Pete Duty & Associates Inc. to match the existing pumps and starters. (\$180,010)
 - Allowance Item No. 3: For the conversion of the existing Muffin Monster solids cutter from a hydraulic drive to an electric immersible motor drive, this Allowance Item will have the Contractor purchase from JWC Environmental the parts necessary for this conversion, a new control panel, and the services of an authorized technician to modify the existing Muffin Monster unit. (\$15,000)
 - Allowance Item No. 4: For the Carbon Adsorption Odor Control System described in Specification Division 11-J, as manufactured by Evoqua Water Technologies and as represented by Heyward, Inc. (\$67,200)
- Construction is anticipated to start following issuance of the Notice to Proceed, with a duration of approximately 240 days.

Background:

- The Twelve Oaks Pump Station is nearing its permitted capacity of 1.944 million gallons per day (MGD). Originally designed as a 1,350 gallons per minute (GPM) pump station.

Town Council Business Meeting
March 1, 2022

Field testing in August 2020 indicated that the station was operating at a reliable pumping rate of 1,157 GPM. For planning purposes, this equates to 0.007 MGD of available capacity in the pump station.

- The following timeline is provided:
 - December 2020 - Utilities & Infrastructure Services prepared an RFQ seeking qualified consultants to provide (Task 1) 25% design of upgrades to the gravity sewer outfall, and (Task 2) 100% design of upgrades for the Twelve Oaks Pump Station.
 - March 16, 2021 - Town Council approved a contract with Diehl & Phillips to complete Task 2 based on the Statement of Qualifications received.
 - December 3, 2021 - North Carolina Department of Environmental Quality approved the Fast Track Sewer System Extension Application based on Deihl and Phillips design and issued permit #WQ0030814Mod for the Twelve Oaks Pump Station Expansion & Modifications project.
 - December 10, 2021 - Town of Holly Springs Development Services Department approved the Diehl & Phillips construction drawings for the pump station upgrade.
 - January 10, 2022 - Utilities & Infrastructure Services advertised bid documents for the project.
 - April 2022 - anticipated delivery date for Task 1 (25% design of gravity sewer outfall improvements).
- Twelve Oaks Pump Station Upgrade Expansion & Modification Project was anticipated and budgeted for in the FY 22 Community Investment Plan (CIP). The amount listed in the CIP includes funds to design and construct both Task 1 and Task 2.

Funding Source(s):

Wastewater Capital Project Fund - American Rescue Plan (ARP) Funds

Attachment(s):

1. Twelve Oaks PS Expansion and Modifications ISSUED FOR CONSTRUCTION 1-5-2022
2. Twelve Oaks PS Project Manual ISSUED FOR CONSTRUCTION
3. Bid Summary - Twelve Oaks PS Project TOHS No. 18-005 _20220209
4. Eberhart

TWELVE OAKS
PUMP STATION
EXPANSION AND MODIFICATIONS
TOWN OF HOLLY SPRINGS PROJECT No. 18-005
HOLLY SPRINGS, NORTH CAROLINA

MAYOR: Sean Mayefskie
TOWN CLERK: Linda McKinney
TOWN MANAGER: Randy Harrington
EXECUTIVE DIRECTOR OF UTILITIES
AND INFRASTRUCTURE: Kendra Parrish, P.E.

TOWN COUNCIL MEMBERS

Kristi Bennett

Timothy Forrest

Daniel H. Berry

Shaun McGrath

Dr. Aaron Wolff

INDEX OF DRAWINGS	
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2	SITE PLAN & STAKING PLAN - PROPOSED PROJECT
3	ENLARGED PLAN - EXISTING PUMP STATION
4	TOP PLAN
5	SECTIONAL PLAN, SECTION, AND MISCELLANEOUS DETAILS
6	EROSION CONTROL DETAILS
E1	TOP PLAN - ELECTRICAL
E2	HVAC ADDITION, PANEL SCHEDULES, AND ELECTRICAL DETAILS
E3	ONE LINE DIAGRAM

DIEHL & PHILLIPS, P.A.
CONSULTING ENGINEERS - LIC. NO. C-0465
1500 PINEY PLAINS RD., SUITE 200
CARY, N.C. 27518 • (919) 467-9972



Construction Drawings
Approval Date: 12/9/2021
Approved By: Don Baker

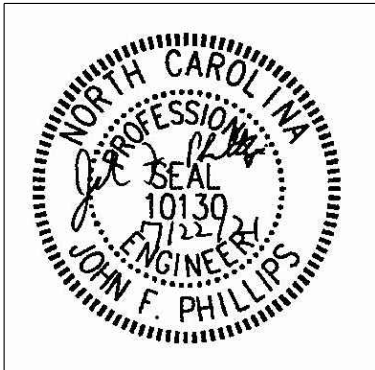
Approval of these plans does not relieve developer/owner from responsibility of construction in accordance with town board approvals, ordinances, policies, and/or construction standards and specifications. Issuance of Plan Approval does not constitute approval to commence grading and utility installation activities on-site. These activities may take place only after the required preconstruction meeting has been held and all permits have been issued.

Water Permit #: N/A

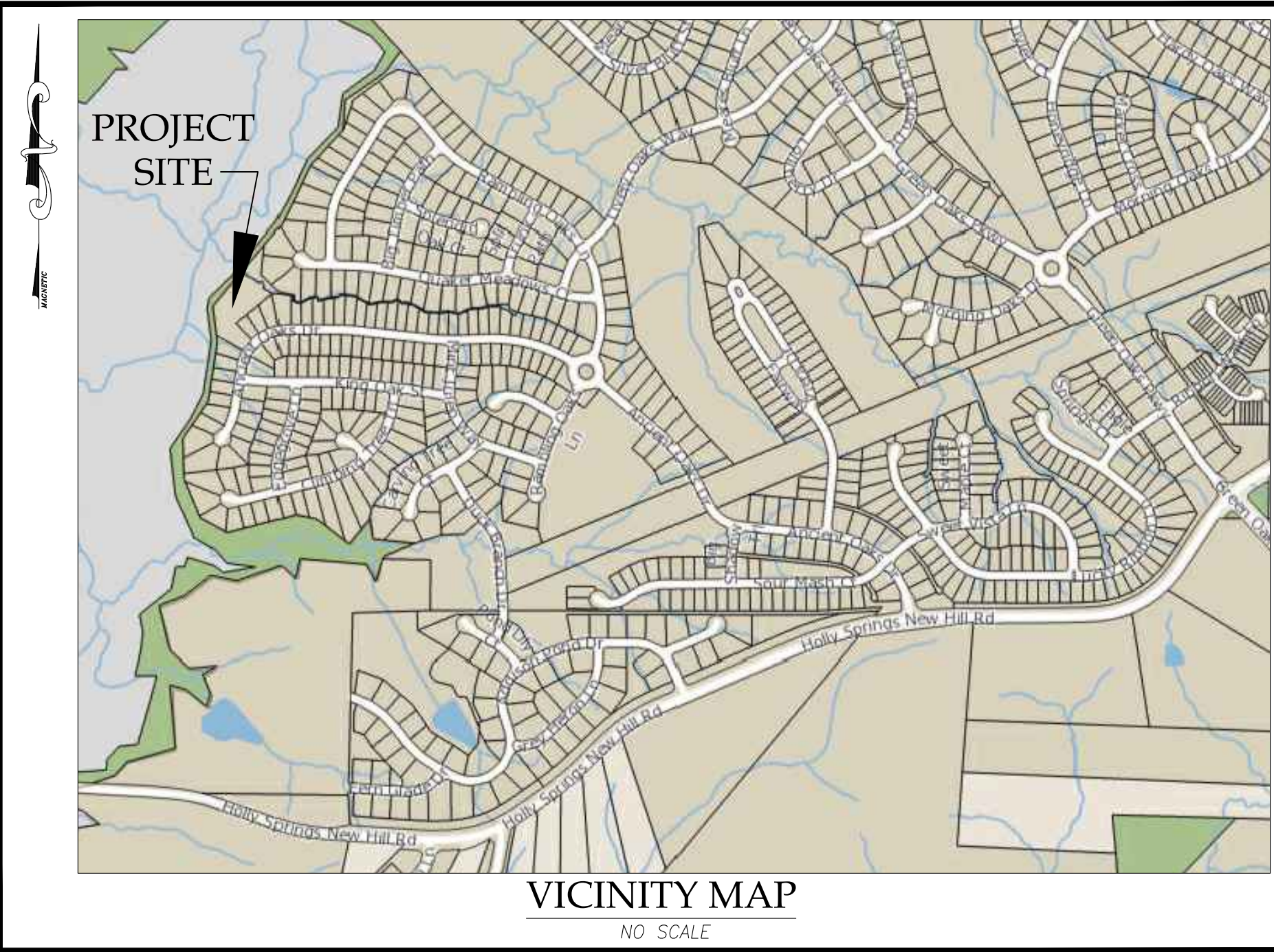
Wastewater Permit #: WQ0030814

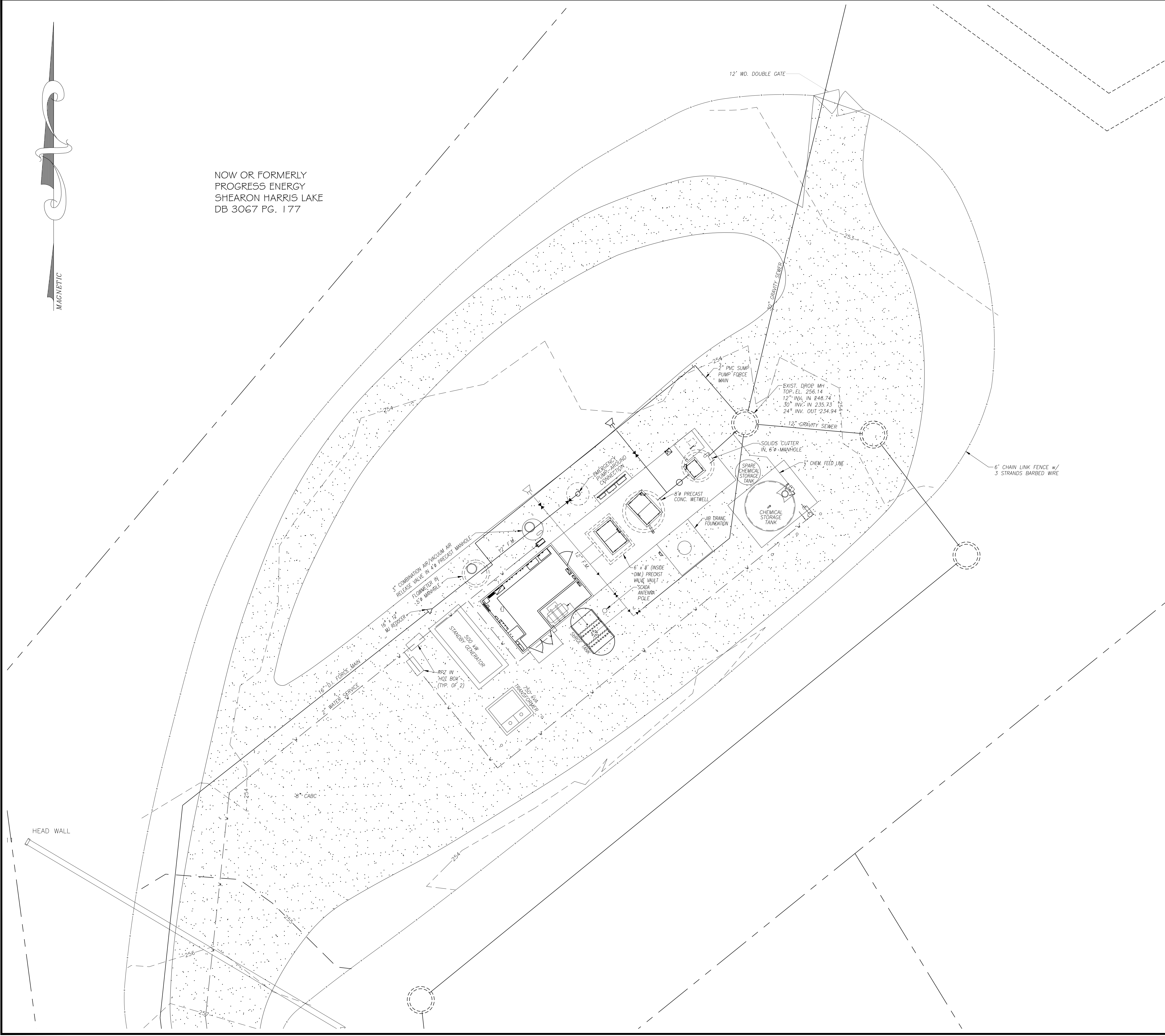
Reclaim Permit #: N/A

"This project shall be constructed in accordance with the following plans, and the adopted Engineering Design and Construction Standards of the Town of Holly Springs. These plans were prepared in conformance with the approved preliminary plan approved by the Town. Furthermore, the engineer whose seal and signature appear below this certifies that the Town of Holly Springs Engineering Design and Construction and Standards have been thoroughly reviewed for applicability to this particular project. Any proposed exceptions or deviations from either the standards and/or from the approved preliminary plan are listed below:



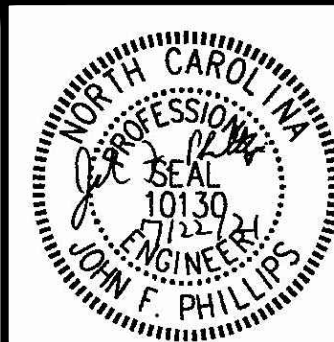
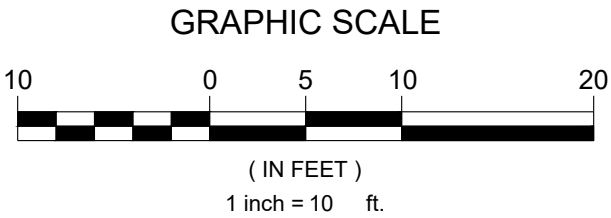
Signature & Seal of Professional Engineer





GENERAL NOTES

- ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE TOWN OF HOLLY SPRINGS STANDARD SPECIFICATIONS AND DETAILS, AND THE SPECIFICATIONS, DETAILS, AND PLANS PREPARED BY DIEHL & PHILLIPS, P.A. FOR THIS PROJECT.
- TOPOGRAPHIC INFORMATION PROVIDED BY MAULDIN-WATKINS SURVEYING, P.A., FUQUAY-VARINA, NC.
- THERE ARE NO KNOWN WETLANDS ON THE PUMP STATION SITE.
- 100 YEAR FLOOD ELEVATION FOR SITE IS: 240.9 (FEMA PANEL 370403).



DESIGN JFP	REVISIONS:	DIEHL & PHILLIPS, P.A. CONSULTING ENGINEERS - LIC. NO. C-40465 1500 PINEY PLAINS RD., SUITE 200 CARY, NC 27518 • (919) 467-9972
DRAWN JLB		
CHECKED JFP		
SCALE 1" = 10'		
FILE TOPS2-SPR1		
SITE PLAN - EXISTING CONDITIONS		
TWELVE OAKS PUMP STATION EXPANSION AND MODIFICATIONS TOWN OF HOLLY SPRINGS, NORTH CAROLINA		
SHEET 1 OF 9		



GENERAL NOTES

1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE TOWN OF HOLLY SPRINGS STANDARD SPECIFICATIONS AND DETAILS, AND THE SPECIFICATIONS, DETAILS, AND PLANS PREPARED BY DIEHL & PHILLIPS, P.A. FOR THIS PROJECT.
2. TOPOGRAPHIC INFORMATION PROVIDED BY MAULDIN-WATKINS SURVEYING, P.A., FUQUAY-VARINA, NC.
3. THERE ARE NO KNOWN WETLANDS ON THE PUMP STATION SITE.
4. 100 YEAR FLOOD ELEVATION FOR SITE IS: 240.9 (FEMA PANEL 370403).

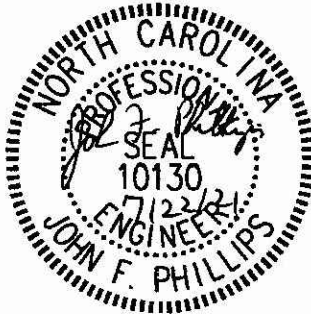
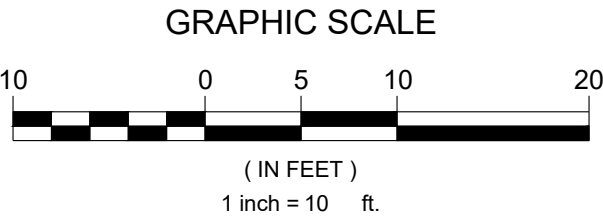
EROSION CONTROL LEGEND

- 0.00 — LIMITS OF DISTURBANCE/CONSTRUCTION
- + + + — TEMPORARY SILT FENCE

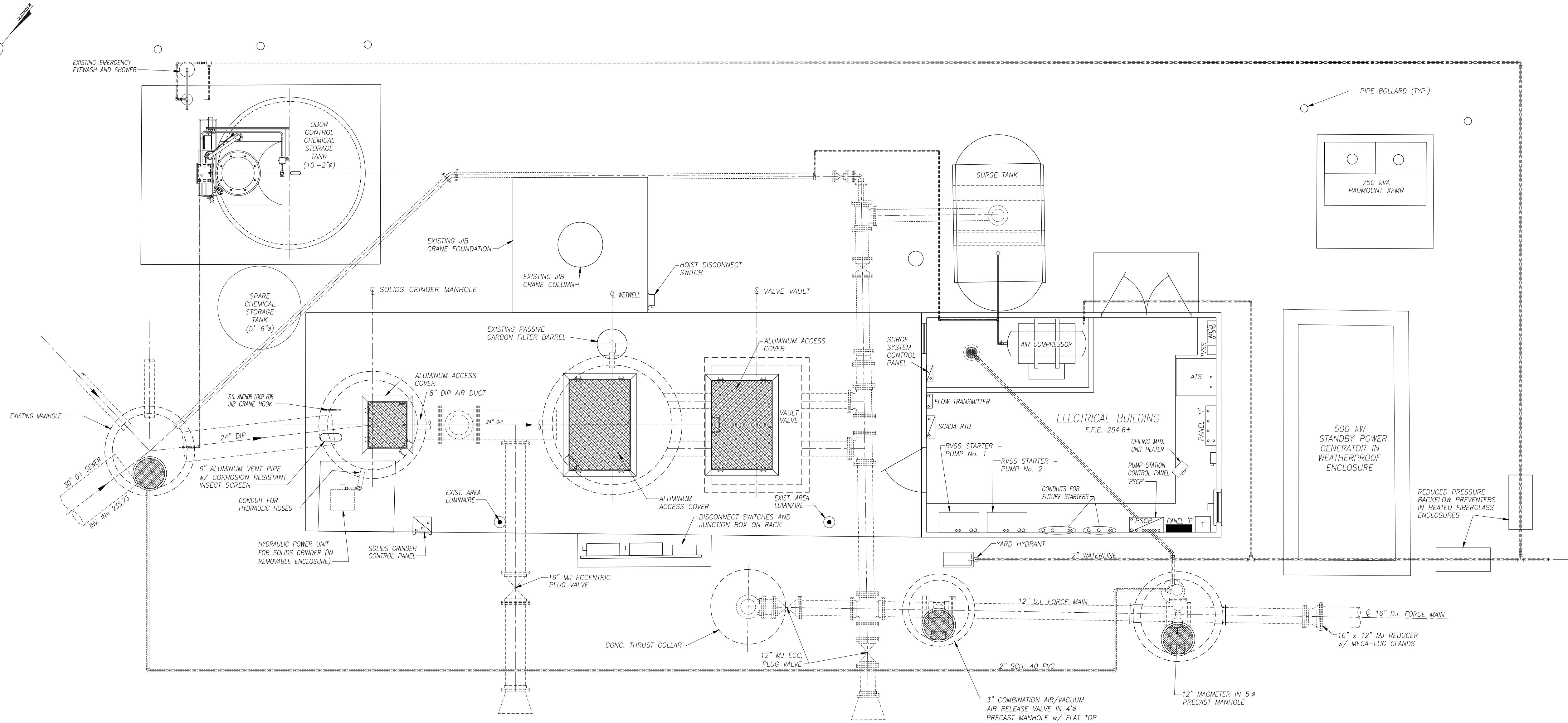
PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO EXPAND THE CAPACITY OF THE EXISTING TWELVE OAKS PUMP STATION BY INSTALLING A SECOND WETWELL WITH TWO NEW PUMPS, AND A SECOND VALVE VAULT. THESE ADDITIONS WILL REQUIRE MODIFICATIONS TO THE EXISTING ELECTRICAL SYSTEM. THIS PROJECT WILL ALSO ADD A CARBON ADSORPTION ODOR CONTROL SYSTEM, ADD A SECOND JIB CRANE AND HOIST SYSTEM, AND RETROFIT THE EXISTING SOLIDS CUTTER WITH AN IMMERSIBLE MOTOR AND A NEW CONTROL PANEL.

PROJECT IS IN THE CAPE FEAR BASIN
TOTAL DISTURBED AREA = 0.20 AC.

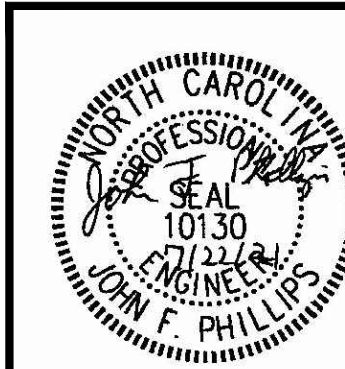


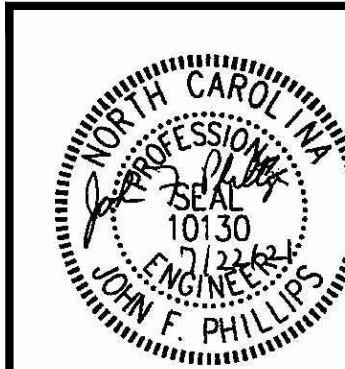
DESIGN JFP	REVISIONS:	DIEHL & PHILLIPS, P.A. CONSULTING ENGINEERS - LIC. NO. C-40465 1500 PINEY PLAINS RD., SUITE 200 CARY, NC 27518 • (919) 467-9972
DRAWN JLB		
CHECKED JFP		
SCALE 1" = 10'		
FILE TOPS2-SPR1		
TWELVE OAKS PUMP STATION EXPANSION AND MODIFICATIONS TOWN OF HOLLY SPRINGS, NORTH CAROLINA		
SITE PLAN & STAKING PLAN - PROPOSED PROJECT		
SHEET 2	OF 9	

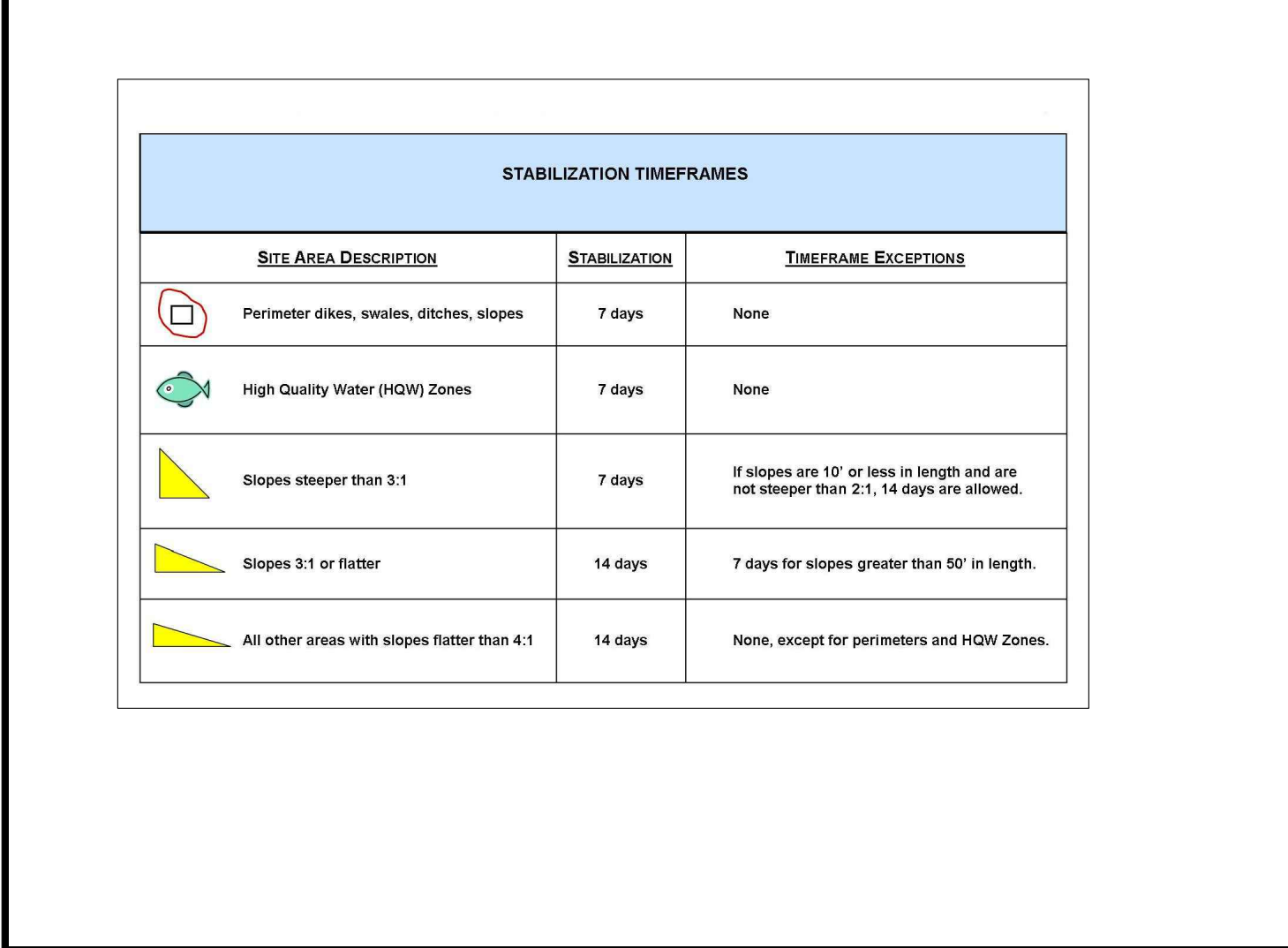
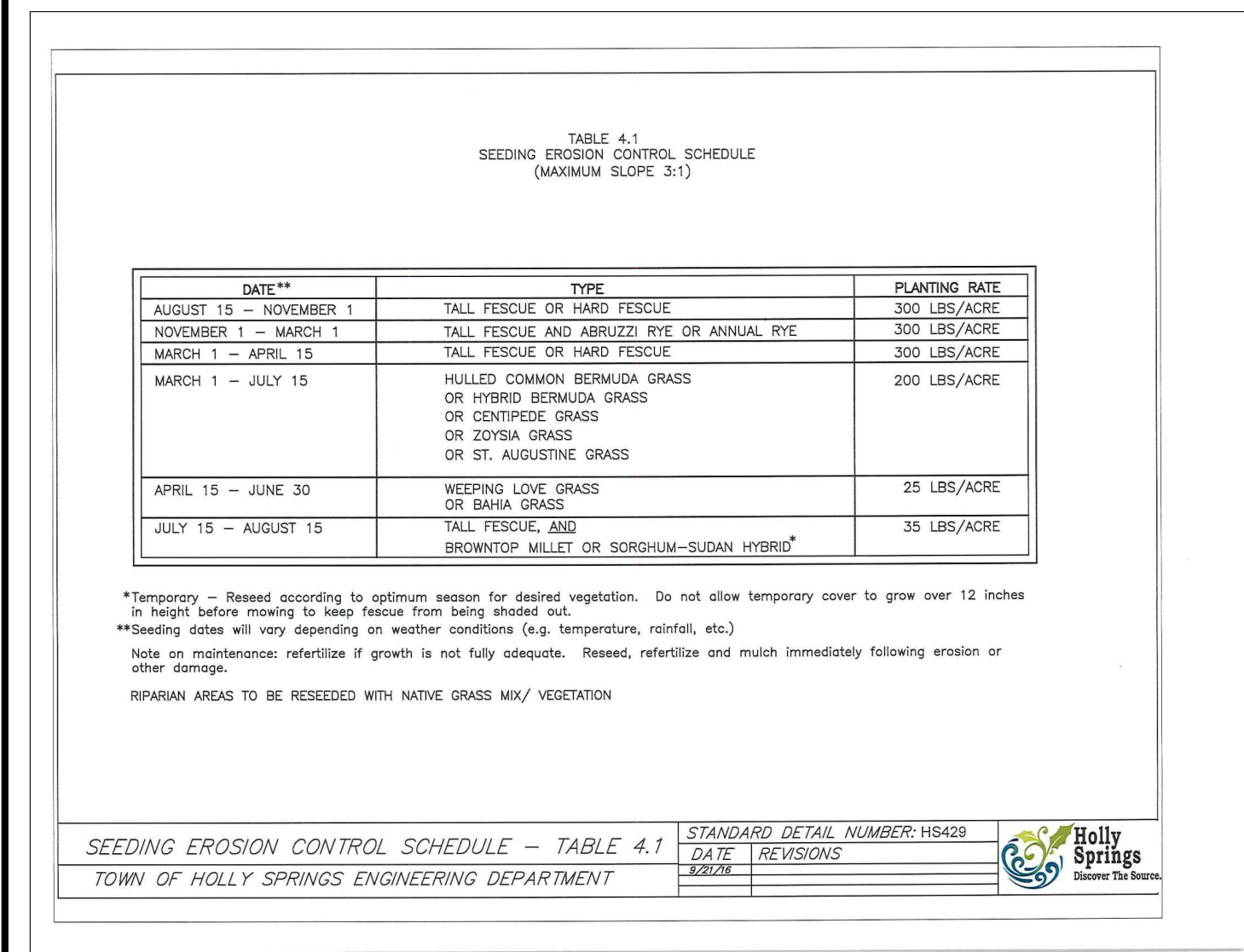
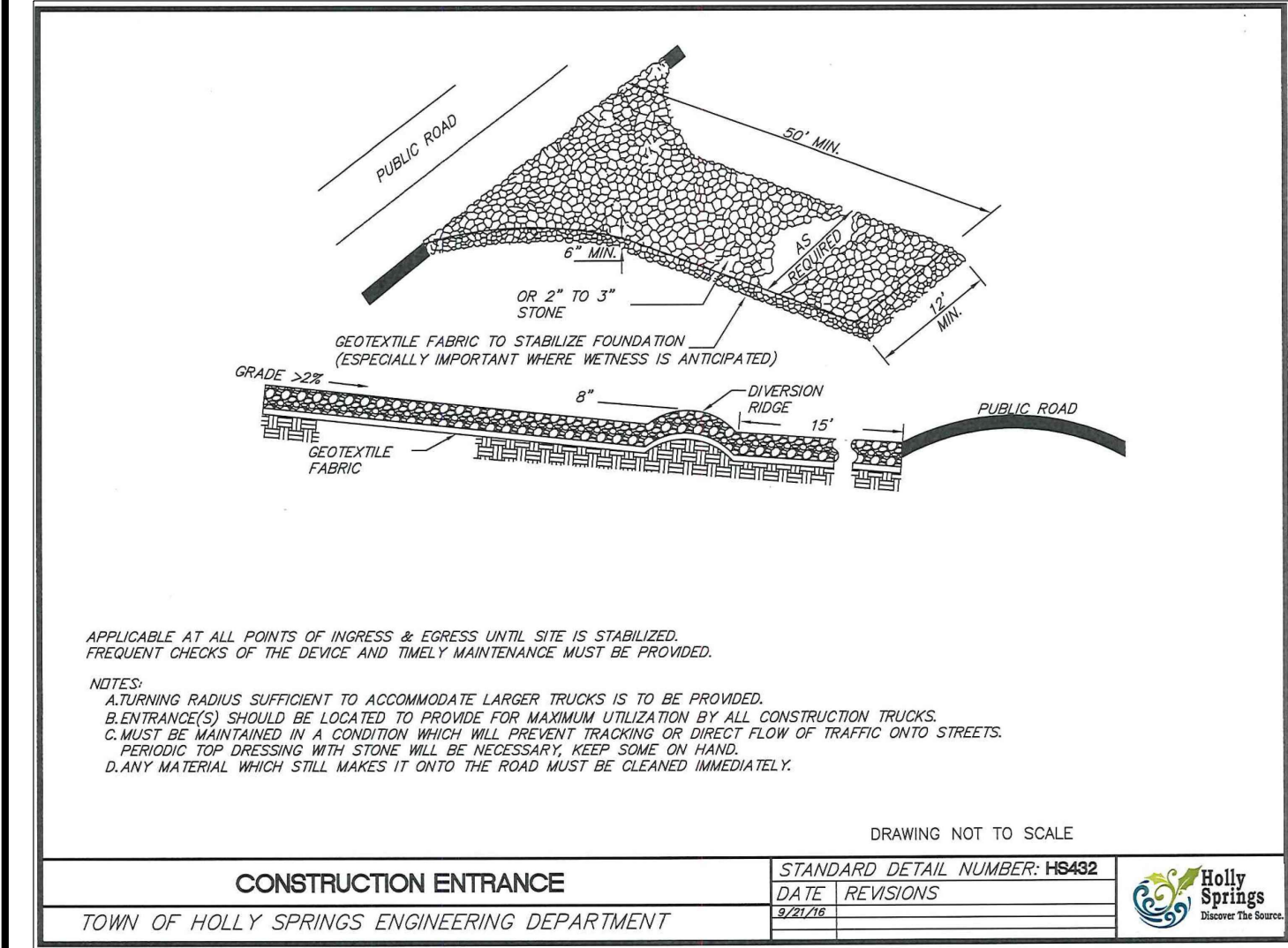
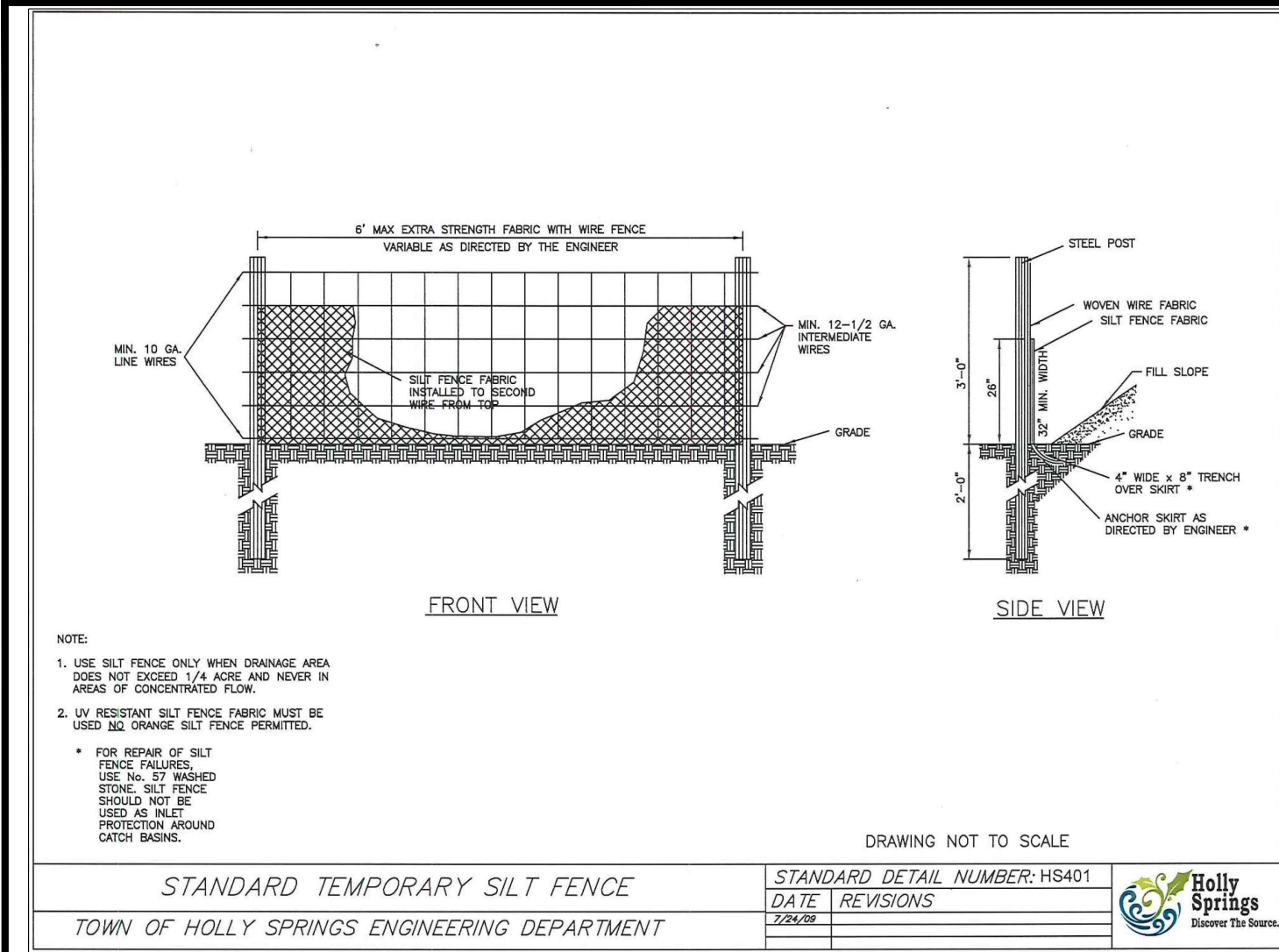


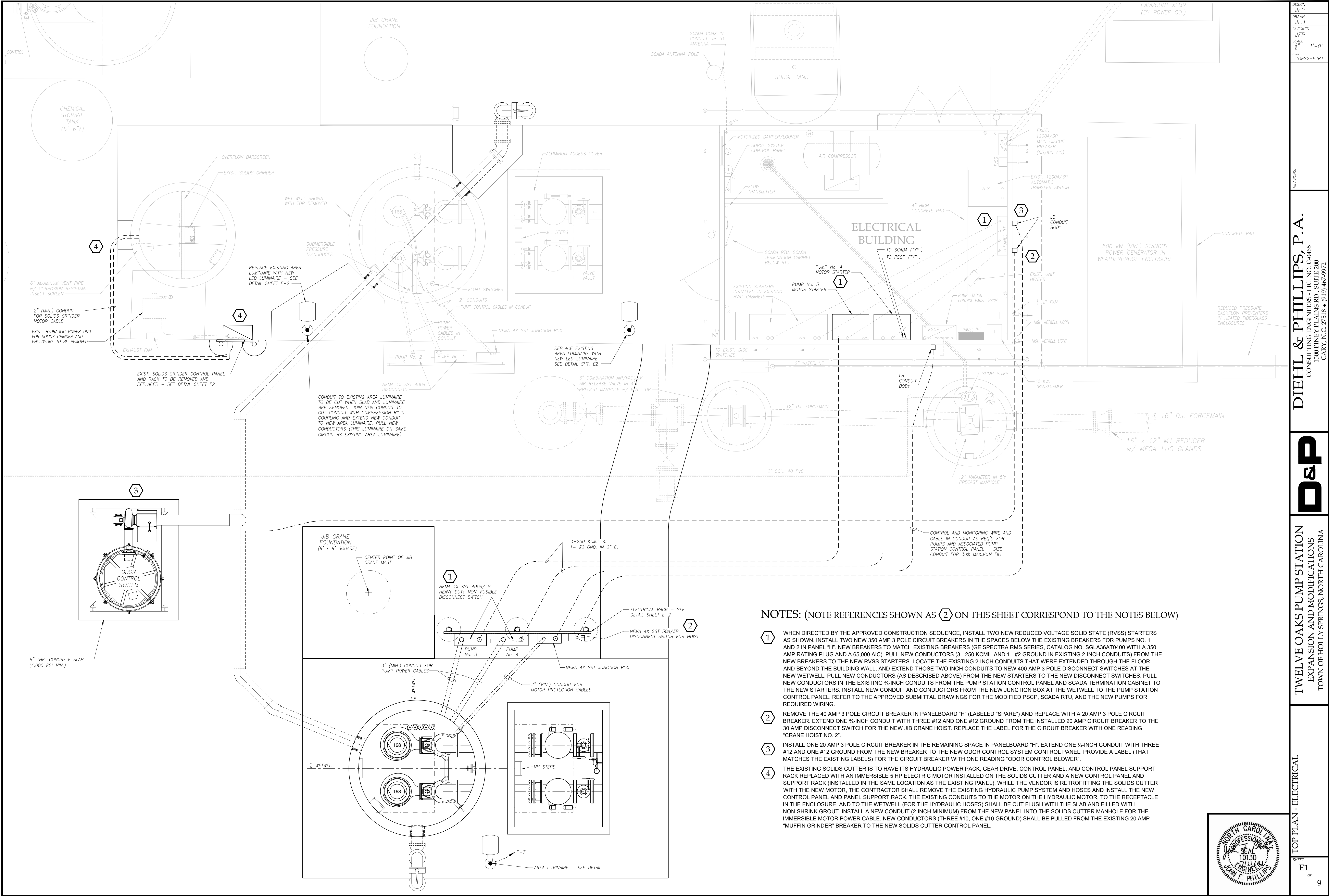
ENLARGED PLAN - EXISTING PUMP STATION

SCALE: 1/4" = 1'-0"



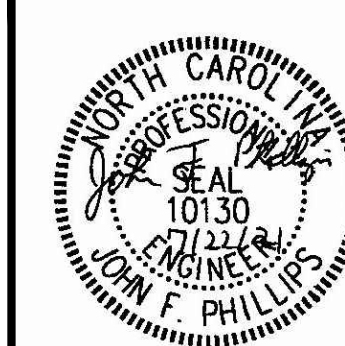


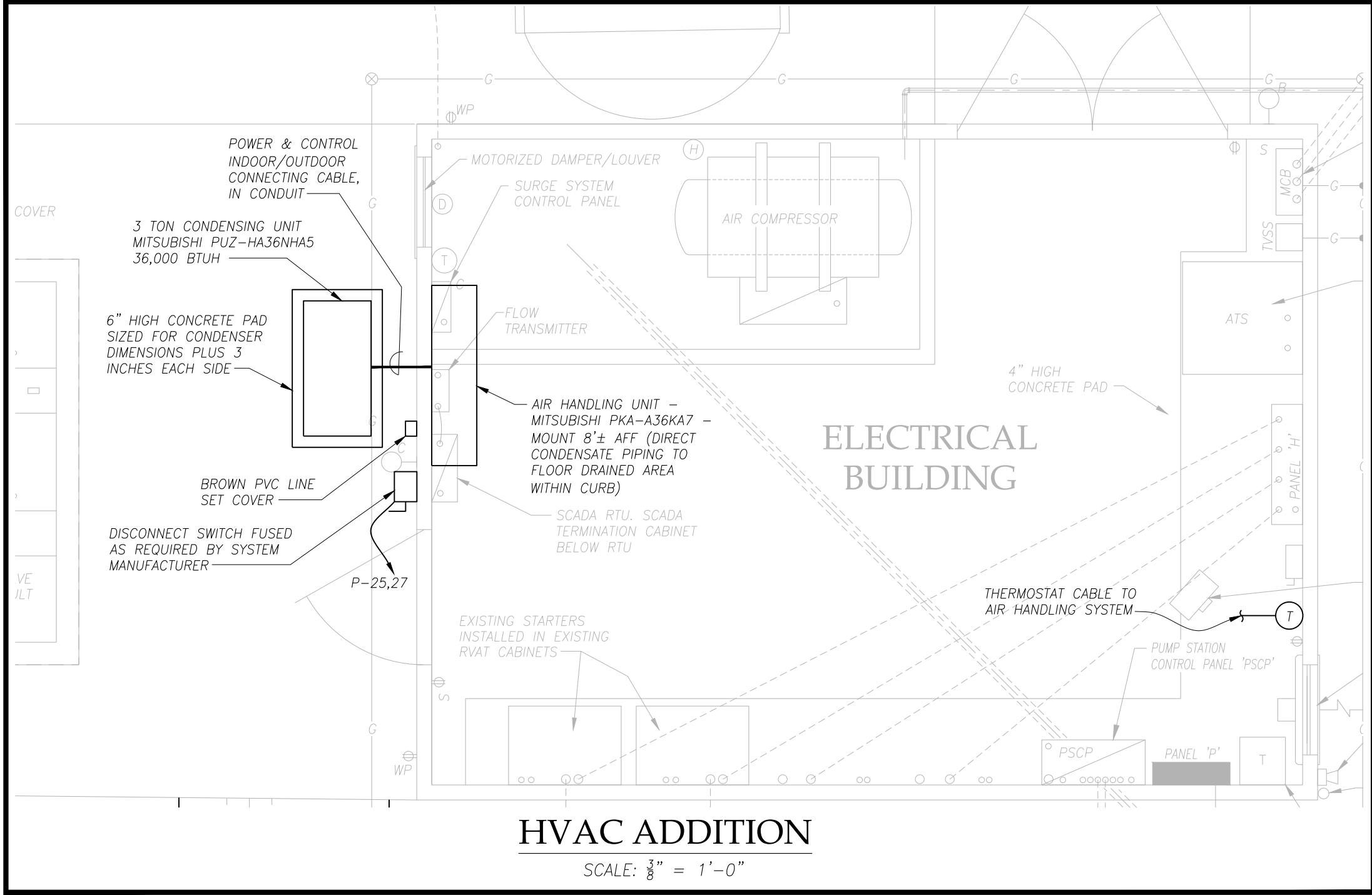




NOTES: (NOTE REFERENCES SHOWN AS ② ON THIS SHEET CORRESPOND TO THE NOTES BELOW)

- ① WHEN DIRECTED BY THE APPROVED CONSTRUCTION SEQUENCE, INSTALL TWO NEW REDUCED VOLTAGE SOLID STATE (RVSS) STARTERS AS SHOWN. INSTALL TWO NEW 350 AMP 3 POLE CIRCUIT BREAKERS IN THE SPACES BELOW THE EXISTING BREAKERS FOR PUMPS NO. 1 AND 2 IN PANEL "H". NEW BREAKERS TO MATCH EXISTING BREAKERS (GE SPECTRA RMS SERIES, CATALOG NO. SGLA36AT0400 WITH A 350 AMP RATING PLUG AND A 65,000 AIC). PULL NEW CONDUCTORS (3 - 250 KCMIL AND 1 - #2 GROUND IN EXISTING 2-INCH CONDUITS) FROM THE NEW BREAKERS TO THE NEW RVSS STARTERS. LOCATE THE EXISTING 2-INCH CONDUITS THAT WERE EXTENDED THROUGH THE FLOOR AND BEYOND THE BUILDING WALL, AND EXTEND THOSE TWO INCH CONDUITS TO NEW 400 AMP 3 POLE DISCONNECT SWITCHES AT THE NEW WETWELL. PULL NEW CONDUCTORS (AS DESCRIBED ABOVE) FROM THE NEW STARTERS TO THE NEW DISCONNECT SWITCHES. PULL NEW CONDUCTORS IN THE EXISTING ¾-INCH CONDUITS FROM THE PUMP STATION CONTROL PANEL AND SCADA TERMINATION CABINET TO THE NEW STARTERS. INSTALL NEW CONDUIT AND CONDUCTORS FROM THE NEW JUNCTION BOX AT THE WETWELL TO THE PUMP STATION CONTROL PANEL. REFER TO THE APPROVED SUBMITTAL DRAWINGS FOR THE MODIFIED PSCP, SCADA RTU, AND THE NEW PUMPS FOR REQUIRED WIRING.
- ② REMOVE THE 40 AMP 3 POLE CIRCUIT BREAKER IN PANELBOARD "H" (LABELED "SPARE") AND REPLACE WITH A 20 AMP 3 POLE CIRCUIT BREAKER. EXTEND ONE ¾-INCH CONDUIT WITH THREE #12 AND ONE #12 GROUND FROM THE INSTALLED 20 AMP CIRCUIT BREAKER TO THE 30 AMP DISCONNECT SWITCH FOR THE NEW JIB CRANE HOIST. REPLACE THE LABEL FOR THE CIRCUIT BREAKER WITH ONE READING "CRANE HOIST NO. 2".
- ③ INSTALL ONE 20 AMP 3 POLE CIRCUIT BREAKER IN THE REMAINING SPACE IN PANELBOARD "H". EXTEND ONE ¾-INCH CONDUIT WITH THREE #12 AND ONE #12 GROUND FROM THE NEW BREAKER TO THE NEW ODOR CONTROL SYSTEM CONTROL PANEL. PROVIDE A LABEL (THAT MATCHES THE EXISTING LABELS) FOR THE CIRCUIT BREAKER WITH ONE READING "ODOR CONTROL BLOWER".
- ④ THE EXISTING SOLIDS CUTTER IS TO HAVE ITS HYDRAULIC POWER PACK, GEAR DRIVE, CONTROL PANEL, AND CONTROL PANEL SUPPORT RACK REPLACED WITH AN IMMERSIBLE 5 HP ELECTRIC MOTOR INSTALLED ON THE SOLIDS CUTTER AND A NEW CONTROL PANEL AND SUPPORT RACK (INSTALLED IN THE SAME LOCATION AS THE EXISTING PANEL). WHILE THE VENDOR IS RETROFITTING THE SOLIDS CUTTER WITH THE NEW MOTOR, THE CONTRACTOR SHALL REMOVE THE EXISTING HYDRAULIC PUMP SYSTEM AND HOSES AND INSTALL THE NEW CONTROL PANEL AND PANEL SUPPORT RACK. THE EXISTING CONDUITS TO THE MOTOR ON THE HYDRAULIC MOTOR, TO THE RECEPTACLE IN THE ENCLOSURE, AND TO THE WETWELL (FOR THE HYDRAULIC HOSES) SHALL BE CUT FLUSH WITH THE SLAB AND FILLED WITH NON-SHRINK GROUT. INSTALL A NEW CONDUIT (2-INCH MINIMUM) FROM THE NEW PANEL INTO THE SOLIDS CUTTER MANHOLE FOR THE IMMERSIBLE MOTOR POWER CABLE. NEW CONDUCTORS (THREE #10, ONE #10 GROUND) SHALL BE PULLED FROM THE EXISTING 20 AMP "MUFFIN GRINDER" BREAKER TO THE NEW SOLIDS CUTTER CONTROL PANEL.





HVAC ADDITION

SCALE: $\frac{3}{8}" = 1'-0"$

PANEL DESIGNATION: "H" - EXISTING VOLTAGE: 480V, 3ø, 3W AMPERES: 1200A						LOCATION: ELECTRICAL BUILDING MAIN: 1200/3 MCB PANEL MOUNTING: NEMA 12, SURFACE						
LOAD SERVED	CONNECTED LOAD (KVA)			CIRCUIT BREAKER		CKT NO.						
	A	B	C	AMPS	POLES							
PUMP No. 1	56	56	56	350	3	1	1200A A B C ø ø ø					

PANEL DESIGNATION: "P" - EXISTING VOLTAGE: 120/240V, 1Ø, 3W AMPERES: 100A					LOCATION: ELECTRICAL BLDG. MAIN: 100/2 MCB PANEL MOUNTING: NEMA 12, SURFACE				
LOAD SERVED	CONNECTED LOAD (KVA)		L1	L2	CIRCUIT BREAKER	CKT NO.			
LIGHTING	0.5		20	1	1				
LIGHTING - EXTERIOR	0.5	0.2	20	1	3				
*** LIGHTING - EXTERIOR	0.2		20	1	5				
PUMP STA. CONT. PANEL	0.2		20	1	7				
RPZ ENCLOSURE		0.1	20	1	9				
EXHAUST FAN	0.6		20	1	11				
AREA LUMINAIRES		0.4	20	1	13				
GFI RECEPTACLE	1.0		20	1	15				
SURGE SYSTEM CONT. PANEL		0.2	20	1	17				
SPARE			20	1	19				
TRACE HEATING		0.3	20	1	21				
* HEAT PUMP	2.5	2.5	30	1	23				
EQUIPPED SPACE					25				
SUB-TOTAL					5.3	3.9			
L1: 8.2_KVA L2: 7.6_KVA					TOTAL CONNECTED LOAD= 15.8_KVA				
					INTERRUPTING RATING: 22,000 AIC AT 240 VAC				

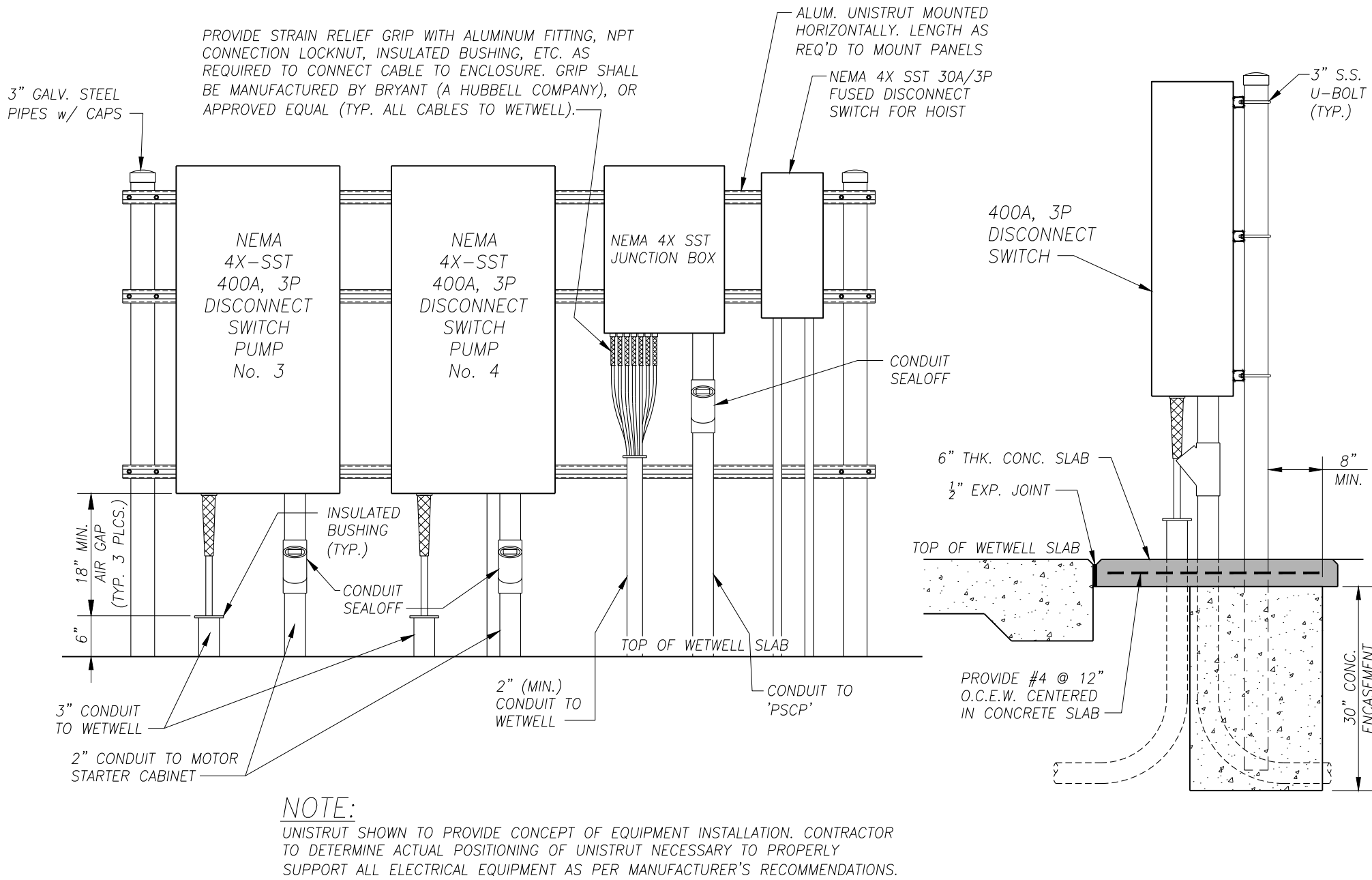
* INSTALL NEW CIRCUIT BREAKERS, SIZE AS SHOWN

** REMOVE EXISTING 40A - 3 POLE CIRCUIT BREAKER AND REPLACE WITH 20A/3P CIRCUIT BREAKER.

ALL BREAKERS TO HAVE 65,000 AIC.

*** USE EXISTING SPARE CIRCUIT BREAKER (No. 7) FOR NEW AREA LUMINAIRE.

PANEL SCHEDULES



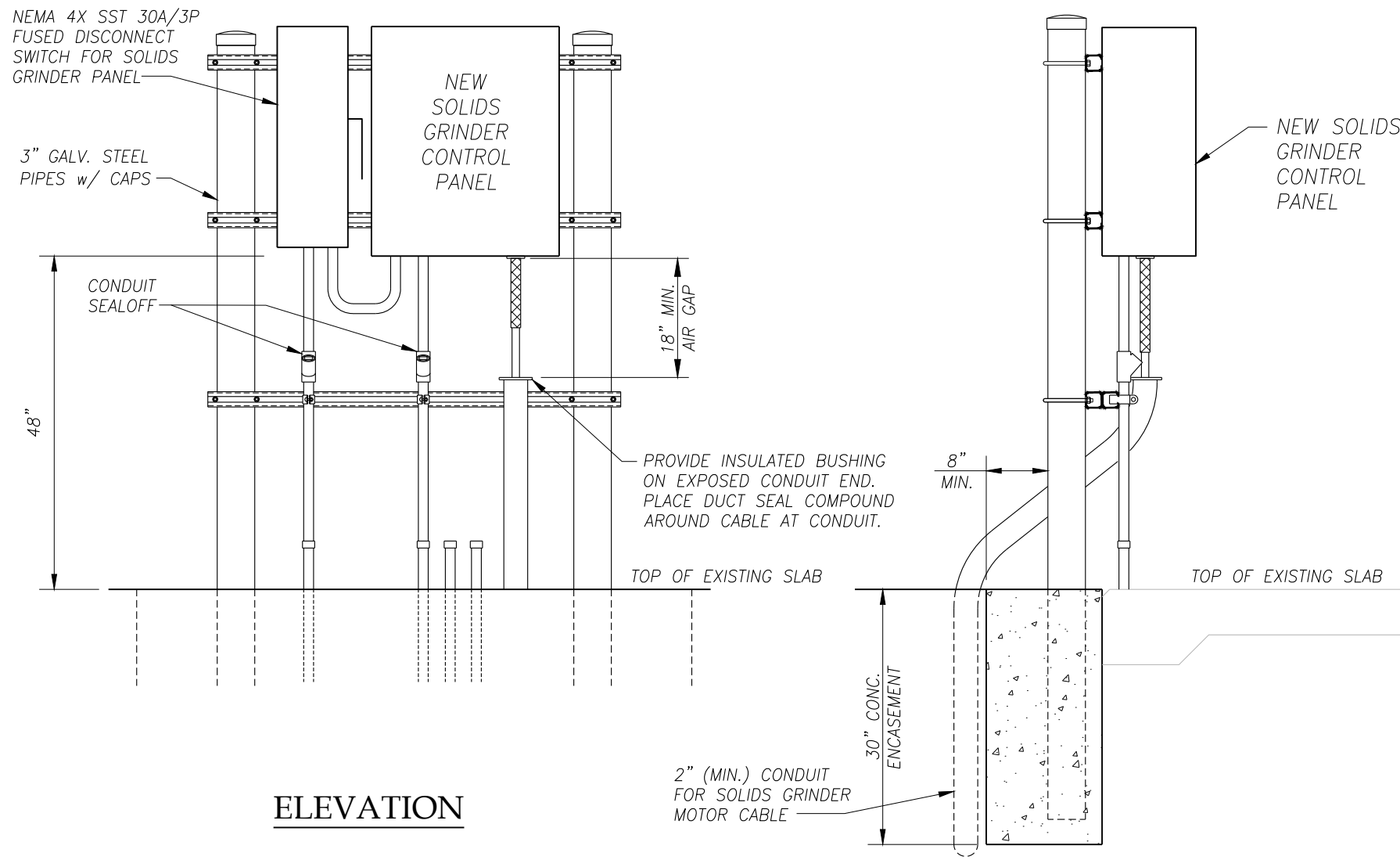
NOTE:
UNISTRUT SHOWN TO PROVIDE CONCEPT OF EQUIPMENT INSTALLATION. CONTRACTOR TO DETERMINE ACTUAL POSITIONING OF UNISTRUT NECESSARY TO PROPERLY SUPPORT ALL ELECTRICAL EQUIPMENT AS PER MANUFACTURER'S RECOMMENDATIONS.

ELEVATION

SECTION

DETAIL - ELECTRICAL RACK AT NEW WETWELL

NO SCALE



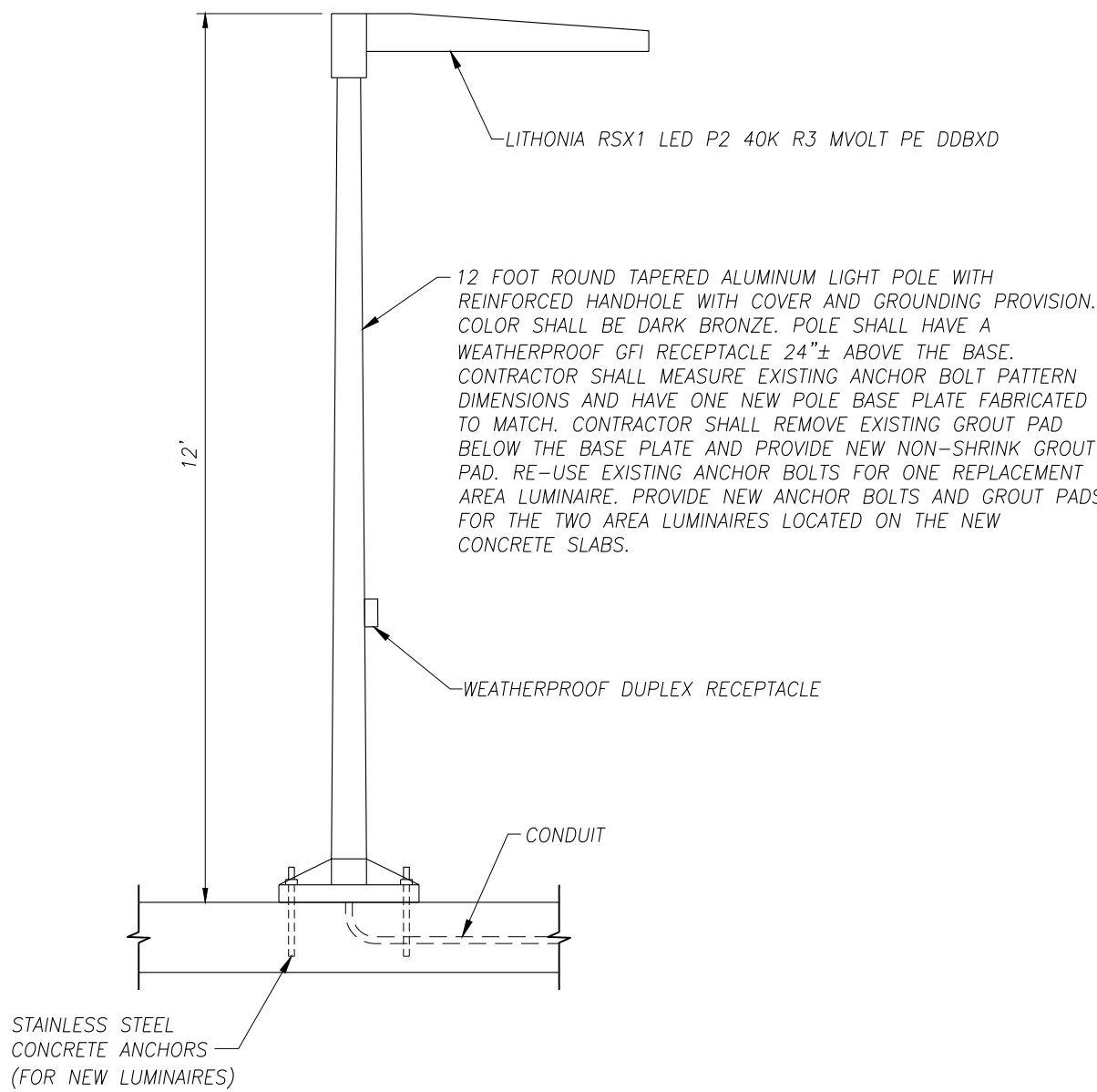
ELEVATION

SECTION

DE-ENERGIZE PANEL AND REMOVE ALL CONDUCTORS TO AND FROM PANEL. THE FOUR CONDUITS FROM THE COUPLINGS NEAR GROUND LEVEL TO THE PANEL, AND THE PANEL. INSTALL NEW PIPE SUPPORTS, CONCRETE PIPE FOUNDATIONS, UNISTRUT RACK SUPPORTS, AND NEW PANEL. CAP EXISTING CONDUITS THAT EXTENDED TO THE HYDRAULIC POWER SYSTEM ENCLOSURE. PROVIDE NEW COUPLINGS AND CONDUITS FOR THE POWER CIRCUIT TO THE PANEL AND THE STATUS/ALARM CONDITIONS TO THE SCADA TERMINATION CABINET. PULL NEW CONDUCTORS TO THE PANEL FROM PANEL "H" AND THE SCADA TERMINATION CABINET. INSTALL NEW 2" CONDUIT TO THE SOLIDS GRINDER MANHOLE, AS SHOWN ON SHEET E1. PROVIDE STRAIN RELIEF GRIP WITH ALUMINUM FITTING, NPT CONNECTION LOCKNUT, INSULATED BUSHING, ETC. AS REQUIRED TO CONNECT CABLE TO ENCLOSURE. GRIP SHALL BE MANUFACTURED BY BRYANT (A HUBBELL COMPANY), OR APPROVED EQUAL.

SOLIDS GRINDER CONTROL PANEL DETAILS

NO SCALE



AREA LUMINAIRE

NO SCALE

DESIGN	JFP
DRAWN	JLB
CHECKED	JFP
SCALE	$\frac{3}{8}" = 1'-0"$
FILE	TOPS2-E2R1

REVISIONS:

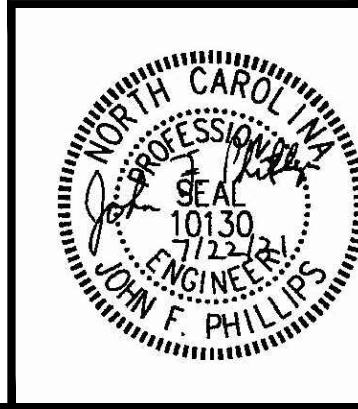
DIEHL & PHILLIPS, P.A.
CONSULTING ENGINEERS - LIC. NO. C-40465
1500 PINE PLAINS RD., SUITE 200
CARY, NC 27513 • (919) 467-9972

D&P

**TWELVE OAKS PUMP STATION
EXPANSION AND MODIFICATIONS**
TOWN OF HOLLY SPRINGS, NORTH CAROLINA

**HVAC ADDITION, PANEL
SCHEDULES, AND ELECTRICAL
DETAILS**

SHEET
E2
OF
9



SPECIFICATIONS, PROPOSAL, CONTRACT, AND BONDS
FOR
TWELVE OAKS PUMP STATION EXPANSION AND
MODIFICATIONS PROJECT

PROJECT NO. 18-005

TOWN OF HOLLY SPRINGS
WAKE COUNTY, NORTH CAROLINA

MAYOR:
TOWN CLERK:
TOWN MANAGER:
EXECUTIVE DIRECTOR OF UTILITIES
AND INFRASTRUCTURE:

Sean Mayefskie
Linda McKinney
Randy Harrington
Kendra Parrish, P.E.

TOWN COUNCIL MEMBERS

Kristi Bennett
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Dr. Aaron Wolff

Daniel H. Berry
Shaun McGrath



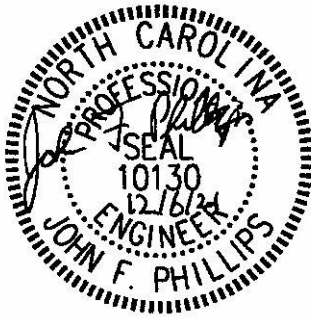
Prepared By

Diehl & Phillips, P.A.
1500 Piney Plains Road,
Suite 200
Cary, North Carolina 27518
License No. C-0465
Telephone 919-467-9972

CERTIFICATION

I HEREBY CERTIFY THAT THE SPECIFICATIONS CONTAINED HEREIN AND THE ACCOMPANYING PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION.

SIGNED, SEALED, AND DATED THIS 6th DAY OF DECEMBER 2021.



BY John F. Phillips, P.E.
Name

Project Name: Twelve Oaks Pump Station Expansion and Modifications Project

Project No. 18-005

**TWELVE OAKS PUMP STATION EXPANSION & MODIFICATIONS PROJECT
PROJECT NO. 18-005 - TABLE OF CONTENTS**

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INVITATION TO BID

TOWN OF HOLLY SPRINGS
Holly Springs, North Carolina

January 5th, 2022

Sealed bids will be received by the Town of Holly Springs until **Wednesday, February 9nd, 2022, at 2:00 PM** and thereafter immediately opened and read publicly via a Zoom Meeting for the **TWELVE OAKS PUMP STATION EXPANSION AND MODIFICATIONS PROJECT** (Town of Holly Springs Project No. 18-005). The project is generally described as follows:

Contract 1 – Furnishing and installing one precast concrete wetwell adjacent to an existing wetwell, one valve vault, two submersible wastewater pumps, Protecto 401 lined 12-inch discharge piping and 16-inch influent piping, fittings, valves, two reduced voltage solid state starters, two disconnect switches, new circuit breakers in existing panelboards, one 3-ton jib crane with motorized trolley and electric chain hoist, one immersible motor retrofit for an existing hydraulic fluid powered solids cutter, new control panel for the existing solids cutter, one carbon adsorption odor control system, one mini-split heat pump system for the existing building at the site, all required conduit and wiring for the proposed improvements, erosion control measures and their maintenance, and clean up and restoration of the site and stone driveway.

Plans, Specifications, and Contract documents may be viewed on the Town's website at www.hollyspringsnc.gov (available for download), and at the following electronic plan rooms: Carolina Plan Room, Carolina AGC, iSqFt, Planscope.com (Accent Imaging), PlanHub, Bidclerk, Construct Connect, NC Institute of Minority Economic Development (NCIMED), Dodge Data & Analytics, and HCACarolinas.

REQUIRED: Plan holders are required to sign up for "Construction Bids" notifications at www.hollyspringsnc.us/bids.aspx for further project notifications/addenda. A NON-mandatory site visit shall be held at 10:00 AM on Wednesday, January 19th, 2022 at Twelve Oaks Pump Station (779 Ancient Oaks Drive).

All project questions or requests for clarification should be submitted to the Town of Holly Spring's Project Manager, Rachel Ingham, PE at: Rachel.ingham@hollyspringsnc.gov, or 919-577-3150.

The project will be funded by public funds from the Town of Holly Springs, therefore; bidding, contract award and bonding requirements shall conform to N.C Statutes for public facilities construction. Minority firms are encouraged to submit proposals.

Award will be made to the lowest, responsive, responsible bidder unless all bids are rejected. The Town of Holly Springs reserves the right to reject any or all bids.

Contractors offering a proposal on this project must be licensed to do the specified type of contracting in the State of North Carolina. The Use of any sub-contractor on this project must

be approved by the Engineer. Any bidder that is currently in litigation with the town will be disqualified from bidding.

Each proposal shall be accompanied by a certified check or bid bond in the amount of not less than five percent (5%) of the amount of the total of the itemized bid in the form and subject to the conditions provided in the Instruction to Bidders.

Kendra D. Parrish, PE
Executive Director of Utilities & Infrastructure

INSTRUCTIONS TO BIDDERS

A **Non-mandatory** site visit shall be conducted for all interested bidders. The meeting shall be held at **10:00 AM on Wednesday, the 19th of January, 2022 at Twelve Oaks Pump Station (779 Ancient Oaks Drive).**

Each proposal shall be submitted in a sealed envelope on the printed form, or exact copies thereof, contained in the Contract Documents. These proposals shall be plainly marked:

**“Contract 1 – Twelve Oaks Pump Station Expansion and Modifications
Project
Town of Holly Springs Project No. 18-005”**

The envelope shall also be marked with the Bidder’s name, address, North Carolina contractor license number, and name and phone number of a contact person. The Bidder must complete the applicable bidding information and return, at minimum, all pages of Sections 00250, 00300, and 00905 of the bid documents. If mailed or delivered, the envelope shall show the date and time of the Bid Opening in order to guard against premature opening of the Bid. **Bids must be delivered to the Town’s possession by 2:00 PM Wednesday, February 9, 2022.** Addresses for Delivery of Bids:

US Postal Service	Delivery
Attn: Brent Quick Purchasing Manager Town of Holly Springs Finance Department P O Box 8 Holly Springs, NC 27540	Attn: Brent Quick Purchasing Manager Town of Holly Springs Finance Department 128 South Main Street Holly Springs, NC 27540

Bids submitted by facsimile or email shall not be accepted.

The Owner may consider non-responsive any Bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all Bids.

Each proposal shall be accompanied by a Bid Bond payable to the Town of Holly Springs for an amount of not less than five percent (5%) of the total amount bid; or in lieu of the Bid Bond, the bidder may offer a certified check in an amount of not less than five percent (5%) of the total amount bid. The Bids and bidder's bond or checks of all bidders may be held for a period of ninety (90) days pending award of the contract. Notification of award of contract shall be evidence of intent to contract and shall extend time for holding the contractor's bid surety for a time mutually agreed between the Town of Holly Springs and the bidder.

Each proposal shall have a page providing references, to include the company name, address, phone number, email address, contact name and position, and type of work completed. Reference form is included at the end of these Instructions to Bidders.

The bid opening will be held in the Holly Springs Town Hall on **Wednesday, February 9th, 2022 at 2:00 PM**, at which time the BIDS will be opened and publicly read aloud via a Zoom Meeting (due to Covid concerns, bidders may not attend the Bid Opening in person).

Instructions to join the Bid Opening Zoom Meeting:

Please click the link below to join the Bid Opening:

<https://hollysprings.zoom.us/j/88601987382?pwd=YWpNaIZ3RjZ1dXdzbWIDWm1Gc3Bldz09>

Passcode: 244302

Or One tap mobile :

US: +13017158592,,88601987382# or +13126266799,,88601987382#

Or Telephone:

Dial(for higher quality, dial a number based on your current location):

US: +1 301 715 8592 or +1 312 626 6799 or +1 646 558 8656 or +1 253 215 8782 or +1 346 248 7799 or +1 720 707 2699

Webinar ID: 886 0198 7382

International numbers available: <https://hollysprings.zoom.us/j/88601987382>

AWARDING CONTRACT

“The Town of Holly Springs, in accordance with the provisions of *Title VI of the Civil Rights Act of 1964* (78 Stat. 252) and the Regulations of the Department of Transportation (49 C.F.R., Part 21), issued pursuant to such act, hereby notifies all bidders that it will affirmatively insure that the contract entered into pursuant to this advertisement will be awarded to the lowest responsible bidder without discrimination on the ground of race, color, or national origin”.

Award will be made to the lowest responsible and responsive Bidder for each Contract as soon as practicable, provided that in the selection of equipment or materials, a Contract may be awarded to a responsible Bidder other than the lowest in the interest of standardization or if ultimate economy is clearly evident.

Evaluation of Bids

1. All spaces for lump sum and unit prices in the Bid Form shall be filled in with a number. Spaces left blank will be evaluated as zero (\$0.00).
2. Discrepancies between the multiplication of units of Work and Unit Prices will be resolved in favor of the Unit Prices.
3. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
4. Discrepancies between words and figures will be resolved in favor of the words.

The award of the Contract, if it is awarded, will be to the lowest responsive, responsible bidder on the Base Bid and/or Alternate Bid, whose qualifications indicate the award will be in the best interest of the Town of Holly Springs. The Town of Holly Springs reserves the right to waive technicalities and/or reject any or all bids.

The Owner will not consider any bid or award of Contract to any person, firm, or corporation who has defaulted in any obligation to the Owner or who, in the opinion of the Owner, failed to perform their work satisfactorily, either as to character or time. Any Bidder that is currently in litigation with the Town will be disqualified from bidding

A conditioned or qualified bid will not be accepted.

Requirements for any pre-bid submittal information will vary based on the complexity and importance of the product to the project as a whole. Submittals should be prepared in a concise and straightforward manner. Submittals shall clearly identify variances from the specifications. Products that clearly do not meet the requirements of the specifications and plans should not be submitted. Unless noted, products shall be the manufacturer's standard offering, with standard options.

Incomplete submittals, or submittals received after the deadline, shall not be considered.

Submittals are to be delivered to the Engineer at the address indicated in the "Notice to Bidders". The Owner and Engineer shall review all submittals and issue an Addendum to all document holders no later than 7 days prior to the bid opening date, listing the approved products.

Pre-approval of materials or equipment does not, in any manner, preclude the manufacturer from meeting the full requirements of the specifications, including any performance guarantees required, unless specific exceptions are noted in the pre-approval.

No Post-Bid substitutions shall be permitted except as herein provided.

A Performance Bond and a Payment Bond, each in the amount of one hundred percent (100%) of the contract price, with a corporate surety approved by the Town of Holly Springs, will be required for the faithful performance of the contract. Bidders shall provide certification that performance and payment bond sureties are licensed in North Carolina.

Minority Business participation must be documented and submitted with bids, please see contract documents for further direction.

Reference Sheet
(To be filled out with each Bid package)

Company Name	Address	Phone	E-mail	Contact person Name	Contact Person Position	Type of Work Completed

- END OF SECTION 00250 -

SECTION 00300
BID PROPOSAL ("Proposal")
Contract 1 – Twelve Oaks Pump Station Expansion and Modifications Project

TO: THE TOWN OF HOLLY SPRINGS, NORTH CAROLINA ("Owner")

FROM: "BIDDER" _____

ADDRESS _____

DATE OF BID _____, 2022.

The Bidder hereby signifies that it is his/her/its intention and purpose to enter into a formal Contract with the Town of HOLLY SPRINGS, North Carolina, to furnish all labor, materials, tools, equipment, apparatus, supplies, and the like required, and to do all the work necessary, for and because of the construction, erection, and/or installation of the proposed "Project":

Contract 1 – Twelve Oaks Pump Station Expansion and Modifications Project

for the Town of HOLLY SPRINGS, North Carolina in accordance with the Contract Documents, including Addenda thereto.** There is deposited, herewith, a certified check in the amount of: _____ Dollars (\$_____), or a Bid Bond, in the amount of five percent (5%) of the total aggregate amount of the Bid, made payable to the Owner, the same to be refunded to the Bidder under the conditions of and in accordance with the terms of this Proposal, which are as follows:

THAT: The Bidder has carefully examined the Plans and Specifications and all other Contract Documents and fully understands them.

THAT: The Bidder has carefully examined the site of the Project and is familiar with the conditions under which the work, or any part thereof, is to be performed and the conditions which must be fulfilled in furnishing and/or installing, erecting or constructing any or all items of the Project.

THAT: The Bidder shall provide all necessary tools, machinery, equipment, apparatus, and all other means necessary to do all the work and shall furnish all labor, materials and all else required to complete such Contract as may be entered into, in the manner prescribed in and in accordance with the terms of the Specifications and the Contract and in accordance with the true intent and meaning thereof, and in accordance with the Plans and/or Drawings and the requirements of the Consulting Engineers under them, in a first class manner.

[Terms continued on the following page.]

** Fill in appropriate Addenda number(s): Addendum # _____ Dated _____
Addendum # _____ Dated _____
Addendum # _____ Dated _____
Addendum # _____ Dated _____
Addendum # _____ Dated _____
Addendum # _____ Dated _____

THAT: The rights of the Owner and the recommendations of the Consulting Engineers shall not be questioned in the Award of the Contract.

THAT: It is the intention of the Owner to let contracts on the basis of the Bids received in accordance with G.S. 143-129 and in such manner as the Owner may deem to be for the best interests of the Owner.

THAT: The Owner reserves the right to reject any or all proposals and can award any combination of Alternate Bids as may be in the Owner's best interest.

THAT: The work under each Section will be awarded under one Contract and that the Owner shall have the right to include such item or items as the Owner may deem to be in the best interests of the Owner.

THAT: On being awarded the Contract, the Bidder shall execute a Performance Bond and a Payment Bond, on the forms included herein, each equal to one hundred percent (100%) of the Awarded Contract Price (Contract Sum), as security for the faithful performance of the Contract.

THAT: The Bidder shall submit, in the blank spaces provided, all data, guarantees and other information called for.

THAT: The Bidder shall submit, herewith, drawings, or cuts and Specifications showing and describing in detail the equipment and/or apparatus which the undersigned proposes to furnish.

THAT: This Proposal shall be signed and submitted in the manner prescribed in the Instructions to Bidders.

THAT: Should this Proposal not be accepted by the Owner, the certified check, in the amount of:

Dollars (\$ _____) or the five percent (5%) Bid Bond, as applicable, deposited herewith shall be returned to the Bidder.

THAT: Should this Proposal be accepted by the Owner and the Bidder fail or neglect to execute the Contract and furnish the required Bonds within fifteen (15) days after receiving notifications of the acceptance of the Proposal and/or receipt of the formal Contract and Bond forms, the certified check, in the amount of: _____

Dollars (\$ _____), or the Bid Bond, deposited herewith shall be retained by the Owner as liquidated damages, it being understood that the Owner reserves the right to extend the time allowed for executing the Contract and/or furnishing the Bond in its sole discretion.

[Terms continued on the following page.]

THAT: The Bidder shall complete such Contract as may be entered into within the number of consecutive calendar days specified in the Contract from the date of the Notice to Proceed.

THAT: The Bidder proposes to enter into a Contract in accordance with this Proposal, the Plans and Specifications and the Contract Documents included herein, for the prices shown on the following pages.

THAT: The Bidder shall be required to submit a complete detailed itemized unit cost breakdown of the Bid Items on the Itemized Bid Proposal form in Section 00510 along with a computed Total Bid Price amount with this proposal.

THAT: It is the intent of these Contract Documents to obtain a Contract based on Unit Prices with project awarded based upon the lowest qualified total bid based upon unit prices applied to the estimated quantities. Where a discrepancy exists between words and numbers in the Bid amount, the written words shall govern. Where a discrepancy exists between unit prices and mathematical computations in the Itemized Proposal, the unit prices and quantities in the Itemized Proposal shall govern.

THAT: The successful bidder shall be required to apply for and obtain a privilege license from the Town of HOLLY SPRINGS, prior to the Award of the Contract if said bidder has an office within the Town limits of HOLLY SPRINGS

THAT: The successful bidder shall have all proper Bidder licenses and privilege licenses required under North Carolina state laws governing their respective trade(s).

THAT: Notice to Proceed and project available shall occur within 60 days of award of contract by the Town Council.

BID PROPOSAL
GENERAL CONSTRUCTION
FOR THE
Twelve Oaks Pump Station Expansion and Modifications Project
Town of Holly Springs Project 18-005
(the "Project")

The work items and materials required by the project plans and specifications shall be made a part of this contract along with the completed price for the installed work. The bid proposal shall consist of the full completion of these work items supplemented with any work item the Contractor deems necessary to complete the project. The Base Bid Price shall include the following allowances items and costs. The actual allowance amounts paid to the Contractor will be the vendor invoice amounts, with no mark-up by the Contractor allowed.

Allowance Item No. 1: For Soil and Concrete Testing and Vibration Monitoring by the Geotechnical Firm selected by the Owner. Allowance Cost to be included in the Base Bid for this item: **Ten Thousand and no/100 Dollars (\$10,000.00).**

The Town of Holly Springs is seeking a best value procurement for products under this contract. The Town has determined that certain equipment items proposed for this project should be supplied by specific equipment manufacturers in order to duplicate existing equipment items that are in service at the Pump Station, to maintain an efficient inventory of spare parts, and to maintain the equipment familiarity and knowledge held by the Town's Utility maintenance staff. In the event that the bidder seeks to use a product other than the one matching the existing component, Bidder shall seek approval from the Executive Director of Utilities & Infrastructure Services.

Allowance Item No. 2: For Submersible Pumps No. 3 and 4 and Reduced Voltage Solid State combination starters No. 3 and 4 in enclosures, as provided by Pete Duty & Associates Inc. to match the existing pumps and starters. See the Appendix for the Scope of Supply and Standard Terms and Conditions of Sale. Allowance Cost to be included in the Base Bid for this item: **One Hundred Eighty Thousand Ten and no/100 Dollars (\$180,010.00) - (sales tax and shipping are included in the stated Allowance Cost).**

Allowance Item No. 3: For the conversion of the existing Muffin Monster solids cutter from a hydraulic drive to an electric immersible motor drive, this Allowance Item will have the Contractor purchase from JWC Environmental the parts necessary for this conversion, a new control panel, and the services of an authorized technician to modify the existing Muffin Monster unit. The Town staff will be responsible for hoisting the solids cutter out of the existing manhole and re-installing it after the conversion is completed by the technician (same day). The Contractor will be responsible for furnishing and installing a new rack for the new control panel, installing the new panel, furnishing and installing the new disconnect switch, and furnishing and installing the conduit and wiring as described on the Project plans. See the Appendix for the Scope of Supply for this Item.

Allowance Cost to be included in the Base Bid for this item: **Fifteen Thousand and no/100 Dollars (\$15,000.00) - (sales tax and shipping are included in the stated Allowance Cost).**

Allowance Item No. 4: For the Carbon Adsorption Odor Control System described in Specification Division 11-J, as manufactured by Evoqua Water Technologies and as represented by Heyward, Inc. The Contractor shall purchase this equipment and shall be responsible for unloading, storing, and installing the System, and for furnishing and installing all the duct piping, conduit, wiring, and any other items shown on the plans and/or specified to deliver a fully functioning Carbon Adsorption Odor Control System. See the Appendix for the Scope of Supply for this Item.

Allowance Cost to be included in the Base Bid for this item: **Sixty-Seven Thousand Two Hundred and no/100 Dollars (\$67,200.00) - (sales tax and shipping are included in the stated Allowance Cost).**

TOTAL “BASE BID” PRICE for the construction of the Project complete, as indicated by the Contract Documents is (complete in words and figures):

_____ Dollars

and _____ Cents (\$ _____)

Optional Spare Pump Bid Add Item: For the provision of a third submersible pump, identical to the pumps to be purchased under Allowance Item No. 2, to be turned over to the Town of Holly Springs and stored as a spare pump for the Twelve Oaks Pump Station. The Contractor shall be reimbursed the amount shown below, in addition to the Base Bid Price, for purchasing the third pump and having it delivered to the Town’s Utilities Maintenance shop, if the Town elects to accept this Optional Spare Pump Bid Add Item:

Optional Spare Pump Bid Add Amount: **Fifty Four Thousand Five Hundred and no/100 Dollars (\$54,500.00) - (sales tax and shipping are included in the stated Amount).**

Bidder _____ (Print)

NOTE: PROPOSAL SIGNATURE REQUIRED ON PAGES 00300-7 and 300-9. ALL PROPOSALS MUST BE PROPERLY EXECUTED TO BE CONSIDERED A VALID BID.

CERTIFIED LIST OF EQUIPMENT/MATERIAL MANUFACTURERS AND SUB-CONTRACTORS

The Bidder, as part of the procedure for the submission of Bids on the Project, submits the following list of Equipment/Materials Manufacturers and Sub-Contractors to be used in the performance of work to be done on said Project. The list of Manufacturers and all equipment/materials furnished shall be based on requirements of the Contract Documents. Changes to this list after the Bid opening shall only be as approved by the Owner upon request by the Bidder or as required by the Owner based upon review of Bidder's submittals:

<u>EQUIPMENT/MATERIALS/SERVICE SUB-CONTRACTS</u>	<u>MANUFACTURER/SERVICE SUB-CONTRACTS</u>
<u>Precast Concrete Wetwell & Valve Vault</u>	<u></u>
<u>Ductile Iron Pipe & Fittings</u>	<u></u>
<u>Check Valves</u>	<u></u>
<u>Plug Valves</u>	<u></u>
<u>Jib Crane, Trolley, and Hoist</u>	<u></u>
<u>Sub-Contract – Electrical Construction</u>	<u></u>
<u>Other Proposed Sub-Contracts:</u>	
<u></u>	<u></u>
<u></u>	<u></u>

It is understood and agreed that, if awarded a Contract, the Bidder shall not make any additions, deletions or substitutions to this certified list without the consent of the Owner. Failure to identify a manufacturer for any or all of the items listed shall constitute an entry of one of the manufacturers listed in its respective technical specification.

CERTIFICATION AFFIDAVIT

THE ABOVE INFORMATION IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF. I FURTHER UNDERSTAND AND AGREE THAT, IF AWARDED A CONTRACT, THIS CERTIFICATION SHALL BE ATTACHED THERETO AND BECOME A PART THEREOF.

[If Bidder is not an individual, enter entity name here]

By: _____
(Signature)

NAME OF SIGNER: _____
(Please Print or Type)

TITLE OF SIGNER: _____
(Please Print or Type)

DATE: _____

BID SECURITY:

Accompanying this Proposal is a (1)_____ in the amount of
(2)_____ Dollars
(\$_____).

NOTE: (1) Insert the words "bank draft," "certified check," "bid bond", "cash", or "cashier's check", as the case may be.

(2) Amount must be equal to at least five percent (5%) of the total Bid.

BIDDER'S LICENSE:

The Bidder certifies that (he/she/it) is licensed as a Bidder under the specific North Carolina state law regulating his/her/its particular trade and that the number of the license under which he/she/it now operates is_____.

BIDDER'S CERTIFICATION AS TO ORGANIZATION AND AUTHORITY:

The Bidder certifies that the Affidavit of Organization and Authority, like the other documents attached hereto, form an integral part of the Proposal, and the Bidder acknowledges that the Owner will rely on the information provided therein in reviewing the Proposal and awarding a Contract.

LIQUIDATED DAMAGES:

The Bidder agrees, further, that the Owner may retain those amounts indicated in the Contract from the amount of compensation due the Bidder, under the terms of the Contract, for each and every day that the work remains incomplete and/or unsatisfactory beyond the Substantial Completion and Final Completion date(s) specified in the Notice to Proceed. This amount is agreed upon as the proper measure of liquidated damages the Owner will sustain, per day, by the failure of the Bidder to complete the work within the stipulated time, and it is not to be construed in any sense as a penalty.

The Bidder shall not have or bring a claim against the Owner, or raise as a defense against the imposition of liquidated damages, other construction purportedly impeding Bidder's progress or timely project completion.

(SIGNATURE PAGE)

Dated _____, 20__.

Bidder—Legal Entity (SEAL)

By: _____ (SEAL)
(SIGN HERE)

SEAL-if corporation

Printed Name

Address

() _____
Telephone No.

Subscribed and sworn to before me this ____ day of _____, 20__

Notary Public

My Commission Expires:

BID BOND

This is a Bid Bond that is subject to the provisions of Article 3 of Chapter 44A of the North Carolina General statutes.

This Bid Bond is executed on _____, 20__.

The name of the PRINCIPAL is _____ (1)

_____ (2)

The name of the SURETY is _____

The TOWN OF HOLLY SPRINGS, NORTH CAROLINA is the OWNER.

The amount of the Bond is _____

_____ (Dollars) (\$_____)

KNOW BY ALL MEN BY THESE PRESENTS, the Principal and Surety above named are hereby held and firmly bound unto the above named OWNER hereinafter called the OWNER in the penal sum of the amount stated above in lawful money of the United States, for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of the above obligation is such that whereas the Principal has submitted to the OWNER a certain Bid Proposal, attached hereto and hereby made a part hereof to enter into a Contract in writing, for the construction of:

Twelve Oaks Pump Station Expansion and Modifications Project – Holly Springs, NC, as described by a document entitled "Specifications, Proposal, Contract, and Bonds for Twelve Oaks Pump Station Expansion and Modifications Project", Project No. 18-005 dated, December 6, 2021; and Twelve Oaks Pump Station Expansion and Modifications Project construction drawings No. 1 through 9, dated December 6, 2021, as prepared by Diehl & Phillips, P.A.

NOW, THEREFORE

- (a) If said Bid Proposal shall be rejected; or in the alternate,
- (b) If said Bid Proposal shall be accepted and the Principal shall execute and deliver a Contract in the form of Contract attached hereto (properly completed in accordance with said Bid Proposal) and shall furnish a bond for his faithful performance of said Contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid Proposal, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its Bid Bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such Bid Proposal; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

ATTEST:

(Principal) Secretary
(SEAL)

Principal

BY: _____ (3)

(Address)

Witness as to Principal

(Address)

ATTEST:

N. C. Resident Agent
(SEAL)

Surety

By: _____

(Name) (4)

(Address)

(Phone Number)

Witness as to Surety

(Address)

- (1) Insert the correct name of Principal.
- (2) Insert whether the Principal is a corporation, a partnership, a limited liability company or an individual.
- (3) If Principal is a partnership, all partners should execute the Bid Bond. If Bidder is a limited liability company, all managers (or all members, if the company is member-managed) should execute the Bond.
- (4) Provide contact name, address and phone number for bid bond surety.

**POWER OF ATTORNEY
(Attach)**

BIDDER'S CERTIFICATES
AFFIDAVIT OF ORGANIZATION AND AUTHORITY
SWORN STATEMENT

STATE OF _____)

COUNTY OF _____)

_____ being first duly sworn on oath deposes and says that the Bidder on the attached Bid Proposal is organized as indicated below and that all statements herein made are made on behalf of such Bidder and that this deponent is authorized to make them.

(Fill Out Applicable Paragraph)

CORPORATION:

The Bidder is a corporation organized and existing under the laws of the State of _____, it operates under the legal name of _____, and the full names of its officers are as follows:

President	_____
Secretary	_____
Treasurer	_____
Manager	_____

and it does _____ have a corporate seal. The _____ is/are authorized to sign construction proposals and contracts for the company by action of its Board of Directors taken _____, a certified copy of which is hereto attached. (Strike out this last phrase if not applicable.)

PARTNERSHIP:

The Bidder is a [limited/general] partnership consisting of individual/corporate partners as follows:

<u>General Partners</u>	<u>Limited Partners</u>
_____	_____
_____	_____
_____	_____

The partnership does business under the name of : _____

LIMITED LIABILITY COMPANY:

The bidder is a [member-managed/manager-managed] limited liability company consisting of the following individual/corporate members/managers:

<u>Managers</u>	<u>Members</u>
_____	_____
_____	_____
_____	_____

INDIVIDUAL:

The Bidder is an individual whose full name is:

and if operating under a trade name, said trade name is as follows:

The business address of the Bidder is:

Its phone number is: _____

The contact person for this Proposal is:

Bidder

By: _____

Subscribed and sworn to before me this _____ day of _____, 20__.

Notary Public

County

My Commission Expires:

EQUAL EMPLOYMENT OPPORTUNITY ADDENDUM

During the performance of the Contract the Bidder agrees as follows:

- a. The Bidder shall not discriminate against any employee or applicant because of race, color, religion, sex, or national origin. The Bidder shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to race, color, religion, sex, or national origin. Such action shall include but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Bidder agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of the nondiscrimination clause.
- b. The Bidder shall, in all solicitations or advertisements for employees placed by or on behalf of the Bidder, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- c. The Bidder shall send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract understanding, a notice, to be provided, advising the labor union or worker's representative of the Bidder's commitments under the Equal Employment Opportunity Section of the Contract, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- d. In the event of the Bidder's noncompliance with the nondiscrimination clauses of the Contract or with any of such rules, regulations, or orders, the Contract may be canceled, terminated, or suspended in whole or in part and the Bidder may be declared ineligible for further OWNER contracts.
- e. The Bidder will include the provisions of this Addendum in every subcontract or purchase order unless exempted by rules, regulations, or orders of the OWNER so that such provisions will be binding upon each Subcontractor or vendor.

(Use the following form for execution by a CORPORATION):

ATTEST:

Corporate Name

(Assistant) Secretary

BY: _____
(Vice) President

(CORPORATE SEAL)

(Use the following form for execution by a PARTNERSHIP):

Partnership Name

BY: _____
General Partner

(Use the following form for execution by a LIMITED LIABILITY COMPANY):

Company Name

BY: _____
Manager/Member

(Use the following form for execution by an INDIVIDUAL):

BY: _____
(SEAL)

WITNESS:

Subscribed and sworn to before me this _____ day of _____, 20__.

Notary Public

County

My Commission Expires:

QUALIFICATIONS OF BIDDERS

In order to assist the Owner in determining whether the Bidder is qualified to perform the Work, as set forth in the Contract Documents, the Bidder shall furnish the following information.

1. List of references who are qualified to judge as to his financial responsibility and his experience in work of similar nature to that bid upon:
2. List of previous contracting experience, including dollar values of contracts:
3. List of facilities or equipment that is available for use:
4. Name, City/Town of residence, and title of the individual who will give personal attention to the work:
5. Financial Statement:

ASSETS

CURRENT ASSETS:

Cash \$ _____

Notes and Accounts Receivable _____

Inventories _____

PLANT ASSETS:

Real Estate \$ _____

Machinery _____

Good Will, Patents, etc. _____ \$ _____
Total Assets

LIABILITIES:

Notes Payable	\$ _____	
Accounts Payable	_____	
Accrued Wages	_____	
Other Liabilities	_____	\$ _____
		Total Liabilities
	EXCESS OF ASSETS OR NET WORTH	\$ _____

6. List all pending claims or lawsuits, and any lawsuit within the last 10 years, filed by or against the Bidder, and describe the resolution of each claim or lawsuit:

<u>Claim</u>	<u>Date of Claim</u>	<u>Resolution, if any</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

The existence of unresolved claims against Bidder may disqualify the Bidder from making a Bid Proposal and entering into a Contract.

Notes:

- A. The above is a suggested form for the Financial Statement, but the Bidder is not required to follow the form explicitly. The Financial Statement submitted must clearly show to the satisfaction of the Owner the Bidder's current financial condition. The Owner reserves the privilege of requiring additional information as to financial responsibility of the Bidder prior to awarding Contract.
- B. Bidder shall attach additional pages, if necessary, in order to complete the required information.
- C. The Bidder shall submit detailed information required for above items 1 through 4 with his Bid Proposal package and, at the discretion of the Bidder, the information required under Item 5 may be furnished after Bid Proposals are received if required by the Owner and Engineer to evaluate the financial qualifications of a prospective Bidder.

**AFFIDAVIT OF
STATEMENT OF NON-COLLUSIVE**

State of _____)
County of _____) ss.

_____ being first duly sworn,
deposes and says that:

- (1) He/she is the _____
(Owner, Partner, Officer, Representative or Agent)
of _____, the BIDDER that has
submitted the attached BID PROPOSAL;
- (2) He is fully informed respecting the preparation and contents of the attached BID
PROPOSAL and of all pertinent circumstances respecting such BID PROPOSAL;
- (3) Such BID PROPOSAL is genuine and is not a collusive or sham BID PROPOSAL;
- (4) Neither the said BIDDER nor any of its officers, partners, owners, agents, representatives,
employees or parties in interest, including this affiant, have in any way colluded, conspired,
connived or agreed, directly or indirectly, with any other BIDDER, firm, or person to submit
a collusive or sham BID PROPOSAL in connection with the Contract for which the attached
BID PROPOSAL has been submitted; or to refrain from bidding in connection with such
Contract; or have in any manner, directly or indirectly, sought by agreement or collusion,
or communication, or conference with any BIDDER, firm, or person to fix the price or prices
in the attached BID PROPOSAL or of any other BIDDER, or to fix any overhead, profit, or
cost elements of the BID PROPOSAL price or the BID PROPOSAL price of any other
BIDDER, or to secure through any collusion, conspiracy, connivance, or unlawful
agreement any advantage against The Town of HOLLY SPRINGS, or any person
interested in the proposed Contract;
- (5) The price or prices quoted in the attached BID are fair and proper and are not tainted by
any collusion, conspiracy, connivance, or unlawful agreement on the part of the BIDDER
or any other of its agents, representatives, owners, employees or parties in interest,
including this affidavit.

BIDDER

BY _____

ITS _____
(Title)

Subscribed and sworn to before me this _____ day of _____, 20__.

My commission expires _____

END OF AFFIDAVIT

Town of Holly Springs

AFFIDAVIT A

AFFIDAVIT of Intent to Perform Contract with Own Workforce.

County of Wake

Affidavit of _____
(Name of Bidder)

I hereby certify that it is our intent to perform a minimum of _____ % of the work required for the _____ contract.
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract substantial elements of work for this type project, and normally performs and has the capability to perform and will perform substantial elements of the work on this project with his/her own current work forces; and

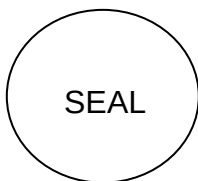
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ **Name of Authorized Officer:** _____

Signature: _____

Title: _____



State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

NONDISCRIMINATION CLAUSE

It is specifically agreed as part of the consideration of the signing of this Bid Proposal, and the resulting execution of a Contract, that the parties hereto, their agents, officials, employees or servants shall not discriminate in any manner on the basis of age, handicap, race, color, creed, gender, religious affiliation, or national origin with reference to the subject matter of the Contract, no matter how remote.

This provision, being incorporated for the benefit of the Town of HOLLY SPRINGS and its residents, may be enforced as set out in the ordinances of the Town of HOLLY SPRINGS, enforcement of this provision shall be by action for specific performance, injunctive relief, or other remedy as by law provided.

This provision shall be binding on the successors and assigns of the parties hereto with reference to the subject matter of the Contract.

(Use the following form for signatures by a CORPORATION):

ATTEST:	_____ Corporate Name
_____ (Assistant) Secretary	BY: _____ (Vice) President
_____ (Printed Name)	_____ (Printed Name)
(Corporate Seal)	

(Use the following form for signatures by a PARTNERSHIP):

_____ WITNESS	_____(SEAL) Partnership Name
_____ (Printed Name)	BY: _____(SEAL) General Partner

(Use the following form for signatures by a LIMITED LIABILITY COMPANY):

_____	_____ (SEAL)
WITNESS	Company Name
_____	BY: _____ (SEAL)
(Printed Name)	Manager/Member

(Use the following form for signatures by an INDIVIDUAL):

	_____ (SEAL)

	(Printed Name)

WITNESS	

(Printed Name)	

Subscribed and sworn to before me this _____ day of _____, 20__.

_____	_____
Notary Public	County

My Commission Expires:

NOTICE OF AWARD

TO: CONTRACTOR/BIDDER: _____

ADDRESS: _____

FROM: _____

OWNER: Town of HOLLY SPRINGS
Engineering Department
HOLLY SPRINGS, North Carolina

PROJECT:

Twelve Oaks Pump Station Expansion and Modifications Project – Holly Springs, NC
Project No. 18-005

You are hereby notified that the Owner has considered the Bid Proposal submitted by you for the above-described project in response to its Notice to Bidders dated _____.

It appears that it is to the best interest of said Owner to accept your Bid Proposal in the amount of: _____ Dollars (\$_____).

You are therefore hereby notified that your Bid Proposal has been accepted for **Contract 1 – Twelve Oaks Pump Station Expansion and Modifications Project (TOHS Project No. 18-005).**

The Bidder is required by as a condition of its Award of the Contract to execute and deliver the formal Contract with the Owner and to furnish the required Bidder's Performance and Payment Bonds within fifteen (15) days from the date of the delivery of this Notice to you.

If you fail to execute said Contract and to furnish said Bonds within fifteen (15) days from the date of delivery of this Notice, said Owner will be entitled to consider all your rights arising out of the Owner's acceptance of your Bid Proposal as abandoned and to award the work covered by your Bid Proposal to another bidder, or to re-advertise the work or otherwise dispose thereof as the Owner may see fit.

Dated this _____ day of _____, 2022.

Town of HOLLY SPRINGS, North Carolina

By: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged this _____ day of _____, 2022.

Bidder

By: _____

Title: _____

- END OF SECTION 00300 -

SECTION 00500
AGREEMENT (CONTRACT)

**INSTRUCTIONS TO CONTRACTORS AND
REQUIREMENTS AS TO FORM FOR TOWN OF HOLLY SPRINGS, NC AGREEMENTS**

DO NOT REMOVE FROM AGREEMENT

Please observe the following in executing the attached Agreement:

1. The Owner may contract with four types of legal entities.
 - (a) If the Agreement is with an individual, that individual should sign the Agreement exactly as his/her name is set out. If the Agreement is with an individually-owned business, the Agreement should be with the individual owner, and not the named business.
 - (b) Execution on behalf of a corporation should be by the president or a vice president, attested by the corporate secretary, with the corporate seal affixed. An official other than president or vice president should attach documentation of his/her authority to execute and bind the corporation.
 - (c) If the Agreement is with a partnership, all general partners of the partnership should execute the Agreement unless an authorized partner is designated to execute, in which case documentation of such authorization should be attached.
 - (d) If the Agreement is with a limited liability company, all managers of the limited liability company should execute the Agreement. If the limited liability company is member-managed, all members should sign the Agreement. If only certain manager(s) or member(s) of the limited liability company are authorized to execute the Agreement, documentation of such authorization should be attached.
2. After signing the Agreement, the appropriate notary's acknowledgement, in the individual, corporate or partnership form should be completed.
3. The Performance Bond and Payment Bond should be attached to the Agreement package. They should be signed by the Contractor, and its signature should be acknowledged with the appropriate acknowledgement form. Next, the Bonds, in approved form, must be signed by the authorized agent of the Surety Company issuing the Bonds, and an executed Power of Attorney document authorizing the agent to sign must accompany the Bond Documents.
4. The Agreement and Bonds should not be dated, except by the last person executing the Agreement, normally the Town Clerk.
5. The Bid Form and all other documents submitted with the Bid shall be included with the Agreement.
6. Bid Proposal: Complete the Acceptance of Notice section on the last page of this document.
7. Page 00500-3: Fill in the Contractor name and address.
8. Pages 00500-6 through 00500-9: Choose the appropriate signature page and complete it in its entirety.

9. Pages 00500-10 through 00500-15: Complete in their entirety.
10. Page 00500-16: Certificate of Insurance. The General Conditions of the Contract, as modified by the Supplementary Conditions and the Special Conditions, require the Certificate of Insurance to include the Indemnification Agreement on the reverse side of the Certificate. All parties required to be named as additional insured parties by the Contract Documents in connection with the attached Agreement shall be named on the Certificate of Insurance for each policy.
11. Most Certificates of Insurance state under the cancellation clause that “the issuing company will endeavor to mail 30 days written notice to the ...” and “but failure to mail such notice shall impose no obligation or liability of any kind upon the Company, its agents or representatives”. If your certificate states this, the words “endeavor to” and “but failure to mail such notice shall impose no obligation or liability of any kind upon the Company, its agents or representatives” must be stricken in order to comply with the Contract Documents.
12. Four copies of the Agreement are sent to the Contractor. The original and duplicates should be signed and returned to the Engineer or Architect for signature by the Owner, after which one duplicate will be returned to the Contractor and one copy will be sent to the Contractor’s Bonding Company(ies).
13. Failure to fully complete all four sets of the Agreement will cause delays in the approval by the Owner and therefore delay the issuance of the Notice to Proceed.

AGREEMENT

This Agreement (the "Agreement") is made this ____ day of _____ in the year 2022, by and between the Town of Holly Springs, North Carolina, (the "Owner") and _____ of _____, (the "Contractor").

WITNESSETH

THAT, WHEREAS, an Award of Contract (the "Award") for:

Contract 1 – Twelve Oaks Pump Station Expansion and Modifications Project
TOHS Project No. 18-005

as prepared by Diehl & Phillips, P.A. . (hereinafter called "Engineer's Consultant"), has recently been awarded to the Contractor by the Owner.

AND WHEREAS, the work to be performed by the Contractor or its subcontractors, and the labor, materials, equipment, apparatus, and supplies to be provided in connection therewith (collectively, the "Work") is more particularly described in the Proposal (the "Proposal") attached hereto.

AND WHEREAS, the aggregate cost of the Work (referred to as either the "Contract Price" or the "Contract Sum") and the individual prices and rates of the various components of the Work that together comprise the Contract Price, are more particularly described in the Proposal.

AND WHEREAS, it was one of the conditions of said Award that a formal contract should be executed by and between the Owner and the Contractor, evidencing the terms of said Award.

NOW THEREFORE, THIS AGREEMENT FURTHER WITNESSETH THAT the Owner and the Contractor represent, warrant, covenant and agree as follows:

It is agreed and understood that the terms and conditions of the following documentation of are a part of and parcel to this Agreement to the same extent as if incorporated herein in full:

Project Manual for Project No. 18-005 Twelve Oaks Pump Station Expansion and Modifications Project, Standard General Conditions of the Construction Contract (EJCDC Document No. 1910-8, 1996 edition), as amended, revised, and supplemented by the Supplementary Conditions (the "Supplementary Conditions") and the Special Conditions (the "Special Conditions") thereto (as so amended, revised and supplemented, the "General Conditions") or 2012 NCDOT Standard Specifications for Roads and Structures.

The Contractor hereby covenants and agrees with the Owner that it will, for a sum equal to the Contract Price, well and faithfully perform, provide and execute the Work in accordance with each and every one of the conditions, covenants, stipulations, terms and provisions contained in the Notice to Bidders/Invitation to Bid, the Instructions to Bidders, the Proposal, the Plans, the Specifications, the General Conditions and the Contract Documents (as that term is defined in the General Conditions), all of which are a part of and parcel to this Agreement to the same extent as if incorporated herein in full. The Owner does hereby covenant and agree with the Contractor that it will pay to the Contractor, when due and payable under the terms of the Contract Documents and the Award, the Contract Price, and that it will well and faithfully

comply with and perform each and every obligation imposed upon it by said Contract Documents and the terms of said Award.

The Contractor shall commence the Work on the commencement date specified in a written order of the Owner (the “Notice to Proceed”). **The Work shall be substantially completed within 220 CONSECUTIVE CALENDAR DAYS of the commencement date specified in the Notice to Proceed, and finally and fully completed, so that it is ready for final payment, as evidenced by the Engineer’s written recommendation, within 240 CONSECUTIVE CALENDAR DAYS of the commencement date specified in the Notice to Proceed (such deadlines being referred to herein and in the Contract Documents as the “Contract Time” or the “Contract Times”).** In the event that the Work is not completed to the standards and degrees required by the Contract Times, or either of them, liquidated damages shall be assessed against the Contractor for each day of delay as described herein below.

LIQUIDATED DAMAGES

The parties recognize and acknowledge that Owner will suffer financial losses if the Work is not completed as required within the Contract Times. They also recognize and acknowledge that the damages caused by the contractor’s delays are difficult to ascertain and that the expense and difficulty to both parties in proving or contesting the amounts of those losses would be substantial. Instead of requiring proof of those amounts, it is agreed that Contractor shall be liable for and shall pay owner the following amounts under owner’s damages, and engineering charges, all as liquidated damages, and not as a penalty in the event the Work remains incomplete at the end of the contract time specified in the Notice to Proceed.

The Contractor agrees further that the Owner may retain those amounts indicated below from the amount of Compensation due the Contractor for each day that the work remains incomplete beyond the completion date specified in the Notice to Proceed. Payment by the Owner to the Contractor in lieu of retainage does not constitute a waiver by the Owner. This amount is agreed upon as the proper measure of liquidated damages the Owner will sustain, per day, by the failure of the undersigned to complete the work within the stipulated time, and it is not to be construed, in any sense, as a penalty. The parties agree this is a reasonable amount.

No Contractor shall have a claim against the Owner as a result of a third party’s lack of progress or project completion.

Contract	Number of Days	Owner’s Damages	Engineering Charges	Total Liquidated Damages
From NTP to Substantial Completion	220 days	\$300 /day	\$200 /day	\$500_/day
From Substantial Completion to Final Completion	20 days	\$150 /day	\$100 /day	\$250_/day

Liquidated damages in the amount of \$500/day will commence on the 221st day following the commencement date specified in the Notice to Proceed (assuming no contract time extensions approved through change orders), if the new pumps are not fully installed and put into service conveying pumped wastewater from the Twelve Oaks Pump Station.

Payment of the charges described herein shall not excuse or relieve the Contractor for any other liability under the Contract Documents for delay in the progress schedule of the Work, and all other penalties imposed on the Contractor and remedies available to the Owner under the Contract Documents shall remain in full force and effect.

IN WITNESS WHEREOF, said Contractor and Owner, being duly authorized, have caused these presents to be signed in their names as of the day and year first above written.

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

By: _____
Name: _____
Title: Finance Director

ATTEST:

TOWN OF HOLLY SPRINGS,
a North Carolina municipality

By: _____
Name: Linda McKinney
Title: Town Clerk

By: _____
Name: Randy Harrington
Title: Town Manager

(SEAL)

STATE OF _____

COUNTY OF _____

I, _____, a Notary Public of _____ County,
State of _____, do hereby certify that _____ personally came
before me this day and acknowledged that he/she is the Town Clerk of the Town of Holly Springs, a North
Carolina municipality, and that, by authority duly given and as the act of the corporation, the foregoing
instrument was signed in its name by its Town Manager, sealed with its seal, and attested by himself/herself
as its Town Clerk.

Witness my hand and official seal, this the ____ day of _____, 20__.

Notary Public

My Commission Expires: _____

[OFFICIAL SEAL]

[OR: Contractor's Signature, if a corporation]

CONTRACTOR:

a _____ corporation

ATTEST:

Secretary
(SEAL)

By: _____
Name: _____
Title: _____

STATE OF _____

COUNTY OF _____

I, _____, a Notary Public of _____ County, State of _____, do hereby certify that _____ personally came before me this day and acknowledged that he/she is _____ Secretary of _____, a _____ corporation, and that, by authority duly given and as the act of the corporation, the foregoing instrument was signed in its name by its _____ President, sealed with its corporate seal, and attested by himself/herself as its _____ Secretary.

Witness my hand and official seal, this the _____ day of _____, 20__.

Notary Public

My Commission Expires: _____

[OFFICIAL SEAL]

IMPORTANT

NOTE: If the Contractor is a Corporation, the legal name of the Corporation shall be set forth above, together with the signature of the officer or officers authorized to sign Contracts on behalf of the Corporation. If the signature is by an agent other than an authorized officer of the Corporation, a Resolution must be attached hereto. The signature of the Contractor shall also be acknowledged before a Notary Public or other person authorized by law to execute such acknowledgment.

[OR: Contractor's Signature, if a partnership]

CONTRACTOR:

a [general/limited] partnership (SEAL)

By: _____(SEAL)

Name: _____

Title: General Partner

STATE OF _____

COUNTY OF _____

I, _____, a Notary Public of _____ County, State of _____, do hereby certify that _____, General Partner of _____, a _____ [general/limited] partnership, personally appeared before me this day and acknowledged the due execution of the foregoing instrument as his/her act and deed and as the act and deed of the partnership.

Witness my hand and official seal, this the _____ day of _____, 20__.

Notary Public

My Commission Expires: _____

[OFFICIAL SEAL]

IMPORTANT

NOTE: If Contractor is a partnership, the true name of the firm shall be set forth above, together with the signatures of all the general partners. If the signature is by an agent other than a general partner, a Resolution must be attached hereto. The signature of the Contractor shall also be acknowledged before a Notary Public or other person authorized by law to execute such acknowledgment.

[OR: Contractor's Signature, if a limited liability company]

CONTRACTOR:

_____,
a limited liability company (SEAL)

By: _____ (SEAL)

Name: _____

Title: Member/Manager

STATE OF _____

COUNTY OF _____

I, _____, a Notary Public of _____ County, State
of _____, do hereby certify that _____ a
[Member/Manager] of _____, a _____ limited liability
company, personally appeared before me this day and acknowledged the due execution of the foregoing
instrument as his/her act and deed and as the act and deed of the company.

Witness my hand and official seal, this the _____ day of _____, 20____.

Notary Public

My Commission Expires: _____

[OFFICIAL SEAL]

IMPORTANT

NOTE: If Contractor is a limited liability company, the true name of the firm shall be set forth above, together with the signatures of all the managers. If the signature is by an agent other than all of the managers of the limited liability company (or all of the members, if the company is member-managed), a Resolution must be attached hereto. The signature of the Contractor shall also be acknowledged before a Notary Public or other person authorized by law to execute such acknowledgment.

PERFORMANCE BOND

This Bond is executed on _____, 20__.

The name of the PRINCIPAL is _____(1)

a _____(2)

The name of the SURETY is _____

The TOWN OF HOLLY SPRINGS, NORTH CAROLINA is the CONTRACTING BODY.

The amount of the Bond is _____
_____ Dollars (\$ _____)

KNOW ALL MEN BY THESE PRESENTS, that we, the PRINCIPAL and SURETY above named, are held and firmly bound unto the above named CONTRACTING BODY, hereinafter called the "Contracting Body", in the penal sum of the amount stated above in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas, the Principal entered into a certain Agreement with the Contracting Body, dated the ____day of _____, 20__ for work described by Plans and Specifications prepared by Town of Holly Springs and their consulting engineers, herein called and referred to as the "Engineers", a copy of said Agreement is hereto attached and made a part hereof for the construction of:

Twelve Oaks Pump Station Expansion and Modifications Project – Holly Springs, NC, as described by a document entitled "Specifications, Proposal, Contract, and Bonds for Twelve Oaks Pump Station Expansion and Modifications Project", Project No. 18-005 dated, December 6, 2021; and Twelve Oaks Pump Station Expansion and Modifications Project construction drawings No. 1 through 9, dated December 6, 2021, as prepared by Diehl & Phillips, P.A.

NOW THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said Agreement during the original term of said Agreement and any extensions thereof that may be granted by the Contracting Body, with or without notice to the Surety, and during the life of any guaranty required under the Agreement, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said Agreement that may hereafter be made, notice of which modifications to the SURETY being hereby waived, then, this obligation is to be void; otherwise it shall remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

ATTEST:

(Principal) Secretary
(SEAL)

Principal

By: _____(3)

(Address)

Witness as to Principal

(Address)

Surety

By: _____(4)

(Name)

ATTEST:

(Address)

By: _____
[N.C. Resident Agent]
(SEAL)

(Phone Number)

Witness as to Surety

(Address)

NOTE: Date of Bond must not be prior to date of Agreement.

- (1) Insert the correct name of Contractor.
- (2) Insert whether the Contractor is a corporation, a partnership, a limited liability company or an individual.
- (3) If Contractor is a partnership, all general partners should execute the Bond. If Contractor is a limited liability company, all managers (or all members, if the company is member-managed) should execute the Bond .
- (4) Provide contact name, address and phone number for performance bond surety.

PAYMENT BOND

This Bond is executed on _____, 20__.

The name of the PRINCIPAL is _____(1)

a _____(2)

The name of the SURETY is _____

The TOWN OF HOLLY SPRINGS, NORTH CAROLINA is the CONTRACTING BODY.

The amount of the Bond is _____
_____ Dollars (\$ _____)

KNOW ALL MEN BY THESE PRESENTS, that we, the PRINCIPAL and SURETY above named, are held and firmly bound unto the above named CONTRACTING BODY, hereinafter called the "Contracting Body", in the penal sum of the amount stated above in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas, the Principal entered into a certain Agreement with the Contracting Body, dated the ____ day of _____, 20__ for work described by Plans and Specifications prepared by Town of Holly Springs and their consulting, herein called and referred to as the "Engineers", a copy of said Agreement is hereto attached and made a part hereof for the construction of:

Twelve Oaks Pump Station Expansion and Modifications Project – Holly Springs, NC, as described by a document entitled "Specifications, Proposal, Contract, and Bonds for Twelve Oaks Pump Station Expansion and Modifications Project", Project No. 18-005 dated, December 6, 2021; and Twelve Oaks Pump Station Expansion and Modifications Project construction drawings No. 1 through 9, dated December 6, 2021, as prepared by Diehl & Phillips, P.A.

NOW THEREFORE, if the Principal shall promptly make payment to all persons supplying labor and material in the prosecution of the work provided for in said Agreement, and any and all duly authorized modifications of said Agreement that may hereafter be made, notice of which modifications to the SURETY being hereby waived, then this obligation is to be void; otherwise it shall remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

ATTEST:

(Principal) Secretary
(SEAL)

Principal

By: _____(3)

(Address)

Witness as to Principal

(Address)

Surety

By: _____(4)

(Name)

(Address)

(Phone Number)

ATTEST:

By: _____
[N.C. Resident Agent]
(SEAL)

Witness as to Surety

(Address)

NOTE: Date of Bond must not be prior to date of Agreement.

- (1) Insert the correct name of the Contractor.
- (2) Insert whether the Contractor is a corporation, a partnership, a limited liability company or an individual.
- (3) If Contractor is a partnership, all general partners should execute the Bond. If Contractor is a limited liability company, all managers (or all members, if the company is member-managed) should execute the Bond.
- (4) Provide contact name, address and phone number for payment bond surety.

AFFIDAVIT

(To be attached to all Agreements)

STATE OF)
) SS
COUNTY OF)

_____ being first duly sworn on oath deposes and says that
s/he is _____ (attorney-in-fact or agent) of
_____ (bonding company) surety on the attached Agreement on
_____ executed by
_____ (Contractor).

Affiant further deposes and says that no officer, official or employee of the Owner has any interest directly or indirectly, or is receiving any premium, commission fee or other thing of value on account of the same or furnishing of the Bond, undertaking or Contract of Indemnity, Guaranty, Suretyship in connection with the above mentioned Agreement.

Signed _____

Subscribed and sworn to before me this ____ day of _____, 20__.

(Notary Public, _____ County, _____)

My Commission Expires _____

RESOLUTION OF CONTRACTOR'S PARTNERS, MANAGERS OR MEMBERS

(Attach if necessary)

CERTIFICATE OF INSURANCE

(Attach)

[See the General Conditions for specific requirements.]

NOTICE TO PROCEED

TO: CONTRACTOR: _____

ADDRESS: _____

FROM: Kendra D. Parrish, PE
Executive Director of Utilities and Infrastructure

OWNER: Town of Holly Springs
P.O. Box 8
128 S. Main St.
Holly Springs, North Carolina 27540

PROJECT: Twelve Oaks Pump Station Expansion and Modifications Project

TOWN OF HOLLY SPRINGS PROJECT NO.: 18-005

CONTRACT PRICE/SUM: \$ _____ Dollars
(\$ _____).

You are hereby notified to commence Work on the referenced project on or before _____, 20__
(the "Commencement Date"), and are to Substantially Complete the Work within 220 CONSECUTIVE
CALENDAR DAYS of the Commencement Date, and finally and fully Complete the Work within 240
CONSECUTIVE CALENDAR DAYS of the Commencement Date. Your Contract final completion date
is therefore _____, 20__.

The Agreement provides for assessment of liquidated damages for each consecutive calendar day after the
above established completion dates that the Work remains incomplete to the standard and degree required.

ENGINEER:

Diehl & Phillips, P.A.

By: _____

Name: John F. Phillips, P.E.

Title: Consulting Engineer for Proj. # 18-005

Date: _____

- END OF SECTION 00500 -

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By



AMERICAN COUNCIL OF
ENGINEERING COMPANIES



**National Society of
Professional Engineers®**

ASCE American Society
of Civil Engineers

AMERICAN COUNCIL OF ENGINEERING COMPANIES

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
a practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

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The Associated General Contractors of America

Construction Specifications Institute

These General Conditions have been prepared for use with the Owner-Contractor Agreements (No. 1910-8-A-1 or 1910-8-A-2) (1996 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC User's Guide (No. 1910-50). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. 1910-17) (1996 Edition).

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between OWNER and CONTRACTOR covering the Work.

3. *Application for Payment*--The form acceptable to ENGINEER which is to be used by CONTRACTOR during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

7. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements.

8. *Bonds*--Performance and payment bonds and other instruments of security.

9. *Change Order*--A document recommended by ENGINEER which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by OWNER or CONTRACTOR seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the OWNER and CONTRACTOR concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*--The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER's written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.

13. *Contract Price*--The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Substantial Completion; and (ii) complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment.

15. *CONTRACTOR*--The individual or entity with whom OWNER has entered into the Agreement.

16. *Cost of the Work*--See paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by CONTRACTOR. Shop Drawings and other CONTRACTOR submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *ENGINEER*--The individual or entity named as such in the Agreement.

20. *ENGINEER's Consultant*--An individual or entity having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

21. *Field Order*--A written order issued by ENGINEER which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

22. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

23. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

24. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

25. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

27. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

28. *Notice of Award*--The written notice by OWNER to the apparent successful bidder stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, OWNER will sign and deliver the Agreement.

29. *Notice to Proceed*--A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform the Work under the Contract Documents.

30. *OWNER*--The individual, entity, public body, or authority with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be performed.

31. *Partial Utilization*--Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

32. *PCBs*--Polychlorinated biphenyls.

33. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

34. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part as may be indicated elsewhere in the Contract Documents.

35. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

36. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

37. *Resident Project Representative*--The authorized representative of ENGINEER who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

40. *Site*--Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by OWNER which are designated for the use of CONTRACTOR.

41. *Specifications*--That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

42. *Subcontractor*--An individual or entity having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the Site.

43. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

44. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

45. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.

46. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable

television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

47. *Unit Price Work*--Work to be paid for on the basis of unit prices.

48. *Work*--The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

49. *Work Change Directive*--A written statement to CONTRACTOR issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

50. *Written Amendment*--A written statement modifying the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

1.02 Terminology

A. Intent of Certain Terms or Adjectives

1. Whenever in the Contract Documents the terms "as allowed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of ENGINEER as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to

supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 or any other provision of the Contract Documents.

B. Day

1. The word “day” shall constitute a calendar day of 24 hours measured from midnight to the next midnight.

C. Defective

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.04 or 14.05).

D. Furnish, Install, Perform, Provide

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, “provide” is implied.

E. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used

in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 *Delivery of Bonds*

A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

2.02 *Copies of Documents*

A. OWNER shall furnish to CONTRACTOR up to ten copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

A. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

A. *CONTRACTOR’s Review of Contract Documents:* Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents

unless CONTRACTOR knew or reasonably should have known thereof.

B. *Preliminary Schedules:* Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for its timely review:

1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and

3. a preliminary schedule of values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

C. *Evidence of Insurance:* Before any Work at the Site is started, CONTRACTOR and OWNER shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which CONTRACTOR and OWNER respectively are required to purchase and maintain in accordance with Article 5.

2.06 *Preconstruction Conference*

A. Within 20 days after the Contract Times start to run, but before any Work at the Site is started, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.05.B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CON-

TRACTOR, ENGINEER, and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.05.B. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules are submitted to ENGINEER.

1. The progress schedule will be acceptable to ENGINEER if it provides an orderly progression of the Work to completion within any specified Milestones and the Contract Times. Such acceptance will not impose on ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor.

2. CONTRACTOR's schedule of Shop Drawing and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.

3. CONTRACTOR's schedule of values will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to OWNER.

C. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in Article 9.

3.02 *Reference Standards*

A. *Standards, Specifications, Codes, Laws, and Regulations*

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER's Consultants, agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.04; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways: (i) a Written Amendment; (ii) a Change Order; or (iii) a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) ENGINEER's approval of a Shop Drawing or Sample; or (iii) ENGINEER's written interpretation or clarification.

3.05 *Reuse of Documents*

A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with OWNER: (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, including electronic media editions; and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaption by ENGINEER. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 - AVAILABILITY OF LANDS;
SUBSURFACE AND PHYSICAL CONDITIONS;
REFERENCE POINTS

4.01 *Availability of Lands*

A. OWNER shall furnish the Site. OWNER shall notify CONTRACTOR of any encumbrances or restrictions not of general application but specifically related to use of the Site with which CONTRACTOR must comply in performing the Work. OWNER will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If CONTRACTOR and OWNER are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in OWNER's furnishing the Site, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

B. Upon reasonable written request, OWNER shall furnish CONTRACTOR with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and OWNER's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Contract Documents; and
2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not

Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER, or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If CONTRACTOR believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which CONTRACTOR is entitled to rely as provided in paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *ENGINEER's Review:* After receipt of written notice as required by paragraph 4.03.A, ENGINEER will promptly review the pertinent condition, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto, and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

C. *Possible Price and Times Adjustments*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.08 and 11.03.

2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or

c. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A.

3. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be

made therefor as provided in paragraph 10.05. However, OWNER, ENGINEER, and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities, including OWNER, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including OWNER, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), identify the owner of such Underground Facility

and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.

2. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, OWNER or CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

4.05 *Reference Points*

A. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the ENGINEER in the preparation of the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. CONTRACTOR shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. CONTRACTOR shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by CONTRACTOR, Subcontractors, Suppliers, or anyone else for whom CONTRACTOR is responsible.

D. If CONTRACTOR encounters a Hazardous Environmental Condition or if CONTRACTOR or anyone for whom CONTRACTOR is responsible creates a Hazardous Environmental Condition, CONTRACTOR shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by paragraph 6.16); and (iii) notify OWNER and ENGINEER (and promptly thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. CONTRACTOR shall not be required to resume Work in connection with such condition or in any affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR written

notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by CONTRACTOR, either party may make a Claim therefor as provided in paragraph 10.05.

F. If after receipt of such written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in paragraph 10.05. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.E shall obligate OWNER to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs)

arising out of or relating to a Hazardous Environmental Condition created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.F shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of paragraphs 4.02, 4.03, and 4.04 are not intended to apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Contract Documents.

B. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

C. If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.01.B, CONTRACTOR shall within 20 days thereafter substitute another Bond and surety, both of which shall comply with the requirements of paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the

jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

A. CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain.

5.04 *CONTRACTOR's Liability Insurance*

A. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance of the Work and CONTRACTOR's other obligations under the Contract Documents, whether it is to be performed by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;
4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;
5. claims for damages, other than to the Work itself, because of injury to or destruction of

tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this paragraph 5.04 to be purchased and maintained shall:

1. with respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
3. include completed operations insurance;
4. include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.07, 6.11, and 6.20;
5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CONTRACTOR pursuant to paragraph 5.03 will so provide);
6. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be correcting, removing, or replacing defective Work in accordance with paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

5.05 *OWNER's Liability Insurance*

A. In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.04, OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, OWNER shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but

not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER;

5. allow for partial utilization of the Work by OWNER;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.07.

D. OWNER shall not be responsible for purchasing and maintaining any property insurance specified in this paragraph 5.06 to protect the interests of CONTRACTOR, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by CONTRACTOR, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policies provided under paragraph 5.06, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the Site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

5.07 *Waiver of Rights*

A. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.06 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

B. OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to OWNER's property or the Work caused by, arising out of, or

resulting from fire or other peril whether or not insured by OWNER; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by OWNER during partial utilization pursuant to paragraph 14.05, after Substantial Completion pursuant to paragraph 14.04, or after final payment pursuant to paragraph 14.07.

C. Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against CONTRACTOR, Subcontractors, ENGINEER, or ENGINEER's Consultants and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by paragraph 5.06 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.08.B. OWNER shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

B. OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either OWNER or CONTRACTOR has any objection to the coverage afforded by or other provisions of

the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by paragraph 2.05.C. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. CONTRACTOR shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of OWNER or ENGINEER in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

B. At all times during the progress of the Work, CONTRACTOR shall assign a competent resident superintendent thereto who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to or received from the superintendent shall be binding on CONTRACTOR.

6.02 *Labor; Working Hours*

A. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out, and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without OWNER's written consent (which will not be unreasonably withheld) given after prior written notice to ENGINEER.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the General Requirements, CONTRACTOR shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.07 as it may be adjusted from time to time as provided below.

1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.07) proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 12. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to ENGINEER for review under the circumstances described below.

1. *"Or-Equal" Items:* If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment ENGINEER determines that: (i) it is at least equal in quality, durability, appearance, strength,

and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;

b. CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items*

a. If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.

c. The procedure for review by ENGINEER will be as set forth in paragraph 6.05.A.2.d, as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances.

d. CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with

the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.

B. Substitute Construction Methods or Procedures:

If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.05.A.2.

C. Engineer's Evaluation: ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.05.A and 6.05.B. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until ENGINEER's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." ENGINEER will advise CONTRACTOR in writing of any negative determination.

D. Special Guarantee: OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.

E. ENGINEER's Cost Reimbursement: ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER approves a substitute item so proposed or submitted by CON-

TRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such proposed substitute.

F. CONTRACTOR's Expense: CONTRACTOR shall provide all data in support of any proposed substitute or "or-equal" at CONTRACTOR's expense.

6.06 Concerning Subcontractors, Suppliers, and Others

A. CONTRACTOR shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to OWNER as indicated in paragraph 6.06.B), whether initially or as a replacement, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to OWNER in advance for acceptance by OWNER by a specified date prior to the Effective Date of the Agreement, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. CONTRACTOR shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.

C. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of OWNER or

ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR.

E. CONTRACTOR shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.06, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants, and all other individuals or

H. entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

6.07 *Patent Fees and Royalties*

A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto, such as plant investment fees.

6.09 *Laws and Regulations*

A. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

B. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses, and damages (including but not limited to all fees

and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Times. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in paragraph 10.05.

6.10 Taxes

A. CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas

1. CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and

against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER, or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work CONTRACTOR shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 Record Documents

A. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER.

6.13 Safety and Protection

A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER's Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them). CONTRACTOR's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR is obligated to act to prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show ENGINEER the services, materials, and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.17.E.

B. CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17.E. The numbers of each Sample to be submitted will be as specified in the Specifications.

C. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER as required by paragraph 2.07, any related Work performed prior to ENGINEER's review and approval of the pertinent

submittal will be at the sole expense and responsibility of CONTRACTOR.

D. *Submittal Procedures*

1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto; and

d. CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

3. At the time of each submittal, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

E. *ENGINEER's Review*

1. ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER. ENGINEER's review and approval will be only to

determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. ENGINEER's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of each submittal as required by paragraph 6.17.D.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1.

F. *Resubmittal Procedures*

1. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.18 *Continuing the Work*

A. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.04 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.19 *CONTRACTOR's General Warranty and Guarantee*

A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or
2. normal wear and tear under normal usage.

B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

1. observations by ENGINEER;
2. recommendation by ENGINEER or payment by OWNER of any progress or final payment;
3. the issuance of a certificate of Substantial Completion by ENGINEER or any payment related thereto by OWNER;
4. use or occupancy of the Work or any part thereof by OWNER;
5. any acceptance by OWNER or any failure to do so;
6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;
7. any inspection, test, or approval by others; or
8. any correction of defective Work by OWNER.

6.20 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold

harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom; and
2. is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.

B. In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of CONTRACTOR under paragraph 6.20.A shall not extend to the liability of ENGINEER and ENGINEER's Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

ARTICLE 7 - OTHER WORK

7.01 *Related Work at Site*

A. OWNER may perform other work related to the Project at the Site by OWNER's employees, or let other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to CONTRACTOR prior to starting any such other work; and
2. if OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in paragraph 10.05.

B. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the other work with OWNER's employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

C. If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper

execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If OWNER intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
2. the specific matters to be covered by such authority and responsibility will be itemized; and
3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility for such coordination.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.02 *Replacement of ENGINEER*

A. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer to whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.03 *Furnish Data*

A. OWNER shall promptly furnish the data required of OWNER under the Contract Documents.

8.04 *Pay Promptly When Due*

A. OWNER shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by ENGINEER in preparing the Contract Documents.

8.06 *Insurance*

A. OWNER's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change*

A. OWNER is obligated to execute Change Orders as indicated in paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. OWNER's responsibility in respect to certain inspections, tests, and approvals is set forth in paragraph 13.03.B.

8.09 *Limitations on OWNER's Responsibilities*

A. The OWNER shall not supervise, direct, or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. OWNER's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract Documents, OWNER's

responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *OWNER'S Representative*

A. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents and will not be changed without written consent of OWNER and ENGINEER.

9.02 *Visits to Site*

A. ENGINEER will make visits to the Site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, ENGINEER, for the benefit of OWNER, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work.

B. ENGINEER's visits and observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.10, and particularly, but without limitation, during or as a result of ENGINEER's visits or observations of CONTRACTOR's Work ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of

the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.10 and in the Supplementary Conditions. If OWNER designates another representative or agent to represent OWNER at the Site who is not ENGINEER's Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Clarifications and Interpretations*

A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a written clarification or interpretation, a Claim may be made therefor as provided in paragraph 10.05.

9.05 *Authorized Variations in Work*

A. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR, who shall perform the Work involved promptly. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefor as provided in paragraph 10.05.

9.06 *Rejecting Defective Work*

A. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.07 *Shop Drawings, Change Orders and Payments*

A. In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraph 6.17.

B. In connection with ENGINEER's authority as to Change Orders, see Articles 10, 11, and 12.

C. In connection with ENGINEER's authority as to Applications for Payment, see Article 14.

9.08 *Determinations for Unit Price Work*

A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.05.

9.09 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing, in accordance with the provisions of paragraph 10.05, with a request for a formal decision.

B. When functioning as interpreter and judge under this paragraph 9.09, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to this paragraph 9.09 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.07) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

9.10 *Limitations on ENGINEER's Authority and Responsibilities*

A. Neither ENGINEER's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by ENGINEER shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this paragraph 9.10 shall also apply to ENGINEER's Consultants, Resident Project Representative, and assistants.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Written Amendment, a Change Order, or a

Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in paragraph 3.04, except in the case of an emergency as provided in paragraph 6.16 or in the case of uncovering Work as provided in paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

1. changes in the Work which are: (i) ordered by OWNER pursuant to paragraph 10.01.A, (ii) required because of acceptance of defective Work under paragraph 13.08.A or OWNER's correction of defective Work under paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.18.A.

10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change.

10.05 *Claims and Disputes*

A. *Notice:* Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER and the other party to the Contract within 60 days after the start of such event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of such Claim, dispute, or other matter). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to ENGINEER and the claimant within 30 days after receipt of the claimant's last submittal (unless ENGINEER allows additional time).

B. *ENGINEER's Decision:* ENGINEER will render a formal decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. ENGINEER's written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and CONTRACTOR unless:

1. an appeal from ENGINEER's decision is taken within the time limits and in accordance with the dispute resolution procedures set forth in Article 16; or

2. if no such dispute resolution procedures have been set forth in Article 16, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after

the date of such decision or within 60 days after Substantial Completion, whichever is later (unless otherwise agreed in writing by OWNER and CONTRACTOR), to exercise such rights or remedies as the appealing party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.

C. If ENGINEER does not render a formal decision in writing within the time stated in paragraph 10.05.B, a decision denying the Claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

D. No Claim for an adjustment in Contract Price or Contract Times (or Milestones) will be valid if not submitted in accordance with this paragraph 10.05.

ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday

pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

3. Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER, who will then determine, with the advice of ENGINEER, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in this paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items

used but not consumed which remain the property of CONTRACTOR.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work.

i. When the Cost of the Work is used to determine the value of a Change Order or of a Claim, the cost of premiums for additional Bonds

and insurance required because of the changes in the Work or caused by the event giving rise to the Claim.

j. When all the Work is performed on the basis of cost-plus, the costs of premiums for all Bonds and insurance CONTRACTOR is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.01.A.1 or specifically covered by paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site.

3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

4. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraphs 11.01.A and 11.01.B.

C. *CONTRACTOR's Fee:* When all the Work is performed on the basis of cost-plus, CONTRACTOR's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined

on the basis of Cost of the Work, CONTRACTOR's fee shall be determined as set forth in paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to paragraphs 11.01.A and 11.01.B, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

11.02 *Cash Allowances*

A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. CONTRACTOR's costs for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

B. Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER subject to the provisions of paragraph 9.08.

B. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

C. OWNER or CONTRACTOR may make a Claim for an adjustment in the Contract Price in accordance with paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
2. there is no corresponding adjustment with respect any other item of Work; and
3. if CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.03); or
2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in paragraph 11.01) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 12.01.C).

C. *CONTRACTOR's Fee:* The CONTRACTOR's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under paragraphs 11.01.A.1 and 11.01.A.2, the CONTRACTOR's fee shall be 15 percent;
 - b. for costs incurred under paragraph 11.01.A.3, the CONTRACTOR's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
 - d. no fee shall be payable on the basis of costs itemized under paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
 - e. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and
 - f. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with para-

graphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Times (or Milestones) shall be based on written notice submitted by the party making the claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. Any adjustment of the Contract Times (or Milestones) covered by a Change Order or of any Claim for an adjustment in the Contract Times (or Milestones) will be determined in accordance with the provisions of this Article 12.

12.03 *Delays Beyond CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in paragraph 12.02.A. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

12.04 *Delays Within CONTRACTOR's Control*

A. The Contract Times (or Milestones) will not be extended due to delays within the control of CONTRACTOR. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

12.05 *Delays Beyond OWNER's and CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay.

12.06 *Delay Damages*

A. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:

1. delays caused by or within the control of CONTRACTOR; or

2. delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

B. Nothing in this paragraph 12.06 bars a change in Contract Price pursuant to this Article 12 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which OWNER or ENGINEER has actual knowledge will be given to CONTRACTOR. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. OWNER, ENGINEER, ENGINEER's Consultants, other representatives and personnel of OWNER, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by paragraphs 13.03.C and 13.03.D below;
2. that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.04.B shall be paid as provided in said paragraph 13.04.B; and
3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish ENGINEER the required certificates of inspection or approval.

D. CONTRACTOR shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for OWNER's and ENGINEER's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to OWNER and ENGINEER.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

F. Uncovering Work as provided in paragraph 13.03.E shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

13.05 *OWNER May Stop the Work*

A. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. CONTRACTOR shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by ENGINEER, remove it from the Project and replace it with Work that is not defective. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for CONTRACTOR's use by OWNER or permitted by Laws and Regulations as contemplated in paragraph 6.11.A is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER, remove it from the Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.

B. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

C. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed

and replaced under this paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

D. CONTRACTOR's obligations under this paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER's recommendation of final payment, ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by CONTRACTOR pursuant to this sentence. If any such acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and OWNER shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

13.09 *OWNER May Correct Defective Work*

A. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.06.A, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days written notice to CONTRACTOR, correct and remedy any such deficiency.

B. In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of

the Site, take possession of all or part of the Work and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other contractors, and ENGINEER and ENGINEER's Consultants access to the Site to enable OWNER to exercise the rights and remedies under this paragraph.

C. All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by OWNER in exercising the rights and remedies under this paragraph 13.09 will be charged against CONTRACTOR, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, OWNER may make a Claim therefor as provided in paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of CONTRACTOR's defective Work.

D. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies under this paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The schedule of values established as provided in paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments*

1. At least 20 days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect OWNER's interest therein, all of which must be satisfactory to OWNER.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the Work have been applied on account to discharge CONTRACTOR's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications*

1. ENGINEER will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

2. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's observations on the Site of the executed Work as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the

accompanying data and schedules, that to the best of ENGINEER's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.08, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work.

3. By recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents; or (ii) that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

4. Neither ENGINEER's review of CONTRACTOR's Work for the purposes of recommending payments nor ENGINEER's recommendation of any payment, including final payment, will impose responsibility on ENGINEER to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR's failure to comply with Laws and Regulations applicable to CONTRACTOR's performance of the Work. Additionally, said review or recommendation will not impose responsibility on ENGINEER to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to OWNER free and clear of any Liens.

5. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.02.B.2. ENGINEER may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Written Amendment or Change Orders;

c. OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.09; or

d. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.A.

C. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of paragraph 14.02.D) become due, and when due will be paid by OWNER to CONTRACTOR.

D. Reduction in Payment

1. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

a. claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens;

c. there are other items entitling OWNER to a set-off against the amount recommended; or

d. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.02.B.5.a through 14.02.B.5.c or paragraph 15.02.A.

2. If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR any amount remaining after deduction of the amount so withheld. OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.

3. If it is subsequently determined that OWNER's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.02.C.1.

14.03 *CONTRACTOR's Warranty of Title*

A. CONTRACTOR warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Promptly thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within 14 days after submission of the tentative certifi-

cate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said 14 days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

B. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Use by OWNER at OWNER's option of any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER, and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following conditions.

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially

complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

2. No occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will promptly make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment*

1. After CONTRACTOR has, in the opinion of ENGINEER, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in paragraph 6.12), and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph

5.04.B.7; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in paragraph 14.07.A.2 and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

B. *Review of Application and Acceptance*

1. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application for Payment to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.09. Otherwise, ENGINEER will return the Application for Payment to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due*

1. Thirty days after the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR.

14.08 *Final Completion Delayed*

A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing which are still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 *OWNER May Suspend Work*

A. At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly

attributable to any such suspension if CONTRACTOR makes a Claim therefor as provided in paragraph 10.05.

15.02 *OWNER May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. CONTRACTOR's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.07 as adjusted from time to time pursuant to paragraph 6.04);

2. CONTRACTOR's disregard of Laws or Regulations of any public body having jurisdiction;

3. CONTRACTOR's disregard of the authority of ENGINEER; or

4. CONTRACTOR's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in paragraph 15.02.A occur, OWNER may, after giving CONTRACTOR (and the surety, if any) seven days written notice, terminate the services of CONTRACTOR, exclude CONTRACTOR from the Site, and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by OWNER arising out of or relating to completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and, when so approved by ENGINEER, incorporated in a Change Order. When exercising any rights or remedies under this paragraph OWNER shall not

be required to obtain the lowest price for the Work performed.

C. Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.03 *OWNER May Terminate For Convenience*

A. Upon seven days written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):

1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. for all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. for reasonable expenses directly attributable to termination.

B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *CONTRACTOR May Stop Work or Terminate*

A. If, through no act or fault of CONTRACTOR, the Work is suspended for more than 90 consecutive days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within 30 days after it is submitted, or OWNER fails for 30 days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon

seven days written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Contract and recover from OWNER payment on the same terms as provided in paragraph 15.03. In lieu of terminating the Contract and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within 30 days after it is submitted, or OWNER has failed for 30 days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may, seven days after written notice to OWNER and ENGINEER, stop the Work until payment is made of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.04 are not intended to preclude CONTRACTOR from making a Claim under paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping the Work as permitted by this paragraph.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of paragraphs 9.09 and 10.05, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

ARTICLE 17 - MISCELLANEOUS

17.01 *Giving Notice* 17.01

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the

applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligation*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Agreement.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

**SECTION 00900
SUPPLEMENTARY & SPECIAL CONDITIONS**

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SUPPLEMENTARY & SPECIAL CONDITIONS

These Supplementary & Special Conditions amend, revise, and supplement the Standard General Conditions of the Construction Contract (EJCDC Document No. 1910-8, 1996 edition) (the “General Conditions in connection with the Agreement between the Town of Holly Springs and the Contractor (as identified in the Agreement, attached hereto) and other provisions of the Contract Documents in the manner indicated below. All provisions that are not so amended, revised, and supplemented remain in full force and effect. In addition, where any portion of an article, section, paragraph, subparagraph or clause is deleted or modified by these Supplementary Conditions, the unaltered provisions of the article, section, paragraph, subparagraph or clause shall remain in full force and effect. All capitalized terms used but not defined herein shall have the meanings ascribed to them in the Agreement or the General Conditions. In any instance in which the insertion or deletion of text described herein is inaccurately described (as to the location of such insertion or deletion, accompanying appropriate grammar or other technical rather than substantive aspects of the insertion or deletion), if the correct description of the insertion or deletion can be reasonably deduced from the context of the insertion or the deletion, or otherwise, then the description of the insertion or deletion shall be deemed reformed in accordance with the correct description thereof.

A. ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1. SC-1.01.

- a) In Subparagraph 1.01.A.12, the definition for “*Contract Documents*”, in the first sentence, third line, after the word “Agreement”, insert “the Invitation to Bid, the Instructions to Bidders, and this Project Manual.”
- b) In Subparagraph 1.01.A.19, the definition for “*ENGINEER*”, add the following sentence at the end of the definition:

“In the discretion of the OWNER, the OWNER may replace the ENGINEER from time to time pursuant to the terms of any agreement(s) between the OWNER and the ENGINEER. Once the CONTRACTOR has been notified in writing by the OWNER of the identity of a new or replacement ENGINEER for the Project or a portion thereof, the CONTRACTOR shall treat such new or replacement ENGINEER as the ENGINEER under the Contract Documents for the remainder of the Project, or the portion of the Project so specified by the OWNER, but nothing herein shall impute any liability on a new or replacement ENGINEER’s part for actions or circumstances of a prior ENGINEER.

The ENGINEER is the Director of Engineering of the Town of Holly Springs and/or any other party identified by the OWNER as the ENGINEER for the Work from time to time. In its sole discretion, the OWNER may act in the stead of the ENGINEER, exercising any of the rights or responsibilities of the ENGINEER provided under the Contract Documents, so long as the OWNER provides notice to the CONTRACTOR of its intent to do so. In its sole discretion, the OWNER may delegate any of the rights or responsibilities of the ENGINEER to a third party, who, for the purposes of the rights and responsibilities so delegated, shall be governed by the Contract Documents, so long as the OWNER provides notice to the CONTRACTOR of its intent to do so.”

- c) In Subparagraph 1.01.A.20, the definition of “*ENGINEER’s Consultant*,” add the following sentence to the end of the definition:

“The ENGINEER’s Consultant is **Diehl & Phillips, P.A.** and any other party to a subcontract with ENGINEER in connection with the Work.”

- d) In Subparagraph 1.01.A.30, the definition for “*OWNER*,” delete the text in its entirety and insert the following in its place:

“30. *OWNER*--The Town of Holly Springs, a municipal corporation in North Carolina, and its successors and assign, and is the party for whom the work is to be performed.

The Owner’s Representative is **the Town Manager of the Town of Holly Springs**. The Owner’s Representative may be an employee, agent or other representative of the Owner, and may be an individual or any one of several identified individuals, or a committee or entity, in which case the committee or entity shall select one or more individuals to speak and act on its behalf and on behalf of the Owner.

The OWNER’S REPRESENTATIVE has the express authority to bind the OWNER with respect to all matters requiring the OWNER’s approval or authorization. Except as otherwise specifically stated, the ENGINEER does not have such authority. The term ‘OWNER’ means the OWNER or the OWNER’s REPRESENTATIVE”

- e) In Subparagraph 1.01.A.41 of the EJCDC, in the definition for “*Specifications*” add the following sentence to the end of the definition:

“Specifications include all Sections included under the Technical Specifications of the Project Manual.”

- f) In Subparagraph 1.01.A.43, the definition for “*Substantial Completion*:”

In the first sentence, third line, after the words “in the opinion of the ENGINEER,” add the words “and with the approval of the OWNER.”

Add the following line to the last sentence of the paragraph:

“The OWNER’s receipt of all certificates of occupancy and approvals by regulatory agencies applicable to the Project is a condition precedent to the Project being deemed ‘Substantially Complete.’”

- g) In Subparagraph 1.01.A.44, the definition for “*Supplementary Conditions*,” add the following to the end of the definition:

“, whether titled the ‘Supplementary Conditions,’ the ‘Special Conditions,’ ‘Supplementary or Special Conditions,’ or otherwise. Unless otherwise indicated, Special Conditions amend and/or supplement the General Conditions as already amended and/or supplemented by Supplementary Conditions.”

- h) In Subparagraph 1.01.48, the definition for “*Work*,” delete the second sentence of the definition in its entirety and insert the following in its place:

“Work includes and is the result of performing or providing all labor, services, and documentation necessary or appropriate to produce such construction, and furnishing, installing, and incorporating all necessary or appropriate materials and equipment into such

construction, all as required and more specifically described in the Contract Documents.”

- i) Add the following new definitions to Paragraph 1.01.A immediately after Subparagraph 1.01.A.50 as follows:

- “51. *Conditions of the Contract*--The combined General Conditions and Supplementary Conditions, including the Special Conditions.
- 52. *Project Manual*--The Advertisement for Bids, Instructions to Bidders, Bid Forms, Agreements, Bonds, General Conditions, Supplementary Conditions, Special Conditions, Specifications, and Appendices.
- 53. *General Contractor*--The Contractor responsible for all Work other than Electrical, Instrumentation, HVAC, and Plumbing Work, as defined in the Contract Documents.
- 54. *HVAC Contractor*--The Contractor responsible for all HVAC Work as defined in the Contract Documents.
- 55. *Plumbing Contractor*--The Contractor responsible for all Plumbing Work as defined in the Contract Documents.
- 56. *Electrical Contractor*--The Contractor responsible for all Electrical and Instrumentation Work as defined in the Contract Documents.
- 57. *Single Prime Contractor*--If this project is awarded as a Single Prime Contract, then the terms General Contractor, HVAC Contractor, Plumbing Contractor, and Electrical Contractor shall be understood to refer to the Single Prime Contractor.
- 58. *Preoperational Testing*--All field inspections, installation checks, water test, performance tests, and necessary corrections required of Contractor to demonstrate that individual components of the Work have been properly constructed and do operate in accordance with the Contract Documents for their intended purposes.
- 59. *Startup Testing*--A predefined trial period required for achieving substantial completion during which Contractor is to operate the entire Work (or any part thereof agreed to by the OWNER) under actual and simulated operating conditions for the purpose of (i) making such minor adjustments and changes to the Work as may be necessary for the Work to comply with the Contract Documents and (ii) complying with the final test requirements in the Contract Documents.”

- j) Add Subparagraphs 1.01.A.60 and 61 to the EJCDC General Conditions:

“ 60. The ‘Standard Specifications and Details’ shall be the ‘*Town of Holly Springs Engineering Design and Construction Standards*,’ that have been adopted as of the date of the work performed by the Contractor.

61. The ‘NCDOT Standard Specifications’ shall be the ‘*Standard Specifications for Roads and Structures*’ and the ‘*Roadway Standard Drawings*,’ current edition as of the date of the work performed by the Contractor.”

B. ARTICLE 2 – PRELIMINARY MATTERS

1. SC-2.02.

a) In Paragraph 2.02.A:

Delete Paragraph 2.02.A in its entirety and insert the following in its place:

“The Contract Documents shall be executed by the OWNER and the CONTRACTOR in four (4) counterparts, one (1) of which shall be returned to the CONTRACTOR. Additional copies will be furnished upon request at the cost of reproduction and handling to be borne by CONTRACTOR.”

b) Add a new Paragraph immediately after Paragraph 2.02.A as follows:

“B. The ENGINEER shall provide the CONTRACTOR with three (3) copies of any revised plans, Drawings, and Specifications as may be required for the execution of authorized changes or extra Work.”

2. SC-2.03.

Delete Paragraph 2.03.A in its entirety and insert the following in its place:

“A. Notice to Proceed will be given in the timeframe indicated in the Bid Proposal or Notice to Bidders. The Contract Times will commence at the time specified in such Notice to Proceed.”

3. SC-2.04.

Delete the second sentence of 2.04.A in its entirety and insert the following in its place:

“No Work shall be done, including materials supplied, at the Site prior to the date on which the Contract Times commence to run without the express written consent of the OWNER.”

4. SC-2.05.

a) In Paragraph 2.05.A:

(i) Insert the following text before the first sentence, after “*CONTRACTOR’s Review of Contract Documents:*”

“The data provided in the Specifications and shown on the plans and Drawings is believed by the ENGINEER or the OWNER to be accurate, but the accuracy is not guaranteed by the ENGINEER or the OWNER. The CONTRACTOR must take all levels, locations, and measurements, and verify all dimensions of the Site prior to construction, and adapt its Work to the exact construction. Scale measurements taken from prints shall not be considered except as references; the larger scale Drawings take precedence over the smaller scale, and Shop Drawings take precedence over all others. All Work under this Contract shall be constructed in accordance with the lines and grades shown on the Contract Drawings or as otherwise directed by the ENGINEER. Elevations of existing ground, structures and appurtenances shown on Drawings and Specifications are presented only as an approximation. Any error or apparent discrepancy in the data shown, or omissions of data, shall be referred immediately to the ENGINEER for interpretation or correction.”

- (ii) In the [original] second sentence, thirteenth line, after the words “Documents unless,” insert the words “and until.”
 - b) In Paragraph 2.05.B, on the third line, delete the words “General Requirements” and insert the words “Contract Documents” in their place.
 - c) Delete Paragraph 2.05.C in its entirety and insert the following in its place:

“C. Before any Work at the site is started, CONTRACTOR shall deliver to OWNER, with copies to ENGINEER and each additional insured identified in Article 5, as supplemented and amended by the Supplementary Conditions, certificates of insurance (and other evidence requested by OWNER) that CONTRACTOR is required to purchase and maintain in accordance with the requirements of Article 5.”
 - d) Add a new Paragraph immediately after Paragraph 2.05.C as follows:

“D. Execution of the Contract by the CONTRACTOR is a representation by the CONTRACTOR that CONTRACTOR has visited the Site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with the requirements of the Contract.”
5. SC-2.06
- a) In the first sentence, second line, after the text “before any Work at the Site is started” insert the text “or any materials or equipment are delivered to the Site.”
 - b) Add the following sentences after the first sentence:

“The ENGINEER shall notify the CONTRACTOR of the place, date and time of the conference. The CONTRACTOR, its project manager, its superintendent, and any of the CONTRACTOR’s other Project coordinators, representatives or other parties whose work on the Project would benefit from the conference shall attend.
 - c) Add a new Paragraph immediately after Paragraph 2.07.A of the General Conditions of the EJCDC, as follows:

“B. Construction Conferences. The following conferences with the ENGINEER or the Owner shall be held to ensure that the Work progresses appropriately and that the Owner and the Architect are kept apprised of the status of the Work throughout the duration of the Project:

 - 1. Preconstruction Conference. A preconstruction conference shall be held after the award of the Contract and prior to commencement of the Work or delivery of materials or equipment to the Project site. The ENGINEER shall notify the Contractor of the place, date, and time of the meeting. The Contractor, its project manager, its superintendent, and any of the Contractor’s other Project coordinators, representatives or other parties whose work on the Project would benefit from the conference shall attend. The OWNER and ENGINEER will attend this conference. The Contractor, major subcontractors, and

Contractor's safety representative shall attend this conference. The resumes of both the Contractor's project manager and superintendent shall be submitted to the Owner for review and approval prior to the conference. The project manager and superintendent shall have at least 2 years of experience managing and supervising the type of construction work specified in the contract documents. No work shall be allowed until the Project Superintendent is on-site and working on this project. The conference agenda will include, as a minimum: tentative construction schedule; critical work sequencing; designation of responsible personnel; processing of field decisions, proposal requests and change orders; adequacy of distribution of contract documents; submittal of shop drawings and samples; procedures for maintaining record documents; use of site and Owner's requirements; material deliveries and storage areas; major equipment and material deliveries and priorities; safety; security; housekeeping procedures; partial payment processing; general regard for community relations."

6. SC-2.07.

- a) Insert the following four sentences immediately before the first sentence of Subparagraph 2.07.A.1:

"The progress schedule may be a critical path type or any other system likely to provide equivalent results. The progress schedule shall account for all Work to be performed under subcontracts. The progress schedule shall provide for the proper sequence of construction, considering various crafts, purchasing times, shop drawing approval, material delivery, equipment fabrication and similar time-consuming factors. The progress schedule shall show as a minimum, earliest starting, earliest completion, latest starting, latest completion, and the total float times for each task or item."

- b) In the [original] first sentence of Subparagraph 2.07.A.1, second line, after the words "if it provides", insert the words "all of the foregoing and"
- c) Add a new Subparagraph immediately after Paragraph 2.07.A of the EJCDC General Conditions, as follows:

"B. The construction schedule shall be evaluated by the Contractor not less than monthly. An updated and corrected progress schedule shall be submitted to the ENGINEER in triplicate and shall show any rescheduling necessary to reflect the true job conditions. This updated progress schedule shall be submitted monthly to the ENGINEER with the Contractor's pay request. When the shortening of various time intervals is necessary to correct for behind-schedule conditions, the Contractor shall indicate the steps necessary to accomplish the Work in the shortest schedule possible. Information regarding the new time intervals and the reasons for them shall be submitted to the ENGINEER in writing with the revised schedule. Notwithstanding anything apparently to the contrary in the Contract Documents, the ENGINEER may withhold progress payments until such time as the progress schedule or revised progress schedule, if applicable, is received."

7. SC 2.08

- a. Add a new Section in the EJCDC after Section 2.07, as follows:

“2.08 *Construction Conferences*

- A. Regular construction conferences shall be held with the ENGINEER or the OWNER to ensure that the Work progresses appropriately and that the OWNER and the ENGINEER are kept apprised of the status of the Work throughout the duration of the Project.”
1. Monthly Progress Meetings. Each prime contractor is required to attend monthly, or more frequently as specified in the contract, progress conferences called or scheduled by ENGINEER at the Project Site. Each prime contractor shall be represented at these meetings by both its home office and Project personnel. These representatives shall have the authority to act on behalf of the Contractor. The meetings shall be open to the Subcontractors, materials suppliers, utility company representatives and any others whose presence and participation would contribute toward maintaining required job progress. It shall be the principal purpose of these meetings to effect coordination, cooperation and assistance in every practical way toward the end of maintaining progress of the Project on schedule and to complete the Project within the specified Contract [Time or Times]. Each prime contractor shall be prepared to assess the progress of the Work as required in its particular contract and to recommend remedial measures for correction of the progress as may be appropriate. The ENGINEER, or the representative thereof, shall be the coordinator of the conferences and shall preside as chairman. The ENGINEER will record minutes of the proceedings and decisions, and will distribute copies of minutes to attendees. The Owner and ENGINEER will attend this meeting. The Contractor shall attend this meeting. The agenda will include, as a minimum: review and approve minutes of previous meeting; review progress of work since last meeting; review proposed 30-60 day construction schedule; field observations, problems and conflicts; problems that impede planned progress; corrective measures and/or procedures to regain projected schedule; revise construction schedule as indicated and plan progress during the next work period; submittal status; pending changes; maintenance of quality and work standards; status of community relations and complaint resolution; complete other current business; schedule next progress meeting.
 2. Weekly Coordination Meetings. The Contractor shall meet with the ENGINEER at least once per week to ensure efficient coordination of the various aspects of the Work being performed.
 3. Other Required Meetings. As the ENGINEER or the Owner believes it is appropriate and would be helpful to maintaining the efficiency and quality of the Work, the ENGINEER or the Owner may schedule a meeting with the Contractor and any other parties. The Contractor shall ensure proper representation at such meetings to effect their purpose, including sending any specific personnel requested by the ENGINEER or the Owner. Notwithstanding the foregoing, if the Contractor reasonably believes that the progress or quality of the Work will or might be impeded by attendance at the meeting, then the party calling such meeting shall work with the Contractor to reschedule it for a mutually convenient time.”

C. ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

1. SC-3.01.

a) In Paragraph 3.01.B:

(i) In the first sentence, second line, after the words “a functionally complete” add the words “and operable.”

(ii) In the second sentence, seventh line, delete the word “will” and insert the word “shall” in its place.

b) Add a new Paragraph immediately after Paragraph 3.01.C as follows:

“D. Each and every provision of law and clause required by law to be inserted in these Contract Documents shall be deemed to be inserted herein, and they shall be read and enforced as though included herein. If through mistake or otherwise, any such provision is not inserted correctly, then upon the application of either party, the Contract Documents shall forthwith be physically amended to correct such insertion. If such physical amendment does not occur, however, the correct provision shall be deemed to have been inserted.”

2. SC-3.02.

a) In Subparagraph 3.02.A.1, in the sixth line, after the word “Bids”, insert the text “or, if Laws or Regulations are different at the time of the Work, then those Laws or Regulations in effect at the time of the Work.”

b) Delete Subparagraph 3.02.A.2 in its entirety without substitution.

3. SC-3.03.

Delete Paragraph 3.03.B in its entirety and insert the following in its place:

“B. *Resolving Discrepancies*. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity or discrepancy between the provisions of the Contract Documents and the provisions of any standard, specification, manual, code, or instruction of any technical society, organization or association if the standard, specification, manual, code or instruction imposes a weaker or less stringent standard or obligation upon the Contractor or any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work than the Contract Documents appear to impose; otherwise, the standard, specification, manual, code or instruction of any technical society, organization or association shall take precedence in resolving any conflict, error, ambiguity or discrepancy between the provisions of the Contract Documents and the provisions of such standard, specification, manual, code or instruction.”

4. SC-3.04.

Add a new Paragraph immediately after Paragraph 3.04.B as follows:

“C. The Drawings may be supplemented from time to time with additional Drawings by the ENGINEER as required to illustrate the Work or, as the Work progresses, with additional Drawings by the CONTRACTOR, subject to the approval of the ENGINEER. Supplementary Drawings, when issued by the ENGINEER or by the CONTRACTOR, after approval by the ENGINEER, shall be deemed a part of the Drawings and shall be furnished in sufficient quantity to all those who, in the opinion of the ENGINEER, are affected by such Drawings.”

5. SC-3.05.

Add a new Section immediately after Section 3.05 as follows:

“3.06 *Organization of the Documents.*

A. Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings, shall not control the CONTRACTOR in dividing the Work among Subcontractors or in establishing the extent of the Work to be performed by any trade or party.”

D. ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

1. SC-4.01.

Add a new Paragraph immediately after Paragraph 4.01.C as follows:

“D. If all lands, easements and rights-of-way are not obtained as herein contemplated before construction begins, CONTRACTOR shall begin the Work upon and within such lands, easements and rights-of-way as OWNER has at that time acquired.”

2. SC-4.02.

a) In Paragraph 4.02.B, in the second sentence, fifth line, delete the words “is identified in the Supplementary Conditions” and insert the following words in lieu thereof “is provided in the Specifications and Drawings and may be further identified in the Project Manual or Special Conditions.”

b) Add a new Paragraph immediately after Paragraph 4.02.B as follows:

“C. *No Reliance by CONTRACTOR on Reports of Subsurface Investigations.* In the preparation of Drawings and Specifications, the ENGINEER has relied upon reports of subsurface investigations as may be attached to the Contract Documents. Such reports are not part of the Contract Documents.”

3. SC-4.03.

a) Add a new Subparagraph immediately after Paragraph 4.03.C of the EJCDC General Conditions and replace it, as follows:

“C. *Possible Price and Time Adjustments:*] Subsurface information, if provided by the OWNER to the CONTRACTOR, is provided for the sole purpose of placing the CONTRACTOR in receipt of all information available to the OWNER and the ENGINEER, and such information is not to be considered as part of the Contract Documents.

CONTRACTOR acknowledges that it has interpreted the subsurface information according to its own judgment in bidding the Work and that it did not rely on the subsurface information provided to it in making its bid. The CONTRACTOR acknowledges that it assumes all risks contingent upon the nature of the subsurface conditions actually to be encountered by it in performing the Work required by the Contract, even though such actual conditions may result in the Contractor performing more or less Work than originally anticipated. Unless the Owner specifically agrees in writing, neither the Contract [Time or Times] nor the Contract [Sum or Price] shall be adjusted on the basis of the actual subsurface conditions being different than as revealed in the subsurface information provided to the CONTRACTOR by the OWNER.”

4. SC-4.05.

a) In Paragraph 4.05.A:

- (i) In the third sentence, tenth line, after the words “reference point” insert the text “, survey markers, property corners, right of way monuments.”
- (ii) At the end of the third sentence, fourteenth line, replace the words “professionally qualified personnel” with “a North Carolina Professional Land Surveyor (PLS)”.

b) Add a new Paragraph immediately after Paragraph 4.05.A as follows:

“B. ENGINEER may check lines, elevations, reference marks, batter boards, and the like, set by CONTRACTOR. CONTRACTOR shall correct any errors disclosed by such check as directed by the ENGINEER. No such check shall be deemed an approval of CONTRACTOR’s work, nor shall it relieve CONTRACTOR of the responsibility for accurate construction of the entire Work. CONTRACTOR shall furnish personnel to assist ENGINEER in checking lines and grades. If CONTRACTOR through the course of its Work discovers information leading it to believe that such reference points are in error or that there has been a mistake in survey data, CONTRACTOR shall immediately notify ENGINEER and OWNER.”

5. SC-4.06.

- a) In Paragraph 4.06.A, in the first sentence, second line, delete the word “Supplementary” and insert the word “Project Manual” in its place.
- b) In Paragraph 4.06.B, in the second sentence, sixth line, delete the word “Supplementary” and insert the word “Project Manual” in its place.
- c) In Paragraph 4.06.C, in the first sentence:
 - (i) In the first line, insert the text “Except as otherwise described in the Contract Documents,” as the beginning of the sentence.
 - (ii) In the third line, delete the word “which” and insert the word “that” in its place
 - (iii) At the end of the first sentence, add: “, provided that CONTRACTOR uses reasonable care in its operation equivalent to the care used by similar contractors in the locality.”
- d) In Paragraph 4.06.G, in the second sentence, seventeenth line, delete the reference to Paragraph “4.06.E” and insert “4.06.G” in its place.

- e) In the first sentence, delete the word “and” before “(ii)”, and add the following after the word “responsible” at the end of the sentence:

“, and (iii) was known by the OWNER to exist.”

- f) In Paragraph 4.06.H, in the second sentence, twelfth line, delete the reference to Paragraphs “4.06.F” and insert “4.06.H” in its place.

2. SC-4.07.

Add a new Section immediately after Section 4.06 as follows:

“4.07 Existing Utilities

A. The CONTRACTOR shall be responsible for the location and verification of all utilities prior to construction, both public and private, within the Site. Prior to commencing construction, the CONTRACTOR shall walk the Site verifying the location of all utilities in order to determine which utilities the CONTRACTOR may deem to be in conflict with the Work. At the completion of the walk-through, the CONTRACTOR shall notify the ENGINEER in writing of any such conflicts. The CONTRACTOR shall also attend monthly progress meetings with the OWNER or ENGINEER, and utility company representatives if appropriate, to discuss potential and/or existing conflicts on all roadway and utility portions of the Work, unless such meeting is waived for a particular month or for the duration of the Project by the ENGINEER. At the option of the OWNER, such meetings may occur in connection with any monthly progress meetings established pursuant to Subparagraph 2.08.A.2.

B. Where existing utilities and structures are indicated on the Drawings, it shall be understood that all of the existing utilities and structures affecting the Work may not be shown and that the locations of those shown are approximate only. It shall be the responsibility of the CONTRACTOR to ascertain the actual extent and exact location of the existing utilities and structures. In every instance, the CONTRACTOR shall notify the proper authority having jurisdiction and obtain all necessary directions and approvals before performing any Work in the vicinity of existing utilities.

C. The Work shall be carried out in a manner to prevent disruption of existing services and to avoid damage to the existing utilities. Temporary connections shall be provided, as required, to ensure that no interruption of existing services occurs. Any damage resulting from the Work shall be promptly repaired by the CONTRACTOR at its own expense in a manner approved by the ENGINEER and further subject to the requirements of any authority having jurisdiction. Where it is required by the authority having jurisdiction that such jurisdiction perform its own repairs or have them done by others, the CONTRACTOR shall be responsible for the costs thereof.”

7. SC 4.08

Add a new Section immediately after Section 4.07 (created above) as follows:

“4.08 Miscellaneous Site Conditions”

“A. Construction Staking and Surveying. The OWNER will perform all construction

surveying and staking as called for in the Contract Documents unless a bid item for construction surveying is included in the itemized Proposal. All Work under this Contract shall be constructed in accordance with the lines and grades shown on the Contract Drawings or as directed by the ENGINEER.. Elevations of existing ground, structures and appurtenances are believed to be absolute and therefore are presented only as an approximation. Any error or apparent discrepancy in the data shown or omissions of data required for accurately accomplishing the stake-out survey shall be referred immediately to the ENGINEER for interpretation or correction.

B. The CONTRACTOR shall provide and maintain substantial survey markings delineating easement and property boundaries during construction. These markings shall be in place and approved by the ENGINEER prior to beginning construction activities.

C. Water for Construction. Water needed for construction of the Work may be obtained from the Town of Holly Springs at no charge to the CONTRACTOR. The CONTRACTOR shall be responsible for transporting water. The CONTRACTOR shall contact the Holly Springs Department of Public Works to have a hose and meter installed so as to obtain water. The CONTRACTOR shall not operate any main valve or fire hydrant on the Town water system except in accordance with Town of Holly Springs Policy Statement No. P-005.

D. The CONTRACTOR is advised to perform video inspections and take photographs of the proposed construction areas before disturbing the Site in order to establish an accurate record of the pre-construction conditions for comparison the final restoration work.

E. The CONTRACTOR shall continually notify members of the public that own or occupy private property that may be affected by the scheduled Work that affects their property. The OWNER will distribute a letter to all property owners that will be affected by the proposed Work describing the Project. When construction begins, the CONTRACTOR shall notify residents at least 72 hours in advance of when their property will be directly affected by the Work, with continual updates as required by the progress of the Work. In the event of planned utility service disruptions, the Town's Public Works and Utilities Department, or other affected utility provider, shall also be notified. At a minimum, The CONTRACTOR shall distribute door hangers to all residents in the affected area before mobilizing on the Site and then distribute follow-up notices at least 3-days before residents are directly affected by the planned Work. The door hangers shall be supplied to the CONTRACTOR by the OWNER. The door hangers will include information deemed necessary by the OWNER."

C. ARTICLE 5 – BONDS AND INSURANCE

1. SC-5.00.

Add a new Paragraph at the beginning of Article 5 as follows:

"5.00 Evidence of Bonds and Insurance Required Prior to the Work

All evidence of bonds and insurance required in this Article shall be provided prior to the

CONTRACTOR or its Subcontractors commencing the Work or making or accepting delivery of materials or equipment to the Site. Failure of the CONTRACTOR to timely obtain and deliver evidence of bonds and insurance as described herein shall not excuse CONTRACTOR from adhering to the progress scheduling for the Work, and any such resulting failure of the CONTRACTOR to adhere to the progress schedule or the Contract Times shall entitle the OWNER to such sanctions and remedies as are provided elsewhere in the Contract Documents for insufficient progress on the Work.”

2. SC-5.01.

f) In Paragraph 5.01.A:

(i) In the first sentence, insert the following text at the beginning of the sentence:

“Concurrent with the execution of this Contract,”.

(ii) In the first sentence, first line, after the word “furnish” insert the text:

“and maintain, at the CONTRACTOR’s cost and expense,”.

(iii) In the second sentence, sixth and seventh lines, after the words “date when final payment becomes due,” insert the words “pursuant to Paragraph 14.07.C”.

g) In Paragraph 5.01.C, in the first sentence, fifth line, delete the number “20” and insert in lieu thereof the text “five (5) business”.

3. SC-5.02.

In Paragraph 5.02.A, in the second sentence, seventh line, after the words “surety and insurance companies shall also” insert the text “be approved by the OWNER and”.

4. SC-5.03.

Add the following two new Paragraphs immediately after Paragraph 5.03.A as follows:

“B. The CONTRACTOR shall provide to the OWNER, insurance certificates or other evidence that all Subcontractors are carrying the required insurance. In lieu of each Subcontractor being required to carry the necessary insurance, the CONTRACTOR may insure the activities of its Subcontractors under its policy(ies). In such case, evidence of such coverage shall be provided on the CONTRACTOR’s insurance certificates. Subcontractors shall in all cases, however, provide workers’ compensation and employer’s liability insurance and motor vehicle liability insurance.

C. An authorized representative of the insurance company(ies) providing coverage required herein shall certify that all of the required insurance coverages and amounts specified in the Contract Documents are provided by the submitted policies. The certification shall be signed by the authorized representatives of the insurance company(ies) and notarized. The authorized representative of the insurance company(ies) shall specifically indicate with the submittal which of the policies submitted fulfill which specific coverage and amounts specified under Sections 5.04 and 5.05 of the Contract. The certification, including the correlation, shall be furnished and included with the insurance certificates. One (1) copy of each such insurance policy and the

certificates indicating each type of coverage mentioned, and the correlation between the insurance furnished and that required, shall be provided to each insured party.

The insurance required to be provided by the Contractor (except Worker's Compensation and Employer's Liability insurance) shall name the following as additional insureds as primary without contribution:

 √ The Town of Holly Springs Architect
 √ Engineer Architect's or Engineer's Consultant
 Other: _____.

5. SC-5.04.

- a) Rename Section 5.04, "*CONTRACTOR's Liability and Property Insurance.*"
- b) In Subparagraph 5.04.A.6, add the following words at the end of the Subparagraph:
 "in the prosecution of the Work".
- c) In Paragraph 5.04.B:
 - (i) In Subparagraph 5.04.B.6, delete the word "and" at the end of the Subparagraph.
 - (ii) In Subparagraph 5.04.B.7, delete the "." at the end of the Subparagraph and insert a ";" in its place.
 - (iii) Add four new Subparagraphs immediately after Subparagraph 5.04.B.7 as follows:
 - "8. include builder's risk/fire and extended coverage insurance, including coverage for vandalism and malicious mischief for the life of the Contract upon all Work in place and all materials at the Site;
 - 9. include special hazards insurance covering bodily injury and property damage resulting from blasting and explosions, collapse of or structural injury to any structure, and damage to underground structures, pipes or conduits due to the CONTRACTOR's or its Subcontractor's operations;
 - 10. contain provisions or endorsements that:
 - a) the OWNER shall be notified in writing within thirty (30) days after the filing of each claim under the policy;
 - b) full coverage shall be reinstated after payment of each claim;
 - c) the insurer shall have no right of recovery or subrogation against the OWNER, its agents or agencies, or the ENGINEER, it being the intention of the parties that the insurance policies shall protect both the OWNER and the ENGINEER and be

primary coverage for any and all losses covered by the policies;

- d) the clause “other insurance provisions” in a policy in which the OWNER, its agents or agencies, or the ENGINEER is named as an insured, shall not apply to such insured parties;
- e) the insurance companies issuing the policy or policies shall have no recourse against the OWNER, its agents or agencies, or the Engineer for the payment of any premiums or for assessments under any form of policy; and
- f) any and all deductibles under the insurance policies shall be assumed by and be at the sole risk and expense of the CONTRACTOR;

and

- 11. contain the following Indemnification Agreement, endorsed on the reverse sides of all certificates of insurance:

‘Indemnification - To the fullest extent permitted by law, CONTRACTOR shall indemnify and hold harmless OWNER and ENGINEER and their agents, consultants and employees from and against all claims, damages, losses and expenses, including but not limited to attorneys’ fees arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense: (a) is attributable to bodily injury, sickness, disease or death, or to injury or to destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and (b) is due to damage caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not a party indemnified hereunder is partially negligent, or arises out of operation of law as a consequence of any act or omission of the CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, regardless of whether any of them has been negligent; provided, however, that no party shall be entitled to indemnification with respect to such party’s own negligence. This provision is intended to indemnify to the fullest extent permitted by law both OWNER and ENGINEER independently of the negligence of the other and thus the OWNER’s negligence shall not preclude indemnification by CONTRACTOR of the ENGINEER, and ENGINEER’s negligence shall not preclude indemnification by CONTRACTOR of OWNER.’”

- d) Add a new Paragraph immediately after Paragraph 5.04.B of the EJCDC General Conditions, as follows:

C. SPECIFIC INSURANCE REQUIREMENTS

- 1. The Contractor shall provide insurance coverage for the Town as additional insured to be treated as primary insurance without contribution in amounts not less than the following amounts, and greater coverage where required by law.

Check if Required	Insurance	Minimum Coverage
√	Worker's Compensation	[Statutory Minimum]
√	Employer's Liability	\$1,000,000
	Comprehensive General Liability including Premises/Operations; Explosion, Collapse and Underground Property Damages; Products/Completed Operations; Broad Form Contractual; Independent Contractors; Broad Form Property Damage; and Personal Liability:	
√	(1) Bodily Injury	\$1,000,000 Each Occurrence \$2,000,000 Annual Aggregate
√	(2) Property Damage	\$1,000,000 Each Occurrence \$1,000,000 Annual Aggregate
√	(3) Personal Injury, with employment exclusion deleted	\$1,000,000 Annual Aggregate
	Comprehensive Motor Vehicle Liability, including all owned (private and others), hired and non-owned vehicles used in the Work:	
√	(1) Bodily Injury	\$1,000,000 Each Person \$2,000,000 Each Accident
√	(2) Property Damage	\$1,000,000 Each Occurrence
√	Completed Operations Hazard Insurance	Contract [Sum or Price] or \$1,000,000 if greater
	Builder's Risk/Fire and Extended Coverage, including vandalism and malicious mischief	Contract [Sum or Price] or \$1,000,000 if greater

Check if Required	Insurance	Minimum Coverage
√	Special Hazards Insurance, including coverage for “boiler and machinery”, “blasting and explosion”, “collapse of structure” or “injury to any structure due to contractor’s operations” and “damage to underground structures, pipes or conduits”	Contract Amount or \$1,000,000, whichever is greater
√	Umbrella Liability	\$5,000,000 per occurrence and policy aggregate limit

2. The comprehensive general liability insurance and comprehensive motor vehicle disability insurance shall include Owner, its agents and agencies, ENGINEER and ENGINEER’S Consultant and all municipalities where Work is being performed as additional insureds as primary without contribution. The insurance policies required hereunder shall not contain any third party benefit exclusion.

3. Contractor may purchase and maintain excess liability insurance in the umbrella form in order to satisfy the limits of liability required for the insurance to be purchased and maintained in accordance with this Paragraph. Evidence of such excess liability shall be delivered to OWNER in the form of a certificate indicating the policy numbers and limits of liability of all underlying insurance. The umbrella liability insurance shall have a combined single limit of not less than \$5,000,000.

4. If any of the property and casualty insurance requirements described herein are not complied with at the renewal dates of the insurance policy(ies), then payments to the Contractor shall be withheld until all requirements have been met, or, at the option of the Owner, if the renewal premiums have not been paid, then the Owner may pay the renewal premiums and withhold the cost thereof from any monies due to the Contractor.

5. In the event that claims in excess of the coverage amounts provided herein are filed by reason of any operations under the Contract, the amount of excess of such claims, or any portion thereof, may be withheld from payment due or to become due to the CONTRACTOR until such time as the CONTRACTOR shall furnish such additional security covering such claims as may be determined by the OWNER.

6. The CONTRACTOR shall submit to the OWNER documentation as to the cost of insurance coverage required hereunder prior to obtaining the policy(ies). The OWNER may, if it deems it to be in its best interest, obtain a portion or all of the coverage on its own and receive a credit from the CONTRACTOR against the Contract Sum for the cost of the insurance so provided by the OWNER.”

6. Delete Paragraph 5.05.A of the EJCDC General Conditions, in its entirety, and replace it with the following:

“A. CONTRACTOR shall purchase and maintain a separate OWNER’S Protective Liability policy, issued to OWNER at the expense of CONTRACTOR, including OWNER and ENGINEER as named insured as primary coverage without contribution. The CONTRACTOR shall provide the OWNER with a certificate of insurance for the policy prior to the effective date of the CONTRACT. The certificate shall state that the policy cannot be canceled or terminated while the Work under this Contract, and any renewals thereof, is still in progress without 30 days’ prior notice to the OWNER, who shall have the option of reinstating the policy. The CONTRACTOR shall provide renewal certificates no later than 30 days prior to the expiration date of the policy. The policy of insurance shall provide coverage for not less than the following amounts:

1.	Bodily Injury	\$1,000,000	Each Occurrence
2.	Property Damage	\$1,000,000	Each Occurrence
		\$1,000,000	Annual Aggregate”

7. SC-5.06.

a) Rename Section 5.06, “*Additional Insurance.*”

b) Delete Paragraph 5.06.A in its entirety and insert the following in its place:

“A. OWNER, CONTRACTOR and ENGINEER, each at their own option and expense, may purchase and maintain any additional insurance it deems necessary or prudent to protect its interests in connection with the Work. Expenses of such insurance and any deductibles shall not constitute a portion of the Contract Price but are to be borne entirely by the party obtaining such insurance.”

c) Delete Paragraphs 5.06.B through 5.06.E in their entirety without substitution.

8. SC-5.07.

a) Delete Paragraph 5.07.A in its entirety and insert the following in its place:

“A. Intentionally Omitted.”

b) Delete Paragraph 5.07 B in its entirety and insert the following in its place:

“B. Intentionally Omitted.”

c) Delete Paragraph 5.07 B in its entirety and insert the following in its place:

“C. Intentionally Omitted.”

9. SC-5.08.

Delete Section 5.08 in its entirety and insert the following in its place:

“5.08 Intentionally Omitted.”

10. SC-5.09.

Delete Paragraph 5.09.A in its entirety and insert the following in its place:

“A. If OWNER has any objection to the coverage afforded by or other provisions of the insurance required to be purchased and maintained by CONTRACTOR in accordance with this Article 5 on the basis of its not complying with the Contract Documents, OWNER shall notify CONTRACTOR in writing thereof within ten (10) days of the date of delivery of such certificates to OWNER in accordance with paragraph 2.05. CONTRACTOR shall provide such additional information in respect of insurance provided by CONTRACTOR as OWNER may reasonably request. Failure of OWNER to notify CONTRACTOR of its objection shall not constitute a waiver of any condition of a bond, insurance coverage, or any other covenant contained in the Contract Documents.”

11. SC 5.10.

Delete Paragraph 5.10 in its entirety and insert the following in its place:

“Intentionally Omitted.”

F. ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES

1. SC-6.01.

- a) In Paragraph 6.01.A, in the second sentence, twelfth line, after the word “Documents,” add the following:

“, unless the CONTRACTOR knew or should have known of a mistake, error, flaw, miscalculation, or the like, in the design or specification at the time of the making of the Agreement and failed to notify the OWNER and the ENGINEER thereof.”

- b) Insert the following two Paragraphs immediately after Paragraph 6.01.B:

“C. *Project Manager and Superintendent:* The CONTRACTOR’s project manager and the CONTRACTOR’s superintendent shall be full-time employees of the CONTRACTOR. The project manager and the superintendent shall each have a minimum of five years’ experience constructing projects similar to the Project. The project manager’s and the superintendent’s previous work performances must, respectively, be acceptable to the OWNER as to quality of workmanship and time of performance. The CONTRACTOR shall submit resumes of the project manager and the superintendent to the OWNER at the time the Contract is signed. If either person is or becomes unacceptable to the OWNER, the CONTRACTOR, upon written demand by the OWNER, shall promptly remove the unacceptable person and shall appoint a replacement satisfactory to the OWNER.”

D. *Multi-prime Contract Projects:*

1. The general contractor, or any other contractor specifically named by OWNER, shall act as the Project Expediter, responsible for preparing the Project Schedule, including coordinating the progress schedules of the other prime contractors and their subcontractors, ensuring that each prime contractor and subcontractor adheres to its schedule, and

communicating regularly with the ENGINEER or the OWNER regarding any concerns that arise during the course of the Project, including, without limitation, the scheduling, adherence to the Drawings, the Specifications and/or the Project Manual.

2. All prime contractors shall be required to cooperate and consult with other contractors and with the Project Expeditor during the construction of the Project. Each prime contractor shall schedule and execute its portion of the Work so as to cause the least delay to other contractors. Each prime contractor shall be financially responsible to the other prime contractors for undue delay caused by it to other prime contractors and subcontractors on the Project.”

2. SC-6.02.

a) Delete Paragraph 6.02.A in its entirety and insert the following in its place:

“A. CONTRACTOR is responsible for expediting the Work efficiently and effectively and with due care to the quality of the Work. CONTRACTOR shall ensure that at least half of the Work is performed with CONTRACTOR’s employees. CONTRACTOR shall employ only competent, suitably qualified persons to perform the Work. CONTRACTOR shall at all times maintain good discipline and order at the Site. Whenever OWNER notifies CONTRACTOR in writing that any person on the Project appears to be incompetent, disorderly, or otherwise unsatisfactory, such person shall be removed from the Project and shall not again be employed on it except with the prior written consent of OWNER. No adjustment shall be made in the Contract Price or the Contract Times on the basis of the removal of such person from the Project.”

b) In Paragraph 6.02.B:

(i) In the first sentence, fifth line, of Paragraph 6.02.B, delete the text “overtime work” from the sentence and keep the remaining text.

(ii) Insert the following five sentences after the first sentence:

“‘Regular Working Hours’ are defined as 8 hours per day, Monday through Friday, excluding holidays, between the hours of 7:00 AM and 6:00 PM. Requests to work other than Regular Working Hours shall be submitted to ENGINEER not less than 48 hours prior to any proposed additional daily working hours (including second and third shifts), weekend work or scheduled extended work weeks. All requests to work other than Regular Working Hours must comply with all applicable regulations and ordinances. ENGINEER shall review requests, and ENGINEER shall either (1) deny the request or (2) provide CONTRACTOR with terms for additional engineering and/or inspection costs to be paid for by CONTRACTOR as a result of overtime work in excess of the Regular Working Hours. CONTRACTOR shall agree to ENGINEER’s terms prior to ENGINEER approving CONTRACTOR’s request to work other than Regular Working Hours.”

c) Insert the following two Paragraphs immediately after Paragraph 6.02.B. as follows:

“C. This Agreement is subject to the applicable provisions of the Contract Work Hours and Safety Standards Act, Public Law 87-581, 87th Congress. Neither the CONTRACTOR nor any Subcontractor contracting for any part of the Work shall require or permit any laborer or

mechanic to be employed on the Work in excess of forty hours in any work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half times that person's basic rate of pay for all hours worked in excess of forty hours in such work week.

D. CONTRACTOR and all Subcontractors shall, insofar as practicable, give preference in the hiring of workers for the Project: 1) according to the Minority Outreach Plan as specified in the Contract Documents; and 2) to qualified local residents, with first preference being given to citizens of the United States who have served in the armed forces of the United States and have been honorably discharged therefrom or released from active duty therein."

E. The cost of such overtime Work or the performance of Work on a Saturday, Sunday, or any legal holiday shall be borne by the CONTRACTOR. CONTRACTOR shall reimburse the OWNER for additional engineering and/or inspection costs incurred as a result of overtime work in excess of the Regular Working Hours stipulated herein. At Owner's option, overtime costs may either be deducted from the CONTRACTOR's monthly payment request or deducted from the CONTRACTOR's retention prior to release of final payment. Overtime costs for the OWNER's personnel shall be based on the individual's current overtime wage rate. Overtime costs for personnel employed by the ENGINEER or OWNER's employees or independent testing laboratory shall be calculated in accordance with the terms of their respective contracts with the ENGINEER or the OWNER.

F. Temporary lighting and all other facilities necessary for performing and inspecting the Work outside of Regular Working Hours shall be furnished and maintained by the CONTRACTOR at the CONTRACTOR's expense.

G. Work shall not be performed when the weather is inclement, stormy, freezing or otherwise unsuitable. Only such Work as will not suffer injury to workmanship, materials or equipment is permitted. The CONTRACTOR shall carefully protect all Work against damage or injury from the weather, and when Work is permitted during freezing weather, shall provide and maintain approved facilities for heating the materials and equipment and for protecting the finished Work. The CONTRACTOR shall take all necessary precautions (in the event of impending storms) to protect all Work, materials, and equipment from damage or deterioration due to floods, driving rain, wind or snowstorms. The OWNER reserves the right, upon the advice of the ENGINEER, to order that additional protective measures over and beyond those proposed by the CONTRACTOR be taken to safeguard all components of the Project. The CONTRACTOR shall have no right to nor make any claim for compensation for such precautionary measures so ordered, nor have a right to or make any claim for compensation from the OWNER for damage to the Work from weather elements.

H. The mixing and placing of concrete or pavement courses, the laying of masonry, and installation of sewers and water mains shall be stopped during rainstorms, if ordered by the ENGINEER; all freshly placed Work shall be protected by canvas or other suitable covering in such manner as to prevent running water from coming in contact with it. Sufficient coverings shall be provided and kept ready at hand for this purpose. CONTRACTOR shall not be entitled to an increase in Contract Times due to Work stoppage and other time not spent working pursuant to this Paragraph."

3. SC-6.03.

- a) Add the following text at the end of Paragraph 6.03.A:

“The CONTRACTOR shall provide temporary toilet facilities for the use of all workmen. Temporary toilet facilities shall comply with local and state sanitation laws and regulations.”

- b) Add the following text at the end of Paragraph 6.03.B:

“All construction shall conform (in increasing order of priority in the event of any conflict) to the requirements and dimensions in the Town of Holly Springs ‘Engineering Design and Construction Standards’, the Town Code of the Town of Holly Springs, this Contract, the construction plans, and the Specifications. All materials and workmanship, except as otherwise provided herein, shall be in accordance with the latest edition of the North Carolina Department of Transportation ‘Standard Specifications for Roads and Structures,’ and all addenda thereto, and the Town of Holly Springs ‘Engineering Design and Construction Standards.’”

- c) Add three new Paragraphs immediately after Paragraph 6.03.B as follows:

“C. Delivery of Equipment and Materials: All materials and equipment delivered to the Site shall be accompanied by certificates, signed by an authorized officer of the Supplier, and notarized, guaranteeing that the materials and equipment conform to Specifications requirements. Such certificates shall be immediately turned over to the ENGINEER. Materials and equipment delivered to the Site without such certificates shall be subject to rejection by the ENGINEER. The CONTRACTOR shall ensure that equipment and materials to be incorporated in the Work shall be delivered to the Site sufficiently in advance of their installation and use in order to prevent delay in the execution of the Work, and that they shall be delivered to the Site, as nearly as is feasible, in the other required for executing the Work. The CONTRACTOR shall provide for continuity of supply to avoid changes of supplies or manufacturers or changes in brands of materials during the Work. The CONTRACTOR shall deliver packaged materials to the Site in the manufacturer’s original, unopened, labeled containers and shall not open such containers until the approximate time for the use of the contents.

D. Storage and Protection of Equipment and Materials: The CONTRACTOR shall protect all equipment and materials from deterioration and damage. Any equipment or materials of whatever kind that may have become damaged or deteriorated from any cause shall be removed and replaced by new and satisfactory items, at the CONTRACTOR’S expense, including expenses of labor and materials for such removal and replacement. The CONTRACTOR shall store all equipment and materials at the Site in accordance with the manufacturer’s recommendations, as directed by the ENGINEER, and in conformity with applicable statutes, ordinances, regulations and rulings of any public authority having jurisdiction. The CONTRACTOR shall store the cementitious and wood materials in dry, weather-tight, ventilated spaces. The CONTRACTOR shall store ferrous materials so as to prevent contact with the ground and to prevent rusting and damage from weather. The CONTRACTOR shall store masonry materials so as to prevent them from coming in contact with earth or staining materials and shall cover and protect such materials against weather, moisture, neglect and damage. The CONTRACTOR shall protect materials and equipment from equipment damage, weather, moisture, neglect, and construction operations. The CONTRACTOR shall store all equipment and materials at the Site in the accordance with the manufacturer’s recommendation, as directed by the ENGINEER, and in conformity with applicable statutes, ordinances, regulations, and ruling of any public authority having jurisdiction. The CONTRACTOR shall not store unnecessary materials or equipment on the Site and shall take care to prevent any structure from being loaded with a weight that may endanger its security or the safety of persons and property. If the Site is such that equipment and materials cannot be safely stored at the

Site, then the CONTRACTOR shall be responsible for locating and providing storage areas for equipment and materials. Such storage shall comply with all applicable statutes, ordinances, regulations and rulings of public authorities having jurisdiction.

E. Hazardous Material: The operations of neither the CONTRACTOR nor any Subcontractor shall expose any Town of Holly Springs employees or other person to any hazardous chemicals or other occupational safety or health hazards. The CONTRACTOR shall inform the ENGINEER about any hazardous substances that the CONTRACTOR or the Subcontractors might be using and to which the Town of Holly Springs' employees might become exposed. The CONTRACTOR shall also advise the ENGINEER of the appropriate control measures to be used by the Town of Holly Springs' employees to prevent exposure to such substances and to minimize the risks of such exposure. The OWNER shall not be responsible for any improper use of materials or substances referenced in the Contract Documents nor for any materials or substances brought to the Site by CONTRACTOR."

4. SC-6.04.

- a) Add a new Paragraph immediately after Paragraph 6.04.A as follows:

"B. If the CONTRACTOR does not take the necessary action to accomplish the Work according to the progress schedule established in accordance with Paragraph 2.07, the CONTRACTOR may be ordered by the ENGINEER in writing to take necessary and timely action to improve its Work progress, and CONTRACTOR shall take such action. The ENGINEER's order may include increasing Work forces, providing extra equipment, working extra shifts, or taking other action as required. Should the CONTRACTOR refuse or neglect to take such action or fail to accomplish improvements in meeting the progress schedule, the ENGINEER may take any action authorized under this Contract, including but not limited to withholding of payment of the Contract Price and termination of the Contract."

5. SC-6.05.

- a) Add the following sentence after the first sentence of Paragraph 6.05.A:

"It is the intent of the parties that the CONTRACTOR shall provide materials of the highest standard known to the trade and to provide materials free from defects in workmanship and product."

- b) In Subparagraph 6.05.A.2.d:

- (i) At the end of the first sentence, add the text: ", at least 14 days before such substitute item of material or equipment is to be brought to the Site."

- (ii) After the first sentence, insert the following sentence:

"The application shall include sufficient documentation and samples to allow the ENGINEER to determine the acceptability of the proposed substitute item of material or equipment."

- (iii) After the last sentence in paragraph 6.05B add the following:

"The substitution shall not be allowed without written approval of the OWNER, in

its sole discretion.”

6. SC-6.06.

- a) Delete Paragraphs 6.06.A and 6.06.B in their entirety and insert the following in their place:

“A. CONTRACTOR shall make a good faith effort to utilize minority business enterprises (MBEs) per North Carolina General Statutes Section 143-128, *et seq.*, as Subcontractor for the Work. CONTRACTOR shall submit for approval to the OWNER and the ENGINEER, within ten (10) days after the issuance of the Notice of Award, a list of the names of Subcontractors and Suppliers of principal items of material and equipment. CONTRACTOR shall also submit for approval to the OWNER and the ENGINEER a list of the names of any additional or replacement Subcontractors and Suppliers the CONTRACTOR wishes to use in connection with the Project prior to utilizing their services. The ENGINEER or OWNER shall notify the CONTRACTOR within ten (10) days after receipt of the list of any reasonable objections to any Subcontractor or Supplier. CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization, (including those who are to furnish the principal items of materials or equipment), whether initially or as a substitute, against whom OWNER may have reasonable objection. Acceptance of any Subcontractor, other person or organization by OWNER shall not constitute a waiver of any right of OWNER to reject defective Work or remove such person from the Project pursuant to Paragraph 6.02.A.

- b) Add a new sentence at the end of Paragraph 6.06.E as follows:

“Notwithstanding the foregoing, however, OWNER or ENGINEER may furnish to any such Subcontractor, Supplier or other person or organization, to the extent practicable, information about amounts paid on their behalf to CONTRACTOR in accordance with CONTRACTOR’s Applications for Payment.”

7. SC-6.07.

At the end of Paragraph 6.07.A, add the following sentence:

“In the event of any claim or action by law on account of such patents or fees, it is agreed that the OWNER may retain out of the monies that are due or that may become due to the CONTRACTOR under this Contract, a sum of money sufficient to protect the OWNER against loss, and to retain the same until said claims are paid or are satisfactorily adjusted.”

8. SC-6.08.

- a) In Paragraph 6.08.A from the eighth line to the end of the Paragraph, delete the text: “or if there are no Bids.....plant investment fees.”, and insert in lieu thereof: “, and the CONTRACTOR shall pay all charges of utility owners for connections to the Work.”

9. SC-6.09.

- a) In Paragraph 6.09.A, delete the first sentence and insert in lieu thereof the following two sentences:

“The CONTRACTOR shall, at all times, observe and comply with and shall cause all of its agents and employees and all of its Subcontractors to observe and comply with all such existing

Laws or Regulations. The CONTRACTOR shall protect and indemnify the OWNER and the ENGINEER and the municipalities and counties in which Work is being performed, and their officers and agents, against any claim, fee, civil penalty, fine or liability arising from or based on the violation of any such Law or Regulation, whether by the CONTRACTOR or its employees or any of its Subcontractors.”

b) In Paragraph 6.09.B:

(i) In the first sentence, seventh line, insert “, including all fines, fees, charges, civil penalties and the like assessed against the CONTRACTOR and/or the OWNER by any governmental unit or agency (including, without limitation, the OWNER in its capacity as a municipal corporation)” after “arising out of or relating to such Work.”

(ii) Insert the following sentence prior to the first sentence of the Paragraph:

“If CONTRACTOR observes that the Specifications or Drawings are at variance with any Laws or Regulations, it shall give ENGINEER prompt written notice thereof.”

c) Add a new Paragraph immediately after Paragraph 6.09.C as follows:

“D. *Fines for Noncompliance with Sedimentation and Erosion Control Regulations:* The CONTRACTOR should be aware that State laws and Town ordinances provide for the imposition of fines and other civil penalties for the failure to properly plan, implement and maintain appropriate sedimentation and erosion control practices. The CONTRACTOR shall familiarize itself with all applicable sedimentation and erosion control regulations and shall follow and abide by them closely. Applicable regulations include (by way of illustration and not limitation) North Carolina General Statutes Section 113A-50 *et seq.* and Town of Holly Springs Ordinances. Violations of such regulations include (by way of illustration and not limitation) grading without prior receipt of a valid grading permit or in a manner inconsistent with such permit, failure to take reasonable measures to protect public or private property from damage caused by failure to retain sediment on site, failure to install adequate erosion and sedimentation control devices, failure to maintain temporary and/or permanent erosion control measures, failure to protect exposed slopes, failure to provide adequate ground cover, failure to revise the erosion and sedimentation control plan after notification of the need to do so, failure to keep dirt and mud off of public streets, and failure to maintain slopes. Sedimentation and erosion control laws and ordinances shall be considered among the Laws and Regulations described in Paragraph 6.09.B hereof, and CONTRACTOR shall perform all Work so as to be in compliance with same and pay all fees, fines and civil penalties in connection with the violation(s) of same that do occur. This provision is intended to call CONTRACTOR’s attention to State and Town sedimentation and erosion control plans, and nothing herein is intended to impliedly limit the types of regulations deemed to be Laws and Regulations herein, nor is anything herein intended to limit the applicability of Paragraph 6.09.A or 6.09.B as to sedimentation and erosion control laws.”

10. SC-6.10.

a) At the end of Paragraph 6.10.A, add the following text:

“Use tax is due on construction equipment brought into North Carolina for use in the performance of the Work (N.C. Revenue Laws G.S. 105-164.4 and 105-164.6). CONTRACTOR is also liable for payment of applicable privilege licenses (N.C. Revenue

Laws G.S. 105-54) and for payment of applicable franchise, corporate income and withholding taxes (N.C. Revenue Laws, G.S. 105-122, 105-123, 105-134, and 105-163.2). The absence of mention of any specific tax herein in no way relieves the CONTRACTOR of its obligation to pay the same.”

b) Add two new Paragraphs immediately after Paragraph 6.10.A as follows:

“B. Refunds of all North Carolina sales and use taxes paid in the purchase of building materials, supplies, fixtures and equipment that become a part of or annex to buildings or structures being erected, altered or repaired under contracts with the OWNER are to be made to the OWNER in accordance with state law. Thus, the following procedures shall be followed in order that the OWNER may recover the full amount of the North Carolina sales use and taxes permitted to be refunded to it under the law.

1. It shall be the CONTRACTOR’s responsibility to furnish the OWNER documentary evidence showing the material used and sales tax paid by the CONTRACTOR and each of its Subcontractors and Suppliers.

2. With each partial payment request submitted at the end of a calendar month, fiscal year or final payment, the CONTRACTOR must furnish (i) a certified and notarized statement setting forth the cost of the property purchased from each vendor and the amount of sales and/or use tax paid thereon, and (ii) documentary evidence supporting the statement, including copies of invoices for which the statement is being submitted, with invoice numbers indexed to the statement.

3. The statement shall show all taxes and assessments paid to the State of North Carolina, the County of Wake, and the Town of Holly Springs, including the North Carolina Sales Tax and the Town of Holly Springs Tax, and the statement shall list any payments made directly to the North Carolina Department of Revenue.

4. In the event the CONTRACTOR makes several purchases from the same vendor, the statement must indicate the invoice numbers, the inclusive dates of the invoices, the total amount of the invoices, and the sales and use taxes paid thereon.

5. Such statement must include the cost of any tangible personal property withdrawn from the CONTRACTOR’s warehouse stock and the amount of sales or use tax paid thereon by the CONTRACTOR.

6. Similar certified statements by its Subcontractors must be obtained by the prime CONTRACTOR and furnished to the OWNER.

7. If no tax has been paid during the pay request period, ‘NONE’ shall be entered on the tax form.

C. Materials used in the Project from the CONTRACTOR’s as Subcontractor’s warehouse stock shall be billed to the OWNER at warehouse stock prices.”

11. SC-6.11.

a) In Paragraph 6.11.A.1:

- (i) Add four new sentences immediately after the first sentence as follows:

“Storage of equipment or materials, or erection and use of sheds outside of the Site, if such areas are the property of the OWNER, shall be used only with the OWNER’s approval. Such storage or temporary structures, even within the Site, shall be confined to the OWNER’S property. CONTRACTOR shall not utilize property other than the Site, including property designated as easement area or right of way area, unless specifically permitted elsewhere in the Contract Documents, without the express permission of the owner thereof. Such permission of owners of other properties shall not be sought by the CONTRACTOR without the express permission of the OWNER to so approach such owners.”

- (ii) Add two new sentences at the end of the Subparagraph as follows:

“Prior to commencement of Work in the vicinity of property adjacent to the Site, CONTRACTOR, at its own expense, shall take such surveys as may be necessary or expedient to establish the existing conditions of the property. Any damage or injury occurring to any property as a result of any act, omission or neglect on the part of the CONTRACTOR shall be repaired so that the property is restored in a proper and satisfactory manner, or replaced, by and at the expense of the CONTRACTOR, to an equal or superior condition than previously existed.”

- b) In Subparagraph 6.11.A.2, add two new sentences at the end of the Subparagraph as follows:

“CONTRACTOR shall be responsible for all costs in connection with the settlement of or defense against such claims. Before final payment under the Contract shall be made to the CONTRACTOR, the CONTRACTOR shall furnish satisfactory evidence to the OWNER that all claims for damage have been legally settled, that sufficient funds to cover such claims have been placed in escrow, or that an adequate bond to cover such claims has been obtained.”

- c) In Paragraph 6.11.B:

- (i) In the second sentence, add the following at the end of the sentence:

“, and shall include, without limitation, appropriate sedimentation control measures, as applicable.”

- (ii) Add the following text after the second sentence of Paragraph 6.11.B:

“During construction, the CONTRACTOR shall regularly remove from the Site all accumulated debris and surplus materials of any kind that result from its operations. Unused equipment and tools shall be stored at the CONTRACTOR’s yard or base of operations for the Project. When the Work involves installation of sewers, drains, water mains, manholes, underground structures, or other disturbance of existing features in or across streets, rights of way, easements, or private property, the CONTRACTOR shall, as the Work progresses, promptly backfill, compact, grade, and otherwise restore the disturbed area to a basic condition that will permit resumption of pedestrian or vehicular traffic and any other essential activity or function consistent with the original use of the land. Unsightly mounds of earth, large stones, boulders, and debris shall be removed as promptly as possible so that the Site maintains a neat appearance.”

d) In Paragraph 6.11.C:

(i) In the first sentence, after the words “clean the Site,” insert the words “to a neat and orderly condition meeting or exceeding its appearance prior to construction.”

(ii) At the end of the Paragraph, add the following sentences:

“Failure to clean and prepare the Site in accordance with this Paragraph shall forestall CONTRACTOR’s right to receive its final payment of the Contract Price. At the Contract Time for full performance of the Work, if the cleaning and preparation is not complete, OWNER may make arrangements for same with a third party. The CONTRACTOR shall reimburse the OWNER for all costs associated with such work in a deduction in the Contract Price or by direct payment from the CONTRACTOR to the OWNER, or a combination of both, at the option of the OWNER.”

e) Add three new Paragraphs immediately after Paragraph 6.11.D as follows:

“E. *Traffic to and from the Site:* The CONTRACTOR shall maintain traffic to, from and around the Site in accordance with the Town of Holly Springs Engineering Design and Construction Standards, Section 150 of the NCDOT ‘Standard Specifications for Roads and Structures’ and the following provisions: At the end of each workday, the CONTRACTOR shall backfill, up to the edge and elevation of existing pavement, any area adjacent to the travelway that has a drop off of more than three (3) inches. The CONTRACTOR shall perform this work at no additional cost to the OWNER. Access to the Site and properties adjacent to the Site shall be maintained at all times throughout the Project. Where driveways, mailboxes and/or other improvements are disturbed, temporary drives, mailboxes and/or other improvements if appropriate shall be installed immediately and maintained until such time as permanent repair to the driveways, mailboxes and/or other improvements is made. An ABC stone base shall be used to maintain temporary driveways. No additional payment shall be made by the OWNER or other parties to the Contract for such temporary driveway construction and maintenance because such Work shall be considered incidental to the Contract and included in the Contract Price.

F. *Work in Streets, Highways and Other Rights of Way:* Excavation, grading, fill, storm drainage, paving and any other construction or installations in rights of way of streets, highways, public carrier lines, utility lines (either aerial, surface or subsurface), and the like, shall be done in accordance with the applicable portions of the Specifications and the requirements of authorities having jurisdiction. The OWNER shall make all arrangements with the proper authorities for such Work, including the obtaining of permits, and shall pay costs associated with such, with the exception of electrical permits, blasting permits and inspections. The CONTRACTOR shall keep a copy of all required permits on the Site at all times. The CONTRACTOR shall be responsible for all bonds required by the North Carolina Department of Transportation.

G. *Final Clean-up and Site Rehabilitation:* Before leaving the Site upon completion of the Work, the CONTRACTOR shall remove from the Site all accumulated debris and surplus materials of any kind that result from the Project, including construction equipment, tools, sheds, sanitary enclosures, and the like. The completed Project shall be turned over to the OWNER in a neat and orderly condition. The Site shall be rehabilitated or developed in accordance with other sections of the Specifications and the Drawings. In the absence of any portion of these requirements, the CONTRACTOR shall completely rehabilitate the Site to a

condition and appearance equal or superior to that which existed just prior to construction, except for those items whose permanent removal or relocation was required in the Contract Documents or so ordered by the OWNER.”

H. *Mail Service*: Mail service shall not be interrupted by construction activities. In the event that mailboxes are relocated or temporarily removed, the Contractor must provide alternate methods as approved by the US Postal Service and the Owner for property owners to receive uninterrupted mail service. There will be no separate payments issued for alternate measures required to maintain mail service.

12. SC-6.12.

- a) Add a new sentence at the end of Paragraph 6.12.A as follows:

“Failure to furnish the ENGINEER with accurate and detailed record documents shall be grounds for withholding final payment until such record documents have been properly furnished.”

- b) Add a new Paragraph immediately after Paragraph 6.12.A of the EJCDC General Conditions, as follows:

“B. “Contractor shall maintain ‘as-built’ record drawings, current with the progress of the Work on the Project site, available for inspection on site, and shall provide them in mylar and electronic format to the ENGINEER and the OWNER prior to Substantial completion.”

13. SC-6.13.

- a) In Paragraph 6.13.A, add the following text at the end of the first sentence:

“, and shall be solely and completely responsible for conditions of the Site, including the safety of all persons and property at the Site, preparatory to and during performance of the Work.”

- b) In Paragraph 6.13.B:

- (i) In the first sentence, second line, after the words “Laws and Regulations,” insert the text “, including such safety regulations as may be prescribed from time to time by the ENGINEER, the OWNER or local authorities having jurisdiction,”.

- (ii) In the first sentence, fourth line, after the text “damage, injury or loss:” delete the word “and”.

- (iii) In the first sentence, fifth line, after the words “safety and protection”, insert the text:

“; and shall, when so directed by the ENGINEER or the OWNER, properly correct any unsafe conditions created by, or unsafe practices being committed on the part of its employees, Subcontractors, Suppliers or any individual or entity directly or indirectly employed by any of them. The CONTRACTOR shall fully comply with any and all applicable portions of the latest revision of the North Carolina Division of Highway ‘Policies and Procedures for Accommodating Utilities on Highway Right of Way.’ In the event of the CONTRACTOR’S failure to comply with any of the safety precautions referenced herein or in the Contract Documents, the ENGINEER or OWNER may take the

necessary measures to correct the conditions or practices complained of; and all costs thereof will be deducted from the Contract Price due the CONTRACTOR. Failure of the ENGINEER to direct the correction of unsafe conditions or practices shall not relieve the CONTRACTOR of its responsibility hereunder.”

- (iv) In the third sentence, delete the seventeenth line, now reading:
“CONTRACTOR (except damage or loss attributable to the”

and insert the following text in its place:

“CONTRACTOR (except and to the extent that such damage or loss is attributable to the”.

- (v) In the fourth sentence, insert after the words “responsibilities for safety and for protection of the Work” the text “and those people and that property that come into contact with the Work.”

- (vi) In the fourth sentence, insert after the words “shall continue” the text “even during non-working hours,”.

- c) Add two new Paragraphs immediately after Paragraph 6.13.B as follows:

“C. In the event of any claims for damage or alleged damage to persons or property as a result of Work under this Contract, the CONTRACTOR shall be responsible for all costs in connection with the settlement of or defense against such claims. Before final payment to the CONTRACTOR is made under the Contract, the CONTRACTOR shall furnish satisfactory evidence that all claims for damage have been legally settled or that sufficient funds to cover such claims have been placed in escrow, or that an adequate bond to cover such claims has been obtained.

D. The Construction Documents and the joint and several phases of construction contemplated by the Construction Documents are to be governed at all times by applicable provisions of local and State laws, ordinances and regulations and Federal laws, including but not limited to the latest amendments of the Department of Labor, Bureau of Labor Standards, Safety and Health Regulations for Construction; and Williams and Steiger Occupational Safety and Health Act of 1970, including rules and regulations issued pursuant thereto (OSHA), applicable to the Work and performance of the Contract. Where applicable to the Work, in addition to the requirements of the General Conditions, as supplemented by these Supplementary Conditions and any Special Conditions, the CONTRACTOR shall fully comply with any and all applicable portions of the Division of Highway ‘Policies and Procedures for Accommodating Utilities on Highway Right of Way’ or latest revision. The duty of the ENGINEER to conduct a construction review of the CONTRACTOR's performance is not intended to include a review of the adequacy of the CONTRACTOR's safety measures in, on, or near the Site.”

14. SC-6.15.

Add a new Paragraph immediately after Paragraph 6.15.A as follows:

“B. CONTRACTOR shall notify the OWNER immediately, and no event more than eight hours later, after an emergency has occurred if an emergency compromising the safety of persons or property at the Site has occurred.”

15. SC-6.17.

- a) In Paragraph 6.17.A, delete the third sentence and insert the following sentence in its place:

“CONTRACTOR shall provide on the Shop Drawings complete data with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show ENGINEER the services, materials and equipment that CONTRACTOR agrees to provide, and the Shop Drawings shall be sufficient to enable ENGINEER to review the information for the purposes delineated in paragraph 6.17.E.”

- b) Add two new Subparagraphs immediately following Subparagraph 6.17.D.3 as follows:

“4. All submittals required by the Contract Documents shall be submitted in three (3) copies plus the number to be returned to the CONTRACTOR. Samples and Operation and Maintenance Manuals required by the Contract Documents shall be submitted in three (3) copies, none of which will be returned.

5. All submittals shall be checked by CONTRACTOR for accuracy and conformance to the Contract Documents before submittal to ENGINEER. Shop Drawings shall show the location of all structural members, walls, and slabs with relation to the Work on the layout drawings. Any potential interference with structural members, pipes, ducts, or other equipment or work must be brought to the Engineer’s attention by the CONTRACTOR in writing.”

16. SC-6.19.

- a) In Paragraph 6.19.A, in the second sentence, fifth line, insert after the word “damage” the word “normally”.

- b) Add a new Paragraph 6.19.C as follows:

“C. By entering into the Contract with the OWNER, the CONTRACTOR represents and warrants:

1. That CONTRACTOR is experienced in and competent to perform the type of Work required and to furnish the plant, materials, supplies or equipment to be so performed or furnished by it.

2. That CONTRACTOR is financially solvent, able to pay its debts as they mature, and possessed of sufficient working capital to initiate and complete the Work required under the Contract.

3. That CONTRACTOR is familiar with all federal, state, county, municipal and department laws, ordinances, permits, regulations and resolutions which may in any way affect the Work or those employed therein, including but not limited to any special laws or regulations relating to the Work or any part thereof.

4. That such temporary and permanent Work required by the Contract Documents that is to be done by CONTRACTOR will be satisfactorily constructed and fit for use for its intended purpose and that such construction will not injure any person, or damage any property.

5. That CONTRACTOR has carefully examined the Contract Documents and the Site of the Work and that from its own investigations, it has satisfied itself and made itself familiar with: (1) the nature and locations of the Work; (2) the character, quality and quantity of surface and subsurface materials likely to be encountered, including, but not limited to all structures and obstructions on or at the Project Site, whether natural or man-made; (3) the character of equipment and other facilities needed for the performance of the Work; (4) the general and local conditions including, without limitation, the climatic conditions, the availability and cost of labor and the availability and cost of materials, tools and equipment; (5) the quality and quantity of all materials, supplies, tools, equipment, labor and professional services necessary to complete the Work in the manner required by the Contract Documents; and (6) all other matters or things which could in any manner affect the performance of the Work.

6. That CONTRACTOR will fully comply with all requirements of the Contract Documents.

7. That CONTRACTOR will perform the Work consistently with good workmanship, sound business practice, and in the most expeditious manner, consistent with the best interests of the OWNER.

8. That CONTRACTOR will furnish efficient business administration and experienced superintendents and an adequate supply of workmen, equipment, tools and materials at all times.

9. That CONTRACTOR has carefully reviewed the Work required and that the Work can be planned and executed in a normal and orderly sequence of Work and reasonably scheduled so as to ensure completion of the Project in accordance with the Contract Documents, allowing for normal and reasonable foreseeable weather, labor and other delays, interruptions and disruptions of the Work.

10. That CONTRACTOR will complete the Work within the Contract Time and all portions thereof within any required Contract deadlines.

11. That the Contract Price is based upon the labor, materials, systems and equipment required by the Contract Documents, without exception.

12. That CONTRACTOR will make a good faith effort to utilize minority business enterprises (MBEs) per N.C. General Statutes Section 143-128, *et seq.*, as Subcontractors for the Work.

13. That Contractor is not at the time of the making of the Contract in dispute with the Town of Holly Springs in connection with any project for which it has performed Work.”

17. SC-6.20.

a) In Paragraph 6.20.A:

(i) In the first sentence, sixth line, after the word “costs” insert the text “, civil penalties, fines...”

(ii) In the first sentence, eleventh line, after the word “cost” insert the text “,civil penalty,

fine...”

(iii) Add two new sentences at the end of Subparagraph 6.20.A.2 as follows:

“If through the negligence on the part of CONTRACTOR performing the Work, any other contractor or any subcontractor shall suffer or claim to have suffered loss or damage, CONTRACTOR shall reasonably attempt to settle such claims with such other contractor or subcontractor by agreement or arbitration. If such other contractor or subcontractor shall assert any claim against OWNER on account of any damage alleged to have been sustained, OWNER shall notify CONTRACTOR, who shall indemnify and hold harmless OWNER against any such claims.”

b) Add a new Paragraph immediately after Paragraph 6.20.C as follows:

“D. Nothing in the Contract Documents shall create or give to third parties any claim or right of action against the CONTRACTOR, the OWNER or the ENGINEER beyond such claims or rights as legally exist irrespective of the Contract.”

18. SC-6.21.

Add a new Section immediately after Section 6.20 as follows:

“6.21 *Contractor License Requirements.*

A. CONTRACTOR shall be licensed in North Carolina in an amount equal to one and one-half (1-1/2) times the total Contract Price for all of the Work. CONTRACTOR shall have and maintain a valid Town of Holly Springs Privilege License to perform the Work. If the Work involves any roadway construction, CONTRACTOR shall have and maintain a current unlimited General Contractor’s license with the ‘Highway Contractor’ classification.”

G. ARTICLE 7 – OTHER WORK

1. SC-7.01.

In Paragraph 7.01.B:

(i) In the third sentence, twelfth line, after the word “endanger,” insert the words “others or”

(ii) In the fourth sentence, seventeenth line, after the words “for the benefit of”, insert the text “OWNER,”

2. SC-7.02.

In Paragraph 7.02.A, in the first sentence, first line, after the word “intends,” insert the words “at the time of the making of the Agreement”.

3. SC-7.03.

Add a new Section immediately after Section 7.02 as follows:

“7.03 Remedies

A. Should CONTRACTOR cause damage to the work or property of any separate contractor at the Site, or should any claim arising out of CONTRACTOR's performance of the Work at the Site be made by any separate contractor against CONTRACTOR, OWNER, ENGINEER, ENGINEER's Consultants, the Construction Coordinator or any other person, then CONTRACTOR shall promptly attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by arbitration or at law.

B. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER, ENGINEER, ENGINEER's Consultants and the Construction Coordinator harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals, and court and arbitration or mediation costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any separate contractor against OWNER, ENGINEER, ENGINEER's Consultants or the Construction Coordinator to the extent based on a claim arising out of CONTRACTOR's performance of the Work. Should a separate contractor cause damage to the Work or property of CONTRACTOR or should the performance of work by any separate contractor at the site give rise to any other claim, CONTRACTOR shall not institute any action, legal or equitable, against OWNER, ENGINEER, ENGINEER's Consultants or the Construction Coordinator or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter that seeks to impose liability on or to recover damages from OWNER, ENGINEER, ENGINEER's Consultants or the Construction Coordinator on account of any such damage or claim. If CONTRACTOR is delayed at any time in performing or furnishing Work by any act or neglect of a separate contractor and OWNER and CONTRACTOR are unable to agree as to the extent of any adjustment in Contract Times attributable thereto, CONTRACTOR may make a claim for an extension of times in accordance with Article 12. An extension of the Contract Times shall be CONTRACTOR's exclusive remedy with respect to OWNER, ENGINEER, ENGINEER's Consultants and Construction Coordinator for any delay, disruption, interference or hindrance caused by any separate contractor. This paragraph does not alter the liability of OWNER, ENGINEER, ENGINEER's Consultant and Construction Coordinator for activities that are their respective responsibilities.”

H. ARTICLE 8 – OWNER'S RESPONSIBILITIES

1. SC-8.01.

In Paragraph 8.01.A:

- (i) Insert “as amended by the Supplementary Conditions and any Special Conditions, and unless OWNER is also acting as the ENGINEER or the inspector for the Project,” after “Except as otherwise provided in these General Conditions”.
- (ii) Add at the end of the sentence “or shall copy ENGINEER on its direct correspondence with CONTRACTOR.”

I. ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

1. SC-9.01.

In Paragraph 9.01.A:

- (i) At the end of the first sentence, add “, unless and until the OWNER provides otherwise in writing to the CONTRACTOR, and all instructions of the ENGINEER as the OWNER’s representative shall be executed promptly and efficiently by the CONTRACTOR and its Subcontractors.”
- (ii) Delete the second sentence in its entirety.

2. SC-9.02.

Add a new Paragraph immediately after Paragraph 9.02.B as follows:

“C. After hours or weekend Work shall include only such tasks that do not require observation by the ENGINEER unless the OWNER specifically authorizes otherwise in writing.”

3. SC-9.03.

In Paragraph 9.03.A, add the text “and any Special Conditions” at the end of the second sentence, after “in the Supplementary Conditions”.

4. SC-9.05.

In Paragraph 9.05.A, delete the last sentence, on the ninth through the thirteenth lines, and insert the following in its place:

“If the CONTRACTOR decides that the Field Order should result in an increase of the Contract Price or a change in the Contract Times, then the CONTRACTOR shall submit a written request regarding such an adjustment to the ENGINEER prior to commencing the Work. If the CONTRACTOR proceeds with the Work prior to the execution of the Change Order, such Work shall be performed with the understanding that the increase in the Contract Price or a change in the Contract Times requested is subject to the approval of the OWNER. The decision rendered by the OWNER concerning the request for an increase in the Contract Price or a change in the Contract Times resulting from a Field Order shall be final.”

5. SC-9.10.

- a) In Paragraph 9.10.A., insert the following text at the beginning of the first sentence:

“Unless otherwise specified in any separate agreement between the OWNER and the ENGINEER,”

and replace the former initial word of the first sentence “Neither” with “neither”.

- b) In Paragraph 9.10.B, insert the following at the beginning of the first and the second sentence:

“Unless otherwise specified in any separate agreement between the OWNER and the ENGINEER,”.

- c) In Paragraph 9.10.C, insert the following at the beginning of the sentence:

“Unless otherwise specified in any separate agreement between the OWNER and the ENGINEER,”.

- d) In Paragraph 9.10.D., in the first sentence, sixth line, delete the word “generally”.

- e) Renumber Paragraph 9.10.E as 9.10.F.

- f) Add a new Paragraph immediately following Paragraph 9.10.D as follows:

“E. The presence or absence of the ENGINEER at the Site shall in no way modify the CONTRACTOR’s responsibility for conformity with the Drawings and Specifications. Failure of the ENGINEER to reject materials or Work that does not conform with the Drawings and Specifications, whether from lack of discovery or for any other reason, shall in no way prevent later rejection of or corrections to the unsatisfactory materials or Work when discovered. The CONTRACTOR shall have no claim for losses suffered due to any necessary removals or repairs resulting from unsatisfactory Work.”

J. ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

1. SC-10.01.

Add three new Paragraphs immediately after Paragraph 10.01.B as follows:

“C. If CONTRACTOR claims (1) that any work he/she has been ordered to do is not part of the Work required by the Contract Documents (hereinafter referred to as ‘Extra Work’) and that he/she has performed or is going to perform Extra Work, or (2) that any action or omission of OWNER or ENGINEER is contrary to the terms and provisions of the Contract Documents, CONTRACTOR shall:

- (i) Verbally inform the ENGINEER or OWNER of its claim and then Promptly comply with such order;
- (ii) File with ENGINEER, within fourteen working days after being ordered to perform the work claimed by him/her to be Extra Work or within fourteen working days after commencing performance of the Extra Work, whichever date shall be the earlier, or within fourteen working days after the action or omission of the OWNER or the ENGINEER occurred or was due, a written notice stating the basis of his/her claim and a request for a determination thereof;
- (iii) File with ENGINEER thirty (30) calendar days after said alleged Extra Work was required to be performed or said alleged Extra Work was commenced, whichever date shall be earlier, or said alleged action or omission by OWNER or ENGINEER occurred or was due, a verified detailed statement, with documentary evidence of the items and basis of his/her claim;
- (iv) Produce for OWNER’S examination, upon notice from OWNER, all his/her books of account, bills, invoices, payrolls, subcontracts, time books, progress records, daily reports, bank deposit books, bank statements, checkbooks and canceled checks showing all of his/her actions and transactions in connection with or relating to or arising by reason of

his/her claim, and submit himself/herself and persons in his/her employment and in his/her Subcontractor's employment for examination under oath by any person designated by OWNER to investigate any claims made against OWNER under the Contract, such examination to be made at the offices of OWNER or OWNER'S agent;

- (v) Proceed diligently, pending and subsequent to determination of OWNER with respect to any such disputed matter, with the performance of the Contract and in accordance with all instructions of OWNER and ENGINEER.

D. CONTRACTOR'S failure to comply with any or all of the provisions of Paragraph 10.01.C shall be deemed to be: (1) a conclusive and binding determination that said order, work action or omission is not additional or extra Work for CONTRACTOR and is not contrary to the terms and provisions of the Agreement; and (2) a waiver by CONTRACTOR of all claims for additional compensation or damages or extension of Contract Times as a result of said order, work action or omission.

E. Only OWNER may waive or modify any of the provisions of Paragraphs 10.01.C or 10.01.D, which waiver must be done in writing and signed by OWNER. In any action against OWNER to recover any sum in excess of the sum certified by OWNER to be due under or by reason of the Contract, CONTRACTOR must allege in his/her complaint and prove at trial compliance with the provisions of Paragraph 10.01.C. Nothing in paragraphs 10.01.C, 10.01.D, or this paragraph shall in any way affect OWNER's right to obtain an examination of CONTRACTOR before trial or discovery and inspection in any action that might be instituted by or against OWNER or CONTRACTOR."

2. SC-10.05.

- a) In Subparagraph 10.05.B.1, in the third line, after the text "Article 16", insert the words "or in the Supplementary Conditions".

- b) In Subparagraph 10.05.B.2:

- (i) In the second line, after the text "Article 16", insert the words "or in the Supplementary Conditions".

- (ii) In the fifth and sixth lines, delete the words "after the date of such decision" and insert in their place "after the date such decision is delivered to OWNER and CONTRACTOR".

- (iii) In the eighth line, delete the words "within 60 days after the date of such decision" and insert in their place the following:

"within 60 days after the date of delivery of such decision, if the appealing party is the CONTRACTOR, and within 90 days after the date of delivery of such decision, if the appealing party is the OWNER,".

- c) In Paragraph 10.05.C, add the following to the end of the sentence:

", in which case an appeal from the denial of the claim may be made in accordance with subparagraph 10.05.B.1 or 10.05.B.2."

- d) Add a new Paragraph immediately following Paragraph 10.05.D as follows:

“E. CONTRACTOR shall diligently continue all Work and adhere to the progress schedule to the extent possible during the resolution of any dispute, including a Claim, even if the dispute or Claim pertains to Contract Times, Contract Price, or any other integral feature of the Agreement, unless the OWNER and the CONTRACTOR agree otherwise in writing.”

3. SC-10.06; SC-10.07.

Add two new Sections immediately after Section 10.05 as follows:

“10.06 *Requests for Changes in the Work*

A. At any time ENGINEER may request a quotation from CONTRACTOR for a proposed change in the Work. Within 21 calendar days after receipt of a request for a quotation for a proposed change, the CONTRACTOR shall proceed to submit a written and detailed proposal for an increase or decrease in the Contract Price or alterations of the Contract Times for the proposed change. ENGINEER shall have 21 calendar days after receipt of the detailed proposal to respond in writing. The proposal shall include an itemized estimate of all cost and time for performance that will result directly or indirectly from the proposed change. Unless otherwise directed, itemized estimates shall be in accordance with Articles 11 and 12, and in sufficient detail to reasonably permit an analysis by ENGINEER of all material, labor, equipment, subcontracts, overhead costs and fees, and shall cover all Work involved in the change, whether such Work was deleted, added, changed, or impacted. Any amount claimed for subcontracts shall be similarly supported. Itemized schedule adjustments shall be in sufficient detail to permit an analysis of impact as required by the Contract Documents. Notwithstanding the request for quotation, CONTRACTOR shall carry on the Work and maintain the progress schedule.

10.07 *Effect of the Change Order*

A. The adjustment in the Contract Price and/or Contract Times stated in a Change Order shall comprise the total price and/or time adjustment due or owed the CONTRACTOR for the work or changes defined in the Change Order. By executing the Change Order, the CONTRACTOR acknowledges and agrees that the stipulated price and/or time adjustments include the costs and delays for all Work contained in the Change Order, including costs and delays associated with the interruption of schedules, extended overheads, delay, and cumulative impacts or ripple effect on all other non-affected Work under this Contract. Signing of the Change Order constitutes full and mutual accord and satisfaction for the adjustment in contract price or time as a result of increases or decreases in costs and time of performance caused directly and indirectly from the change, subject to the current scope of the entire Work as set forth in the Contract Documents. Acceptance of this waiver constitutes and agreement between OWNER and CONTRACTOR that the Change Order represents an equitable adjustment to the Contract, and that CONTRACTOR will waive all rights to file a claim on this Change Order after it is properly executed.”

K. ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

1. SC-11.01.

a) In Subparagraph 11.01.A.5:

(i) In Subparagraph 11.01.A.5.c add the following text between the second and third sentence:

“Rental rates shall include all fuel, lubricants, insurance and the like necessary in connection with the use of the equipment. Equipment rental charges shall not exceed the prorated monthly rental rates listed in the current edition of the ‘Compilation of Rental Rates for Construction Equipment’ as published by the Associated Equipment Distributors. Hourly charges shall be determined by dividing the monthly rates by 176.”

(ii) In Subparagraph 11.01 A 5.c eliminate the words “CONTRACTOR or” from the first sentence, third line.

(iii) In Subparagraph 11.01.A.5.f:

(1) In the first sentence, fifth, sixth and seventh lines, delete the following text without substitution:

“(except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D)”.

(2) In the first sentence, eighth line, after the text “provided” insert the text “and to the extent that”.

(iv) In Subparagraph 11.01.A.5.h:

(1) In the third line, after the text “petty cash items” insert the text “, all of which must be”.

(2) In the fourth line, after the text “connection with” insert the text “and in furtherance of”.

b) Add a new Subparagraph immediately following Subparagraph 11.01.B.5, as follows:

“6. Any costs due to the CONTRACTOR, or the Subcontractors or Suppliers, not properly performing or supplying the Work, including, without limitation, not adhering to the progress schedule.”

c) In Paragraph 11.01.C add the following sentence at the end of the Paragraph:

“The CONTRACTOR’s fee shall not be applied to payroll taxes, social security contributions, or unemployment taxes.”

2. SC-11.04.

Add a new Section immediately after Section 11.03 as follows:

“11.04 *Costs Included in Contract Price*

A. ENGINEER acknowledges that the Contract Price includes CONTRACTOR’s costs of bonds, insurance, transportation of materials, labor and equipment, general administration, and the like. Gravel construction entrances to the Site also are included in the Contract Price.”

L. ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIME

1. SC-12.01.

- a) In Subparagraph 12.01.C.1, replace in its entirety without substitution with:

“a mutually acceptable fixed fee or a mutually acceptable percentage of Cost of Work;
or”

- b) In Subparagraph 12.01.C.2.b, in the third line, after the word “percent” and before the semicolon, add the words “based on the Subcontractor’s Cost of Work;”.

2. SC-12.02.

Add a new Paragraph after Paragraph 12.02.B as follows:

“C. Pending any adjustment of the Contract Times pursuant to the terms of this paragraph 12.02, the CONTRACTOR shall diligently continue all Work and adhere to the progress schedule and the Contract Times to the extent possible.”

3. SC-12.03.

- a) In Paragraph 12.03.A:

- (i) Insert the following immediately after the first sentence:

“Extensions granted to the Contract Times shall reflect the actual delay likely to be caused to the date of Substantial Completion. For example, a 3-day delay in the exterior landscaping due to abnormal weather conditions may or may not result in a full 3-day delay in the remainder of the Work such that Substantial Completion is also delayed a full three days. Only the resulting delay to Substantial Completion shall be credited to the Contract Times.”

- ii) Insert the following at the end of the Paragraph:

“‘Abnormal weather’ is defined as weather that is more severe than the average weather for the particular time(s) and date(s) in question as compared to the last 5-year average. The ‘average’ shall be based on the ‘Local Climatological Data’ published by the National Oceanic and Atmospheric Administration for the Project area. It shall be the responsibility of the CONTRACTOR to furnish all data necessary to support its request. The CONTRACTOR shall not be entitled to additional compensation as a result of time extensions not due to acts or neglect by the OWNER.”

4. SC-12.06.

Delete Paragraph 12.06.B in its entirety and insert the following in lieu thereof:

“B. The CONTRACTOR agrees to make no claim against OWNER, ENGINEER, their agents, representatives, or employees for damages or a change in the Contract Price for delay in the performance of this Contract occasioned by any act or omission to act of the OWNER or any of its representatives, and agrees that any such potential claim shall be fully satisfied by an extension of time to complete performance of the deemed Work as provided in Paragraph 12.03.”

5. SC-12.07.

Add a new Section immediately after Section 12.06 as follows:

“12.07 Float Times and Contract Times and Contract Price

A. Notwithstanding the agreement by the parties that the CONTRACTOR controls and has responsibility for matters of scheduling, sequencing and arranging the work, the parties hereby agree that the float time is a benefit to the OWNER in the progress schedule, and therefore, without obligation to extend either the overall completion date or any intermediate completion dates set out in the progress schedule, the OWNER may initiate changes to the Work that absorb float time only. OWNER-initiated changes that affect the critical path on a critical path methods schedule shall be the sole grounds for extending (or contracting) said completion dates. CONTRACTOR-initiated changes that encroach on the float time identified in the current progress schedule may be accomplished with the OWNER’s concurrence. Such changes, however, shall give way to OWNER-initiated changes competing for the same float time.

B. Portions of the Work that are listed in the progress schedule with a float time may, at the option of the OWNER, be performed using any or no amount of the float time, but in no event shall performance of the Work during the float times entitle the CONTRACTOR to an increase in the Contract Price as to such portions of the Work or as to other portions of the Work.”

M. ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

1. SC-13.03.

a) Add two sentences at the end of Paragraph 13.03.C as follows:

“Testing to be performed under the Contract Documents shall be performed in accordance with the North Carolina Department of Transportation ‘Materials Specifications Guidelines’ and the Town of Holly Springs ‘Engineering Design and Construction Standards’. If and to the extent that the Town of Holly Springs testing standards conflict with and are more stringent than those of the North Carolina Department of Transportation, testing shall be performed in accordance with the Town of Holly Springs standards.”

b) In Paragraph 13.03.E, replace the following words at the end of the sentence:

“be uncovered for observation”

with:

“be uncovered and made available for inspection at the CONTRACTOR’s expense”.

c) In Paragraph 13.03.F, in the fourth line, after the word “same”, insert the text “, and given ENGINEER time to inspect same,”.

d) Add four Paragraphs immediately after Paragraph 13.03.F as follows:

“G. The CONTRACTOR shall allow the ENGINEER sufficient time and opportunity for testing materials and equipment to be used in the Work. The CONTRACTOR shall advise the ENGINEER promptly upon placing orders for materials and equipment so that arrangements may be made, if desired by the ENGINEER, for inspection before shipment from the place of manufacture. The CONTRACTOR shall at all times furnish the ENGINEER and all OWNER representatives appropriate facilities for performing inspections and tests, including any labor necessary, and shall allow proper time for inspecting and testing materials, equipment, and workmanship. In setting Contract Times and a progress schedule for the Work, the CONTRACTOR should anticipate that delays may be caused in the execution of Work due to the necessity of materials and equipment being inspected and accepted for use. The CONTRACTOR shall furnish, at its own expense, samples of all materials required by the ENGINEER for testing, and shall make its own arrangements for providing water, electric power, and/or fuel for the various inspections and tests of structures and equipment.

H. The CONTRACTOR shall furnish the services of representatives of the manufacturers of certain equipment if so prescribed in the Specifications. The CONTRACTOR shall also place its orders for such equipment requiring that, after the equipment has been tested prior to final acceptance of the Work, the manufacturer shall furnish the OWNER with certified statements that the equipment has been installed properly and is ready to be placed in functional operation. Tests and analyses required of equipment shall be paid for by the CONTRACTOR, unless specified otherwise in the Contract Documents.

I. The OWNER reserves the right to independently perform, at its own expense, laboratory tests on random samples of material or performance tests on equipment delivered to the Site. These tests if made shall be conducted in accordance with the Specification requirements or other appropriate standards. The entire shipment represented by any given sample or piece of equipment may be rejected on the basis of the failure of a sample or piece of equipment to meet specified test requirements. All rejected materials and equipment shall be removed from the Site, whether stored or installed in the Work, and the required replacement shall be made, all at no additional cost to the OWNER in accordance with terms of Paragraphs 13.06 through 13.09.

J. Whenever nonconformance is discovered by the ENGINEER as a result of tests, inspections, or investigations, the CONTRACTOR shall bear responsibility for the full cost of such tests, whether otherwise required to pay for such tests, inspections or investigations under the Contract Documents, and shall directly pay for such services or shall reimburse the OWNER for such costs. Once nonconformance has been discovered, the cost of any additional tests and investigations that are ordered by the ENGINEER to ascertain subsequent conformance with the Contract Documents shall be borne by the CONTRACTOR, whether or not the original tests, inspections, or investigations of such nonconforming Work were originally required by the Contract Documents to be borne by another party.”

2. SC-13.05.

- a) In Paragraph 13.05.A, in the fourth line, after the word “will” insert the words “or is likely to”.
- b) Add a new Paragraph immediately after Paragraph 13.05.A as follows:

“B. If OWNER stops Work under Paragraph 13.05.A, CONTRACTOR shall be entitled to no extension of Contract Times or increase in Contract Price.”

3. SC-13.06.

a) In Paragraph 13.06.A:

(i) At the end of the first sentence, after the word “defective,” insert the text “, even if such Work has previously been overlooked by ENGINEER and estimated as a basis for payment.”

(ii) Add two new sentences immediately after the first sentence as follows:

“At any time during the progress of the Work and up to the date of final acceptance, the ENGINEER shall have the right to reject any Work that does not conform to the requirements of the Contract Documents, even if such Work has been previously inspected and paid for. Any omissions or failure on the part of the ENGINEER to disapprove or reject any Work or materials at the time of inspection shall not be construed as an acceptance of any defective Work or materials.”

(iii) In the [original] second sentence, [originally on the] eleventh line, after the words “work of others” and before the end parenthesis, insert the words “or other portions of the Work affected by such correction, removal, or replacement.”

b) Add a new Paragraph immediately after Paragraph 13.06.A as follows:

“B. The ENGINEER may order tests of imperfect or damaged Work, equipment, or materials to determine the required functional capability for possible acceptance, if there is no other reason for rejection. The cost of such tests shall be borne by the CONTRACTOR; and the nature, tester, extent and supervision of the tests shall be as determined by the ENGINEER. If the results of the tests indicate that the required functional capability of the Work, equipment, or material was not impaired, then the Work, equipment, or materials may be deemed acceptable by OWNER. If the results of such tests reveal that the required functional capability of the questionable Work, equipment or materials have been impaired, then such Work, equipment, or materials shall be deemed imperfect and shall be replaced at the CONTRACTOR’s expense. The CONTRACTOR may elect to replace the imperfect Work, equipment, or material immediately upon their identification as such in lieu of performing the tests for functional capability.”

4. SC-13.07.

a) In Paragraph 13.07.A, insert at the end of the second sentence the words “immediately upon the submission of an invoice for such expenses to the CONTRACTOR by the ENGINEER or the OWNER”.

b) In Paragraph 13.07.C, insert at the end of the sentence the text:

“, or, if such correction or removal and replacement took longer than one year, then for such period of time as the correction or removal and replacement took. All warranties for the Work so affected shall be extended for the same amount of time.”

5. SC-13.08.

a) In Paragraph 13.08.A, at the end of the second sentence, insert the text “and a proportionate

amount of the CONTRACTOR's fee.”

- b) In Paragraph 13.08.C, at the end of the first sentence, insert the text “, including a proportionate decrease in the amount of the CONTRACTOR's fee.”

N. ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

1. SC-14.02.

- a) Delete Subparagraph 14.02.A.1 in its entirety and insert the following in its place:

“1. Once a month after the Work has commenced, CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by the CONTRACTOR covering the Work completed as of the date of the Application for Payment and accompanied by such supporting documentation as is required by the Contract Documents. The due date for submitting an Application for Payment shall be the 25th day of the month for which the application is being made. Request for payment shall be submitted on the standard forms included in the Contract Documents unless approved otherwise by the ENGINEER. All submittals shall include five (5) copies of Application for Payment forms, all bearing original signatures. The Certificate of Sales Tax Paid, shall be notarized and bearing original signatures and shall also be submitted as described under Section 6.10. If payment is requested on the basis of materials and equipment not incorporated into the Work but delivered and suitably stored at the Site or at another location agreed to in writing by the OWNER, the Application for Payment shall also be accompanied by such supporting data, satisfactory to the OWNER, which shall establish the OWNER's title to the materials and equipment, clear of liens, and protection of the OWNER's interest in the materials and equipment, including the maintenance of insurance on materials stored off the site.”

- b) In Subparagraph 14.02.A.2, in the third line, after the word “CONTRACTOR” insert the words “and all Subcontractors who have performed Work or are otherwise receiving payment under the Application for Payment.”

- c) Add two new Subparagraphs immediately after Subparagraph 14.02.A.3 as follows:

“4. Beginning with the second Application for Payment, each Application shall include evidence that payment received on the basis of materials and equipment not incorporated and suitably stored, has in fact been paid to the respective Supplier(s) within sixty days of payment by OWNER. Failure to provide such evidence of payment may result in the withdrawal of previous approval(s) and removal of the cost of related materials and equipment from the next submitted Application for Payment.

5. Each Application for Payment shall include the current list of Subcontractors and Suppliers providing labor or materials to the Site. Failure to provide an accurate list, or the existence of Subcontractors or materials at the Site that have not been approved by the OWNER and the ENGINEER, may result in the withdrawal of previous approval(s) and/or removal of the cost of labor and/or materials provided by unapproved Subcontractors and/or Suppliers from the current and future Applications for Payment.”

- d) In Subparagraph 14.02.B.2:

- (i) Delete the “and” at the end of Clause 14.02.B.2.b.

- (ii) Replace the “.” At the end of Clause 14.02.B.2.c with “; and”.
- (iii) Add a new Clause immediately after Clause 14.02.B.2.c as follows:
 - “d. any fines owed by CONTRACTOR (to third parties or the OWNER), setoffs, or other reductions in the amount due to CONTRACTOR have been subtracted from the current or previous Applications for Payment.”
- e) In Subparagraph 14.02.B.3, in the first line, delete the text “By recommending any such payment ENGINEER” and insert in its place the text “Except as specified in any separate agreement between the OWNER and the ENGINEER, and only to the extent of that agreement, the ENGINEER through his recommendation...”
- f) In Subparagraph 14.02.B.4, in the first line, delete the text “Neither” and insert in its place the text “Except as specified in any separate agreement between the OWNER and the ENGINEER, and only to the extent of that agreement, neither...”
- g) In Subparagraph 14.02.B.5:
 - (i) Delete the “or” at the end of Subparagraph 14.02.B.5.c.
 - (ii) Replace the “.” at the end of Subparagraph 14.02.B.5.d with a “;”.
 - (iii) Add three new Subparagraphs immediately after Subparagraph 14.02.B.5.d as follows:
 - “e. ENGINEER has knowledge of any setoff, fine, or other reduction in the amount due to CONTRACTOR in connection with the Application for Payment and such amount has not been properly accounted for in the Application for Payment;
 - f. The Application for Payment is in any way incomplete; or
 - g. Unapproved Subcontractors or Suppliers are performing Work at or supplying materials to the Site.”
- h) In Subparagraph 14.02.C.1, first line, delete the word “Ten” and insert the word “Thirty” in its place.
- i) Add five new Subparagraphs immediately after Subparagraph 14.02.C.1 as follows:
 - “2. Should CONTRACTOR neglect to pay any undisputed claims made in writing to OWNER within thirty days after completion of the Work or any portion thereof, and continuing unsatisfied for a period of ninety days, OWNER may pay such claim and deduct the amount thereof from the balance due CONTRACTOR. OWNER may also, with the written consent of CONTRACTOR, use any monies retained, due, or to become due under this Contract for the purpose of paying for both labor and materials for such Work, even if claims have not been filed.
 - 3. Payment under the Payment Bond and the withholding of retainage by the OWNER for claims shall not be mutually exclusive protections for OWNER. OWNER may exercise both.
 - 4. Any and all liens for work and materials may be paid off by OWNER within a reasonable

time after filing for record of a notice of such liens in accordance with State and local laws, except where the claim on which the lien is filed is being actively litigated by CONTRACTOR; in such case OWNER may pay the amount of any final judgment or decree or any such claim within a reasonable time after such final judgment or decree shall be rendered.

5. All monies paid by OWNER in settlement of liens as aforesaid, with all costs and expenses incurred by OWNER in connection therewith, shall be charged to CONTRACTOR, shall bear interest at the rate of three percentage points above the rediscount rate then charged by the Federal Reserve Bank, and shall be deducted from the next payment(s) due CONTRACTOR under the terms of this Contract or shall be reimbursed by CONTRACTOR immediately upon receipt by the CONTRACTOR of an invoice therefor by the OWNER if insufficient payments are outstanding to the CONTRACTOR to cover such costs and expenses.

6. As this agreement is a public construction contract, final payment shall be governed by North Carolina General Statute §143-134.1 and the applicable interest rate shall be four percent per annum.”

j) In Subparagraph 14.02.D.1:

(i) Delete the “or” at the end of Clause 14.02.D.1.c.

(ii) Replace the “.” at the end of Clause 14.02.D.1.d with “;or”.

(iii) Add a new Clause immediately after 14.02.D.1.d as follows:

“e. Insufficient funds have been deducted from the Application for Payment to cover all fines owed by CONTRACTOR (to third parties or the OWNER) and other setoffs and reductions in the amount due to the CONTRACTOR in connection with the Application for payment.”

2. SC-14.03.

Add two new Paragraphs immediately following Paragraph 14.03.A as follows:

“B. No materials or supplies for the Work shall be purchased by CONTRACTOR or any Subcontractor subject to any chattel mortgage, fixture filing, or under a conditional sale contract or other agreement by which an interest is retained by the seller. CONTRACTOR warrants that CONTRACTOR has good title to all materials and supplies used by CONTRACTOR in the Work, free from all liens, claims or encumbrances.

C. CONTRACTOR shall indemnify and save OWNER harmless from all claims growing out of the lawful demands of Subcontractors, Suppliers, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this Contract. CONTRACTOR shall at OWNER’s request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged, or waived. If CONTRACTOR fails to do so, then OWNER may, after having provided ten (10) days’ written notice on CONTRACTOR, withhold from the CONTRACTOR’s unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims. OWNER may hold such withheld money until satisfactory evidence is furnished that all liabilities have been fully discharged, or use the money to pay the unpaid obligations. Once the obligations have been satisfied, payment to CONTRACTOR shall be

resumed in accordance with the terms of this Contract. In no event shall the provisions of this paragraph be construed to impose any obligations upon OWNER to either CONTRACTOR or CONTRACTOR's Surety. In paying any unpaid bills of the CONTRACTOR, OWNER shall be deemed the agent of CONTRACTOR, and any payment so made by OWNER shall be deducted from the Contract Price due to CONTRACTOR. OWNER shall not be liable to CONTRACTOR for any such payment made in good faith."

3. SC-14.04.

- a) In Paragraph 14.04.A, in the third sentence, ninth line, delete the phrase "If ENGINEER does not consider the Work" and insert in its place the phrase "If ENGINEER or OWNER does not consider the Work".
- b) In Paragraph 14.04.B, at the end of the sentence, insert the words "unless the OWNER has stopped or suspended Work or terminated the Contract pursuant to the terms hereof."

4. SC-14.05.

Add a new Subparagraph immediately after Subparagraph 14.05.A.2 as follows:

"3. Payment in full for portions of the Project that are completed and used by OWNER shall not be made until the entire Project has been completed. Partial payments and retainage shall continue to be handled as described elsewhere in the Contract Documents. Under no circumstances shall occupancy and use of completed portions of the Project by OWNER be considered grounds for either reducing the retainage withheld from CONTRACTOR's partial payments or increasing the Contract Price."

5. SC-14.09.

In Subparagraph 14.09.A.2, in the third line, delete the word "which" and insert the word "that" in its place.

O. ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

1. SC-15.01.

In Paragraph 15.01.A, in the third sentence, sixth line, insert at the beginning of the sentence the following text "If the OWNER suspends the Work without cause, then..."

2. SC-15.02.

- a) Delete the header to Paragraph 15.02 and insert the following in its place:

"OWNER May Terminate the Contract or Suspend the Work for Cause."

- b) In Paragraph 15.02.A, in the second line, after the word "justify" insert the text "suspension of the Work and/or termination of the Contract (which termination may or may not be preceded by a suspension of the Work)."
- c) Add three new Subparagraphs immediately after Subparagraph 15.02.A.4 as follows:

“5. CONTRACTOR’s abandonment of the Work, or sublet or assignment of its rights and/or responsibilities under this Contract, or any part thereof, without the previous written consent of OWNER, or the CONTRACTOR’s assignment of any right, obligation or claim under the Contract without the previous written consent of the OWNER or otherwise than as herein specifically permitted;

6. Delays within the control of the CONTRACTOR, pursuant to Paragraph 12.04.A, have caused or will shortly cause the Work to interfere with the intended use of the Site, or a portion thereof, for other purposes, which interference would not have occurred if Contract Times had been met;

7. Any material misstatement by CONTRACTOR in any of the public bidding documents or failure of the CONTRACTOR to comply with any public bidding law.”

d) In Paragraph 15.02.B, in the last line, insert at the end of the last sentence the following:

“, and may pay more than the prevailing rate if necessary to have the Work completed in accordance, or as close thereto as feasible, with the original progress schedule and Contract Times.”

e) Add a new Paragraph immediately after 15.02.C as follows:

“D. If the OWNER suspends Work due to repeated unsafe Work conducted by the CONTRACTOR, confirmed by subsequent inspection by OSHA NC, then the CONTRACTOR shall not be allowed any adjustment in the Contract Price or extension of Contract Times for delays caused by such suspension, and CONTRACTOR shall bear all responsibilities under this Contract for such delays.”

3. SC-15.03.

a) In Subparagraph 15.03.A.1, in the fourth line, after the words “and profit on such” insert the words “completed and acceptable”.

b) Add a new Paragraph immediately after Paragraph 15.03.B as follows:

“C. Upon receiving the OWNER’s notification of termination of the Contract, the CONTRACTOR shall immediately and expeditiously terminate any ongoing Work and inform its Subcontractors and Suppliers of termination, all so as to minimize the costs, expenses and other damage sustained prior to the effective date of the termination.”

4. SC-15.04.

a) In Paragraph 15.04.A:

(i) In the first sentence, seventh line, after the words “be due” and before the comma, insert the words “and not disputed by either party...”

(ii) In the second sentence, seventeenth line, after the words “be due” and before the comma, insert the words “and not disputed by either party...”

P. ARTICLE 16 – DISPUTE RESOLUTION

1. SC-16.01.

Add a new sentence at the end of Paragraph 16.01.A as follows.

“CONTRACTOR shall continue to diligently pursue completion of the Work and maintain the progress schedule during any dispute resolution process, unless otherwise agreed by CONTRACTOR and OWNER in writing.”

The Town of Holly Springs shall follow the rules of the State Construction Office entitled “Rules Implementing Mediated Settlement Conferences in North Carolina Public Construction Projects, Adopted February 26, 2002” as found at:

http://www.nc-sco.com/Guidelines/SBC/sbc_Dis_rules.pdf

Q. ARTICLE 17 – MISCELLANEOUS

1. SC-17.06; SC-17.07; SC-17.08; SC-17.09; SC-17.10.

Add six new Sections immediately following Section 17.05 as follows:

“17.06 *Amendments*

A. This Contract may only be amended in writing by an instrument executed by the party or parties granting additional rights against it to others or upon whom additional obligations are being imposed.

17.07 *Assignment*

A. CONTRACTOR shall not assign, transfer, convey or otherwise dispose of the Contract, or of its legal right, title, or interest in or to the same or obligations or warranties made thereunder, in whole or in part, without the prior written consent of the OWNER. CONTRACTOR shall not assign by power of attorney or otherwise any monies due it and payable under this Contract without the prior written consent of the OWNER. Such consent, if given, shall in no way relieve the CONTRACTOR from any of the obligations of this Contract. OWNER shall not be bound to abide by or observe the requirements of any such assignment.

17.08 *Addresses*

A. Both the address given in the Bid Form upon which this Agreement is founded, and CONTRACTOR’s office at or near the site of the Work are hereby designated as places to either of which notices, letters, and other communications to CONTRACTOR shall be certified, mailed, or delivered. The delivering at either of the above named places, or depositing in a postpaid wrapper directed to the address in the Bid Form, in any post office box regularly maintained by the post office department, of any notice, letter or other communication to Contractor shall be deemed sufficient service thereof upon CONTRACTOR; and the date of said service shall be the date of such delivery or mailing. The CONTRACTOR’s notice address may be changed at any time by an instrument in writing, executed and acknowledged by CONTRACTOR, and delivered to OWNER and ENGINEER. Nothing herein contained shall be deemed to preclude or render inoperative

the service of any notice, letter, or other communication upon CONTRACTOR personally.

17.09 *Forms*

A. The form of all submittals, notices, change orders, and other documents permitted or required to be used or transmitted under the Contract Documents shall be determined by ENGINEER. Standard forms, which ENGINEER expects to use, are contained in the pages of the Special Conditions following the amendments, deletions and revisions to the General Conditions.

17.10 *Dissemination of Information*

A. It is expressly agreed and understood that the CONTRACTOR shall not at any time publicly disseminate any information concerning the Project without prior approval from the OWNER. Such approval will not be unreasonably withheld but may be given with certain stipulations, such as Owner participation in the creation of the public product or OWNER review and the option to refuse ultimate release of the final product should it fail to meet the OWNER's standards and goals. Public dissemination includes but is not limited to electronic, video, audio, photographic or hard copy materials serving as, in whole or part, professional papers or presentations, news releases, articles, or other media products, and/or CONTRACTOR's business collateral pieces.

17.11 *Other:*

The section headings contained herein are for reference purposes only and shall not in any way affect the meaning or interpretation of this Agreement. This Agreement has been produced by negotiation of the parties, each of whom had an opportunity to consult with an attorney, and the rule of construction against the interest of the drafter shall not apply.”

END OF SECTION

NOTE

The following forms shall be used during construction:

FOR PAYMENT APPLICATIONS – 5 COMPLETE SETS ARE TO BE SUBMITTED TO THE TOWN

PAYMENT APPLICATIONS ARE TO BE SUBMITTED EVERY MONTH FOR PAYMENT

NCDOT PROJECTS FORM DBE-IS TO BE INCLUDED IN PAYMENT APPLICATION

APPLICATION FOR PROGRESS PAYMENT (5 pages)
 MBE INFORMATION
 FORM DBE-IS (if NCDOT)
 TAX STATEMENT AND CERTIFICATION (
 FIELD ORDER
 WORK CHANGE DIRECTIVE INSTRUCTIONS
 WORK CHANGE DIRECTIVE
 CHANGE ORDER INSTRUCTIONS
 CHANGE ORDER (2 PAGES)
ATTACHMENT TO CHANGE ORDER, SUPPORTING DOCUMENTATION
 CONTRACTOR'S RELEASE OF OWNER
 CONSENT OF SURETY TO FINAL PAYMENT
 FINAL RECEIPT

APPLICATIONS FOR PROGRESS PAYMENT

FOR PAYMENT APPLICATIONS – 5 COMPLETE SETS ARE TO BE SUBMITTED TO THE TOWN

PAYMENT APPLICATIONS ARE TO BE SUBMITTED EVERY MONTH FOR PAYMENT

NCDOT PROJECTS FORM DBE-IS TO BE INCLUDED IN PAYMENT APPLICATION

Each Application for progress payment must include, as a minimum, the following information:

1. Pay Request cover letter as included on page 00900-54.
2. Town of Holly Springs Cover Sheet as included on page 00900-55.
3. Itemized quantity sheet(s) as included on page 00900-56.
4. A Certificate of Sales Tax Paid as included on page 00900-57.
If no sales tax has been paid in the period, then a certificate should be included stating that no sales tax was paid.
5. Updated schedule.
6. MBE Documentation for Contract Payments on page 00905-157. Five full sets of the above information.
7. A progress schedule updated to reflect current status of project. If project is still on a previously submitted schedule, submit another copy of the schedule with “No Change” noted, along with the date of submittal.
8. S&EC Rain Event Logs, if applicable.
9. S&EC Self Inspection Logs, if applicable.
10. MBE Documentation for Contract Payments on page 00905-15

PAY REQUEST COVER LETTER
(To Be Submitted)

DATE: _____

TO: Town of Holly Springs

RE: _____

We hereby certify that the labor and materials listed on this request for payment have been used in the construction of this Work, or that all materials included in this request for payment and not yet incorporated into the construction are now on the site or stored at an approved location with proper insurance to protect these stored materials; and that all lawful charges for labor, materials and the like, covered by previous Certificates of Payment have been paid and that all other lawful charges on which this request for payment is based have been paid for in full or will be paid for in full from the funds received in payment of this request within ten (10) calendar days from receipt of this partial payment from the OWNER.

CONTRACTOR: _____

BY: _____

TITLE: _____

State of _____
County of _____

Sworn to and subscribed before me this _____ day of _____, 20__.

Notary Public (Seal)

My Commission Expires

APPLICATION FOR PAYMENT

Town of Holly Springs, North Carolina

Project _____

Contractor _____

Project No. _____

Period _____

Payment No. _____

The undersigned Contractor certifies that to the best of its knowledge and belief, all items, units, quantities and prices of all work and material indicated on sheet(s) _____ of this periodic estimate are correct; that all Work has been performed and Materials supplied in full accordance with the terms and conditions of the construction Contract Documents between the undersigned as Contractor and the Town of Holly Springs as Owner, dated _____, _____, and all authorized changes thereto; that the following is a true and correct statement of the Contract amount up to and including the last day of the period covered by this estimate; and that no part of the "Total Amount Due" has been received.

Total Contract Amount, Including Change Orders_____

Total Amount Earned, To Date _____ % Earned

10% Retainage _____

Total Earned Less Retainage _____

Total Previously Approved _____

Amount Due This Estimate _____

Unpaid From Previous Estimate _____

Current Amount Due _____

Balance to Finish, Including Retainage _____

The Contractor further certifies that all claims outstanding as of this date against the undersigned as Contractor for labor, materials, and expendable equipment employed in the performance of said Contract up to the date of this estimate have been paid in full accordance with the requirements of this Contract.

CONTRACTOR _____ BY _____ TITLE _____ DATE _____

APPROVAL FOR PAYMENT:

Resident Project Representative

Engineer/Architect

Town of Holly Springs – Owner's Representative

Project No. 18-005

00900-55

Twelve Oaks Pump Station Project

APPLICATION FOR PAYMENT

Town of Holly Springs, North Carolina

PAYMENT NO. _____
PROJECT _____
PERIOD _____
CONTRACTOR _____

ITEM NO	DESCRIPTION OF ITEMS	UNIT	UNIT PRICE	BID QUANTITIES	CURRENT QUANTITY	QUANTITY TO DATE	CURRENT AMOUNT	CONTRACT AMOUNT	% COMP	AMOUNT EARNED TO DATE

TOTAL EARNED TO DATE
TOTAL PAID TO DATE
10% RETAINAGE
AMOUNT DUE THIS ESTIMATE

CERTIFICATE OF SALES TAX PAID

PAYMENT NO. _____

PROJECT _____

OWNER - TOWN OF HOLLY SPRINGS, WAKE COUNTY, NORTH CAROLINA

CONTRACTOR _____

FOR PERIOD _____ TO _____

VENDOR	ADDRESS	INVOICE #	DATE	AMOUNT	NC TAX	COUNTY	COUNTY TAX

I hereby certify that the above listed vendors were paid sales tax upon purchases of building materials during the period covered by this construction estimate, and the property upon which such taxes were paid was or will be used in the performance of this Contract. No tax on purchases or rentals of tools and/or equipment is included in the above list. All of the materials listed above became a part of or are annexed in the above referenced construction project.

By _____
Signature

Title

_____, being duly sworn, certifies that the foregoing statement of sales taxes paid in connection with the referenced Contract is true to the best of his or her knowledge and belief.

Sworn to before me this _____ day of _____, 20__.

Notary Public

My commission expires _____, 20__.

FIELD ORDER

FIELD ORDER NO.: _____

DATE: _____

PROJECT: _____

RE: _____

TO CONTRACTOR: This Field Order is issued to interpret/clarify the Contract Documents, order minor changes in the work, and/or memorialize trade-off agreements. Both parties hereby agree that the work described by this Field Order is to be accomplished without change in Contract Sum or Price, Contract Time or Times, and/or claims with other costs.

DESCRIPTION: _____

ATTACHMENTS: _____

REFERENCES: _____

RECOMMENDED:

By: _____
Inspector
(Authorized Signature)

Date: _____

APPROVED:

By: _____
Development Inspection Administrator
or Senior Engineer
(Authorized Signature)

Date: _____

ACCEPTED:

By: _____
Contractor
(Authorized Signature)

Date: _____

Distribution: Project Inspector
Lead Inspector
Project Engineer
Director of Engineering/Town Engineer
Contractor

WORK CHANGE DIRECTIVE INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed for use in situations involving changes in the Work which, if not processed expeditiously, might delay the Project. These changes are often initiated in the field and may affect the Contract Sum or Price or the Contract Time or Times. This is not a Change Order, but only a directive to proceed with Work that may be included in a subsequent Change Order.

For supplemental instructions and minor changes not involving a possible change in the Contract Sum or Price or the Contract Time or Times, a Field Order instead shall be used.

B. COMPLETING THE WORK CHANGE DIRECTIVE FORM

Engineer or Architect initiates the form, including a description of the items involved and attachments.

Based on conversations between Engineer or Architect and Contractor, Engineer or Architect completes the following:

METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT SUM OR PRICE: Mark the method to be used in determining the final cost of Work involved and the estimated net effect on the Contract Sum or Price. If the change involves an increase in the Contract Sum or Price and the estimated amount is reached before the additional or changed Work is completed, another Work Change Directive must be issued to change the estimated price or Contractor may stop the changed Work when the estimated price is reached. If the Work Change Directive is not likely to change the Contract Sum or Price, the space for estimated increase (decrease) should be marked "Not Applicable."

METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT TIME OR TIMES: Mark the method to be used in determining the change in Contract Time or Times and the estimated increase or decrease in Contract Time or Times. If the changes involves an increase in the Contract Time or Times and the estimated times are reached before the additional or changed Work is completed, another Work Change Directive must be issued to change the times or Contractor may stop the changed Work when the estimated times are reached. If the Work Change Directive is not likely to change the Contract Time or Times, the space for estimated increase (decrease) should be marked "Not Applicable."

Once Engineer or Architect has completed and signed the form, all copies should be sent to Owner for authorization because neither Engineer nor Architect alone has the authority to authorize changes in the Contract Sum or Price or the Contract Time or Times. Once authorized by Owner, a copy should be sent by Engineer or Architect to Contractor. The Contract Sum or Price and the Contract Time or Times may only be changed by Change Order signed by Owner and Contractor with Engineer's or Architects' recommendations.

Once the Work covered by this directive is completed or final cost and times are determined, Contractor should submit documentation for inclusion in a Change Order.

THIS IS A DIRECTIVE TO PROCEED WITH A CHANGE THAT MAY AFFECT THE CONTRACT SUM OR PRICE OR THE CONTRACT TIME OR TIMES. A CHANGE ORDER, IF ANY, SHOULD BE CONSIDERED PROMPTLY.

WORK CHANGE DIRECTIVE

WORK CHANGE DIRECTIVE NO.: _____ DATE: _____

Project: _____

Contractor _____

Engineer/Architect _____

You are directed to proceed promptly with the following change(s):

Description: _____

Purpose of Work Change Directive: _____

Attachments (List documents supporting change): _____

If a claim is made that the above change(s) have affected the Contract Sum or Price or the Contract Time or Times, any claim for a Change Order based thereon will involve one or more of the following methods of determining the effect of the change(s).

Method of determining change in Contract Sum or Price:

- Unit Prices
- Lump Sum
- Other _____

Method of determining change in Contract Time or Times:

- Contractor's records
- Engineer's records
- Other _____

Estimated (increase/decrease) in Contract Price:

\$ _____

Estimated (increase/decrease) in Contract Times:

Substantial Completion: _____ days;

Ready for final payment: _____ days;

If the change involves an increase, the estimated price and times are not to be exceeded without further authorization.

RECOMMENDED:

By: _____

Development Inspection Administrator
or Senior Engineer
(Authorized Signature)

Date: _____

APPROVED:

By: _____

Director of Utilities and
Infrastructure
(Authorized Signature)

Date: _____

ACCEPTED:

By: _____

Contractor
(Authorized Signature)

Date: _____

Distribution: Project Inspector
Lead Inspector
Project Engineer
Director of Engineering/Town Engineer
Contractor

CHANGE ORDER INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling Contract changes that affect the Contract Sum or Price or the Contract Time or Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect the Contract Sum or Price or the Contract Time or Times.

Changes that affect the Contract Sum or Price or the Contract Time or Times should be promptly covered by a Change Order. The practice of accumulating change order items to reduce the administrative burden may lead to unnecessary disputes.

If milestones have been listed, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Sum or Price or the Contract Time or Times, a Field Order may be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer or Architect initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer or Architect has completed and signed the form, all copies should be sent to Contractor for approval. After approval and signature by Contractor, all copies should be sent to Owner for approval. Engineer or Architect should distribute executed copies after approval by Owner.

If a change only applies to the Contract Sum or Price or to the Contract Time or Times, cross out the part of the tabulation that does not apply.

CHANGE ORDER

CHANGE ORDER NO.: _____ DATE: _____

Project: _____

Contractor: _____

Engineer/Architect: _____

CONTRACTOR is directed to make the following changes in the Contract Documents.

Description:

Attachments:

CHANGE IN CONTRACT SUM OR PRICE:	CHANGE IN CONTRACT TIME OR TIMES:
Original Contract Price \$	Original Contract Times Substantial Completion: _____ Ready for final payment: _____ days or dates
Net change from previous Change Orders No. ____ to No. ____: \$	Net change from previous Change Orders No. ____ to No. ____: _____ days
Contract Sum or Price prior to this Change Order \$	Contract Times with all approved Change Orders Substantial Completion: _____ Ready for final payment: _____ days or dates
Net Increase (decrease) of this Change Order \$	Net Increase (decrease) of this Change Order days
Contract Sum or Price with all approved Change Orders \$ _____	Contract Times with all approved Change Orders Substantial Completion: _____ Ready for final payment: _____ days or dates

RECOMMENDED:

By: _____

Director of Utilities and
Infrastructure(Authorized Signature)
(Authorized Signature)

Date: _____

APPROVED:

By: _____

Town Manager
(Authorized Signature)

Date: _____

ACCEPTED:

By: _____

Contractor
(Authorized Signature)

Date: _____

By: _____

Consulting Engineer
(Authorized Signature)

Date: _____

CHANGE ORDER NO.: _____

Page 2 of 2

The adjustment in Contract Sum or Price and/or Contract Time or Times stated in this Change Order shall comprise the total price and/or time adjustment due or owed the CONTRACTOR for the work or changes defined in this Change Order. By executing the Change Order, the CONTRACTOR acknowledges and agrees that the stipulated price and/or time adjustments include the costs and delays for all work contained in the Change Order, including costs and delays associated with the interruption of schedules, extended overheads, delay, and cumulative impacts or ripple effect on all other non-affected work under this Contract. Signing of the Change Order constitutes full and mutual accord and satisfaction for the adjustment in Contract Sum or Price or Contract Time or Times as a result of increases or decreases in costs and time of performance caused directly and indirectly from the change, subject to the current scope of the entire work as set forth in the Contract Documents. Acceptance of the waiver constitutes an agreement between OWNER and CONTRACTOR that the Change Order represents an equitable adjustment to the Contract, and that CONTRACTOR waives all rights to file a claim on this Change Order after it is properly executed.

IN WITNESS WHEREOF, the undersigned have caused the execution hereof:

CONTRACTOR: _____

ATTEST:

By: _____

Name: _____

Secretary

Title: _____

Address: _____

[Corporate Seal]

Date: _____

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

By: _____

Date: _____

Title: Finance Director

OWNER: TOWN OF HOLLY SPRINGS

Approval as to form and legal sufficiency:

By: _____

Name: _____

By: _____

Title: _____

Date: _____

Date: _____

Distribution:

CONTRACTOR'S RELEASE OF OWNER

The Contractor, known as _____

for the construction of Project: _____.

hereby and forever releases the Town of Holly Springs (Owner), its officers, agents, and Diehl & Phillips, P.A. (Engineer), from all past, present, and future claims and liability to the Contractor for anything done or furnished for, relating to, or for any act of neglect of the Owner, its engineers, or any persons relating to or affecting the work.

Contractor's Certification:

Contractor: _____

Authorized Representative: _____

Date: _____

CONSENT OF SURETY COMPANY TO FINAL PAYMENT

PROJECT: _____

OWNER: Town of Holly Springs

CONTRACTOR: _____

CONTRACT: _____ DATE: _____

TO: Town of Holly Springs

P.O. Box 8

Holly Springs, NC 27540

In accordance with the provisions of the Contract between the Town of Holly Springs (Owner), and the Contractor, known as _____, the Surety Company, known as _____, on bond of Contractor, hereby approves of the final payment to Contractor, and agrees that final payment to Contractor shall not relieve the Surety Company of any of its obligations to the Owner as set forth in said Surety Company's bond.

In witness whereof, the Surety Company has hereunto set its hand this ____ day of _____ in the year _____.

Surety Company

Signature of Authorized Representative

[Seal]

Typed Name and Title of Authorized Representative

FINAL RECEIPT

Contract: _____

Received this _____ day of _____, 20____ as full and final payment of the cost of all improvements provided for in the foregoing Contract the sum of _____ Dollars and _____ Cents, (\$_____), in cash, being the full amount accruing to the undersigned by virtue of said Contract, said cash covering and including full payment for all extra work and material furnished by the undersigned in the construction of said improvements, and all incidentals thereto, and the undersigned hereby releases the said _____ from all claims whatsoever growing out of the said Contract.

These presents are to certify that all persons doing work upon or furnishing materials or supplies for said improvements under the foregoing Contract have been paid in full.

The undersigned further certifies that all taxes imposed by Chapter 212, North Carolina Statutes (Sales and Use Tax Act), as amended, have been paid and discharged.

CONTRACTOR

By: _____ (Seal)

(Typewritten Name)

SECTION 00905

OUTREACH PLAN AND GUIDELINES FOR RECRUITMENT AND SELECTION OF MINORITY BUSINESSES FOR PARTICIPATION IN TOWN OF HOLLY SPRINGS CONSTRUCTION CONTRACTS

In accordance with G.S. 143-128.2 these guidelines establish goals for minority participation in single-prime bidding, separate-prime bidding, Construction Manager-at-Risk, and alternative contracting methods on Holly Springs construction projects in the amount of \$300,000 or more. The Outreach Plan shall also be applicable to the selection process of architectural, engineering and Construction Manager-at-Risk services.

The Town of Holly Springs current goal for minority participation for public building construction is five percent (5%). The overall goal will be reviewed annually, or as soon as relevant data is available.

INTENT

The intent of these guidelines is that the Town of Holly Springs, as awarding authority for construction projects, and the contractors and subcontractors performing the construction contracts awarded, shall cooperate and in good faith do all things, legal, proper and reasonable to achieve the statutory goal of five percent (5%) for participation by minority businesses in each construction project as mandated by GS 143-128.2. Nothing in these guidelines shall be construed to require contractors or awarding authorities to award contracts or subcontracts to or to make purchases of materials or equipment from minority-business contractors or minority-business subcontractors who do not submit the lowest responsible responsive bid or bids.

DEFINITION

1. Minority - a person who is a citizen or lawful permanent resident of the United States and who is:
 - a. Black, that is, a person having origins in any of the black racial groups in Africa;
 - b. Hispanic, that is, a person of Spanish or Portuguese culture with' origins in Mexico, South or Central American, or the Caribbean Islands, regardless of race;
 - c. Asian American, that is, a person having origins in any of the original peoples of the Far East, Southeast Asia and Asia, the Indian subcontinent, or the Pacific Islands;
 - d. American Indian, that is, a person having origins in any of the original peoples of North America; or
 - e. Female
2. Minority Business - means a business
 - a. In which at least fifty-one percent (51 %) is owned by one or more minority persons, or in the case of a corporation, in which at least fifty-one percent (51 %) of the stock is owned by one or more minority persons or socially and economically disadvantaged individuals; and
 - b. Of which the management and daily business operations are controlled by one or more of the minority persons or socially and economically disadvantaged individuals who own it.

3. Socially and economically disadvantaged individual – means the same as defined in 15 U.S.C. 637. "Socially disadvantaged individuals are those who have been subjected to racial or ethnic prejudice or cultural bias because of their identity as a member of a group without regard to their individual qualities". "Economically disadvantaged individuals are those socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same business area who are not socially disadvantaged".
 4. Public Entity - means State and all public subdivisions and local government units.
 5. Owner – The Town of Holly Springs.
 6. Designer - Any person, firm, partnership, or corporation, which has contracted with the Town of Holly Springs to perform architectural or engineering work.
 7. Bidder - Any person, firm, partnership, corporation, association, or joint venture seeking to be awarded a public contract or subcontract.
 8. Contract - A mutually binding legal relationship, or any modification thereof, obligating the seller to furnish equipment, materials or services, including construction, and obligating the buyer to pay for them.
 9. Contractor - Any person, firm, partnership, corporation, association, or joint venture which has contracted with the Town of Holly Springs to perform construction work or repair.
 10. Subcontractor - A firm under contract with the prime contractor or Construction Manager-at-Risk for supplying materials or labor and materials and/or installation. The subcontractor may or may not provide materials in the subcontract.
3. Minority and Small Business Participation Outreach Plan
1. Work with minority-focused and small business groups that support MBE and small business inclusion in the solicitation of bids.
 2. Place more emphasis on the importance of soliciting certified MBE firms and small businesses for subcontracting opportunities at pre-bid conferences and in the bid documents. Examine specifications to identify special subcontracting opportunities and strongly encourage prime contractors to solicit bids for subcontracts from MBE firms.
 3. Provide detailed information to majority contractors concerning the Guidelines for Recruitment and Selection of Minority Business and Outreach Plan and provide information on G.S. 143-129 by holding meetings with the contractors.
 4. Assess the effectiveness of the MBE Program, and identify opportunities to enhance it, by evaluating MBE participation and compliance and reviewing the "good faith efforts" provided in bid packages.

5. Identify subcontracting opportunities unique to each construction contract and project and concentrate heavily on targeting certified MBE firms and small businesses that have expressed an interest in the Town's projects. Identify these opportunities and contact interested businesses no later than 10 days prior to the bid opening and provide a list of prime contractors plan to participate in the project.
6. Build new business relationships through networking and continue networking with other North Carolina cities and counties to find out how their Outreach Program and MBE program is working and sharing "best practices" and ideas to improve the program.
7. Participate in education opportunities throughout the community as they become available and offer training sessions to share the Town's Outreach Plan with interested businesses and organizations.
8. Be visible through participation in trade shows and business organizations of interest to MBE firms, majority contractors and small businesses, and provide information to the general public about the MBE Program, and continue outreach efforts to the business community.
9. Enhance the Town's web page by including the Outreach Plan and Guidelines, listing good faith efforts, and creating links to MBE resources, and creating awareness of specific subcontracting opportunities.
10. Make available to minority-focused agencies, a list of subcontracting opportunities when they are identified, no later than 10 days prior to the bid opening, and a list of prime bidders that subcontractors may wish to contact for subcontracting consideration.
11. Continue to maintain a database specifically for MBE firms and majority contractors to ensure those firms wishing to do business with the Town of Holly Springs have access to up to date information.
12. Advertise upcoming bid opportunities in minority-focused media.
13. Work with architects and engineers to make subcontracting opportunities more noticeable and more easily understood by potential contractors and subcontractors.

DESIGNER

Under the single-prime bidding, separate prime bidding, dual bidding, Construction Manager-at-Risk, or alternative contracting method, the designer must do all of the following:

- a. Attend the scheduled prebid conference to explain minority business requirements to the prospective bidders.
- b. Assist the owner to identify and notify prospective minority business prime and subcontractors of potential contracting opportunities.
- c. Maintain documentation of any contacts, correspondence, or conversations with minority business firms made in an attempt to meet the goals.

- d. Review jointly with the owner, all requirements of G.S. 143-128.2(c) and G.S. 143-128.2(f) - (i.e. bidders' proposal for identification of the minority businesses that will be utilized with corresponding dollar value of the bid and affidavit listing Good Faith Efforts or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of an award.
- e. During the construction phase of the project, review "MBE Documentation for Contract Payment" form with monthly pay applications to the owner and forward copies to the Town of Holly Springs.

PRIME CONTRACTOR(S) CONSTRUCTION MANAGER-AT RISK. AND ITS FIRST-TIER SUBCONTRACTORS

Under the single-prime bidding, the separate-prime bidding, dual bidding, Construction Manager-at-Risk and alternative contracting methods, contractor(s) must do all of the following:

- a. Attend the scheduled prebid conference.
- b. Identify or determine those work areas of a subcontract where minority businesses may have an interest in performing subcontract work.
- c. At least ten (10) days prior to the scheduled day of bid opening, notify minority businesses of potential subcontracting opportunities listed in the proposal. The notification must include all of the following:
 - (1) A description of the work for which the subbid is being solicited.
 - (2) The date, time and location where subbids are to be submitted.
 - (3) The name of the individual within the company who will be available to answer questions about the project.
 - (4) Where bid documents may be reviewed.
 - (5) Any special requirements that may exist, such as insurance, licenses, bonds and financial arrangements.
- d. During the bidding process, comply with the contractor(s) requirements listed in the proposal for minority participation.
- e. Identify on the bid the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit listing good faith efforts as required by G.S. 143-128.2(c) and G.S. 143-128.2(f) or Intent to Perform Contract With Own Workforce affidavit.
- f. Make documentation showing evidence of implementation of Prime Contractor, Construction Manager-at-Risk and First Tier Subcontractor responsibilities available for review by the Town of Holly Springs upon request.
- g. Provide one of the following upon being named the apparent low bidder: (1) an affidavit that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal. This affidavit shall give rise to a presumption that the bidder has made the required good faith effort; or (2) if the percentage is not equal to the applicable goal, then documentation of all good faith efforts taken to meet the goal. The documentation must include evidence of all good faith efforts that were implemented, including any advertisements, solicitations, and evidence of other specific actions demonstrating recruitment and selection of minority businesses for participation in the contract. Failure

to comply with these requirements is grounds for rejection of the bid and award to the next lowest responsible and responsive bidder.

- h. Identify the name(s) of minority business subcontractor(s) and corresponding dollar amount of work on the schedule of values.
- i. Submit with each monthly pay requests(s) and final payment(s), "MBE Documentation for Contract Payment" for designer's review.
- j. If at any time during the construction of a project, it becomes necessary to replace a minority business subcontractor I immediately advise the owner in writing of the circumstances involved. The prime contractor shall make a good faith effort to replace a minority business subcontractor with another minority business subcontractor.
- k. Make a good faith effort to solicit subbids from minority businesses during the construction of a project if additional subcontracting opportunities become available.

MINORITY BUSINESS RESPONSIBILITIES

The Town of Holly Springs does not certify minority, disadvantaged or woman-owned businesses. Any business which desires to participate as an MBE will be required to complete and submit for certification, documents required by the agencies listed below. Only those firms holding current certification through at least one of the following agencies will be considered eligible for inclusion in meeting the MBE participation percentage goals:

North Carolina Administration Department Historically Underutilized Business (HUB) certification.

North Carolina Department of Transportation Minority/Disadvantage/Woman- owned Business certification.

Small Business. Administration 8(a) certification.

Other governmental agencies on a case-by-case basis.

A copy of these guidelines will be issued with each bid package for the Town of Holly Springs construction projects. These guidelines shall apply to all contractors regardless of ownership.

MINIMUM COMPLIANCE REQUIREMENTS

All written statements, affidavits or intentions made by the Bidder shall become a part of the agreement between the Contractor and the Town of Holly Springs for the performance of the contract. Failure to comply with any of these statements, affidavits or intentions, or with the minority business guidelines shall constitute a breach of contract. A finding by the Town that any information, submitted either prior to award of the contract or during the performance of the contract, is inaccurate, false or incomplete, shall constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the Town of Holly Springs whether to terminate the contract for breach.

In determining whether a contractor has made Good Faith Efforts, the Town will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and results of these efforts. Contractors are required to earn at least 50 points. Failure to file a required affidavit or documentation that demonstrates that the contractor made the required good faith effort is grounds for rejection of the bid.

- (1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed. Value = 10 points.
- (2) Making the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals are due. Value = 10 points.
- (3) Breaking down or combining elements of work in economically feasible. units to facilitate minority participation. Value - 15 points.
- (4) Working with minority trade, community, or contractor organizations identified by the Office for Historically Underutilized Businesses and those included in the bid documents to provide assistance in recruitment of minority businesses. Value = 10 points.
- (5) Attending any prebid meetings scheduled by the public owner. Value = 10 points.
- (6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors. Value = 20 points.
- (7) Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing. Value = 15 points.
- (8) Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit. Value = 25 points.
- (9) Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public building construction or repair project when possible. Value = 20 points.
- (10) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands. Value = 20 points.

Town of Holly Springs

**Intent to Perform Contract With
Own Workforce**

County of _____

Affidavit of _____
(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the
_____ contract.
(Name of Project)

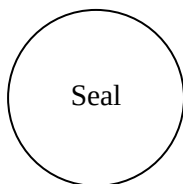
In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type of project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____

Signature: _____



Title: _____

State of North Carolina, County of _____
Subscribed and sworn to before me this _____ day of _____ 20____
Notary Public _____
My commission expires _____

TOWN OF HOLLY SPRINGS, NORTH CAROLINA
"GOOD FAITH EFFORT"

County of _____

Affidavit of _____
(Name of Bidder)

I have made a good faith effort to comply under the following areas checked:

(A minimum of 50 points is required to have achieved a "good faith effort")

(Y/N)

- _____ (1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed. Value = 10 points
- _____ (2) Making the construction plans, specifications and requirements available for review by prospective minority businesses or providing these documents to them at least 10 days before the bid or proposals are due. Value = 10 points
- _____ (3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation. Value = 10 points
- _____ (4) Working with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses. Value = 10 points.
- _____ (5) Attending any pre-bid meetings scheduled by the public owner. Value = 10 points.
- _____ (6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors. Value = 20 points.
- _____ (7) Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of minority business based on lack of qualification should have the reasons documented writing. Value = 15 points.
- _____ (8) Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily is required. Assisting minority businesses in obtaining the 'same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit. Value = 25 points.

_____ (9) Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible. Value = 20 points.

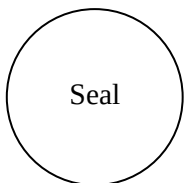
_____ (10) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands. Value = 20 points.

In accordance with GSI43-128.2(d) the undersigned will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon execution of a contract with the Owner. Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certified that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____

Name of Authorized _____



Officer: Signature: _____

Title: _____

State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

Town of Holly Springs**- Portion of the Work to be
Performed by Minority Firms**

***** (NOTE: THIS FORM IS NOT TO BE SUBMITTED WITH THE BID PROPOSAL) *****

If the portion of the work to be executed by minority businesses as defined in GS 143-128.2 (g) is equal to or greater than 5% of the bidders total contract price, then the bidder must complete this affidavit. This affidavit shall be provided by the apparent lowest responsible, responsive bidder within 72 hours after notification of being low bidder.

Affidavit of: _____ I do hereby certify that on the
(Bidder)

(Project Name)

Project ID # _____ Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with minority business enterprises. Minority Businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below.

Attach additional sheets if required.

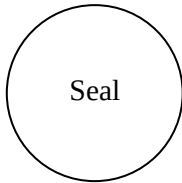
Name and Phone Number	* Minority Category	Work Description	Dollar Value

*Minority categories: Black, African American (B), Hispanic (H), Asian American (A), American Indian (I), Female (F), Socially and Economically Disadvantaged (D)

Pursuant to GS 143-128.2 (d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____



Signature: _____

Title: _____

State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

If the goal of 5% participation by minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts.

Affidavit of: _____
(Bidder)

I do certify the attached documentation as true and accurate representation of my good faith efforts.

(Attach additional sheets if required)

Name and Phone Number	*Minority Category	Work Description	Dollar Value

*Minority categories: Black, African American (B), Hispanic (H), Asian American (A), American Indian (I), Female (F), Socially and Economically Disadvantaged (D)

Documentation of the Bidder's good faith efforts to meet the goals set forth in these provisions. Examples of documentation shall include the following evidence:

- A. Copies of solicitation for quotes to at least three (3) minority business firms from the source list provided for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contract, and location, date and time when quotes must be received.
- B. Copies of quotes or responses received from each firm responding to the solicitation.
- C. A telephone log of follow-up calls to each firm sent a solicitation.
- D. For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- E. Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.
- F. Copy of pre-bid roster.

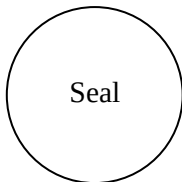
G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.

H. Letter detailing reasons for rejection of minority business due to lack of qualification.

I. Letter documenting proposed assistance offered to minority businesses in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

Date: _____ Name of Authorized Officer: _____



Signature: _____

Title: _____

State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

Identification of Minority Business Participation

I, _____
(Name of Bidder)

do hereby certify that on this project, we will use the following minority business enterprises as construction subcontractors, vendors, suppliers or providers of professional services.

Firm Name, Address and Phone #	Work Type	*Minority Category

*Minority categories: Black, African American (B), Hispanic (R), Asian American (A).
American Indian (I), Female (F), Socially and Economically Disadvantaged (D)

The total value of minority business contracting will be (\$) _____.

Town of Holly Springs, NC

MBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor/Architect: _____

Address & Phone: _____

Project Name: _____

Pay Application #: _____ Period: _____

The following is a list of payments to be made to minority business contractors on this project for the above-mentioned period.

Firm Name	*Minority Category	Payment Amount	Owner Use Only

*Minority categories: Black, African American (B), Hispanic (H), Asian American (A), American Indian (I), Female (F), Socially and Economically Disadvantaged (D)

Date: _____ Approved/Certified By: _____

Name

Title

Signature

****THIS DOCUMENT MUST BE SUBMITTED WITH EACH PAY REQUEST & FINAL PAYMENT**

SECTION 00910

CERTIFICATE OF TOWN ATTORNEY

I am the Town Attorney for the Town of Holly Springs and after receiving these documents, I find them legally sufficient as to form.

BY: _____

TITLE: _____

DATE: _____

CERTIFICATE OF FINANCE OFFICER

I hereby certify that I am the legal and duly appointed Financial Officer for the Owner of this project and that provision for the payment of the moneys to fall due under this agreement has been made or will be made by appropriation duly made or by bonds or notes duly authorized, as required by the Local Government and Fiscal Control Act.

BY: _____

TITLE: _____

DATE: _____

- END OF SECTION 00910 -

DIVISION 1 - GENERAL

1-A: GENERAL REQUIREMENTS

A. General:

The work to be done under the construction contracts and in accordance with these specifications consists of furnishing equipment, supervision, labor, skill, materials, and all other items necessary for the construction of the Town of Holly Springs Twelve Oaks Pump Station Expansion and Modifications Project. The Contractor shall perform all work required for such construction in accordance with the contract documents and, subject to the terms and conditions of the contract, complete, and ready for use. This project shall have one contract. This contract is:

Contract No. 1: Twelve Oaks Pump Station Expansion and Modifications

The work shall consist of, but shall not be limited to, the following:

- Furnishing and installing one 8-foot diameter precast concrete wetwell (approximate depth to subgrade of 35 feet)
- Furnishing and installing one precast concrete valve vault
- Furnishing and installing two submersible wastewater pumps in the new wetwell
- Furnishing one spare submersible wastewater pump and turning it over to the Town
- Furnishing and installing Protecto 401 lined 12-inch ductile iron discharge piping and fittings for the two new pumps
- Furnishing and installing plug valves and check valves for the two new pumps
- Furnishing and installing approximately 25 linear feet of Protecto 401 lined 16-inch ductile iron pipe and fittings for influent piping to the new wetwell
- Furnishing and installing two new Reduced Voltage Solid State starters
- Furnishing and installing two new 400 Amp disconnect switches and mounting rack
- Removing existing conductors, and furnishing and installing new conductors in existing conduits
- Furnishing and installing new breakers in existing panelboards
- Furnishing and installing one new 3-ton jib crane, motorized trolley, electric chain hoist, and jib crane foundation
- Furnishing and installing a new control panel for the existing solids cutter, removing the existing hydraulic pump system, and having the solids cutter retrofitted with an immersible motor by the manufacturer's representative
- Furnishing and installing one new carbon adsorption odor control system, and related ducting and electrical service
- Furnishing and installing one mini-split heat pump system for the existing building
- Installation and maintenance of erosion control measures
- Restoration of the gravel driveway
- Clean up, finish grading of disturbed areas, and seeding of all disturbed areas not to receive the weed barrier and CABC stone ground cover

B. Pre-Construction Conference:

A pre-construction conference shall be held after the award of contract. The Engineer will notify the Contractor of the place, date, and time of the meeting. The Contractor shall, at minimum, have his project manager and all sub-contractors attend the meeting.

C. Coordination:

The Contractor shall require his sub-contractors and trades to cooperate and fully coordinate their work for the purpose of securing a complete project within the contract period.

D. Sub-Surface Information:

Sub-surface information is available for the sole reason of placing the bidder in receipt of all information available to the Owner and Engineer, and in no event is to be considered as part of the contract documents. See the Appendix for a copy of the subsurface report.

In bidding this project, the bidder acknowledges that he has interpreted the sub-surface information according to his own judgment and that he is not relying upon the sub-surface conditions that may be found to exist. The bidder further acknowledges that he assumes all risk contingent upon the nature of the sub-surface conditions to be actually encountered by him in performing the work required by the contract, even though such actual conditions may result in the bidder performing more or less work than he originally anticipated.

In making this data available, the Owner and Engineer make no guarantees, either expressed or implied, as to the accuracy of the data or the accuracy of any interpretation thereof.

E. Time of Work:

Unless otherwise specifically permitted, no work shall be done between the hours of 6:00 p.m. and 7:00 a.m., or on Saturdays and Sundays, except as necessary for the proper care and protection of work already performed.

If it shall become imperative to perform work at night, the Owner and Engineer shall be informed a reasonable time in advance of the beginning of such work. Temporary lighting and all other necessary facilities for performing and inspecting the work shall be provided and maintained by the Contractor. The Owner shall make the determination of whether the proposed work is imperative and justifies the inconveniences of night work to its citizens and staff.

Should the Contractor be allowed to work nights or weekends, the additional Engineering or construction observation fees incurred by the Owner may be charged to the Contractor and deducted from the monies due to him.

Unless otherwise specifically permitted, all work that would be subject to damage shall be stopped during inclement, stormy, or freezing weather. Only such work as will not suffer injury to workmanship or materials will be permitted. Contractor shall carefully

protect his work against damage or injury from the weather; and when work is permitted during freezing weather, he shall provide and maintain approved facilities for heating the materials and for protecting the finished work.

F. Plans and Specifications:

The Engineer will provide the Contractor with three sets of plans and specifications after the execution of the contract, and one electronic version of the documents as PDFs. Additional paper copies of the plans and specifications will be available for the cost of printing and handling.

The Engineer will provide the Contractor with three copies of any revised plans, drawings, and specifications as may be required for the execution of authorized changes or extra work.

The data given in the specifications and shown on the plans and drawings is believed to be accurate, but the accuracy is not guaranteed. Each Contractor must take all levels, locations, measurements, and verify all dimensions of the job site prior to construction and adapt his work into the exact construction. Scale measurements taken from prints are not considered for more than reference; the larger scale drawings take precedence over the smaller scale, and shop drawings take precedence over all others.

G. Surveys and Staking:

All work under this contract shall be constructed in accordance with the lines and grades shown on the contract drawings or as directed by the Engineer. Elevation of existing ground, structures and appurtenances are believed to be reasonably correct but are not guaranteed to be absolute and therefore are presented only as an approximation. Any error or apparent discrepancy in the data shown or omissions of data required for accurately accomplishing the stake-out survey shall be referred immediately to the Engineer for interpretation or correction.

All survey work for construction control purposes shall be made by the Contractor at his expense. The plans provide a benchmark and horizontal control points for use by the Contractor's Surveyor.

Contractor shall establish all base lines for the location of the principal component parts of the work together with a suitable number of benchmarks adjacent to the work. Based upon the information provided by the contract drawings, the Contractor shall develop and make all detail surveys necessary for construction including slope stakes, batter boards, stakes for all working points, lines, and elevations.

Contractor shall have the responsibility to carefully preserve the bench marks, reference points and stakes; and in the case of destruction thereof by the Contractor or resulting from his negligence, the Contractor shall be charged with the expense and damage resulting from this and shall be responsible for any mistakes that may be caused by the unnecessary loss or disturbance of such bench marks, reference points, and stakes.

Existing or new control points, property markers, and monuments that will be or are destroyed during the normal causes of construction shall be re-established by the Contractor; and all reference ties shall be furnished the Engineer.

All computations necessary to establish the exact position of the work shall be made and preserved by the Contractor.

The Engineer may check all or any portion of the work, and the Contractor shall afford all necessary assistance to the Engineer in carrying out such checks. The Contractor shall immediately make any necessary corrections to the work. Such checking by the Engineer shall not relieve the Contractor of any responsibilities for the accuracy or completeness of his work.

H. Record Drawings:

The Contractor shall keep a complete and up to date record in red pencil of any and all changes made during construction on one set of plans and specifications.

At the completion of the work, the Contractor shall furnish record drawings indicating the final location of all structures, yard piping, conduits, property lines, new roads and pavements, curbs, drainage ditches, etc. The record drawings shall also show the size and elevation of all piping, finish grades, and elevation of all structures.

Record drawings for wastewater gravity collection systems shall indicate final invert elevations, deflections through manholes, depth of manholes, and location of service fittings along the main line. The Contractor shall record the approximate location of marker balls installed along a force main route, and shall provide at least two measurements from permanent above-ground structures to each installed valve and fitting. Record drawings shall be prepared using survey data provided by the Contractor's Surveyor. Final payment will be withheld until satisfactory record drawings have been furnished to the Owner.

I. Field Offices and Material Staging Area:

Field offices are not required for this project, but the Contractor may elect to furnish one if desired. It shall be the Contractor's responsibility for obtaining permission and paying any costs associated with any private property used for a field office. The Contractor is also responsible for obtaining the use of any private property for use as a staging area and for material storage. This project has limited materials storage or staging areas, other than the area located within the existing utility easements.

J. Temporary Toilets:

Each Contractor shall provide temporary toilet facilities for use of all workmen. Temporary toilet facilities shall comply with local and state sanitation laws and regulations. Owner's facilities shall not be used by any Contractor's personnel. Contractor must obtain the Owner's approval of the proposed location of the temporary toilets, and they must be located within the permanent utility or temporary construction easements on this project site.

K. Project Sign: Not required for this project.

L. Temporary Services:

Each Contractor shall make arrangements for obtaining any potable water required for his work from the Town of Holly Springs. The Contractor must obtain a meter from the Town to measure all water used. The Town will invoice the Contractor for the water used, and the Contractor will be reimbursed the same amount through the monthly pay application to the Town (water invoice will be submitted with the pay application to document the cost).

M. Existing Utilities:

The term existing utilities shall be deemed to refer to both publicly-owned and privately-owned utilities such as electric power and lighting, telephone, cable television, water, gas, storm drains, and sanitary sewers, and all appurtenant structures.

Where existing utilities and structures are indicated on the drawings, it shall be understood that all of the existing utilities and structures affecting the work may not be shown and that the locations of those shown are approximate only. It shall be the responsibility of the Contractor to ascertain the actual extent and exact location of existing utilities and structures. In every instance, the Contractor shall notify the proper authority having jurisdiction and obtain all necessary locations, instructions, and approvals before performing any work in the vicinity of existing utilities.

The work shall be carried out in a manner to prevent disruption of existing services and to avoid damage to the existing utilities. Temporary connections shall be provided, as required, to insure no interruption of existing services. Any damage resulting from the work of this contract shall be promptly repaired by the Contractor at his own expense in a manner approved by the Engineer and further subject to the requirements of the authorities having jurisdiction. Where it is required by the authority having jurisdiction that the authority perform their own repairs or have them done by others, the Contractor shall be responsible for all costs thereof.

Where excavations by the Contractor require any utility lines or appurtenant structures to be temporarily supported and otherwise protected during the construction work, such support and protection shall be provided by the Contractor. All such work shall be performed in a manner satisfactory to the Engineer and the respective authority having jurisdiction over such work. In the event the Contractor fails to provide proper support or protection to any existing utility, the Engineer may, at his discretion, have the respective authority provide such support or protection as may be necessary to insure the safety of such utility; and the costs of such measures shall be paid by the Contractor.

N. Safety:

Each Contractor alone shall be solely and completely responsible for conditions of the job site in connection with his work, including safety of all persons and property, preparatory

to and during performance of the work. This requirement shall apply continuously and not be limited to normal working hours.

The construction documents and the joint and several phases of construction hereby contemplated are to be governed, at all times, by applicable provisions of local, state, and federal laws and regulations, including but not limited to the latest amendments of the following:

Department of Labor, Bureau of Labor Standards, Safety and Health Regulations for Construction, and Occupational Safety and Health Act, including rules and regulations issued pursuant thereto, applicable to the work and performance of the contract (OSHA).

All trench excavation must comply with all applicable OSHA regulations, and it is the sole responsibility of the Contractor to be sure this compliance occurs. If any part of the plans or specifications direct or might be interpreted to direct the Contractor to perform any act, procedure or method that might be construed to cause an OSHA violation, the Contractor must notify the engineer in writing before any such act, procedure, or method is undertaken by the Contractor and the Contractor must outline why this act, procedure, or method might be construed to be an OSHA violation. The Contractor must recommend a method to accomplish the same task that will not result in an OSHA violation, with all such work to be performed at no additional cost to the Owner. The Contractor is fully responsible for all OSHA compliance on this project.

The duty of the Engineer to conduct construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures in, on, or near the construction site.

O. Blasting and Explosives:

Blasting will not be allowed on this project, due to the proximity of existing structures, utilities, and residences.

P. Weather Conditions:

No work shall be done when the weather is unsuitable. The Contractor shall take necessary precautions (in the event of impending storms) to protect all work, materials, or equipment from damage or deterioration due to floods, driving rain, or wind and snowstorms. The Owner reserves the right, through the opinion of the Engineer, to order that additional protection measures over and beyond those proposed by the Contractor, be taken to safeguard all components of the project. The Contractor shall not claim any compensation for such precautionary measures so ordered, nor claim any compensation from the Owner for damage to the work from weather elements.

The mixing and placing of concrete or pavements courses, the laying of masonry, and installation of sewers and water mains shall be stopped during rainstorms, if ordered by the Engineer; and all freshly placed work shall be protected by tarps or other suitable covering in such manner as to prevent running water from coming in contact with it.

Sufficient coverings shall be provided and kept ready at hand for this purpose. The limitations and requirements for mixing and placing concrete or laying of masonry in cold weather shall be as described elsewhere in these specifications.

The bidder shall prepare his bid with the understanding that unsuitable weather may cause all work to be stopped; yet an extension of the contract period will not be permitted due to unsuitable weather.

Q. Limits of Work Area:

The Contractor shall confine his construction operations within the Limits of Construction indicated on the project plans, which are confined within the pump station site fencing. Storage of equipment and materials outside of the Limits of Construction shall not be permitted.

This Project does not provide a materials storage/staging area for the Contractor beyond the Limits of Construction. The Contractor shall be responsible for securing a materials storage/staging area for this project, if needed, and transporting materials to the active worksite.

Contractor shall provide traffic control signs and flag personnel, and maintain open one 12' (minimum) travel lane when construction operations or deliveries require a short-term interruption of two-way traffic on the street that provides access to the pump station driveway.

R. Protection of Property:

Contractor shall be responsible for the preservation and protection of property adjacent to the work site against damage or injury as a result of his operations under this contract. Any damage or injury occurring on account of any act, omission, or neglect on the part of the Contractor shall be restored in a proper and satisfactory manner or replaced by and at the expense of the Contractor to an equal or superior condition than previously existed.

In the event of any claims for damage or alleged damage to property as a result of work under this contract, the Contractor shall be responsible for all costs in connection with the settlement of or defense against such claims. Prior to commencement of work, the Contractor shall, at his own expense, make a video or photographic log of the work site as necessary to establish the existing condition of the adjacent properties. Before final payment can be made, the Contractor shall furnish satisfactory evidence that all claims for damage have been legally settled, or sufficient funds to cover such claims have been placed in escrow.

S. Construction Permits and Easements:

The Contractor shall obtain and keep current any necessary building and construction permits from those authorities or agencies having jurisdiction over land areas, utilities, or structures which are located within the contract limits and which will be constructed,

occupied, encountered, used, or temporarily interrupted by the Contractor's operations unless otherwise stated. The Contractor shall pay all building permit and inspection fees.

When construction permits are accompanied by regulations or requirements issued by a particular authority or agency, it shall be the Contractor's responsibility to familiarize himself and comply with such regulations or requirements as they apply to his operations on this project.

T. Construction Schedule:

Within 15 days after award of contract, the Contractor shall submit to the Engineer, for approval, a project construction schedule that shows the required tasks, task duration and sequencing, and the critical path that will complete the project scope of work within time allotted. Schedule may be of critical path type or any other system providing equal results. Schedule shall account for all subcontracts. Schedule shall provide for proper sequence of construction considering various crafts, purchasing time, shop drawing approval, material delivery, equipment fabrication, and similar time-consuming factors. Schedule shall show as a minimum, earliest starting, earliest completion, latest starting, latest finish, and total float for each task or item. Schedule to be evaluated not less than monthly. An updated and corrected schedule will be submitted to Engineer in triplicate and show rescheduling necessary to reflect true job conditions. This updated schedule shall be submitted monthly to the Engineer with the Contractor's pay request. When shortening of various time intervals is necessary to correct for behind-schedule conditions, indicate steps to implement to accomplish work in shortest schedule. Information shall be submitted to Engineer in writing with revised schedule.

If Contractor does not take necessary action to accomplish work according to schedule, he may be ordered by the Engineer, in writing, to take necessary and timely action to improve his work progress. Order may include increased work forces, extra equipment, extra shifts, or other action as required. Should Contractor refuse or neglect to take such action or fail to accomplish improvements, the Owner through the Engineer may take any action authorized under provisions of this contract including but not limited to withholding of payment and termination of contract.

U. Equipment and Materials:

All equipment, materials, instruments, or devices incorporated in this project shall be new and unused, unless indicated otherwise in the contract documents.

Equipment and materials to be incorporated in the work shall be delivered sufficiently in advance of their installation and use to prevent delay in the execution of the work, and they shall be delivered as nearly as feasible in the order required for executing the work.

The Contractor shall protect all equipment and materials from deterioration and damage. Any equipment or materials of whatever kind, which may have become damaged or deteriorated from any cause, shall be removed and replaced by new and satisfactory items and at the Contractor's expense for both labor and materials.

Each Contractor shall provide for continuity of supply to avoid change of supplier or manufacturer or change in brand materials during work.

Materials shall not be placed or stored within the public street rights of way.

Store ferrous materials to prevent contact with ground and to prevent rusting and damage from weather.

V. Substitutions:

Whenever a particular brand or make of material, equipment, or other item is specified, or is indicated on the drawings, it is for the purpose of establishing a standard of quality, design, and type desired and to supplement the detailed specifications. Any other brand or make that, in the opinion of the Engineer, is equivalent to that specified or indicated may be offered as a substitute subject to the following provisions:

1. Contractor shall submit for each proposed substitution sufficient details, complete descriptive literature, and performance data together with samples of the materials, where feasible, to enable the Engineer to determine if the proposed substitution is equal.
2. Contractor shall submit certified tests, where applicable, by an independent laboratory attesting that the proposed substitution is equal.
3. A list of installations where the proposed substitution is equal.
4. Requests for substitutions shall include full information concerning cost savings resulting from such substitutions to the Owner.
5. Where the approval of a substitution requires revision or redesign of any part of the work, all such revision and redesign, and all new drawings and details required therefore, shall be provided by the Contractor at his own cost and expense, and shall be subject to the approval of the Engineer.
6. In the event that the Engineer is required to provide additional Engineering services, then the Engineer's charges for such additional services shall be charged to the Contractor by the Owner.
7. In all cases, the Engineer shall be the sole judge as to whether a proposed substitution is to be approved. The Contractor shall abide by the Engineer's decision when proposed substitute items are judged to be unacceptable and shall, in such instances, furnish the item specified or indicated. No substitute items shall be used in the work without written approval of the Engineer.

Contractor shall make no claim for an extension of time or for damages by reason of the time taken by the Engineer in considering a substitution proposed by the Contractor, or by reason of the failure of the Engineer to approve a substitution proposed by the

Contractor. Acceptance of any proposed substitution shall in no way release the Contractor from any of the requirements of the Contract Documents.

W. Maintenance of Traffic:

Contractor shall obey all traffic laws and comply with all the requirements, rules, and regulations of the North Carolina State Department of Transportation and local authorities having jurisdiction to maintain adequate warning signs, lights, barriers, etc., for the protection of traffic on public roadways.

The Contractor shall maintain traffic and protect the public from all damage to persons and property within the contract limits, in accordance with the contract documents and all applicable state and local regulations. He shall conduct his operations so as to maintain and protect access for vehicular and pedestrian traffic, to and from all properties adjoining or adjacent to those streets affected by his operations, and to subject the public to a minimum of delay and inconvenience. Suitable signs, barricades, railing, etc., shall be erected and the work outlined by adequate lighting at night, as applicable. Danger lights shall be provided as required. Watchmen and flagmen shall be provided as may be necessary for the protection of traffic.

X. Defective Work, Equipment, or Materials:

Any defective or imperfect work, equipment, or materials furnished by the Contractor that is discovered before the final acceptance of the work, as established by the Certificate of Substantial Completion, or during the subsequent guarantee period, shall be removed immediately even though it may have been overlooked by the Engineer and included in a pay application. Any equipment or materials condemned or rejected by the Engineer shall be tagged as such and shall be immediately removed from the site. Satisfactory work or materials shall be substituted for that rejected.

The Engineer may order tests of imperfect or damaged work, equipment, or materials to determine the required functional capability for possible acceptance, if there is no other reason for rejection. The cost of such tests shall be borne by the Contractor; and the nature, tester, extent, and supervision of the tests will be as determined by the Engineer. If the results of the tests indicate that the required functional capability of the work, equipment, or material was not impaired, consistent with the final general appearance of same, the work, equipment, or materials may be deemed acceptable. If the results of such tests reveal that the required functional capability of the questionable work, equipment, or materials have been impaired, then such work, equipment, or materials shall be deemed imperfect and shall be replaced. The Contractor may elect to replace the imperfect work, equipment, or material in lieu of performing the tests.

Y. Openings, Chases, Sleeves, Inserts, Equipment Pads, etc.: Not required for this project.

Z. Periodic Clean Up:

During construction, the Contractor shall regularly remove from the site of the work all accumulated debris and surplus materials of any kind that result from his operations.

Unused equipment and tools shall be stored at the Contractor's off-site base of operations for the project.

When the work involves installation of sewers, drains, water mains, manholes, underground structures, or other disturbance of existing features in or across streets, rights-of-way, easements, or private property, the Contractor shall (as the work progresses) promptly backfill, compact, grade, and otherwise restore the disturbed area to a basic condition which will permit resumption of pedestrian or vehicular traffic and any other critical activity or function consistent with the original use of the land. The requirements for temporary paving of streets, walks, and driveways are specified elsewhere. Unsightly mounds of earth, large stones, boulders, and debris shall be removed so that the site presents a neat appearance.

AA. Major Equipment Stipulation:

Not Applicable to this Project.

BB. Additional Engineering Services:

In the event that the Engineer is required to provide additional Engineering services as a result of Contractor's errors, omissions, or failure to conform to the requirements of the contract documents, or if the Engineer is required to examine and evaluate any changes proposed by the Contractor solely for the convenience of the Contractor, then the Engineer's charges in connection with such additional service shall be charged to the Contractor by the Owner.

CC. Additional Owner Expenses:

The normal work time under this contract is 7:00 AM to 6:00 PM, five days per week, Monday through Friday inclusive. Work beyond these hours will result in additional expense to the Owner. Any expenses and/or damages, including the cost of Engineer's periodic site visits, arising from the Contractor's operations beyond the hours and days specified above will be borne by the Contractor.

In the event the work of this contract is not completed within the time set forth in the contract or within the time to which such completion may have been extended in accordance with the contract documents, the additional Engineering or inspection charges incurred by the Owner may be charged to the Contractor and deducted from the monies due him. Extra work or supplemental contract work added to the original contract, as well as extenuating circumstances beyond the control of the Contractor, will be given due consideration by the Owner before assessing Engineering and inspection charges against the Contractor.

DD. Inspection and Tests:

The Contractor shall allow the Engineer ample time and opportunity for testing materials and equipment to be used in the work. He shall advise the Engineer promptly upon placing orders for materials and equipment so that arrangements may be made, if desired, for inspection before shipment from the place of manufacture. The Contractor shall at all times furnish the Engineer and his representatives, facilities including labor, and allow

proper time for inspecting and testing materials, equipment, and workmanship. The Contractor must anticipate that possible delays may occur in the execution of his work due to the necessity of materials and equipment being inspected and accepted for use. The Contractor shall furnish at his own expense, all samples of materials required by the Engineer for testing, and shall make his own arrangements for providing water, electric power, or fuel for the various inspections and tests of structures and equipment.

The Contractor shall furnish the services of representatives of the manufacturers of certain equipment, as prescribed in other sections of the specifications. The Contractor shall also place his orders for such equipment on the basis that, after the equipment has been tested prior to final acceptance of the work, the manufacturer will furnish the Owner with certified statements that the equipment has been installed properly and is ready to be placed in functional operation. Tests and analyses required of equipment shall be paid for by the Contractor, unless specified otherwise in the section that covers a particular piece of equipment.

Where other tests or analyses are specifically required in other sections of these specifications, the cost thereof shall be borne by the party (Owner or Contractor) so designated in such sections. The Owner will bear the cost of all tests, inspections, or investigations undertaken by the order of the Engineer for the purpose of determining conformance with the contract documents if such tests, inspection, or investigations are not specifically required by the contract documents, and if conformance is ascertained thereby. Whenever nonconformance is determined by the Engineer as a result of such tests, inspections, or investigations, the Contractor shall bear the full cost thereof or shall reimburse the Owner for said costs. In this connection, the cost of any additional tests and investigations, which are ordered by the Engineer to ascertain subsequent conformance with the contract documents, shall be borne by the Contractor.

EE. Siltation and Erosion:

The Contractor should be familiar with the applicable provisions of the Sedimentation Pollution Control Act of 1973 and the policies and procedures of the NC Division of Energy, Minerals, and Land Resources. The Contractor shall be responsible for incorporating conservational procedures necessary to comply with this act in minimizing erosion and sediment pollution associated with the construction of this project as directed by the Engineer.

FF. Inspections by Federal and State Agencies:

Not Applicable to this Project.

GG. Registration of Chemicals:

Each Contractor shall register for the purpose specified, all chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification with either the Environmental Protection Agency or the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

HH. Experience Clause:

Not Applicable to this Project.

II. Project Close Out:

As construction of the project enters the final stages of completion, the Contractor shall, in concert with accomplishing the requirements set forth in the contract documents, attend to or have already completed the following items as they apply to his contract:

1. Required testing of project components.
2. Correcting or replacing defective work, including completion of items previously overlooked or work which remains incomplete, all as evidenced by the Engineer's "Punch" lists.
3. Attend to any other items listed herein or brought to the Contractor's attention by the Engineer.

In addition, and before the Certificate of Completion is issued, the Contractor shall submit to the Engineer (or to the Owner if indicated) certain records, certifications, etc., which are specified elsewhere in the contract documents. Missing, incomplete, or unacceptable items, as determined by the Engineer or the Owner, shall constitute grounds for withholding final payment to the Contractor. A partial list of such items appears below, but it shall be the Contractor's responsibility to submit any other items that are required in the contract documents.

1. Test results of project components.
2. Certification of equipment or materials in compliance with contract documents.
3. Operation and maintenance instructions or manuals for equipment.
4. One set of neatly marked-up record drawings showing as-built changes and additions to the work under his contract.
5. Any special guarantees or bonds (Submit to Owner).

JJ. Use of Facilities Before Completion:

The Owner reserves the right to enter and use any portion of the constructed facilities before final completion of the whole work to be done under this contract. However, only those portions of the facilities that have been completed to the Engineer's satisfaction, as evidenced by his issuing a Certificate of Substantial Completion covering that part of the work, shall be placed in service.

It shall be the Owner's responsibility to prevent premature connections to or use of any portion of the installed facilities by private or public parties, persons or groups of persons, before the Engineer issues his Certificate of Substantial Completion covering that portion of the work to be placed in service.

Consistent with the approved progress schedule, the Contractor shall cooperate with the Owner, his agents, and the Engineer to accelerate completion of those facilities, or portions thereof, which have been designated for early use by the Owner.

KK. Final Clean-up; Site Rehabilitation:

Before finally leaving the site, the Contractor shall remove from the site of the work all accumulated debris and surplus materials of any kind which result from his operation, including construction equipment, tools, sheds, sanitary enclosures, etc. The Contractor shall leave all equipment, fixtures, and work, which he has installed, in a clean condition. The completed project shall be turned over to the Owner in a neat and orderly condition.

The site of the work shall be rehabilitated or developed in accordance with other sections of the specifications and the drawings. In the absence of any portion of these requirements, the Contractor shall completely rehabilitate the site to a condition and appearance equal or superior to that which existed just prior to construction, except for those items whose permanent removal or relocation was required in the contract documents or order by the Owner.

LL. Final Inspection:

Final cleaning and repairing shall be so arranged as to be finished upon completion of the construction work.

The Engineer will make his final inspection of the work during the progress of final cleaning and repairing, and any portion of the work finally inspected and accepted by the Engineer shall be kept clean by the Contractor, until the final acceptance of the entire work.

When the Contractor has finally cleaned and repaired the whole or any portion of the work, he shall notify the Engineer that he is ready for final inspection of the whole or a portion of the work, and the Engineer will thereupon inspect the work. If the work is not found satisfactory, the Engineer will order further cleaning, repairs, or replacement.

When such further cleaning or repairing is completed, the Engineer, upon further notice, will again inspect the work. The "Final Payment" will not be processed until the Contractor has complied with the requirements set forth, and the Engineer has made his final inspection of the entire work and is satisfied that the entire work is properly and satisfactorily constructed in accordance with the requirements of the contract documents.

MM. Shop Drawings:

Shop drawings include, but are not limited to, layout drawings in plan and elevation, installation drawings, construction drawings, certified wiring diagrams, interconnecting wiring diagrams, manufacturer's data, etc. Contractor shall be responsible for securing all of the information, details, dimensions, drawings, etc. necessary to prepare the shop drawings required under this contract and to fulfill all other requirements of this contract. Shop drawings shall, at minimum, accurately and clearly present the following information:

1. All working and installation dimensions.
2. Arrangement and sectional views.

3. Units of equipment in the proposed positions for installation, details of required attachments and connections and dimensioned locations between units and in relation to the structures.
4. Necessary details and information for making connections between the various trades including, but not limited to, power supplies and interconnection wiring between units, accessories, appurtenance, etc.

Contractor shall submit for review by the Engineer shop drawings for all fabricated work and for all manufactured items required to be furnished by the contract documents.

Structural and all other layout drawings prepared specifically for the project shall have a plan scale of not less than $\frac{1}{4}'' = 1'$.

Where manufacturer's publications in the form of catalogs, brochures, illustrations, or other data sheets are submitted in lieu of prepared shop drawings, such submission shall specifically indicate the item for which approval is requested. Identification of items shall be made in ink, and submissions showing only general information are not acceptable.

All submissions from sub-contractors, manufacturers, or suppliers shall be sent direct to the Contractor for checking. Contractor shall thoroughly check all drawings for accuracy and conformance to the intent of the contract documents. Drawings found to be inaccurate or otherwise in error shall be returned to the sub-contractors, manufacturers, or suppliers by the Contractor for correction before submitting them to the Engineer.

All submissions shall be bound, dated, properly labeled, and consecutively numbered. Information on the label shall indicate specification section, contract drawing number, sub-contractor's, manufacturer's, or supplier's name and the name or type of item the submission covers. Each part of a submission shall be marked and tabulated.

Shop drawings shall be submitted as a single complete package for any operating system and shall include all items of equipment and any mechanical units involved or necessary for the functioning of such system. Where applicable, the submission shall include elementary wiring diagrams showing circuit functioning and necessary interconnection wiring diagrams for construction.

All submissions shall bear the Contractor's stamp of approval certifying that they have been checked for conformance and accuracy. Submissions without the Contractor's stamp of approval will not be reviewed by the Engineer and will be returned to the Contractor.

If the submissions contain any departures from the contract documents, specific mention thereof shall be made in the Contractor's letter of transmittal. Otherwise, the review of such submittals shall not constitute approval of the departure. Where errors, deviations, and/or omissions are discovered at a later date in any of the submissions, the Engineer's prior review of the submissions does not relieve the Contractor of the responsibility for

correcting all errors, deviations, and/or omissions. Submissions shall be transmitted in sufficient time to allow the Engineer a reasonable time period for review and processing.

Contractor shall transmit six copies of each submission to the Engineer for review. Submission shall be accompanied by a letter of transmittal containing date, project title, title of submission notification of deviation, and any other pertinent data. The Engineer will mark submission in one of the following ways:

"Approved as Noted" - no exceptions are taken, or minor corrections have been noted and shall be made to final drawings.

"Revise and Resubmit" - major corrections have been noted and a resubmittal is required.

"Rejected" - submittal generally does not comply with specification and a resubmittal is required.

The Engineer will retain four submission copies and return two to the Contractor. The Contractor shall revise and resubmit submissions as required by the Engineer until submissions are acceptable to the Engineer. Engineer's review of the Contractor's submissions shall in no way relieve the Contractor of any of his responsibilities under the Contract. An acceptance of a submission shall be interpreted to mean that the Engineer has no specific objections to the submitted material, subject to conformance with the contract drawings and specifications.

Engineer's review will be confined to general arrangement and compliance with the contract drawings and specifications only and will not be for the purpose of checking dimensions, weights, clearances, fitting, tolerances, interferences, coordination of trades, etc.

Submittals may be made via email to the Engineer, as PDF attachments, with the reviewed copies returned via email.

NN. Mobilization Allowance:

Each Contractor shall be allowed a maximum of 3% of the total contract amount for mobilization. Mobilization is considered to cover the cost of items such as bonds, insurance, transporting materials, labor and equipment, general project administration, etc.

OO. Method of Award:

If a contract is awarded, it will be awarded to the low responsive, responsible bidder whose bid and/or combination of alternatives will be in the best interests of the Owner.

PP. Allowances:

Each Contractor shall include the following allowance amounts in his proposal. These allowance amounts will be used to pay for the various items listed. If the cost of a

particular item, as evidenced by the invoice amounts to the Contractor, exceeds the amount stated below, the Owner will increase the contract amount by Change Order for the overrun amount. Similarly, the Contractor amount shall be decreased if the total invoiced amount is less than the allowance amount. The Contractor shall not be allowed any mark-up or increased charges above the invoice cost.

Contract 1 – Soils and Concrete Testing; Vibration Monitoring \$ 10,000.00

QQ. Pre-bid Submittals:

Not Applicable to this Project.

RR. Contract Period:

The Contract 1 period for Substantial Completion shall be **220 calendar days** following the issuance of the Notice to Proceed, and **240 calendar days** following the issuance of the Notice to Proceed for Final Completion.

SS. Special Conditions Regarding Working in the Vicinity of Overhead Power Lines:

Not applicable to this Project.

TT. Special Conditions Regarding Subcontracting:

The Contractor shall perform a minimum of 50% of the project work (as measured by dollar value) with their own forces, unless otherwise approved by the Town. Documentation of this shall be provided in the Affidavit A form provided in Section 0300.

UU. Special Conditions Regarding Valve Operation:

Only Town of Holly Springs employees may operate existing valves or any pump station equipment.

VV. Special Conditions Regarding Permit Compliance:

Contractor shall be responsible for complying with all permit conditions placed upon the Town of Holly Springs, for all permits included in the Appendix. The Contractor shall pay any fines levied against the Town due to violations of Permit conditions caused by the Contractor.

WW. Special Conditions Regarding Existing Conditions for Project:

The Contractor No. 1 **shall** videotape or photograph the pre-construction condition of pump station site, all structures, building interior and exterior, ditches, driveway, etc. See also Supplementary and Special Condition 4.08 D., page 00900-13.

XX. Special Conditions Regarding Warranty:

The Contractor shall provide a full one-year warranty on all materials and workmanship, with the warranty period beginning when the Owner accepts the project (all of the pumps must be installed, tested, accepted, and put into service).

End Section 1-A

DIVISION 1 - GENERAL

1-B: CONSTRUCTION SEQUENCE

A. General:

The Contractor shall submit a proposed Construction Sequence for review and approval by the Engineer and Owner prior to commencing work on the site. The Sequence shall list the order of the tasks the Contractor proposes, with the Sequence showing the continued operation of the pump station. This specification presents a construction sequence that the Contractor may review and use as a basis for the submittal.

B. Construction Sequence:

This is a general suggested construction sequence. Some of the listed tasks will run concurrently with others. The Contractor shall review and formulate a proposed sequence, and submit it to the Engineer for review and approval:

1. Install sheet piling or shoring as required to protect the existing structures while excavating for the new wetwell.
2. Install the new 8-foot diameter wetwell and the 16-inch DI influent pipe connection to the existing 16-inch plugged pipe. Remove the plug and connect the new piping to the existing pipe. Test the new pipe as specified.
3. Install the air intake piping, and a portion of the odor control duct from the wetwell.
4. Backfill the new wetwell to the valve vault level, install the valve vault and 12-inch DI force main pipe connection to the existing 12-inch plugged pipe. Install the piping and valves in the wetwell and valve vault. Test the new piping as specified.
5. Place the new concrete jib crane foundation. Install the jib crane when it is available.
6. Construct the new electrical rack at new wetwell, with the disconnect switches and junction box.

7. Place the cast in place concrete slab around and over the wetwell and valve vault, with the new hatches in the slab. Place the concrete slab for the new odor control system.
8. Coat the new wet well and valve vault piping as specified, and line the interior of the wetwell.
9. Install the new 350A breakers for Pumps 3 and 4 in Panel "H". Install RVSS starters for Pumps 3 and 4, and the new conduits from RVSS 3 and 4 to the new disconnect switches at the wetwell. Install the new conduit from the Pump Station Control Panel (PSCP) to the junction box at the new wetwell. Pull the specified new conductors from the RVSS's to the disconnect switches, and from the junction box to the PSCP.
10. Pull the required additional conductors from the PSCP to the SCADA system termination cabinet and to RVSS 3 and 4.
11. Install the new circuit breaker in Panel "H" and new conduit and conductors from the panel to the jib crane hoist system. Test and then put the new trolley and hoist into operation.
12. Install Pumps 3 and 4 in the new wetwell. Test pumps and controls, and verify the new SCADA inputs are active.
13. Open the existing valves on the 12-inch and 16-inch lines, switch Pumps 3 and 4 into "Auto" at the PSCP. The Pump Station Control Panel has a quadruplex controller will operate Pumps 1 through 4 in a quadruplex rotation.
14. Cut the existing pump station concrete slab and install the new 8 inch piping for the air intake and odor control ductwork for the existing wetwell. Set the new odor control system on the concrete pad, and complete the ductwork and electrical connections to the system. Install the new breaker in Panel "H" and the new conduit and conductors from Panel "H" to the Odor Control System Panel. Test the system and put it into operation.
15. Retrofit the existing wetwell, valve vault, and Muffin Monster hatch openings with the specified fall through protection systems.

16. Have the factory authorized representative onsite to retrofit the Muffin Monster with a 5 HP immersible motor. Remove the Muffin Monster from its manhole and install the existing fabricated bar rack in its place. Remove the existing hydraulic pump system, cables, and system enclosure. Install the new control panel and conduit, pull new conductors from Panel "H" to the new control panel. Pull new conductors from the control panel to the SCADA termination cabinet. Remove the bar rack, install the retrofitted Muffin Monster in the manhole, connect the new motor cable to the control panel, and return the Muffin Monster to service.
17. Place concrete in the areas where sections of the existing concrete slab were removed. Replace the existing area luminaires.
18. Install the new ductless mini-split heat pump in the existing building.
19. Perform site cleanup, restore the gravel driveway, seed disturbed areas and place stone ground cover in areas noted on the plans.

End Section 1-B

DIVISION 2 - SITE WORK

2-B: SITE EXCAVATION AND GRADING

A. General:

The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and installation complete of all operations in connection with excavation, construction of fills, borrow, rough grading, finish site grading, and disposal of excess material as shown in the drawings and as specified in accordance with provisions of the contract documents.

Work included within the project consists of but is not limited to the following:

Excavation for new wetwell and valve vault

Repair of access driveway

Fine grading site for surface drainage

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

B. Pump Station Excavation:

Due to the depth of the excavation required for the new wetwell and its proximity to the existing pump station, the Contractor shall have a temporary shoring system designed by a professional engineer. The shoring system plan shall provide details of the proposed shoring system materials, sequence of installation and removal, areas where ramps or shelves are proposed, etc. The proposed shoring plan shall be submitted to the project Engineer.

The geotechnical investigation encountered partially weathered rock at approximately 25 feet below ground surface. Subgrade for the proposed wetwell is approximately 34 feet below ground surface. Rock excavation must be accomplished by an excavator with a narrow bucket equipped with rock teeth or an excavator with a hoe ram attachment, as blasting will not be allowed for this project.

All excavation for this project shall be unclassified. All excavated rock and topsoil may not be used for backfilling the precast concrete structures. The excavated soils may be used for backfill if they can be brought to within 2% of the optimum moisture content by drying, if required. Backfill shall be brought up in lifts as described in the geotechnical report and

as may be directed by the geotechnical engineer's field representative. All backfill shall be compacted to not less than 95% of the standard Proctor maximum dry density, except for the final foot under the valve vault, where the compaction shall be not less than 98% of the standard Proctor maximum.

Should the Contractor elect to import off-site borrow materials for some or all of the backfill, the proposed materials shall first be approved by the project geotechnical engineer.

C. Site Grading:

Plans indicate both existing grade and finished grade required for construction of project. The Contractor shall stake out all clearing limits, structures, piping, driveways, etc., establish their elevations, and perform all other layout work required. Stake out all buffer lines, limits of construction, wetlands limits, etc. indicated on plans. Replace property corner markers to original location if disturbed or destroyed.

It shall be the Contractor's responsibility to maintain existing utility lines (either overhead or underground), sidewalks, pavement areas, and gravel roadways within the project limits or affected by the project construction and construction traffic. It is noted that a portion of the circular gravel driveway will have to be taken out of service due to the pump station excavation. Any item unknown or not properly located that is inadvertently damaged shall be repaired to original condition. Notify the Engineer and Owner of said utility at once so that emergency repair may be made.

During construction, shape and drain embankment and excavations. Maintain ditches and excavations to provide drainage at all times. Protect graded areas against action of elements prior to acceptance of work. Reestablish elevations and slopes where settlement or washing may have occurred.

D. Construction of Embankments and Fills:

Not applicable to this project.

E. Topsoiling:

Reuse existing topsoil to extent available in the disturbed areas that are to be seeded. Provide, as required, additional topsoil to provide a minimum of 6" of topsoil over the entire disturbed areas that are to be seeded. Hold graded surfaces down a distance sufficient to accept the topsoil blanket.

Spread topsoil to a uniform compacted, raked, smooth surface for proposed lawn areas. Compact firmly. Grade and reroll surface free of humps, ruts, or depressions until a smooth satisfactory grade is obtained. Rock shall be removed to a point 6" below finished grade. Rock outcroppings in lawn areas will not be accepted. Rock fragments greater than 2" in any dimension shall be removed from the upper six inches of all lawn areas.

F. Testing:

In place moisture-density tests will be ordered to ensure that all work complies with this specification. Compaction tests will be taken at locations determined by the geotechnical engineer. Tests shall be performed by the geotechnical engineering firm selected by the Owner. All testing costs are to be paid through the Contractor's testing allowance. The Contractor shall not be allowed any mark-up or profit on these testing costs. Copies of test results will be furnished to Contractor, Engineer, and Owner's representative. Materials not meeting specified moisture-density test requirements shall be recompacted and retested at Contractor's expense.

End Section 2-B

DIVISION 2 - SITE WORK

2-D: PIPE LAYING

A. General:

The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and installation complete of all pipe construction as shown on drawings and as specified in accordance with provisions of the contract documents and completely coordinated with that of all other trades.

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

B. Quality Standards:

Procedures for handling, laying, protection, and use of pipe shall be in accordance with the pipe manufacturer's recommendations, these specifications, and the Town of Holly Springs Standard Specifications and Details.

C. Submittals:

The Contractor is to submit to the Engineer the manufacturer's data, catalog cut sheets, submittal drawings and similar information for all pipe materials and all related appurtenances and accessory items. Such materials shall meet with the approval of the Engineer and shall comply with the Town of Holly Springs Standard Specifications. If the materials submitted do not meet the requirements of these specifications, the Contractor is to submit other types and makes that may be approved.

D. Product Delivery, Storage, and Handling:

All pipe materials and appurtenances shall be delivered, unloaded, and stored in a manner to avoid damage to the pipe and in accordance with the manufacturer's recommended practices. All stored materials must be confined to designated project areas on the site.

E. Materials:

In general, the following material schedule will be required for the piping for this project:

1. The 12-inch ductile iron pipe force main and 16-inch influent pipe shall be Pressure Class 350 ductile iron pipe, as manufactured in accordance with AWWA C-151 in full accordance with Town of Holly Springs Standards. The ductile iron pipe and fittings shall have an interior lining of Protecto 401 ceramic epoxy. All mechanical joints shall be furnished with a restraining gland (Megalug Series 1100, Sigma One-Lok, or approved equal). Refer to specification section 2-R: Ductile Iron Pipe and Fittings for additional details and requirements.

Flanged ductile iron pipe and fittings shall be utilized in the pump station piping, as shown on the project plans. Flanged pipe and fittings shall be manufactured in accordance with AWWA C-115 and C-110, and related AWWA standards for linings, coatings, thickness designs, gaskets, and bolts. All flanges shall be ductile iron (cast iron flanges not permitted). The flanged ductile iron pipe and fittings shall have an interior lining of Protecto 401 ceramic epoxy, and an exterior coating of rust inhibitive shop primer. Refer to specification sections 2-R: Ductile Iron Pipe and Fittings and 9-G: Painting for additional details and requirements.

2. The replacement 2-inch force main for the sump pump shall be schedule 40 PVC pipe, manufactured in accordance with ASTM D1784 and D1785.

Each length of pipe shall have, at minimum, the pipe class or designation, manufacturer's name, nominal pipe size plainly and permanently printed on the exterior of the pipe.

F. Pipe Laying:

The work included under this specification consists of, but is not limited to, furnishing and installing piping systems for the purposes of carrying wastewater in both pressure and gravity flow conditions. The work shall also include pressure testing the installed pipe.

Materials shall be handled in such a manner as to protect them from damage. At no time shall pipe and fittings be dropped or pushed into ditches. Pipe and fitting interiors shall be protected from foreign matter and shall be inspected for damage and defects prior to installation. In the event foreign matter is present in the pipe or fittings, it shall be removed before installation.

The piping shall be installed in strict accordance with the manufacturer's recommendations, these specifications. The trench width shall be a minimum of 16-inches plus the pipe outside diameter, and a maximum of 24-inches plus the pipe outside diameter. The trench walls shall be vertical to a point at least 1 foot above the top of the pipe. The Contractor is responsible for all trench bracing, sheeting, shoring, dewatering, trench box selection, etc., as required by OSHA standards and regulations. The Contractor shall separate the excavated material by soil types, if different types are present, so that only suitable

materials are used in the bedding, haunching, and initial backfill zones. The pressure pipe shall be installed to have a full and uniform bearing throughout its entire length.

The 12-inch force main pipe shall be installed in a Type 2 Laying Condition, as defined in AWWA C150/C151. This condition requires a flat bottom trench, with suitable backfill placed up to the springline of the pipe and compacted. Additional backfill shall be compacted to the top of the pipe, and compacted to 95% maximum dry density (as measured by Standard Proctor). The backfill material shall then be placed in 8-inch lifts and compacted.

The 16-inch influent pipe shall be installed in a modified Type 5 Laying Condition, which requires #57 stone from a minimum of 4-inches below the pipe to the top of the pipe. The remaining backfill over this pipe will be part of the backfill for the wetwell, and will be compacted as specified for that structure.

The pipes shall be laid and adjusted so that the alignment with the next succeeding joint will be centered in the joint and the entire pipeline will be in continuous alignment both horizontally and vertically. Pipe joints shall be fitted so that a thoroughly watertight joint will result. All joints will be made in conformance with the manufacturer's recommendations for the type of joint selected. All transition joints between different types of pipe shall be made with transition couplings approved on shop drawings showing the complete assembly to scale.

Each backfill lift must be thoroughly tamped by a mechanical tamp, such as "Rammax Sheepsfoot" or equivalent, before the next layer is placed. Perform in-place moisture-density tests as ordered by the Engineer to ensure trench backfill complies with requirements. Where backfill compaction does not pass moisture-density test requirements, backfill shall be removed and re-compacted to correct the deficiency. Additional tests will be directed until compaction has been verified to meet or exceed the requirements of these specifications. The Contractor shall pay the cost of any additional testing required as a result of his failure to initially meet minimum compaction requirements, as well as the costs of all repeated excavation, backfilling, and compaction operations.

No rocks, boulders, stones, or debris shall be included in the backfill material up to a level that is at least 2 feet above the top of the pipe. Backfill compaction shall be as required to ensure there is no trench settlement. Any observed trench settlement shall be corrected to the satisfaction of the Engineer or his representative.

Water ponding for backfill consolidation is not permitted.

Trench stabilization stone (No. 57 or No. 67) shall be used to backfill trench bottom areas that must be undercut due to soft, wet, or yielding conditions. Trench stabilization stone may only be used after the Engineer's or Owner's representative has approved the amount of undercutting. Payment basis shall be by the ton of Trench Stabilization stone placed.

All precautions will be taken by the Contractor to prevent dirt and mud from entering the pipeline during construction. The trench shall be backfilled as soon as possible. The open end of the pipe shall be plugged or protected at the end of each workday, to prevent the entry of debris, soil, or vermin into the pipe. Upon completion of the pipe laying, the Contractor will flush and clean all lines, to the extent possible, as required to remove any accumulated debris.

All pipes shall be in nominal lengths of 18' to 20' and shall be laid on true lines and at the elevations shown on the Project plans.

G. Water in Trenches:

The Contractor shall remove all groundwater encountered in the trenches by pumping, bailing or by both, handling the water in a manner that all pipe jointing may be made in the "dry". The ground adjacent to the trench/excavation shall be graded to prevent surface water from entering the trench/excavation. Handling of water shall be in a manner to provide best possible laying conditions and shall be disposed of in a proper manner. Water pumped from the trench shall be discharged into a gravel filter or other appropriate erosion control device, and shall be directed toward natural drainage channels. Direct discharge into a stream is not permissible.

In trenches where water is present or where dewatering is required, the trench bottom shall be undercut and stabilized with No. 57 or No. 67 stone, having a minimum depth of 8-inches.

Pipes shall be kept adequately plugged at all points to prevent the flow of ground water or stormwater through the pipes and to prevent entry of sand, mud, or other debris into the pipe. All cost associated with the dewatering shall be included in the lump sum bid.

H. Rock Excavation:

All excavation for this project shall be unclassified.

I. Protection of Existing Utilities:

Verify location and existence of all underground utilities through NC811, the Town of Holly Springs, and other available means and sources. The indicated location of existing utilities on the construction plans is based on information available to the Engineer during the plan preparation, and is not guaranteed to accurately reflect the actual existence, size, or location of the noted utilities. Similarly, there may be existing utilities in place that were not known to the sources checked by the Engineer. The Contractor shall be responsible for the accurate location and protection of all existing utilities, and for the preservation of utility location markings provided by the utility location service.

Take necessary precautions to protect existing utilities from damage due to any construction activity. Contractor shall repair, or have the Owner of the utility repair, all damages to existing utilities at the Contractor's expense. The Contractor shall not attempt to assess any cost of repairs of existing utilities to the Owner or Engineer.

J. Pressure Testing:

Before applying the specified test pressure, all piping shall be thoroughly flushed, and all air shall be expelled from the pipe. If outlets are not available at high places, the Contractor shall make the necessary taps at points of highest elevations before the test is made.

After flushing, pigging, and filling of the pressure mains, each section (as required by the Engineer) of the pipeline system shall be subject to hydrostatic pressure test as scheduled below.

<u>Pipe Description</u>	<u>Test Pressure and Type</u>
12" Wastewater Force Main	150 psi hydrostatic test
16" Influent Pipe	5 psi air test

The 12-inch pipe shall be tested between the plug valves in the valve vault and the existing 12-inch plug valve. The test pressure shall be held for a 1 hour period, with no loss of pressure.

The 16-inch influent pipe shall be tested between the existing 16-inch plug valve and a test plug installed at the pipe entrance into the wetwell. The test pressure shall be held for a 5 minute period, with no loss of pressure.

Any defective materials or workmanship causing leakage shall be repaired or replaced and the test repeated until successful.

K. Clean-Up:

Upon completion of the work required under this section, the Contractor shall remove all excess materials, earth debris, etc., and shall clean up and leave all affected property, in a neat, clean, and orderly condition.

End Section 2-D

DIVISION 2 - SITE WORK

2-F: PRECAST CONCRETE WETWELL AND VALVE VAULT

A. General:

The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and installation complete of all precast utility structures with appurtenant items as shown on drawings and as specified in accordance with provisions of the contract documents and completely coordinated with that of all other trades.

Work required in the project includes but is not necessarily limited to the following:

Precast Concrete Wet Well
Precast Concrete Valve Vault

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

B. Quality Standards:

Refer to the following reference standard for materials specified.

American Society for Testing and Materials (ASTM)

ASTM C478	Precast Reinforced Concrete Manhole Sections
ASTM C443	Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
ASTM A48	Gray Iron Castings (Class 30 Minimum)
ASTM A536	Ductile Iron Castings
ASTM B221	Aluminum Alloy Extruded Bars, Rods, Wire, Shapes and Tubes

Town of Holly Springs Standard Specifications and Details

C. Submittals:

Deliver shop drawings in accordance with General Conditions and General Requirements. All details for the precast concrete structures, castings, and coatings proposed for use on this project must be submitted to the Engineer (shop drawings) for approval prior to being installed on this project.

D. Precast Concrete Wetwell:

This item shall include the construction complete of an 8-foot inside diameter precast concrete wetwell with the necessary flexible pipe boots, modular seals, and joint waterproofing as specified herein.

Excavation will be made to the required depth, and the Engineer's representative shall approve the foundation on which the precast base section (with extended footing) is to be set. The excavation shall include the removal of unstable materials unsuitable for a good foundation. The excavation shall allow for an 12" thick (minimum) bedding of #57 stone under the wetwell base and a minimum of 12" beyond the outer edge of the extended base slab.

The barrels of the structure shall be constructed from precast, reinforced sections, stacked to form the structure and manufactured according to the latest revision of ASTM C-478. The wetwell shall have a cast in place concrete top slab, as indicated on the project plans. Precast structure sections shall have tongue and groove joints with a rubber O-ring conforming to ASTM Standard C-443, or shall be joined with butyl rubber material, such as Ram-Nek, to show both inside and outside of joint (manufacturer's primer must be used if joint is wet). The exterior joints of the wetwell shall be wrapped with ConSeal CS 212 polyolefin-backed exterior joint wrap – 12 inch minimum width – with compatible primer.

The 16-inch diameter influent wastewater line shall be connected to the precast concrete wetwell by a modular seal (Link Seal Model LS-360-S-316-27, or approved equal) in a 20-inch diameter cast opening.

Contractors will be permitted to use only precast structures approved by the North Carolina Department of Transportation for the depth required.

E. Utility Structure Steps:

The wetwell shall be furnished without steps cast into the walls.

F. Testing of Wetwell:

The constructed wetwell shall be vacuum tested. The Contractor shall supply all equipment, materials, and labor required to perform the tests. The tests shall not be performed until all specified coatings and linings have fully cured, in accordance with the manufacturer's instructions. All pipes entering the wetwell should be plugged, taking care to securely brace the plug from being drawn into the manhole, and the aluminum hatch edge openings shall be sealed. A vacuum of ten (10) inches of mercury shall be drawn and the vacuum pump shut off. With the valves closed, the time shall be measured for the vacuum to drop to nine (9) inches. The time for the specified vacuum drop to 9 inches shall be a minimum of 2.5 minutes. If the wetwell fails the initial test, repairs and adjustments necessary due to extenuating circumstances (i.e., pipe joint, liner, plug sealing) should be made. Re-testing shall proceed until a satisfactory test is obtained.

G. Precast Valve Vault:

The Contractor shall furnish the precast concrete valve vault of the dimensions shown on the project plans. This structure shall meet the same standards of construction as the wetwell, and shall have the same joint waterproofing. The valve vault shall have a cast in place concrete top slab with aluminum access hatch, as indicated on the project plans. The valve vault shall not be vacuum tested, but any visible leaks shall be repaired until watertight.

Utility structure steps shall be furnished with the valve vault. Steps shall be of copolymer polypropylene plastic reinforced with 1/2" grade 60 reinforcement. Steps shall be set 16" on center. Holes for the installation of shall not project through the structure wall. There shall be a minimum of 1" wall thickness from the deepest penetration of the step installation hole and the outside wall. Steps shall be at least 10" clear width and shall project at least 4" from the wall into which they are embedded.

Pipe penetrations through the valve vault walls shall utilize a PSX positive seal system as manufactured by the Press Seal Gasket Corporation, or approved equal.

H. Coatings:

Refer to Division 9-G: Painting, for specifications regarding the coating of the interior surfaces that is required for the wetwell.

End Section 2-F

DIVISION 2 - SITE WORK

2-R: DUCTILE IRON PIPE AND FITTINGS

A. General:

The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and installation complete of all ductile iron piping with all fittings, jointing materials, pipe supports, anchors, encasement, and other necessary appurtenances as shown on drawings and as specified in accordance with provisions of the contract documents and completely coordinated with that of all other trades.

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

B. Quality Standards:

Refer to the following standard references, which are incorporated into these standards by reference, with respect to materials, tests, and physical parameters:

ANSI A21.4 (AWWA C104) Cement Mortar Lining for Ductile Iron Pipe and Fittings for Water

ANSI A21.5 (AWWA C105) Polyethylene Encasement for Ductile Iron Pipe Systems

ANSI A21.10 (AWWA C110) Ductile Iron and Gray Iron Fittings

ANSI A21.11 (AWWA C111) Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings

ANSI A21.15 (AWWA C115) Flanged Gray-Iron and Ductile-Iron Pipe with Threaded Flanges

ANSI A21.50 (AWWA C150) Thickness Design of Ductile Iron Pipe

ANSI A21.51 (AWWA C151) Ductile Iron Pipe, Centrifugally Cast, for Water

ANSI A21.53 (AWWA C153) Ductile Iron Compact Fittings

Town of Holly Springs Standard Specifications and Details

Provide all ductile iron pipe and fittings in full compliance with the above listed, applicable standards.

C. Project Requirements for Ductile Iron Force Mains and Fittings:

Install all materials in accordance with these specifications and:

AWWA C600 Installation of Ductile Iron Water Mains and Their
Appurtenances
DIPRA Standards and Installation Recommendations
Town of Holly Springs Standard Specifications and Details

Provide class of pipe required for depth of bury and operating conditions.

All buried ductile iron piping and fittings shall have an exterior asphaltic coating in accordance with the above standards, unless otherwise noted. All ductile iron piping and fittings that will be exposed after installation shall be furnished with a rust inhibitive shop primer unless otherwise noted. Contractor shall furnish information on the primer to the Engineer, and shall be responsible for insuring compatibility of primer with finish coating materials. All exterior abrasion marks shall be adequately patched and repaired.

All ductile iron pipe and fittings for this project shall be furnished with an interior coating of Protecto 401 Ceramic Epoxy.

All types of pipe joints shall be assembled in the field in accordance with the above standards and the manufacturer's instructions. All mechanical joints shall be furnished with a restraining gland (Megalug Series 1100, Sigma One-Lok, or approved equal).

Each length of pipe shall have, at minimum, the pipe class or designation, manufacturer's name, nominal pipe size plainly and permanently printed on the exterior of the pipe.

D. Cutting Procedures:

Cut pipe in a neat workmanlike manner that will not damage the pipe or interior liner material. Use abrasive wheel cutters or saws to cut ductile iron. Make cuts square to the centerline of pipe and then thoroughly clean and swab off all foreign matter. The cut ends shall be beveled and freed of sharp edges after cutting.

E. Testing:

The Owner reserves the right to sample and test any pipe after delivery and to reject all pipe represented by any sample that fails to comply with the specified requirements.

F. Pipe Couplings:

Where plain end ductile iron pipes must be joined with a coupling, the coupling shall be a long mechanical joint sleeve that complies with AWWA C153 standards and dimensions. Restraining glands shall be used with the sleeve.

G. Restrained Flanged Coupling Adapters:

Restrained flanged coupling adapters shall be utilized at the locations shown on the project plans. The restrained flanged coupling adapters shall be Romac Style RFCA with stainless steel nuts and bolts, Smith-Blair Style 911 Flange Lock Flanged Coupling Adapter with type 304 stainless steel hardware, or approved equal.

H. Mid-Span Pipe Restraint:

Where a mid-span restraint anchor point on ductile iron pipe is noted on the project plans, the restraint shall be a series 1100SDB, as manufactured by EBAA Iron, Inc., or approved equal. The restraint shall be split for ease of installation and manufactured of ductile iron conforming to ASTM A536. The split restraint ring, incorporating a plurality of individually-actuating gripping surfaces, shall be used to grip the pipe. The device shall have a minimum working pressure rating as shown in the product brochure. The restraint shall be the Series 1100SDB, as manufactured by EBAA Iron, Inc. or approved equal.

I. Submittals:

The Contractor shall submit manufacturer's data and certifications as required to demonstrate compliance with the standards and specifications listed above.

J. Painting of Primed Pipe:

The shop primed ductile iron pipe and fittings shall be field coated as specified in Division 9-G: Painting.

End Section 2-R

DIVISION 3 - CONCRETE

3-A: CONCRETE - GENERAL

A. General:

The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and installation complete of all concrete work and reinforcing steel for concrete as shown on drawings and specified in accordance with provisions of the contract documents and completely coordinated with that of all other trades.

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

B. Quality Assurance:

Standards, referred to hereafter by serial designation only, form a part of the specifications in their entirety. Any reference to a portion of a standard does not minimize the importance of remainder of standard. In case of conflict between referenced standard and project specification, the one having more stringent requirements governs. Latest edition of standard in use at time of bid advertising together with any revisions apply.

American Society for Testing Materials:

A82 -	Cold-Drawn Steel Wire for Concrete Reinforcement
A153 -	Zinc Coating (Hot Dip) on Iron and Steel Hardware
A185 -	Welded Steel Wire Fabric for Concrete Reinforcement
A416 -	Uncoated Seven-Wire Stress-Relieved Strand for Prestressed Concrete
A615 -	Deformed & Plain Carbon Steel Bars for Concrete Reinforcement
A663 -	Carbon Steel Bars Mechanical Properties
C31-	Making and Curing Concrete Test Specimens in the Field
C33-	Concrete Aggregates
C39 -	Test for Compressive Strength of Cylindrical Concrete Specimens
C42 -	Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
C94 -	Ready Mixed Concrete
C138 -	Test for Density, Yield, and Air Content (Gravimetric) of Concrete
C143 -	Test for Slump of Portland Cement Concrete
C150 -	Portland Cement

- C156 - Test for Water Loss through Liquid Membrane-Forming Compounds for Concrete
- C171 - Sheet Materials for Curing Concrete
- C172 - Standard Practice for Sampling Freshly Mixed Concrete
- C173 - Test for Air Content of Freshly Mixed Concrete by the Volumetric Method
- C192 - Making and Curing of Concrete Test Specimens in the Laboratory
- C231 - Test for Air Content of Freshly Mixed Concrete by the Pressure Method
- C260 - Air-Entraining Admixtures for Concrete
- C309 - Liquid Membrane-Forming Compounds for Curing Concrete
- C494 - Chemical Admixtures for Concrete
- C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
- D98 - Calcium Chloride
- D1056 - Sponge and Expanded Cellular Rubber Products

American Concrete Institute:

- ACI 201 - Guide to Durable Concrete
- ACI 211 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete
- ACI 212 - Report on Chemical Admixtures for Concrete
- ACI 214 - Guide to Evaluation of Strength Test Results of Concrete
- ACI 221 - Guide for Use of Normal and Heavyweight Aggregates in Concrete
- ACI 301 - Specifications for Structural Concrete
- ACI 302 - Guide for Concrete Floor and Slab Construction
- ACI 304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete
- ACI 306 - Recommended Practice for Cold Weather Concreting
- ACI 308 - Specification for Curing Concrete
- ACI 309 - Guide for Consolidation of Concrete
- ACI 315 - Manual of Standard Practice for Detailing Reinforced Concrete Structures
- ACI 318 - Building Code Requirements for Reinforced Concrete
- ACI 347 - Recommended Practice for Concrete Formwork
- ACI 350 - Code Requirements for Environmental Engineering Concrete Structures
- ACI 605 - Recommended Practice for Hot Weather Concreting
- ACI 613 - Recommended Practice for the Design of Concrete Mixes
- ACI 614 - Recommended Practice for Measuring, Mixing, and Placing Concrete

Concrete Reinforcing Steel Institute:

- CRSI Publication - Manual of Standard Practice
- CRSI Publication - Placing Reinforcing Bars

American Welding Society:

AWS D1.0 - Code for Welding in Building Construction.

AWS D1.4 - Structural Welding Code - Reinforcing Steel

Federal Specifications:

TT-S-227b - Sealing Compound; Elastomeric type, Multi-Component

Corps of Engineers Specifications:

CRD-C572 - Polyvinylchloride waterstops

Contractor shall be familiar with the requirements of the standards listed above, as applied to this specific project.

C. Submittals:

Before fabrication or use of materials and installation of any work, submit complete concrete mix design data, shop drawings, and samples in compliance with the contract documents.

Submit concrete mix design data, shop drawings, and samples with sufficient time allowed for checking, resubmittal, and rechecking so as to prevent any delay in manufacturing, fabrication, delivery, erection or installation of the affected items and contiguous work. Do not start concrete mixing or fabrication of materials until approved data, shop drawings or samples have been returned to Contractor.

Submit copies of manufacturer's specifications with application and installation instructions for proprietary materials and items, including admixtures, bonding agents, waterstops, joint systems and chemical floor hardeners.

Submit samples of materials as specified and as otherwise may be requested by Engineer, including names, sources, and descriptions as required.

Submit copies of laboratory test reports for concrete materials and mix design tests. The Engineer's review will be for general information only. Production of concrete to comply with specified requirements is the Contractor's responsibility.

Provide material certificates in lieu of material laboratory test reports only when permitted by the Engineer. The material manufacturer and the Contractor, certifying that each material item complies with, or exceeds, the specified requirements, shall sign material certificates.

D. Workmanship:

Cooperate with and coordinate concrete work with work of other trades and Contractors. Allow ample opportunity for various trades to install all required embedded items. Coordinate opening locations with other trades before concrete is poured.

Correct defective concrete or concrete work which does not conform to specified requirements, including strength, tolerances, and finishes, as directed by the Engineer at Contractor's expense, without extension of time therefore. Perform corrections to any other work affected by or resulting from corrections to concrete work at no additional expense to Owner.

End Section 3-A

DIVISION 3 - CONCRETE

3-B: CONCRETE FORMWORK, JOINTING, AND ACCESSORIES

A. General:

The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and installation complete of all concrete formwork for all concrete work shown on the drawings and as specified in accordance with provisions of the contract documents and completely coordinated with the work of all other trades.

The work includes providing formwork and shoring for cast-in-place concrete and installation into formwork of items furnished by other trades, such as anchor bolts, setting plates, bearing plates, anchorages, inserts, frames, nosings, and other items to be embedded in concrete (but not including reinforcing steel.)

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

B. Quality Assurance:

Examine the substrate and the conditions under which concrete formwork is to be performed. Do not proceed with the work until unsatisfactory conditions have been corrected.

Unless otherwise shown or specified, design, construct, erect, maintain, and remove forms and related structures for cast-in-place concrete work in compliance with the American Concrete Institute Standard ACI 347, "Recommended Practice for Concrete Formwork".

Allowable Tolerances: Construct formwork to provide completed concrete surfaces complying with the tolerances specified in ACI 347 after removal of forms and prior to patching and finishing of cast-in-place formed surfaces.

Contractor shall provide surveys, in addition to those required for general lines and levels in the General Documents, to check the lines and levels of the completed formwork before concrete is placed. Make whatever corrections or adjustments to formwork to correct deviations that exceed specified tolerances.

Check formwork during concrete placement to ensure that forms, shores, falsework, ties, and other features have not been unduly disturbed by concrete placement methods or

equipment. The Surveyor shall report in writing to the Engineer any deviations from the allowable tolerances, with a copy of the report to the Contractor.

Concrete work that, in the opinion of the Engineer, is improperly performed or is defective shall be repaired, or removed and replaced with new work, to the satisfaction of the Engineer and at no additional expense to the Owner.

C. Submittals:

Submit copies of Manufacturer's specifications and installation instructions for proprietary materials and items as required including form coatings, manufactured form systems, ties, waterstops, joint fillers, joint sealants, and accessories.

Submit shop drawings for fabrication and erection of specific finished concrete surfaces as shown or specified. Show the general construction of forms including jointing, special formed joints or reveals, location and pattern of form tie placement, and other items that affect the exposed concrete visually.

D. Design of Formwork:

Design and construction of formwork is the responsibility of the Contractor.

Design, erect, support, brace and maintain formwork and shoring to safely support all superimposed concrete and construction loads placed on them. Transmit loads to ground by formwork system and in-place construction that has attained adequate strength for that purpose. Construct formwork to provide concrete members and structures of correct sizes, shape, alignment, elevation and position. Provide adequate foundations for shoring which bear on earth.

Provide shores and struts that have positive means of adjustment, by wedges or jacks or a combination thereof. Take up all settlement during placing of concrete. Securely brace shoring against lateral deflection.

Design formwork to be readily removable without impact, shock or damage to cast-in-place concrete surfaces and adjacent materials.

E. Form Construction - General:

Construct forms to comply with ACI 347, to the exact sizes, shapes, lines and dimensions shown, and as required to obtain accurate alignment, location, grades, level and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required. Use selected materials to obtain required finished. Support form facing materials by structural members spaced sufficiently close to prevent deflection. Fit forms placed in successive units for continuous surfaces to accurate alignment, free from irregularities and within allowable tolerances.

Fabricate forms for easy removal without hammering or prying against concrete surfaces and without damage to concrete. Do not permit metal tools to come in contact with concrete surfaces during form removal.

Side forms of footings may be omitted and concrete placed directly against neat excavation only when approved by the Engineer. When omission of forms is approved, provide additional concrete required beyond the minimum design profiles and dimensions of the footings as detailed.

Provide temporary openings at bases of column and wall forms and at other locations where necessary for cleaning, for inspection before concrete placement, and for placement of concrete. Brace closures for temporary openings and set tightly to forms to prevent loss of concrete mortar. Locate temporary openings on forms in as inconspicuous location as possible, consistent with project requirements.

Form intersecting planes to provide true, clean-cut corners with edge grain of plywood not exposed as form for concrete.

Provide openings in forms to accommodate other work, including mechanical and electrical work. Accurately place and securely support items required to be built into the forms.

Chamfer exposed concrete corners with continuous 3/4" x 3/4" wood chamfer strips unless otherwise shown.

Provide formwork sufficiently tight to prevent leakage of cement paste during concrete placement. Solidly butt joints and provide backup material at joints as required to prevent leakage and fins.

When top surfaces of beams or slabs are sloped for drainage or other purposes, the forms for the beams and slabs shall also be sloped maintaining members of the required uniform thickness and depth.

F. Forms for Surfaces Exposed to View:

Construct forms of 5/8" or 3/4", five-ply structural plywood of concrete form grade. Plywood may be reused for form surfaces exposed to view only when approved by the Engineer. Forms shall be built-in-place type except that prefabricated panel type may be used where single panel extends over an entire area from reveal to reveal, with no panels joining on flat surfaces. Use full size 4' x 8' sheets for built-in-place type except where smaller pieces will cover an entire area. Where possible, juncture of built-in-place plywood sheets shall occur at architectural lines, vertical control joints, and construction joints. Metal forms for tank walls may be used when approved by the Engineer. Provide and erect metal forms that are sufficiently tight to prevent leakage, and free of dents, irregularities, sags, and rust. Properly brace and tie metal forms to maintain correct

position and shape. Wood forms used for an entire section of exposed to view concrete shall be so oriented that when the concrete surface is viewed, the direction of wood grain as left imprinted on the concrete will appear to run in the same direction. Pieces making up the forms shall be of uniform size and orientation.

Form coatings for exposed concrete shall be of an approved non-staining form oil, lacquer, or plastic. Plywood and metal forms approved for reuse shall be re-coated as directed by the Engineer. When oil is used, wipe off excess with rags. When lacquer is used, a light coating of form oil over lacquer will be permitted, provided excess is wiped off. When factory-applied plastic coatings are used, follow Manufacturer's instructions. Contact surface of forms shall be free of all foreign matter, including dust. Apply form oil to forms before reinforcing is erected. Form oil shall be of type that will not affect bonding of specified surface finish.

G. Forms for Non-Exposed Surfaces:

Construct forms of wood or metal sufficiently tight to prevent leakage, and properly braced and tied to maintain correct position and shape.

Form coatings may be approved form oil or lacquer, of a type that will not affect bonding of waterproofing materials or applied finishes. Apply form coating before reinforcing steel is erected.

H. Form Ties:

Provide factory fabricated, adjustable lengths, removable or snap-off metal form ties designed to resist forces due to concrete pressure and other construction operations, designed to prevent form deflection, and to prevent spalling of concrete surfaces upon removal. Ties shall break off far enough in concrete to enable patching of hole to prevent rusting.

Form ties shall have no metal or other material within 1½ inches of the formed surfaces in any structure intended to contain water or wastewater. The void left from the form ties shall be 1½ inches deep at least 1 inch in diameter (but no greater than 1½ inches in diameter), to allow proper patching/sealing. Forms ties fabricated on the site and wire ties are not acceptable.

I. Accessories and Embedded Items:

Set and build into the work anchorage devices and other embedded items required for work of other trades that is attached to, or supported by, concrete. Use setting drawings, diagrams, instructions and directions provided by suppliers of items to be attached thereto. Carefully coordinate and accurately locate embedded items.

Provide accessories and embedded items indicated and specified. Provide items of standard Manufacturer as approved by the Engineer. Build in items furnished by other

trades. Accurately locate, place, and firmly anchor items to forms. Allow sufficient time after forms are erected to permit other trades to install embedded items before concrete is poured. Do not embed electrical sleeves or boxes unless approved by the Engineer. Electrical conduits shall be installed in the locations indicated on the plans.

Provide waterstops manufactured from Virgin polyvinyl chloride plastic compound that does not contain any scrap or reclaimed material or pigment. Provide material that has properties that comply with Corps of Engineers Specifications CRD-C572.

Position waterstops accurately in forms and install according to Manufacturer's instructions. When installing waterstops do not displace reinforcing from required location. Provide waterstops that are continuous, having ends and intersections butt spliced with electrical splicing iron in accordance with Manufacturer's instructions. The type of waterstops proposed for use in the work shall be as noted on the plans. Waterstops manufactured by Greenstreak, Inc., or equal products by Old North Manufacturing, B. F. Goodrich, Progress Unlimited, Water Seals, Inc., or others may be used if approved by the Engineer during the submittal process. Waterstops used in horizontal joint on structures shall be of the labyrinth type.

J. Form Coatings:

Coat form contact surface with form-coating compound before reinforcement is placed. Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces and will not impair subsequent treatment of concrete surfaces requiring bond or adhesion, nor impede the wetting of surfaces to be cured with water or curing compounds. Do not allow excess form coating material to accumulate in the forms or to come into contact with surfaces against which fresh concrete will be placed. Apply in compliance with Manufacturer's instructions.

Coat steel forms with a non-staining, rust-preventative form oil. Rust-stained steel formwork is not acceptable.

K. Construction Joints:

Joints not shown on drawings shall be located so as not to impair strength of the structure and where approved by the Engineer. In general, locate joints at center of span unless a beam intersects a girder at this point in which case the joints in the girder shall be offset a distance equal to twice the width of the beam. Locate joints in walls and columns at underside of floors, slabs, beams or girders, and at tops of footings or floor slabs. Place beams, girders, brackets, column capitals, haunches, and drop panels at same time as slabs. Locate joints in foundation walls midway between column lines. Locate joints in grade beams midway between supports. Joints shall be perpendicular to main reinforcement.

Haunches or corbels attached to tank walls shall be poured monolithically with the walls. Tank wall construction joints shall be located only at center points between haunches or

corbels. Haunches or corbels attached to walls or other units shall also be poured monolithically with the walls with wall construction joints, if required, located a minimum of 3' from haunch or corbel face.

Continue all reinforcing steel and welded wire fabric across joints. Provide keys and inclined dowels as directed by the Engineer. Provide formed longitudinal keys at least 1-1/2" deep x 3-1/2" wide at all joints in walls and footings unless otherwise shown on the plans.

Obtain bond between pours by roughing surface of concrete at joint in an approved manner which will expose aggregate uniformly and which will not permit laitance, loosened particles of aggregate, and damaged concrete at the surface. Just prior to subsequent concrete pour, coat roughened surface with neat cement grout. Pour subsequent concrete against roughened surface before grout has taken its initial set.

L. Expansion Joints:

Provide expansion joints where indicated. Except for dowels bonded to concrete on only one side of joint, do not permit any reinforcement or other embedded metal items that are bonded to concrete to extend through any expansion joint.

In joints, install joint filler of closed-cell neoprene conforming to ASTM D 1056, Class SC (oil-resistant and medium swell) of 2 to 5 psi compression deflection (Grade SCE-41). Provide neoprene filler as manufactured by Permaglaze Company, Rubatex Corporation, Williams Products, Inc., or equal.

Prepare joint to receive sealant in accordance with sealant Manufacturer's instructions. Provide polyethylene bond breaker between joint filler and sealant. Seal joint with two-component sealing compound complying with Federal Specifications TT-S-2276 as manufactured by Sika, Inc., or equal. Submit for approval samples of filler and sealant proposed for use in work before such materials are delivered to the site.

M. Form Removal:

Under normal conditions, after placing concrete, the minimum waiting period before forms may be stripped shall be governed by following schedule, but use of this schedule shall not relieve the Contractor of responsibility for safety of structure. The number of days in schedule below is the cumulative number, not necessarily consecutive, during which temperature of air surrounding concrete was within categories listed.

STRUCTURAL MEMBER	Above 60 Deg. F.	50-60 Deg. F.	40-50 Deg. F.	Under 40 Deg. F.
Column & Walls	1 Day	2 Days	5 Days	See Para. Below

Side Forms of Beams	1 Day	2 Days	5 Days	See Para. Below
Bottom Forms of Slabs 6' or Less in Span	7 Days	12 Days	18 Days	See Para. Below
Bottom Forms of Beams 20' or Less in Span	14 Days	18 Days	21 Days	See Para. Below

For slab spans greater than 6', and for beam spans greater than 20', add 12 hours to each temperature category for each additional foot over 6' for slabs, and 20' for beams.

When temperatures below 40° F occur, leave forms in place for additional time, equal to time the structure has been exposed to lower temperatures.

After form removal, do not place loads on any members that will damage or weaken members in any way.

Results of suitable control tests shall be used as evidence that the concrete has attained the design strength to permit removal of supporting forms. Cylinders required for control tests shall be provided at Contractor expense in addition to tests otherwise required by this specification. Test specimens shall be removed from molds at end of 24 hours and stored in structure as near points of sampling as possible and shall receive, insofar as practicable, same protection from elements during curing as is given those portions of structure which they represent, and shall not be removed from structure for shipping to laboratory for testing prior to 24 hours before proposed time of form removal.

After forms have been removed, immediately install reshoring in accordance with all provisions of ACI 347.

Re-shoring of all elevated structural concrete is required and shall remain in place until concrete has reached its 28-day design strength. Support for construction of upper floor and roof levels is not required. During re-shoring place no loads upon any members that will damage or weaken them.

End Section 3-B

DIVISION 3 - CONCRETE

3-C: CONCRETE REINFORCEMENT

A. General:

The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and installation complete of all concrete reinforcing steel as shown on drawings and as specified in accordance with provisions of the contract documents and completely coordinated with that of all other trades.

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

B. Quality Standards:

Reinforcing steel items to comply with applicable ASTM standards as indicated in materials.

Fabrication, detailing, and placing of reinforcing to comply with ACI code and CRSI standards.

C. Submittals:

Submit mill reports and shop drawings in compliance with Contract Documents.

Submit mill reports for all reinforcing proposed for use, and submit shop drawings for all reinforcing. Do not fabricate material or deliver to project site before return of approved shop drawings. Submit shop drawings sufficient in detail and dimensions to permit reinforcing steel and accessories to be placed without reference to working drawings.

D. Delivery, Storage and Handling:

Schedule deliveries to avoid delays and to prevent greater accumulation that can be suitably stored at site. Arrange deliveries to provide sufficient quantities to permit continuity of placing of any part of work. Do not change suppliers or brands of materials during any part of work without approval of Engineer.

Store materials to prevent damage to other materials, to work, or structure. Store materials in dry weathertight, ventilated spaces. Store reinforcing on supports that prevent reinforcing from coming in contact with earth.

E. Materials:

Reinforcing Bars including stirrups and column ties shall conform to ASTM A615, Grade 60.

Welded Wire Fabric shall conform to ASTM A185.

Galvanized reinforcing bars shall comply with ASTM A153 and shall be galvanized after fabrication and bending. Provide galvanized reinforcing where shown or specified.

Smooth dowel bars for expansion joints shall be fabricated of round plain carbon steel bars complying with ASTM A306, Grade 60. Where indicated, place a metal dowel cap filled with grease at one end of dowel to permit longitudinal movement of dowel within concrete section. Provide for movement that equals joint width plus 1/2" by leaving 1/2" gap between end of dowel and end of cap.

Epoxy coated reinforcing bars shall be provided where shown on the drawings. The bars shall conform to the standards and requirements of ASTM A775. Bars in horizontal slabs should be supported with plastic or epoxy coated supports. Any damaged coating areas, or bars cut in the field, shall have the damaged coating repaired using a two-part epoxy repair material meeting ASTM A775 and the reinforcing steel supplier's approval. Lap splice lengths for epoxy coating bars shall be 1.5 times greater than the lap length required for uncoated bars. Bars shall be handled and moved to minimize sagging and to avoid abrasive contact points, such as lifting cables or chains. Bars should be stored on wood or plastic lined supports while on the job site, and covered with opaque polyethylene sheeting if they are to be stored outdoors for more than one month.

Epoxy coated bars may be cut in the field with an abrasive saw or power shears (no flame cutting), with all cut surfaces then coated with the approved two-part epoxy coating.

Coated steel tie wire shall be used when tying epoxy coated reinforcing bars. Prior to concrete placement, the epoxy coated bars shall be examined for damaged coating, with all damaged areas repaired and cured prior to concrete placement.

F. Fabrication:

Detail and fabricate reinforcing bars in compliance with ACI Manual of Standard Practice for Detailing Reinforced Concrete Structures (ACI 315) and Chapter 7, "Details of Reinforcement" ACI Building Code (ACI 318.) In event of fabricating errors, do not re-bend or straighten bars in any manner that will injure or weaken material. Cold bend all bars.

Fabricating Tolerances:

Sheared or saw cut length shall be plus or minus 1".

Depth of truss bars shall be plus 0" or minus 1/2".

Stirrups and ties shall be plus or minus 1/2".

All other bends shall be plus or minus 1/2".

Bundle, tag, and mark reinforcing before delivering to site. Use metal tags which show bar size, length, and an identification number that corresponds to number shown on shop drawings.

Do not use any reinforcing having any of the following defects:

Bar lengths, depths and bends exceeding specified fabrication tolerances.

Bends not indicated on project drawings or approved shop drawings.

Cracks or splits occurring at bends.

Bars with reduced cross-section due to excessive rusting or other causes.

G. Placing Reinforcing:

Comply with CRSI "Placing Reinforcing Bars", and with ACI Building Code (ACI 318), Chapter 7, "Details of Reinforcement".

Do not place concrete on reinforcing which has rust, mill scale, form oil, earth, ice, and other materials which will reduce or destroy bond.

When temperature is 35° F or less, or when temperature is at 40° F and falling, or at other times required by Engineer, heat the reinforcing steel to at least 40° F.

Accurately position, support, tie, and secure reinforcement against displacement by construction operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangars as required. On ground, supporting concrete blocks may be used. Provide extra tie steel (not less than No. 3 bars) where necessary to make each layer of reinforcing into a rigid mat or assembly. Where concrete surfaces will be exposed, take precautions to ensure that no metal (especially tie wires) is in contact with forms. Plastic tipped metal chairs shall be used where concrete is exposed.

Provide supports of adequate size and number to prevent displacement of welded wire fabric during construction operations. If required during placing of concrete, lift welded wire fabric to ensure its proper position in the slab. Where approved by Engineer, carry welded wire fabric into position and correctly place after concrete is poured.

Use templates to locate and position vertical column bars in forms.

Provide concrete cover for reinforcing as shown on drawings. Where not shown, provide concrete cover as specified in ACI 318, or ACI 350 for all concrete structures intended to contain water or wastewater.

Space and locate reinforcing bars as shown on drawings and within placement tolerances stated in CRSI "Placing Reinforcing Bars". Maintain minimum clear distances between bars as stated in Chapter 7, "Details of Reinforcement" of ACI 318. When reinforcing cannot be placed in its indicated locations within specified placing tolerances or with specified minimum clear distances between rebars, notify Engineer immediately. Do not pour concrete until corrective action has been determined by Engineer.

H. Splices in Reinforcing:

Provide lap splice lengths as indicated on drawings. Where not indicated, provide Class B tension lap splice lengths as specified in ACI 318. Place lap spliced ends of bars in contact with each other and tightly wire together. Increase the lap splice lengths for uncoated bars by a factor of 1.5 when lap splicing epoxy coated reinforcing bars.

Welded wire fabric splices shall be in accordance with ACI 318.

Provide column locking type vertical rebar mechanical end-bearing splices by means of locking type splices when indicated on drawings.

Saw cut end bearing surfaces of all column bars to be mechanically spliced at 90 degrees with longitudinal axis of bar with a maximum deviation of 1-1/2 degrees. Remove all burrs and foreign matter from bearing surfaces.

I. Weldable Grade Rebars:

Rebars noted on drawings as weldable grade shall have a carbon content between 0.41% and 0.50%, inclusive, and a manganese content of less than 1.30%. These rebars shall be welded using low hydrogen electrodes, with a preheat and interpass temperature of not less than 400° F. When approved by Engineer, these rebars may be welded using pressure gas welding, thermite welding or submerged arc welding. Electrodes shall be E70 series or their equivalent. Welding of rebars shall comply with AWS D12.1. Weldable grade rebars shall comply with ASTM A615 Grade 40.

J. Field Quality Control:

All reinforcement is subject to observation by Engineer after placement, prior to placing concrete. Contractor to give Engineer notice 24 hours in advance of placement to allow opportunity to observe reinforcement. Approval of reinforcing by Engineer for rebar size, placement, spacing, support, and tying only. It is not to relieve Contractor of responsibility for structural integrity of structure.

End Section 3-C

DIVISION 3 - CONCRETE

3-D: CONCRETE MATERIALS, STRENGTHS, PROPORTIONS, AND MIX DESIGNS

A. General:

The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and installation complete of all concrete work having materials, strengths, and proportions as shown on drawings and as specified in accordance with provisions of the contract documents and completely coordinated with that of all other trades.

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

Refer to other sections of Division 3, "Concrete" for additional requirements for concrete.

B. Quality Standards:

The Contractor shall employ a testing laboratory accredited as a Class 1 laboratory by the Board of Accreditation of Concrete Testing Laboratories, Inc. to perform material evaluation tests and to design concrete mixes.

C. Submittals:

Submit copies of manufacturer's specifications with installation instructions for all proprietary materials.

Submit samples of materials as may be requested by Engineer, including names, sources, and descriptions as required.

Submit copies of laboratory test reports for concrete materials and mix design tests as specified.

Provide material certificates in lieu of material laboratory tests only when permitted by Engineer. Material certificates shall be signed by material manufacturer and Contractor, certifying that each material complies with or exceeds specified requirements.

Show the following information on all concrete design mix test reports:

Sieve analysis for fine and coarse aggregate.

Test for aggregate organic impurities.

Proportioning of all materials.

Mill certificates for cement.

Slump.

Air entrainment.

7- and 28-day compression test results (min. 3 cylinders).

A mix design previously used which complies with specifications may be submitted for approval. Include all information noted above.

D. Materials:

Portland Cement: Complying with ASTM C150, Type I or Type II. Type II cement and an air-entrained admixture shall be used for all concrete on the job except where specifically stated to the contrary. Contractor may substitute for Type II, a Type I cement modified to provide a tricalcium aluminate content not in excess of 8.0%. If substitution is elected, Contractor shall furnish Engineer with a mill certificate stating percentage of tricalcium aluminate prior to using cement for project. Same brand of cement shall be used throughout job.

Fine and coarse aggregates for normal weight concrete: Comply with ASTM C33, consisting of sand, sand-gravel, gravel, or crushed stone. Provide aggregate having particles which are clean, hard, tough, durable, of uniform quality, free of soft, thin elongated pieces, disintegrated stone, dirt, organic or other injurious materials occurring as a coating on or in a free state. Provide aggregate obtained from a source approved by the NC Department of Transportation in which aggregate will be used for concrete. Provide aggregate of grade required by NC DOT for use in bridge construction. Aggregate gradation shall comply with ASTM C33 with following limitations:

Coarse aggregate shall be a minimum of 50%.

Fine aggregate shall be minimum of 40%, maximum of 50%.

Concrete mix design shall be made up of approximately 50% coarse aggregate and 50% fine aggregate.

Coarse aggregate gradation shall comply with ASTM C33 gradation size number 67 with 3/4" maximum size aggregate.

Concrete topping shall comply with all requirements set forth herein except that at Contractor's option, 1/2" maximum size aggregate may be substituted for 3/4" size.

Water shall be clean, fresh, potable, free of oil, acid, organic matter or other deleterious substances.

Admixtures: Use following type of admixtures as approved by Engineer. Do not use calcium chloride admixtures in shrinkage compensating concrete.

Air-entraining admixture shall comply with ASTM C260.

Chemical admixtures shall comply with ASTM C494.

E. Concrete Strengths and Uses:

All strengths indicated are 28-day compressive strengths.

<u>Strength</u>	<u>Use</u>
2000 psi	All grout
4000 psi	All concrete not otherwise specifically indicated
5000 psi	All precast concrete

F. Concrete Design and Proportion:

Mix designs for normal weight concrete shall be proportioned in accordance with ACI 211.1 and this specification. Proportion as follows:

28 Day Concrete Strength	Minimum Cement Content Sacks per Cubic Yard	Maximum Water Cement Ratio – Gallons per Sack
2,000 psi	5.0	6.5
4,000 psi	6.25	6.4
5,000 psi	7.0	5.0

A sack of cement shall weigh 94 lbs. Mix designs proposed for use, when tested in laboratory, shall have an average 28-day compressive strength 25% in excess of strength required.

Slump: Water cement ratio shall produce the following:

Concrete with shrinkage-compensating cement: 4" plus or minus 1".
All other concrete: 3" plus 2" or minus 1".

Specified slumps apply at time when concrete is discharged at job site. In all cases, concrete shall have a slump not exceeding that specified and which will allow concrete to flow readily into angles and corners of forms and around rebars.

If water-cement ratio greater than that specified is required to produce slumps within specified limits, obtain approval from Engineer to increase ratio.

Modify procedure for determining mix design for concrete with shrinkage compensating cement to take into account increased water demand. Make trial mix slump tests and concrete cylinders at a time interval after mix is made that would correspond to time it would take concrete to be delivered and discharged at job site. Adjust water content until slump at end of time interval mentioned is within specified slump limits.

Air-entrainment shall be used for all concrete. Provide concrete having air content percentage measure by volume, including entrapped air, not exceeding 7% nor less than 5%. Measure air-entrainment using ASTM C231.

G. Hot and Cold Weather Concreting:

When temperature is above 80° F, provide, when required by Engineer, an admixture to be added to concrete to retard initial set of concrete. Provide admixture which complies with ASTM C494 and use in strict accordance with Manufacturer's instructions. Contractor shall not pour any concrete when the temperature is expected to be less than 40° F.

H. Tests for Proposed Concrete Mixes:

Prepare and submit mix design and data for each type and strength of concrete. Submit mix design and data in accordance with ACI 214 and Chapter 4 - Concrete Quality of ACI 318. Submit to the Engineer for approval in sufficient time before work is started to prevent delay in progress of work.

Approval of mix designs shall not relieve Contractor of full responsibility for concrete and its performance.

Testing of mix designs shall be performed in accordance with section "Concrete Quality Control Testing".

End Section 3-D

DIVISION 3 - CONCRETE

3-E: CONCRETE QUALITY CONTROL TESTING

A. General:

The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and performing complete of all concrete quality control and testing as shown on drawings and as specified in accordance with provisions of the contract documents and completely coordinated with that of all other trades.

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for sound, secure, complete and compatible installation shall be furnished and installed as part of this work.

B. Quality Standards:

The Owner shall select a testing laboratory accredited as a Class 1 laboratory by the Board of Accreditation of Concrete Testing Laboratories, Inc. to perform all quality control testing. The Contractor shall engage the services of the selected testing laboratory, and shall pay for the services with funds provided through the Concrete testing allowance. The Owner shall only pay for tests required by the specifications or required by the Engineer. The Contractor will pay for additional testing required due to failing tests. The Contractor shall submit the invoices from the testing laboratory, with no mark-up by the Contractor, with the request to be reimbursed from the testing allowance.

Testing laboratory shall perform all quality control testing except as indicated above and submit test reports to the Contractor and Engineer. Testing laboratory shall be responsible for conducting and interpreting tests. Each report shall state whether or not test specimens comply with specified requirements and indicate any deviations there from.

C. Submittals:

Testing Laboratory shall submit copies of all test reports directly to the Contractor and Engineer as soon as possible after each test is completed.

Show following information on all compressive strength test reports:

Project identification.

Name of Contractor.

Name of concrete supplier and truck number.

Name of concrete testing service.

Date of concrete placement.

Location of concrete batch in structure.

Designation of cylinder, i.e., "A", "B", "C", etc.

Concrete type.

Design compressive strength at 28 days.

Concrete mix proportions and materials.

Compressive breaking strength and type of break for both 7- and 28-day tests.

Slump.

Air Content Percentage.

Concrete Temperature when taken.

D. Making and Storing Test Specimens and Samples:

A set of concrete test specimens shall consist of five 6" diameter x 12" long test cylinders plus samples of concrete for testing for slump and air content.

During progress of work, perform field tests of concrete to determine compliance with specifications. Provide free access to the work for obtaining specimens and samples and performing tests. Furnish all concrete for testing, and cooperate in making tests.

Provide storage area for storing cylinders. Storage area shall consist of a shed, box, or other enclosure having a moist atmosphere and a temperature of 60 to 80° F during storage period. Protect all cylinders from injury or damage.

Obtain sets of test specimens and samples from vehicle at discharge point of material. Vehicle shall be in place to make the pour. When directed by the Engineer take specimens and samples elsewhere.

Obtain sets of test specimens and samples, for each strength of concrete at the following intervals:

Not less than one set on each day that concrete is placed.

Not less than one set for each 60 cubic yards of concrete poured or for each 4000 sq. ft. of surface area placed, whichever is smaller.

Store test cylinders in storage area for at least 24 hours before removal to laboratory for remainder of storage period and testing. Label such sets of test cylinders as "A", "B", "C", "D", and "E". Test cylinders "A" and "B" at 7 days and "C" and "D" at 28 days, with "E" being held in reserve.

When frequency of testing will provide less than 5 strength tests for a given class of concrete, conduct testing from at least 5 randomly selected batches or from each batch if less than 5 are used.

When total quantity of a given class of concrete is less than 60 cubic yards, strength tests may be waived by the Engineer if, in his judgment, adequate evidence of satisfactory strength is provided.

When strength of field-cured cylinders is less than 8% of companion laboratory cured cylinders, evaluate current operation and provide corrective procedures for protecting and curing in-place concrete.

E. Hot and Cold Weather Concreting:

When weather conditions are such that the Engineer requires additional test cylinders, make, store, and cure such sets of cylinders. Store additional cylinders in structure in vicinity of area represented by cylinders, and cure in same manner as portion of structure represented until 24 hours before testing. Label such sets of field-cured cylinders as "F", "G", and "H". Test cylinder "F" at 7 days and remaining cylinders at 28 days.

F. Testing of Cylinders:

Make and cure test cylinders in accordance with ASTM C31. Test cylinders in accordance with ASTM C39. From each set of cylinders, test one at 7 days and two at 28 days.

G. Slump Tests:

Specified slumps apply at time when concrete is discharged at job site. In all cases, concrete shall have a slump not exceeding specified slump and which will permit concrete to flow readily into angles and corners of forms and around reinforcing steel.

If water-cement ratio greater than that specified is required to produce slumps within specified limits, obtain approval from the Engineer to increase ratio.

Concrete mix which contains shrinkage compensating cement shall have water-cement ratio which produces a slump not less than 3" or more than 5".

Concrete mix which does not contain shrinkage compensating cement shall have a water-cement ratio which produces a slump not less than 2" or more than 4".

Take samples for slump tests in accordance with ASTM C-172. Perform slump tests in accordance with ASTM C-143.

Test for slump for each strength of concrete as required to properly establish design mixes and proportions and also for each set of strength test specimen cylinders.

If field test fails to meet specifications, immediately make a check test on another portion of sample.

H. Air Content Tests:

Concrete mixes shall have an air content percentage, including entrapped air, not less than 5% nor more than 7%, measured by volume.

Take samples for air content tests in accordance with ASTM C172. Test for air content in accordance with ASTM C231.

Test for air content for each strength of concrete to properly establish each mix design and proportion and also for each set of strength test specimen cylinders.

If field test fails to meet specifications, immediately make a check test on another portion of sample.

I. Temperature Tests:

Whenever ambient air temperature is below 50 or over 80° F, perform temperature test at time each set of strength test specimen cylinders is obtained.

Perform test in freshly discharged concrete batch of approximately 1-1/2 cubic yards in volume, using an armored thermometer accurate to plus or minus 2°. Allow thermometer to remain in sample until reading becomes stable.

J. Core Tests:

Take core samples of in-place concrete, as directed by the Engineer when test results are such that there is reasonable doubt that specified concrete strengths and other characteristics have not been attained in structure. Testing service shall conduct tests to determine strength and other characteristics of in-place concrete by compression tests on cored cylinders complying with ASTM C42, or by load testing specified in ACI 318, or by other means as directed. Contractor shall pay for such tests conducted and any other additional testing as may be required.

K. Concrete Evaluations:

Concrete quality control testing will be evaluated by following criteria:

Do not use concrete delivered to final point of placement that has slump or total air content outside specified values.

Compressive strength tests for laboratory-cured cylinders will be considered satisfactory if averages of all sets of three consecutive compressive strength test results equal or exceed 28-day design compressive strength of type or strength of concrete and no individual strength test falls below required compressive strength by more than 500 psi. A strength test shall be the average of 2 cylinders from the same sample tested at 28 days.

Strength tests of specimens cured under field conditions may be required by the Engineer to check adequacy of curing and protecting of concrete placed. Mold these specimens at same time and from same samples as laboratory-cured specimens.

Provide improved means and procedures for curing concrete when 28-day compressive strength of field-cured cylinders is less than 85% of companion laboratory-cured cylinders.

When laboratory-cured cylinder strengths are appreciably higher than minimum required compressive strength, field-cured cylinder strength need not exceed minimum required compressive strength by more than 500 psi even though the 85% criterion is not met.

If individual tests of laboratory-cured specimens produce strengths more than 500 psi below required minimum compressive strength, or if tests of field-cured cylinders indicate deficiencies in protection and curing, provide additional measures to assure that load-bearing capacity of structure is not jeopardized. If probability of low-strength concrete is confirmed and computations indicate load-bearing capacity may have been significantly reduced, core tests of area in question may be required.

If compressive strength tests fail to meet minimum requirements specified, concrete represented by such tests will be considered deficient in strength and subject to additional testing as herein specified.

Formed concrete having any dimensions smaller or greater than required and outside specified tolerance limits, will be considered deficient in strength and subject to additional testing as herein specified.

Formed concrete having any dimension greater than required will be rejected if appearance or function of structure is adversely affected or if larger dimensions interfere with other construction. Repair or remove and replace rejected concrete as required to meet construction conditions.

When permitted, accomplish removal of excessive material in a manner to maintain strength of section without affecting function and appearance. Strength of concrete structure in-place will be considered potentially deficient if it fails to comply with any of the requirements that control strength of structure, including the following conditions:

Failure to meet compressive strength tests requirements.

Concrete, which differs from required dimensions or location in such a manner to reduce strength.

Concrete subjected to damaging mechanical disturbances, particularly load stresses, heavy shock, and/or excessive vibration.

Poor workmanship and quality control likely to result in deficient strength.

When there is evidence that strength of concrete structure in-place does not meet specification requirements, concrete testing service shall take cores drilled from hardened concrete for compressive strength determination, in accordance with ASTM C42 as follows:

Take at least 3 representative cores from each member or area of suspect strength from locations directed by the Engineer.

Test cores in a saturated-surface-dry condition in accordance with ACI 318 if concrete will be wet during use of completed structure.

Test cores in an air-dry condition in accordance with ACI 318 if concrete will be dry at all times during use of completed structure.

Strength of concrete for each series of cores will be considered satisfactory if their average compressive strength is at least 85% and no single core is less than 75% of 28-day required compressive strength. Report test results in writing to the Contractor and Engineer on same day that tests are made. Include in test reports project identification name and number, date, name of Contractor, name of concrete testing service, location of test core in structure, type or strength of concrete represented by core sample, nominal maximum-size aggregate, design compressive strength, compression breaking strength and type of break (corrected for length-diameter ratio), direction of applied load to core with respect to horizontal plane of concrete as placed, and moisture condition of core at time of testing.

Fill core holes solid with patching non-shrink grout, and finish to match adjacent concrete surfaces. Conduct static load test and evaluations complying with ACI 318 if results of core tests are unsatisfactory, or if core tests are impracticable to obtain, when directed by the Engineer. Correct all concrete work that is found structurally inadequate by core tests or by results of static load tests as directed by the Engineer.

If strength test results fail to meet the requirements of the specifications, the Engineer, in addition to ordering core and load tests, shall also have the right to order a change to the concrete mix proportion and to the method of curing.

End Section 3-E

DIVISION 3 - CONCRETE

3- F: CONCRETE BATCHING AND PLACING

A. General:

The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and performing complete of all concrete batching, mixing, and placing as shown on drawings and as specified in accordance with provisions of the contract documents and completely coordinated with that of all other trades.

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

B. Quality Standards:

Applicable provisions of ACI 306 "Recommended Practice for Cold Weather Concreting" and ACI 605 "Recommended Practice for Hot Weather Concreting" apply to concrete work.

Batch plants producing ready-mixed concrete shall comply with standards established by Plant Manufacturer's Bureau of National Ready Mixed Concrete Association. All ready-mixed concrete production facilities shall be currently and recently (within last 12 months) certified by National Ready Mixed Concrete Association.

Truck mixers, agitators, and non-agitating units used to mix and transport concrete shall comply with Standards of Truck Mixers Manufacturer's Association of National Ready Mixed Concrete Association.

C. Batching, Mixing, and Delivery:

Provide ready-mixed concrete unless otherwise approved by the Engineer. Batch, mix, and transport concrete in accordance with applicable provisions of ASTM C94.

Incorporate air-entraining and chemical admixtures into concrete mix in amounts and using procedure recommended by Manufacturer and approved by the Engineer. Measure quantity of any admixture to accuracy of plus or minus 3%.

Add two or more admixtures into concrete mix provided that the combination of admixtures used is compatible, the mixture will have no deleterious effect on the concrete, and each admixture is added separately.

When concrete arrives at project site and has a slump less than that suitable for placing, water may be added providing maximum permissible slump and water-cement ratio are not

exceeded. When water is added, incorporate into concrete mix by mixing equal to 30 revolutions of mixing drum and at speed recommended by Manufacturer. Amount of water so added shall be noted on delivery ticket and ticket signed by person authorizing addition of water. Contractor shall be fully responsible for quality and strength of concrete when water is added.

D. Elapsed Time for Placing Concrete:

Concrete for any monolithic unit of a structure shall be delivered at a rate that will permit proper handling, placing, and finishing of the concrete. The maximum interval between the placing of batches at the work site shall not exceed 20 minutes. The elapsed time between adding the mixing water to the mix and placing the concrete in the forms shall not exceed that set forth in Table A. Any concrete exceeding these limitations shall not be used on the project.

TABLE A
ELAPSED TIME FOR PLACING CONCRETE

Air or Concrete Temperature Whichever is Higher	Maximum Time Elapsed No Retarding Admixture Used	Retarding Admixture Used
90° F or above	30 minutes	1 hour 15 min.
80° F through 89° F	45 minutes	1 hour 30 min.
*79° F or below	60 minutes	1 hour 45 min.
**70° F through 79° F	60 minutes	1 hour 45 min.
**69° F or below	1 hour 30 minutes	2 hour 15 min.

* Applicable to concrete with strength of 3,000 psi or greater.

** Applicable to concrete with strengths less than 3,000 psi.

Note: The quantity of retarder to be used shall be as recommended by the Manufacturer. The Contractor shall furnish the Engineer a copy of the Manufacturer's recommended dosage rate for the temperature ranges shown above.

E. Preparation for Placing Concrete:

Inspect equipment to be used for transporting and consolidating concrete to ensure that it is clean and correctly operating.

Before placing concrete, inspect formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other trades to permit installation of their work; cooperate with other trades in setting such work, as required.

Inspect all forms, subgrade, and granular fill to ensure that they are free of debris, mud, water, frost, ice, or snow. Inspect subgrade and granular fill to ensure that they have been properly graded and compacted.

Inspect reinforcement to ensure that it is correctly placed, securely tied, and free of mud, oil, ice, frost, or other coatings that would destroy bond.

Inspect forms to ensure that all sleeves, formed openings, inserts, hardware, conduit, accessories and items required by other trades are correctly placed and secured in the forms.

Inspect forms to ensure that they are correctly coated; and verify that all piping and conduits required to be buried under or in the slabs has been completed, tested, and approved.

Inspect vapor barrier to ensure that all joints have been sealed and that all tears and punctures have been repaired. Where no vapor barrier is required, slightly wet the granular fill or subgrade to receive concrete. No standing water to remain in area to receive concrete.

Before placing any concrete topping, thoroughly wet surface to receive topping, but leave no standing water at time concrete is placed.

Continuous vapor barrier sheet under concrete slabs shall be provided where granular fill is required below slabs. Unless otherwise indicated, vapor barrier shall be 15 mil. thick polyethylene sheet complying with ASTM C171. Laps shall be 3" and taped with pressure-sensitive tape compatible with the sheet. All tears or punctures shall be taped and repaired prior to pouring concrete. Where shrinkage-compensating cement is specified for slabs, do not provide vapor barrier. In all cases where vapor barrier is not required, slightly wet subgrade before concrete is poured without leaving standing water. Wetting of subgrade applies under all concrete floor slabs, base slabs, and footings where vapor barrier is not required.

F. Placing Concrete:

In placing concrete, comply with ACI 304, except as specified herein.

Do not use any method of conveying concrete from mixer to place of deposit that will cause separation or loss of materials. Do not use any concrete that has partially hardened or which has been contaminated by foreign materials. Do not use any retempered concrete.

Deposit concrete as nearly as possible to its final position to avoid segregation due to rehandling or flowing. At all times place concrete at such a rate that concrete shall be plastic and flow readily into corners of forms and into spaces between rebars.

After concreting has been started, deposit concrete in a continuous operation until panel or section is completed. Deposit formed concrete continuously or in horizontal layers not greater than 2' deep. Do not place concrete on other concrete that has hardened sufficiently to cause formation of seams or planes of weakness within the panel or section being poured. When depositing concrete, do not allow concrete to fall a distance greater than 8' when measured from point of discharge to point of deposit. Deposit concrete in a manner to avoid inclined construction joints.

Employ only operators who are experienced in use of vibrators to consolidate concrete. Consolidate placed concrete by vibrating supplemented by hand spading, rodding or tamping. To vibrate, use internal immersion vibrator operating at speed of 7000 RPM or higher. Where internal vibrator cannot be used in areas of congested reinforcing, use suitable form vibrators located just below top surface of concrete. Use internal vibrators by inserting into concrete vertically, for 5 to 15 seconds, at points 18" to 30" apart, and to a depth that penetrates previously placed lower layer. Do not insert vibrators into lower layers of concrete that have begun to set. Do not use vibrators to move concrete inside of forms.

End Section 3-F

DIVISION 3 - CONCRETE

3-G: CONCRETE FINISHING, CURING, AND PATCHING

A. General:

The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and performing complete of all concrete finishing, curing, and patching as shown on drawings and as specified in accordance with provisions of the contract documents and completely coordinated with that of all other trades.

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

Refer to other sections in Division 9, Finishes, and Division 3, Concrete for applied finishes.

B. Quality Standards:

The Contractor shall be responsible for the proper finishing, curing, patching, and if required, the correction of concrete work which does not comply with specified requirements.

The continuity of color and texture for exposed concrete surfaces is of prime importance. Maintain such controls and procedures in addition to those specified as necessary to provide continuous match of concrete work.

C. Submittals:

Submit copies of Manufacturer's specifications with application and installation instructions for proprietary materials. Submit samples of materials when requested by Engineer, including names, sources, and descriptions as required.

D. Materials:

Membrane-forming curing compound shall comply with ASTM C309, Type 1, unless Engineer approves other type. Approved products and Manufacturers:

- "Masterseal" by Master Builder's Co.
- "Clear Seal" by A. C. Horn/W. R. Grace
- "Kure-N-Seal" by Sonneborn-Contech
- "Polyclear" by UPCO Chemical/USM Corp.
- "Clear Cure" by L & M Construction Chemicals
- "Klearseal" by Castle Chemical Corp.
- "LR-151" by Protex Industries, or equal

Moisture-retaining cover shall provide one of the following:

Waterproof paper shall comply with ASTM C171, Type 1 or Type 2.
Polyethylene sheeting shall comply with ASTM C 171.
Polyethylene-coated burlap

Burlap shall be cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M182, Class 3. In lieu of burlap, cotton mats complying with ASTM C440 may be used.

Liquid chemical floor hardener shall be colorless aqueous solution containing a blend of magnesium fluosilicate and zinc fluosilicate combined with a wetting agent, containing not less than 2 lbs. fluosilicate per gallon. Provide material which does not react with, inhibit, or otherwise interfere with adhesives and bonding of future floor finishes. Following materials may be approved for use:

"Hornolith" by A. C. Horn/W. R. Grace
"Saniseal 50" by Master Builder's Co.
"Lapidolith" by Sonneborn-Contech
"Lithoplate" by Protex Industries, or equal

Abrasive aggregate for non-slip finish shall be fused aluminum oxide grits, or crushed emery, with emery aggregate containing not less than 40% aluminum oxide and not less than 25% ferric oxide. Use material that is factory-graded, packaged, rustproof and non-glazing, and is unaffected by freezing, moisture and cleaning materials. Approved products and Manufacturers:

Aluminous Oxide Floor Hardener: Carborundum Co.
Korundum Non-slip Aluminum Oxide: Concrete Service Co.
Alundum Non-slip Abrasive Grains: Norton Co.
Frictex: Sonneborn-Contech, or equal

E. Finishes for Formed Surfaces:

Provide standard smooth finish for concrete surfaces exposed to view, for concrete surfaces 18" and less below the minimum water level in tank, and for concrete surfaces 18" and less below finished grade. This is for cast concrete surfaces obtained with selected form facing material, arranged orderly and symmetrically with a minimum of seams. Repair and patch defective areas, with fins or other projections completely removed and smoothed.

Concrete surfaces not exposed to view and not covered with a coating shall have defective areas repaired and patched as specified.

Defective areas include but are not necessarily limited to honeycomb, rock pockets, tie holes, voids over 1/2" diameter and other areas as determined by Engineer. Repair defective areas as stated in paragraph "Concrete Patching and Repairing".

Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces occurring adjacent to formed surfaces, strike-off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise shown.

F. Monolithic Slab Finishes:

Apply scratch finish to monolithic slab surfaces that are to receive concrete topping or mortar setting beds for tile, portland cement terrazzo, and other bonded applied cementitious finish flooring material and as shown on the drawings.

After placing slabs, plane surface to a tolerance not exceeding 1/4" in 10' when tested with a 10' straightedge, unless shown otherwise on drawings. Slope surfaces uniformly to drains where required. After leveling, roughen surface before final set, with stiff brushes, brooms, or rakes.

Apply float finish to monolithic slab surfaces that are to receive trowel finish and other finishes as hereinafter specified and slab surfaces which are to be covered with membrane or elastic waterproofing, membrane or elastic roofing, or sand-bed terrazzo, and as shown on drawings or in schedules. After screeding and consolidating concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or by hand floating if area is small or inaccessible to power units. Check and level surface plane to a tolerance not exceeding 1/4" in 10' when tested with a 10' straightedge, unless shown otherwise on drawings. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.

Apply trowel finish to monolithic slab surfaces that are to be exposed-to-view, unless otherwise shown and slab surfaces that are to be covered with resilient flooring, paint, or other thin film finish coating system. After floating, begin first trowel finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and with a surface plane tolerance not exceeding 1/8" in 10' when tested with a 10' straightedge. Grind smooth surface defects that would reflect through applied floor covering system.

Apply chemical-hardener finish to interior concrete floors where shown on drawings or in schedules. Apply liquid chemical-hardener after complete curing and drying of the concrete surface. Dilute liquid hardener with water, and apply in 3 coats:

First coat: 1/3-strength
Second coat: 1/2-strength
Third coat: 2/3-strength

Evenly apply each coat and allow 24 hours for drying between coats. Apply proprietary chemical hardeners in accordance with Manufacturer's printed instructions if instructions are different than those specified in paragraph above. After final coat of chemical-hardener solution is applied and dried, remove surplus hardener by scrubbing and mopping with water.

Non-slip broom finish: Apply non-slip broom finish to exterior concrete platforms, steps and ramps, and elsewhere as shown on drawings or in schedules. Immediately after float finishing, slightly roughen concrete surface by brooming perpendicular to main traffic route. Coordinate required final finish with Engineer before application.

Apply non-slip aggregate finish to concrete stair treads, platforms, ramps, and elsewhere as shown on the drawings or schedules. After completion of float finishing and before starting trowel finish, uniformly spread 25 lbs. of dampened non-slip aggregate per 100 sq. ft. of surface. Tamp aggregate flush with surface using a wood float, but do not force the non-slip aggregate particles below surface. After broadcasting and tamping, apply float finishing as herein specified. After curing, lightly work the surface with a steel wire brush or an abrasive stone and water to expose the non-slip aggregate.

G. Concrete Curing and Protection:

Protect freshly placed concrete from premature drying and excessive cold or hot temperature, and maintain without drying at a relatively constant temperature for a period of time necessary for hydration of cement and proper hardening.

Maintain concrete in moist condition and within specified temperature range for a period of 7 days after placement. When high-early strength concrete is used, time may be reduced to 3 days.

Perform curing of concrete by moist curing, by moisture-retaining cover curing, by membrane curing, and by combination thereof, as specified.

Provide moisture curing by following methods:

Keep surface continuously wet by ponding, or keep surface continuously wet by continuous water-fog spray.

Cover concrete surface with burlap, thoroughly saturated and continuously kept wet. Place burlap to provide coverage of concrete surfaces and edges, with 4" laps at edges and ends of pieces of burlap.

For vertical surfaces, leave forms in place and keep top surface wet.

Provide moisture-cover curing as follows:

Cover concrete surfaces with moisture-retaining non-staining waterproof paper or 4 mils thick polyethylene sheeting, placed in widest practicable width with sides and edges lapped at least 3" and sealed by sand, wood planks, waterproof tape, or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

Provide membrane curing as follows:

Apply membrane-forming curing compound to damp concrete surfaces as soon as water film has disappeared. Apply uniformly in 2-coat continuous operation by power-spray equipment in accordance with Manufacturer's directions. Second coat to be applied at right angles to first coat. Recoat areas that are subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.

Do not use membrane curing compounds on surfaces which are to be covered with a coating material applied directly to concrete or with a covering material bonded to concrete, such as other concrete, liquid floor hardener, waterproofing, dampproofing, membrane roofing, flooring, painting, and other coatings and finish materials, unless otherwise acceptable to the Engineer.

Cure formed concrete surfaces, including undersides of beams, supported slabs and other similar surfaces by moist curing with forms in place for full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.

Initially cure unformed surfaces, such as slabs, floor topping, and other flat surfaces by moist curing. Final cure unformed surfaces, unless otherwise specified, by methods specified above, as applicable. Final cure concrete surfaces to receive liquid floor hardener or finish flooring by use of moisture-retaining cover, unless otherwise directed. During hot weather, maintain concrete temperature at less than 90° F during entire curing period.

During cold weather, provide adequate protection to maintain concrete temperature between 50° F and 80° F during entire curing period. Remove thermal protection at such time and in such a manner that concrete temperature is lowered within the limits set forth in ACI 306.

H. Concrete Patching and Repairing:

Any concrete that is not properly formed or consolidated shall be patched and repaired or removed and replaced with new concrete when so directed by the Engineer and at no additional expense to the Owner.

Cut out honeycomb, rock pockets, voids over 1/2" diameter and holes left by tie rods and bolts, down to solid concrete but in no case to a depth of less than 1". Make edges of cuts perpendicular to the concrete surface. Before placing cement mortar, thoroughly clean, dampen with water, and brush-coat the area to be patched with neat cement grout. Proprietary patching compounds may be used when acceptable to the Engineer.

For exposed-to-view surfaces, blend white Portland cement and standard Portland cement so that when dry patching mortar will match color of surrounding. Provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.

Repair of formed surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Engineer. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, and holes left by tie rods and bolts, fins and other projections on surface, and stains and other discolorations that cannot be removed by cleaning.

Repair concealed formed surfaces, where possible, that contain defects that adversely affect the durability of the concrete. If defects cannot be repaired, remove and replace the concrete.

Test unformed surfaces, such as monolithic slabs, for smoothness and to verify surface plane to tolerances specified for each surface and finish. Correct low and high areas as herein specified. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness, using a template having required slope.

Repair finished unformed surfaces that contain defects that adversely affect durability or strength of concrete. Surface defects, as such, include crazing, cracks in excess of 0.01" wide or which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, pop-outs, honeycomb, rock pockets, and other objectionable conditions.

Correct high areas in unformed surfaces by grinding after concrete has cured at least 14 days.

Correct low areas in unformed surfaces during or immediately after completion of surface finishing operations by cutting out low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Proprietary patching compounds may be used when approved by Engineer.

Repair defective areas, except random cracks and single holes not exceeding 1" diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least 3/4" clearance all around. Dampen concrete surfaces in contact with patching concrete, and brush with a neat cement grout coating or concrete bonding agent. Place patching concrete before grout takes its initial set. Mix patching concrete of same materials to provide concrete of the same type or

strength as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in the same manner as adjacent concrete.

Repair isolated random cracks and single holes not over 1" in diameter by dry-pack method. Groove top of cracks and cut-out holes to sound concrete and clean of dust, dirt, and loose particles. Dampen cleaned concrete surfaces and brush with neat cement grout coating. Place dry-pack before cement grout takes its initial set. Mix dry-pack, consisting of one part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched areas continuously moist for not less than 72 hours.

Repair methods specified above are intended for general use. A specific defect may arise which, in the opinion of the Engineer, affects the structural integrity, the appearance, or the function of the structure in which case the Engineer may require a repair method that is better suited to repairing the defect. Repair methods not specified above may be used; but in all cases, the Engineer shall approve the repair method used for repairing defects.

I. Miscellaneous Concrete Items:

Fill in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place, and cure concrete as herein specified to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete the work.

Provide monolithic finish to interior curbs by stripping forms while concrete is still green and steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

Equipment bases and foundations: Provide machine and equipment bases and foundations as shown on the drawings. Set anchor bolts for machines and equipment with template at correct elevations, complying with certified diagrams or with templates of the Manufacturer furnishing machines and equipment.

End Section 3-G

DIVISION 5 - METALS

5-B: MISCELLANEOUS METALS

A. General:

The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and installation, complete, of all miscellaneous metals as shown on drawings and as specified in accordance with provisions of the contract documents, and completely coordinated with that of all other trades.

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

Custom fabricated metal items and certain manufactured units not otherwise indicated to be supplied under work of other sections may be included within this specification. A general reference guide is included for Contractor's convenience below; it is not intended to be a complete listing of all miscellaneous metal items that may be required for this project. It is Contractor's responsibility to verify all field conditions prior to fabrication.

B. Quality Standards:

Materials and operations to comply with latest edition of codes and standards listed:

A.A.M.A.	Architectural Aluminum Manufacturer's Association.
A.S.T.M.	American Society for Testing and Materials.
A.W.S.	American Welding Society.
F.S.	Federal Specifications.

C. Submittals:

Submit shop drawings for fabrication and erection of assemblies. Include scaled drawings plans and elevations of all miscellaneous metals, and include details of sections and connections at enlarged scales. Show all anchorage and accessory items.

The Contractor shall provide finish samples when requested by the Engineer.

D. Product Delivery, Storage, and Handling:

Protect stored items from damage by the elements. Schedule delivery to avoid unnecessary on-site storage.

E. Job Condition:

Verify suitability of substrate to accept installation. Provide sleeves, embedded anchors, and other built-in items in time for installation.

F. Materials - General:

Following references provide minimum standards as they apply to specific items:

Ductile Iron:	ASTM 536.
Grey Iron:	ASTM 48.
Structural Steel:	ASTM A-36, A-440, A-501, A-575 or A-108.
Steel Forgings:	ASTM A-235, and A-237.
Bolts:	ASTM A-307, A-325, A-354.
Filler Metal:	ASTM A-233, E-60 or E-70 series.
Cast Iron:	ASTM A-48, Class 30, Min. 30,000 psi tensile.
Wrought Iron Bars:	ASTM A-189, Grade A
Wrought Iron Plates:	ASTM A-42, Standard Plate.
Malleable Iron:	ASTM A-47, and A-197.
Steel Pipe:	ASTM A-53.
Galvanizing:	ASTM A-123, A-386, or A-525
Brass:	ASTM B-36
Aluminum:	ASTM B-308 or B-221 for particular alloy in standard shapes and extrusions, B-26 for castings.
Stainless Steel:	ASTM A-484, A-276, Type 302.
Stainless Steel Bolts:	ASTM A-320

Masonry Anchorage Devices: Expansion shields shall comply with FF-S-325, as follows:

Lead expansion shields for machine screws and bolts 1/4" and smaller shall be head-out embedded nut type, single unit class, Group I, Type 1, Class 1.

Larger than 1/4" shall be Group I, Type 1, Class 2.

Bolt anchor expansion shields for lag bolts shall be zinc-alloy, long shield anchors class, Group II, Type 1, Class 1.

Bolt anchor expansion shields for bolts shall be closed-end bottom bearing class, Group II, Type 2, Class 1.

Fasteners: Provide stainless steel or aluminum fasteners as noted for exterior use, where built into exterior walls or into concrete walls. Select fasteners for type, grade, and class required.

Metal primer paint: Primer selected must be compatible with finish coats of paint. Coordinate selection of metal primer with finish paint requirements specified in Division 9-G "Painting".

G. Fabrication:

Form materials to shapes indicated with straight lines, sharp angles, and smooth curves. Drill or punch holes and then smooth edges. Weld permanent shop connections. All welds continuous fillet type. Grind smooth welds that will be exposed. Conceal fastenings where practicable. Punch or drill for temporary field connections and for attachment of work by other trades. Fabricate work in shop in as large assemblies as is practicable. Meet requirements specified under Section "Structural Steel" for fabricating items of structural nature or use. Quality welding processes and welding operators in accordance with AWS "Standard Qualification Procedure".

The miscellaneous metals indicated on the plans show the general dimensions and intended function of the indicated item. The size and shape of the structural member, where indicated, are intended to convey approximate dimensions. The fabricator shall design the structural member based on the N.C. Building Code, AISC specifications, and all other applicable standards. The minimum applied live loads shall be as stated in these codes, or as indicated in the plans and specifications.

H. Shop Painting:

Remove scale, rust, and other deleterious materials before applying shop coat. Clean off heavy rust and loose mill scale in accordance with SSPC SP-2 "Hand Tool Cleaning", or SSPC SP-3 "Power Tool Cleaning", or SSPC SP-7 "Brush-Off Blast Cleaning". Remove oil, grease, and similar contaminants in accordance with SSPC SP-1 "Solvent Cleaning".

Immediately after surface preparation, brush or spray on primer in accordance with manufacturer's instructions, at rate to provide the uniform dry film thickness of specified by the manufacturer for each coat. Use painting methods which will result in full coverage of joints, corners, edges, and exposed surfaces.

Apply one shop applied coat of asphaltic paint to all metal indicated to be set in or receive concrete. Thoroughly clean off foreign matter prior to shop painting.

Aluminum to Dissimilar Metals: Where aluminum surfaces come in contact with metals other than stainless steel, zinc, or white bronze, or other metals compatible with aluminum, keep aluminum surfaces from direct contact with such parts by (1) painting dissimilar metal with a prime coat of zinc-chromate primer or other suitable primer, followed by one or two coats of aluminum metal and masonry paint or other suitable protective coating, excluding those containing lead pigmentation, (2) painting dissimilar metal with a coating of heavy-bodied bituminous paint, (3) placing a good quality caulking placed between aluminum and dissimilar metal, or (4) placing a non-absorptive tape or gasket between aluminum and dissimilar metal. Steel anchors and connecting members may be hot-dip galvanized or zinc plated after fabrication.

Drainage from Dissimilar Metals: Paint dissimilar metals if used in locations where drainage

from them passes over aluminum.

Aluminum to Masonry: Paint aluminum surfaces in contact with lime mortar, concrete, or other masonry materials with alkaline-resistant coatings, heavy-bodied bituminous paint or as specified in Division 9-Section 9-G of these specifications.

Retouch in field, any scraped, abraded, and unpainted surfaces. Painting as specified for shop coats. Painting specified here does not count as a coat for finish painting.

I. Installation:

Set metal work level, true to line, plumb. Shim and grout, as necessary. Weld field connections and grind smooth. Where practicable, conceal fastenings.

Secure metal to wood with lag screws, of adequate size, with appropriate washers. Secure metal to concrete with embedded anchors, setting compounds, caulking and sleeves, or setting grout. Expansion bolts, toggle bolts, and screws permitted for light duty service only.

Meet requirements specified for structural steel for erecting items of structural nature or use.

Field splicing of fabricated items is not allowed unless said items exceed standard shipping length, or change of direction requires splicing. Mechanical splicing by means of wedges without full welding not allowed.

Furnish all handrails complete with brackets. Wherever pickets or posts are indicated to be set in sleeves, provide sleeves having a minimum wall thickness of 1/8". Set pickets or posts in sleeves with epoxy compound.

Provide each fabricated item complete with attachment devices as shown or as required to completely install.

Design aluminum work and anchor so that work will not be distorted nor fasteners overstressed from expansion and contraction of metal.

Suitably protect aluminum surfaces requiring protection against lime mortar stains, discoloration, surface abrasion, and other construction abuses.

Aluminum shall be mill finished unless otherwise specified or, if approved, finished as standard with manufacturer. Apply two sprayed coats of water-white methacrylate lacquer having a total minimum thickness of 0.006" to all aluminum components that will be exposed to or in contact with cement based products. Apply coating in the fabrication plant. Before application of lacquer, remove all fabrication compounds, moisture, dirt accumulations, and other foreign materials to insure proper lacquer adhesion.

Upon completion of installation in the field, clean all stainless steel and aluminum work in accordance with manufacturer's recommendations. Leave in satisfactory condition, as

approved by the Engineer.

J. Schedule of Miscellaneous Metal Items:

The following is a general listing of miscellaneous metal items that may be furnished for this Project. Contractor shall verify which items apply to this Project, and if there are other miscellaneous metal items required that are not included below. Supply all items as required to complete the construction and installation.

Anchorage Accessories: Generally, this includes anchorage items required to secure wood to wood, wood to steel, wood to masonry or steel to masonry/concrete, steel to steel, steel to other metals, aluminum to masonry/concrete, aluminum to aluminum, or aluminum to other metals, specified herein or otherwise required.

Structural Steel Shapes and Plates: Structural steel shapes and plates shall conform to ASTM A36. Unfinished bolts and anchor bolts used in conjunction with structural steel shall conform to ASTM A307. Weld structural steel in accordance with AWS Standard D1.0. Welding electrodes, series E70 conforming to AWS A5.1. All structural items exposed inside or outside shall be hot-dip galvanized, unless otherwise noted to be painted.

Aluminum Safety Chain: Aluminum with aluminum swivel snaps and ring connectors, installed where indicated. Minimum diameter of links: 13/64". Stainless steel chain may be substituted. Chains shall be coated with yellow PVC. Chain and connectors, and supporting posts, shall be capable of resisting a 200 pound force applied to each chain. The chain length shall be such that the maximum sag in the center of the chain's length shall be 3 inches below the ends of the chain. Chains shall be connected to railing posts at the same elevations as the centerlines of the adjacent safety railings (42" and 21" above the floor).

Aluminum Ladders: Construct ladders of 6063T6 Alloy, in accordance with details indicated and following minimum requirements. Stringers 1-1/2" diameter and rungs 1" dia.; secure ladders at each end and at intermediate points not over 5' on center. Mount to provide minimum distance, from centerline of rungs to wall, of 7". Installed ladder shall be designed to support a minimum of a 200 pound concentrated load.

If noted on the project plans or specified in another section of these specifications, attach to the ladder a 304 stainless steel safety climbing system consisting of a two piece 304 stainless steel, notched carrier rail slotted to accept ladder rungs, 304 stainless steel ladder rung clamps, and removable 304 stainless steel extension kit with quick release feature. The system shall be furnished with all required mounting hardware and shall include a safety belt and sleeve device for securing a climber to the rail and preventing free fall. The system shall be Saf-T-Climb as manufactured by North Safety Products, Inc.

Miscellaneous Aluminum Items: Provide and install aluminum items as indicated. In general, fabricate from alloys 6063-T6 or 6061-T6 as required and recommended by manufacturer. Fabricate all aluminum angles, beams, and channels from alloy 6061-T6.

Aluminum Checker Plate: Furnish and install aluminum checker plate where indicated. Diamond pattern, 1/4" minimum thickness and reinforced as necessary with angles to provide an allowable superimposed live load capacity of 200 psf with a maximum deflection of 1/240 of span. Furnish oversized plate for openings as noted on plans. Seal under plate edges with 1/4" thick neoprene gasket, and secure to slab with stainless steel anchors, washers, and nuts.

Aluminum and Stainless Steel Bolts: Use aluminum bolts of Alloy 2024-T4. Use stainless steel bolts conforming to ASTM A320.

Aluminum Access Hatches: Aluminum access hatches of the size and type shown on the plans shall be installed at locations indicated on the plans. Hatches shall have a 300 PSF load rating and shall be Halliday Products Type S1S and S2S with the optional protective grating (secondary fall prevention), equal products by USF Fabrication, or approved equal.

Access frames and covers shall have a 1/4" (7mm) thick one-piece, mill finish, extruded aluminum frame, incorporating a continuous concrete anchor. A bituminous coating shall be applied to the frame exterior where it will come in contact with concrete. Door panel shall be 1/4" aluminum diamond plate, reinforced to withstand a live load of 300 lbs. psf uniform live load with a maximum allowable deflection of 1/150 of the span. Doors shall open to 90 degrees and automatically lock with a T-316 stainless steel hold open arm with aluminum release handle. For ease of operation, the hold open arm shall incorporate an enclosed stainless steel compression spring assist. Doors shall close flush with the frame and rest on a built-in neoprene cushion/gasket. Hinges and all fastening hardware shall be T-316 stainless steel. Unit shall lock with a T-316 stainless steel slam lock with removable key and have a non-corrosive handle. Unit shall carry a lifetime guarantee against defects in material and/or workmanship.

Each aluminum access frame and cover shall have a permanently installed fall through protection grate system that provides continuous safety assurance in both its closed and open positions. When closed, the grate allows visibility for inspections and performance of limited maintenance below it. When open, the grate acts as an additional barrier to the access door opening. The system shall be a single or dual safety grate, depending on the dimensions of opening, and shall be provided as with the aluminum access frame and cover.

The fall through protection system shall be a grate consisting of one or two leafs made of 6061-T6 aluminum that are hinged on the sides of the hatch, as manufactured by Halliday Products or approved equal. Panel shall be 1-inch thick aluminum "I" bar grating with Safety Orange powder-coated finish. Grating shall be hinged with tamper proof stainless steel bolts, and shall be supplied with a positive latch to maintain unit in an upright position. Grating shall have a 6-in. viewing area on each lateral unhinged side for visual observation and limited maintenance. Grating shall be capable of supporting a live load of 300 PSF. The grate shall operate independent of the cover's reinforcing so that the cover will continue to meet specified load and deflection requirements, even if the grate's leafs are damaged or removed. Aluminum pull rods will be attached to the gratings leafs so the operator is

positioned with the grate between him and the hatch's opening whenever he raises the leaf. Each grate leaf will have a rod made from 316 SS that automatically engages to secure the leaf in its open position, and can be lifted upward to permit the grate leaf to close. The hatch cover will not be able to shut until the grate is closed—thereby ensuring the grate is in position when the next operator opens the hatch cover. The grating support ledges shall incorporate a built-in nut rail, equipped with four (4) stainless steel spring nuts. A padlock hasp for owner-supplied padlock shall be provided.

Installation of the fall through protection system shall be in accordance with the instructions provided by the manufacturer.

NOTE that the existing hatches for the solids cutter manhole, the wetwell, and the valve vault at the Twelve Oaks Pump Station shall be retro-fitted with fall through protection system described above. The systems shall be the Halliday Series X – Retro-grate, the Hinged Hatch Safety Grate as manufactured by U.S.F. Fabrication, or approved equal. The Contractor shall make the required measurements and furnish the necessary information for the manufacturer to fabricate the systems for the three existing aluminum hatches.

Bollards: Fabricate bollards (guard posts) of nominal 6" extra strength, galvanized, steel pipe. Length as required to permit minimum setting in ground, in concrete, of 42" and above ground projection of 42" unless otherwise indicated. Fill with 3000 psi concrete and form rounded top. Bollards shall be furnished with Safety Yellow smooth plastic bollard sleeves by Uline, Eagle, Innoplast, or approved equal.

Aluminum Railing: Not applicable to this project.

End Section 5-B

DIVISION 9 - FINISHES

9-G: PAINTING

A. General:

Furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and application, complete, of all painting as shown on drawings and as specified in accordance with provisions of the contract documents and completely coordinated with that of all other trades.

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

The terms "paint" and "painting" generally refer to fillers, primers, sealers, emulsions, oils, alkyds, latex, enamels, thinners, stains, and other applied coatings whether used as prime, intermediate or finish coats, and their application.

Examine other sections of specifications and become familiar with provisions regarding paints and finishes.

B. Work Included:

The work to be performed under this section includes but is not limited to the following:

1. Field painting of all exposed surfaces of all ferrous metal work, including galvanized, exterior and interior, in whatever location found, which do not have finish painting addressed under other sections of the specifications.
2. Painting of the interior surfaces of the specified precast concrete structures on this project. The precast concrete structures that are to be coated (interior surfaces only) include the pump station wetwell. The interior surfaces of the valve vault are not to be coated.
3. Painting of all exposed piping, pipe hangers and supports, and any other equipment that does not have a factory finished coating.

C. Acceptable Manufacturers:

Paint systems as specified herein are first line systems by Tnemec, Sherwin Williams, or approved equal. For all unspecified materials such as shellac, turpentine, or linseed oil, the Contractor shall provide the "best grade" or "first line" made by reputable, recognized manufacturers.

D. Submittals:

The Contractor shall submit detailed information for proposed paint systems and color charts to the Engineer for approval not less than four weeks before any painting will start. Contractor to obtain approval in writing before delivering materials.

The Engineer reserves the option to require samples of paint, oil, shellac, varnish, lacquer, or other materials (samples shall not exceed one pint of each type).

E. Product Delivery, Storage and Handling:

All materials shall be delivered to the job site in original, new and unopened containers bearing manufacturer's name on the label.

Labels shall be provided on each container with the following information:

Name or title of material, manufacturer's stock number, manufacturer's name, contents by volume for major pigment and vehicle constituents, thinning instructions and application instructions.

The Contractor shall protect all material from freezing or damage and shall store all materials used on the job in a single place designated by the Owner or Engineer. Storage place shall be kept neat and clean and make good all damage thereto or to its surroundings. Remove any soiled or used rags, waste, and trash from building every night. Take every precaution to avoid the danger of fire.

F. Job Conditions:

Before painting is started in any area, broom clean and remove excessive dust. After painting operations begin in a given area, broom cleaning will not be allowed. Only cleaning with commercial vacuum cleaning equipment will be allowed.

The Contractor shall provide adequate illumination in all areas where painting operations are in progress.

Before starting any work, the Contractor shall examine surfaces to receive paint finishes carefully for defects that cannot be corrected by procedures specified herein and which might prevent satisfactory painting results. Do not proceed until such defects are corrected. Commencing of work in a specific area constitutes acceptance of surfaces, and responsibility for satisfactory work.

G. Materials:

1. Paint Materials:

Solvents (for cleaning and product reducing) shall be pure and of highest quality, approved by the Engineer. Paint shall be well ground, not subject to settling, caking

or thickening in container, readily broken with a paddle to a smooth consistency and having easy brushing properties. Paint shall be furnished to the job ready-mixed, except for tinting of undercoats and possible thinning. All thinning and tinting materials as recommended for particular material shall be furnished.

ALL PAINT PRIMERS AND FINISH COATS SHALL BE FREE OF LEAD, CADMIUM, CHROMIUM, MERCURY, and other toxic metals.

2. Application Equipment and Accessories:

Application equipment is not required to be new, but adequate and commensurate for work and workmanship. The Contractor shall provide all ladders, scaffolding, drop cloths, masking, scrapers, tools, sandpaper, dusters, cleaning solvents and waste, required to perform the work and obtain results herein specified.

H. Application and Workmanship:

The Contractor shall employ only skilled painters. Application may be by brush, roller, or spray, upon approval from the Engineer. Equipment shall be kept clean and in proper condition to provide a job commensurate with the intent of this specification. Do not use the same tools for application of paint on smooth surfaces that were originally used to paint rough materials.

Mix, thin, modify and apply materials only as specified by manufacturer. Tint all priming coats and undercoats to approximate shade of final coat.

All work areas and all adjacent work and materials shall be protected by suitable covering during progress of painting.

The Contractor shall remove and protect hardware, accessories, device plates, lighting fixtures, factory finished work, and similar items; or provide ample in-place protection. Upon completion of each space, carefully replace all removed items.

Electrical panel box covers and doors shall be removed before painting wall and shall be painted separately and reinstalled.

All materials shall be applied under adequate illumination and shall be evenly spread and smoothly flowed on to avoid runs, sags, holidays, brush marks, air bubbles or excessive roller stipple.

Complete coverage and hide shall be provided. When color or undercoats show through final coat of paint, cover surfaces by additional coats until paint film is of uniform finish, color, appearance, and coverage, at no additional cost to the Owner.

The Contractor shall assure that all coats are thoroughly dry before applying succeeding coats.

All suction spots or "hot spots" in plaster and/or cement shall be touched-up after application of first coat before applying succeeding coats.

Surfaces to be stained shall be covered with a uniform coat of stain and wiped off, unless otherwise required.

Painting shall be scheduled and coordinated with work of other trades. The Contractor shall paint or finish all surfaces requiring paint that are left unfinished by requirements of other sections, as part of this work.

Do not field prime items furnished with shop applied prime coat. Items so furnished shall have all abraded, damaged to marred areas touched up by field painting before subsequent coats are applied.

Unless otherwise indicated, do not paint items that have a complete factory finish.

Do not paint metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze, or similar finished materials.

Do not paint any moving parts of valves, operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sending devices, motor, and fan shafts, unless otherwise indicated.

Do not paint over any code-required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating or name plates, etc.

Where spray painting is specified, finish 100 square feet by spraying as a sample of finish. Finish with materials specified or approved. Approved sample will constitute standard for subsequent work.

Do not perform exterior painting when the surface temperature is below 50° Fahrenheit, while surface is damp, or during cold, rainy, or frosty weather. Avoid painting surfaces while they are exposed to hot sun.

Tops, bottoms, side edges, and interior face of exterior doors shall be finished the same as exterior faces of these doors.

I. Color:

The Contractor shall paint all surfaces requiring paint with color as selected by the Owner. The Engineer will furnish a schedule showing where various colors are to be used, as selected from Contractor's color sample charts.

Before proceeding with painting the Contractor shall finish one area or item of each color required using selected colors, finish texture, materials, and workmanship. After approval, by the Engineer these areas or items will serve as a standard for similar work throughout project.

J. Preparation of Surfaces:

The Contractor shall assure that surfaces are clean, dry, and adequately protected from dampness. Specific surface preparation shall include:

1. Cementitious Material:

Prepare cementitious surfaces of concrete and concrete block to be painted by removing efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

2. Ferrous Metal:

Surface preparation requirements, as outlined below, correspond to the requirements that are included under Metal in the Painting Systems Schedule. These requirements have been adopted for the SSPC Surface Preparation Specifications published by the Steel Structures Painting Council.

a. SSPC-SP1 Solvent Cleaning: Remove oil, dirt, grease, and foreign matter with solvents or commercial cleaners using various method of cleaning such as wiping, dipping, steam cleaning or vapor degreasing.

The removal of oil and grease by solvent cleaning is included in all other SSPC Surface Preparation Specifications.

b. SSPC-SP2 Hand Tool Cleaning: Remove loose rust and mill scale by hand wire brushing, scraping, chipping, or sanding. Hand tool cleaning will not remove all rust residue or intact, firmly adhering mill scale.

c. SSPC-SP3 Power Tool Cleaning: In conjunction with hand tool cleaning, remove loose rust and mill scale by mechanical means such as power sanders, wire brushes, chipping hammers, abrasive grinding wheels, or needle gums. Use each type of cleaning to the extent required to obtain an approved surface ready for painting.

Perform commercial blast cleaning, as specified below, in the shop on surfaces that receive shop coating prior to delivery to the job site.

d. SSPC-SP6 Commercial Blast Cleaning: Remove all mill scale and foreign matter and at least 2/3 of all mill scale oxides (streaking and staining).

Blasting shall be done with centrifugal wheel or compressed air blast nozzles using either steel grit or flint silica sand. Abrasive should provide a 1.5 mil maximum profile with a maximum depth of 2 mils. Steel grit #g-80 or flint silica sand 16-36 mesh is recommended to obtain proper profile depth. Remove all dust and sand by vacuuming.

The blast-cleaned surface shall be primed before any rust bloom forms and no longer than 8 hours after cleaning.

e. SSPC-SP10 Near-White Metal Blast Cleaning: Remove 100% of all mill scales and foreign matter and 95% of all mill scale oxides from each square inch of surface by compressed air nozzle blasting, centrifugal wheels or other method recommended by Steel Structures Painting Council SP10. Use for all surface subject to immersion.

3. Shop-applied prime coats:

Touch-up shop-applied prime coats wherever damaged or bare, where required by other sections of these specifications. Clean and touch up with the same type of shop primer.

4. Galvanized Surfaces:

Clean free of oil and surface contaminants with non-petroleum based solvent.

Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.

Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly painted surfaces.

K. Mechanical and Electrical Painting Requirements:

The Contractor shall paint all exposed piping (except PVC and copper pipe), and accessories. The Contractor shall apply additional coats as necessary to obtain complete coverage and prevent bleed-through, or suction spots, as necessary. Do not paint valve stems, motor shafts, sheaves and other moving parts of equipment and machinery, where paint coating will interfere or impede normal operation of part in question. Contact the Engineer for instructions before painting any questionable parts of equipment or machinery.

L. Paint Systems:

The following is not intended as a listing of surfaces to be painted; it only indicates type of paint to be applied to surfaces that are listed in schedule to be painted.

Approved manufacturers are Tnemec, Sherwin-Williams, or approved equal.

FINISH NO. 1

For all exterior and interior exposed steel surfaces including piping, structural supports, ductile iron piping for the valve vault, and other related ferrous materials (except stainless steel, aluminum, galvanized steel, or steel submerged in sewage).

Surface preparation: Near White Blast SSPC-SP10 (Shop).

Shop Primer: Tnemec Epoxoline Primer 66-1211; 4 mils DFT.

Field Primer: Clean all scarred areas and weld seams by commercial blasting SSPC-SP6 and coat cleaned area with Epoxoline Primer 66-1211; 4 mils DFT.

Field Intermediate Coat: Tnemec Series 66 Hi-Build Epoxoline Coat; 5 mils DFT.

Field Top Coat: Tnemec Series 73 Endura-Shield; 5 mils DFT.

Color to be selected by Owner during submittal process.

FINISH NO. 2

For all exposed surfaces including ductile iron piping, structural supports, and other related ferrous materials submerged in sewage, located within 24 inches of a liquid surface, or in the wetwell (except stainless steel or galvanized steel).

Surface preparation: Near White Blast SSPC-SP10 (Shop).

Shop Primer: Tnemec Epoxoline Primer 66-1211; 4 mils DFT.

Field Primer: Clean all scarred areas and weld seams by commercial blasting SSPC-SP6 and coat cleaned area with Epoxoline Primer 66-1211; 4 mils DFT.

Top Coat: Tnemec Series 46H-413 Hi-Build Tnemec Tar; 14 – 20 mils DFT

FINISH NO. 3

For field painting of all factory finished equipment including, but not limited to, control panels, lighting panels, motors, generator enclosures, and other equipment with factory applied coating. (Factory applied coatings to remain.)

Surface preparation: Solvent Clean and Hand Tool Clean SSPC-SP1 & 2.

Spot Primer: Spot prime all scarred areas with Tnemec Chem-Prime 37-77; 3 mils DFT.

Intermediate Coat: Tnemec 2-H-Color Tnemec Gloss; 3 mils DFT.

Top Coat: Tnemec 2-H-Color Tnemec Gloss; 3 mils DFT.

FINISH NO. 4

For all aluminum surfaces not exposed, and in direct contact with concrete or dissimilar metals:

Coat aluminum surfaces in contact concrete with Tnemec 46H-413 Hi-Build Tneme-Tar, 12 to 15 mils DFT

FINISH NO. 5

For the interior surfaces of the precast concrete wetwell. All precast concrete structures must have cured for a minimum of 30 days before any coatings are applied.

Surface preparation: SSPC-SP13 Surface Preparation of Concrete – care should be taken to thoroughly clean the concrete surface, but not so aggressively as to damage the concrete surface. If water is utilized in the abrasive blasting process, the surfaces must be thoroughly dried before coating.

The interior surfaces shall have a protective coating system of Raven 405 (by Raven Lining Systems), Sewerkote Duramer 10130 System (by Duramer), or Cor-Cote SC (by Sherwin Williams). System shall utilize primers and multiple coats as recommended by the system manufacturer. The dry film thickness for each coat shall equal or exceed the manufacturer's recommendations. The minimum system thickness shall be 100 mils DFT.

M. Protection and Cleanup:

The Contractor shall protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Leave all such work undamaged. Clean, repair or replace, and repaint any damaged areas as directed by Engineer.

Provide "Wet Paint" signs as required.

Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations. Upon completion of work, clean all window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

Remove all surplus materials, scaffolding and debris.

End Section 9-G

DIVISION 11 - EQUIPMENT

11-A: SUBMERSIBLE WASTEWATER PUMPS AND REDUCED VOLTAGE SOLID STATE STARTERS

A. General:

The items specified under this section consist of furnishing and installing new submersible wastewater pumps and reduced voltage solid state starters at the Town of Holly Springs' Twelve Oaks Regional Wastewater Pumping Station.

The pump system supplier shall furnish the pumps, power cables, control cables, reduced voltage solid state starters, and other incidental items as specified herein. All of the pump system components shall be furnished by one vendor, who shall be responsible for ensuring the assembled components will function properly and as specified. The Contractor shall be responsible for providing a complete and functioning wastewater pumping system.

B. Quality Standards:

Pumps and accessories shall be Sulzer (formerly ABS) Model XFP150M CB2, or approved equal meeting the requirements of this specification. Being a named manufacturer in these specifications does not relieve the manufacturer from complying with the detailed specifications below.

C. Submittal Data:

The Contractor shall submit the following data to the Engineer for review.

1. Pump characteristic curve for the design conditions specified.
2. Nearest manufacturer approved repair service center for the proposed pump/motor units.
3. Motor data, to include information on:
 - a. Cooling system
 - b. Bearing system
 - c. Rated motor size (Nameplate HP)
 - d. Motor curves charting speed, current, power input, power factor, motor efficiency, starting current, starting power factor, no load current, no load power factor, locked rotor current, locked rotor power factor, and torque characteristics.
 - e. Manufacturer of motor
4. Pump data, to include:
 - a. Approximate dimensions
 - b. Detailed drawing of pump discharge flange and discharge elbow mating system, and pressure rating of same
 - c. Number and size of power and control cables required
 - d. Description of pump seals and moisture detection system.
 - e. Pump weights, power cable size and weight, and lifting requirements

5. Pump Station Control Panel modifications submittal to include:
 - a. Logic diagram showing all added or deleted electrical components
 - b. Details of all added panel components
6. The approved pumps shall be tested by the manufacturer. Certified pump tests are to be made for each pump and submitted in accordance with the procedures as set forth in the Hydraulic Institute Standards. The performance data and resulting pump curves shall be submitted to the Engineer for review.
7. Reduced Voltage Solid State Starter Enclosures, to include:
 - a. Manufacturer's standard submittal information, indicating the HP, current, fault, and enclosure ratings of the RVSS
 - b. Elevation drawings showing dimensional information and conduit locations for the proposed enclosure
 - c. Schematic wiring diagrams
 - d. Data sheets on all major components, including but not limited to contactors, circuit breakers, control power transformers, pilot devices, relays, and power monitors
 - e. Installation instructions

D. Lubricants:

The pump manufacturer shall furnish, with each pumping unit, all lubricants (oils and greases) necessary for the initial lubrication of the pump and the drive motor. The lubricants furnished shall be appropriately identified by viscosity and/or class number; also, each lubricant furnished shall be identified by the name of the producer of the lubricant and by the trade name given the lubricant by the producer.

E. Pump Data, Description, and Requirements:

The Twelve Oaks Regional Wastewater Pump Station is an existing duplex pump station that currently has two 168 HP submersible pumps installed. The station was designed for a capacity expansion, which consists of the construction a new wetwell and valve vault for two additional pumps, adding two new reduced voltage solid state starters, and upgrading certain parts of the pump station's electrical system.

The new pumps must be capable of meeting the specification design condition of:

1,660 gpm at 243 feet Total Dynamic Head

The new pumps shall have a minimum shut-off head of 333 feet.

Number of pumps required:	3 (two installed, one spare)
Discharge connection:	6-inch
Minimum solids capacity:	3" (minimum)

Minimum pump efficiency at 1,248 gpm: 69%

Maximum Submersible motor size: 168 HP

(Motor shall be non-overloading to a flow of 2,500 gpm, although NPSHR would limit flow to approximately 2,000 gpm)

Motor type: 3 phase induction; submersible; U.L. listed explosion proof for Class 1, Division 1, Groups C and D; hazardous locations as defined by the National Electrical code

Motor voltage, frequency, and nominal speed: 480 VAC, 60 CY, 1780 RPM

Minimum motor efficiency at 1,663 gpm: 96.0%

F. Pump Description:

Furnish and install two heavy duty submersible pumps for the pump station. The submersible wastewater pumps shall be capable of handling raw unscreened sewage, storm water, and other similar solids-laden fluids without clogging. The pumps shall be driven by a Premium Efficiency motor, providing the highest levels of operational reliability and energy efficiency. The required design conditions, motor size, voltages, and other specific data for the pumps are listed in the paragraph above.

The pumps, motors, power cables, and sensor cables shall be suitable for submersible applications and FM approved for Class 1, Division 1, Group C and D locations. The cables shall be sized in accordance with NEC and ICEA standards.

The new pumps shall be installed in the new wetwell as shown on the project plans. Each pump shall be furnished with a stainless steel lifting bail sized to lift the pump and motor. There shall be no need for personnel to enter wet well to remove a pump. Fitting the pumping unit to the discharge connection elbow shall be accomplished by a simple linear, downward motion of the pump. Leakage or blow-by will not be accepted.

A sliding guide bracket shall be an integral part of each pump unit. The pumps shall be automatically and firmly connected to the discharge connection, guided by stainless steel guide rails extending from the top of the station to the discharge connection. The weight of the pump unit shall press tightly against the discharge connection elbow, creating a watertight connection. No portion of the pump shall bear directly on the floor of the wet well.

All pumps, with the appurtenances and cables, shall be capable of continuous submergence underwater without loss of watertight integrity to a depth of 65 feet.

G. Pump Construction:

General: Major pump components shall be of gray cast iron, ASTM A-48, Class 35B, with smooth surfaces devoid of porosity or other irregularities. All exposed fasteners shall be of

stainless steel, 1.4401 (AISI 316). All metal surfaces coming into contact with the pumped media (other than the stainless steel components) shall be protected by a factory applied spray coating of zinc phosphate primer followed by a high solids two-part epoxy paint finish on the exterior of the pump.

Sealing design for the pump/motor assembly shall incorporate machined surfaces fitted with Nitrile (Buna-N) rubber O-rings. Sealing will be the result of controlled compression of rubber O-rings in two planes of the sealing interface. Housing interfaces shall meet with metal to metal contact between machined surfaces, and sealing shall be accomplished without requiring a specific torque on the securing fasteners. Rectangular cross sectioned gaskets requiring specific torque limits to achieve compression shall not be considered equal. No secondary sealing compounds shall be required or used.

The pump volute shall be single piece gray cast iron (ASTM A-48, Class 35B) non-concentric design with centerline discharge. Passages shall be smooth and large enough to pass any solids which may enter through the impeller. Discharge size shall be 6-inches in diameter. The discharge flange design shall permit attachment to standard ANSI flanges and appurtenances. The discharge flange shall be drilled to accept 6 inch ANSI class 125/150 flanged fittings. Proprietary or nonstandard flange dimensions shall not be considered acceptable. The minimum working pressure of the volute and pump assembly shall be 232 psi.

All equipment items shall be properly protected so that no damage or deterioration will occur from the time of shipment until installation is completed and the units and equipment are ready for operation. Proper care shall be taken to protect mechanical parts from the entrance of water during shipment, storage, and handling.

Shaft: The pump shaft and motor shaft shall be an integral, one piece unit adequately designed to meet the maximum torque required at any normal start-up condition or operating point in the system. The shaft shall have a full shutoff head design safety factor of 1.7, and the maximum shaft deflection shall not exceed 0.002 inches at the lower seal during normal pump operation. Each shaft shall be stainless steel 1.4021 (AISI 420) materials, and shall have a polished finish with accurately machined shoulders to accommodate bearings, seals and impeller.

Impeller: The Sulzer Contrablock Plus impeller shall be of gray cast iron, ASTM A-48, Class 35B. The impeller shall be of the semi-open, non-clogging, two-vane design, meeting the Ten State Standards requirement for minimum solids passage size of 3 inches. The impeller shall be capable of passing a minimum of 3.0 x 2.0 inch oblong solids that are commonly found in wastewater. The impeller shall have a slip fit connection onto the motor shaft, driven by a shaft key, and shall be securely fastened to the shaft by a stainless steel screw. A positively engaged, ratcheting washer assembly shall prevent the screw from loosening. The head of the impeller screw shall be effectively recessed within the impeller bore to prevent disruption of the flow stream and loss of hydraulic efficiency. The impeller shall be dynamically balanced to the ISO 10816 standard to provide smooth, vibration-free operation. Impeller designs which do not meet the Ten State Standards requirement for 3

inch solids passage size, those that rely on retractable impeller designs to pass 3 inch solids, or those that rely on fins or pins protruding into the suction path to assist in the handling of fibrous material shall not be considered equal.

Self-Cleaning Wear Plate: The Sulzer Contrablock Plus wear plate shall be of gray cast iron, ASTM A-48, Class 35B. The wear plate shall be designed with a smooth surface incorporating strategically placed intercepting slots on the side facing the impeller, to shred and force any stringy solids which attempt to become lodged between the impeller and wear plate outward from the impeller and through the pump discharge. The wear plate shall be mounted to the volute with four stainless steel securing screws and four stainless steel adjusting screws to permit close tolerance adjustment between the wear plate and impeller for maximum pump efficiency. Adjustment to allow for wear and restore peak pumping performance shall be easily accomplished using standard tools, and without requiring disassembly of the pump. The use of fixed or non-adjustable wear plates or rings, or systems that require disassembly of the pump or shimming of the impeller to facilitate adjustment, shall not be considered equal. The suction flange shall be integrated into the wear plate and its bolt holes shall be drilled and tapped to accept standard 8-inch ANSI class 125/150 flanged fittings.

Mechanical Seals: Each pump shall be equipped with a triple seal system consisting of tandem mechanical shaft seals, plus a radial lip seal; providing three complete levels of sealing between the pump wet end and the motor. The mechanical seal system shall consist of two totally independent seal assemblies operating in a lubricant reservoir that hydro-dynamically lubricates the lapped seal faces at a constant rate. The mechanical seals shall be of nonproprietary design, and shall be manufactured by a major independent manufacturer specializing in the design and manufacture of mechanical seals. The lower, primary seal unit, located between the pump and the lubricant chamber, shall contain one stationary industrial duty solid silicon-carbide seal ring and one rotating industrial duty solid silicon-carbide seal ring. The stationary ring of the primary seal shall be installed in a seal holding plate of gray cast iron (ASTM A-48, Class 35B). The seal holding plate shall be equipped with swirl disruption ribs to prevent abrasive material from prematurely wearing the seal plate. The upper, secondary seal unit, located between the lubricant chamber and the sensing chamber, shall contain one stationary industrial duty solid silicon-carbide seal ring, and one rotating industrial duty solid silicon-carbide seal ring. Each seal interface shall be held in contact by its own spring system. A radial lip seal shall be positioned above the sensing chamber, preventing any liquid which accumulates in the sensing chamber from entering the lower bearing and motor. The seals shall not require routine maintenance, or adjustment, and shall not be dependent on the direction of rotation for proper sealing. Each pump shall be provided with a lubricant chamber for the shaft sealing system which shall provide superior heat transfer and maximum seal cooling. The lubricant chamber shall be designed to prevent overfilling, and to provide lubricant expansion capacity. The drain and inspection plug shall have a positive anti-leak seal, and shall be easily accessible from the outside of the pump. The seal system shall not rely upon the pumped media for lubrication and shall not be damaged when the pump is run dry. Lubricant in the chamber shall be environmentally safe nontoxic material.

Mechanical Seal Protection System: The primary mechanical seal shall be protected

from interference by particles in the wastewater, including fibrous materials, by an active Seal Protection System integrated into the impeller. The back side of the impeller shall be equipped with a sinusoidal cutting ring, forming a close clearance cutting system with the lower submersible motor housing or seal plate. This sinusoidal cutting ring shall spin with the pump impeller providing a minimum of 75 shearing actions per pump revolution. Large particles or fibrous material which attempt to lodge behind the impeller or wrap around the mechanical seal, shall be effectively sheared by the active cutting system into particles small enough to prevent interference with the mechanical seal. The Seal Protection System shall operate whenever the pump operates, and shall not require adjustment or maintenance in order to function.

Seal Failure Early Warning System: The integrity of the mechanical seal system shall be continuously monitored during pump operation and standby time. An electrical probe shall be provided in a sensing chamber positioned above the mechanical seals for detecting the presence of water contamination within the chamber. The sensing chamber shall be oil-filled, and shall have a drain / inspection plug with a positive anti-leak seal which is easily accessible from the outside of the pump. Two additional moisture sensing probes, one in the electrical connection chamber, and one in the motor chamber, shall be provided with each pump. Existing solid-state relays mounted in the PSCP shall send a continuous low voltage, low amperage signal to each probe in the pumps. If sufficient water enters one of the chambers, the local probe shall sense the increase in conductivity and signal the solid state relay in the control panel. The relay shall then energize a warning light on the control panel. This system shall provide an early warning of mechanical seal leakage, leaking into the motor chamber, and leakage into the electrical connection chamber, thereby preventing damage to the submersible motor, and allowing scheduled, rather than emergency, maintenance.

Motors: The Premium Efficiency motor shall meet efficiency standards in accordance with IEC 60034-30, level IE3 and NEMA Premium. Motor rating tests shall be conducted in accordance with IEC 60034-2-1 requirements and shall be certified accurate and correct by a third party certifying agency. A certificate shall be furnished upon request.

The Premium Efficiency motor shall be housed in a water tight gray cast iron (ASTM A-48, Class 35B) enclosure capable of continuous submerged operation underwater to a depth of 65 feet, and shall have an IP68 protection rating. The motor shall be of the squirrel-cage induction design, NEMA type B, Premium Efficiency. The copper stator windings shall be insulated with moisture resistant Class H insulation material, rated for 180°C (356°F). The stator shall be press fitted into the stator housing. The use of bolts, pins or other fastening devices requiring penetration of the stator housing is unacceptable. The rotor bars and short circuit rings shall be made of cast aluminum.

The motor shall be designed for continuous duty. The maximum continuous temperature of the pumped liquid shall be 40°C (104°F), and intermittently up to 50°C (122°F). The motor shall be capable of handling up to 10 evenly spaced starts per hour without overheating. The service factor (as defined by the NEMA MG1 standard) shall be **1.3**. The motor shall have a voltage tolerance of +/- 10% from nominal, and a phase to phase voltage imbalance

tolerance of 1%. The motor shall have a NEMA Class A temperature rise, providing cool operation under all operating conditions. The Premium Efficiency Motor shall be FM and CSA approved, and UL listed, for use in NEC Class I, Division I, Groups C & D hazardous locations. The surface temperature rating shall be T3C. The motor shall meet the requirements of NEMA MG1 Part 30 and 31 for operation on PWM type Variable Frequency Drives.

The motor shall be capable of operating completely submerged, partially submerged, or unsubmerged. The motor shall be self-cooling, via a closed loop cooling system. The factory installed closed-loop cooling system shall be of steel (ASTM A-570, Grade D), adequately designed to allow the motor to run continuously under full load while in an unsubmerged (dry-pit) or minimally submerged condition without the need for de-rating or reduced duty cycle. A cooling jacket shall surround the stator housing, and an environmentally safe nontoxic propylene glycol solution shall be circulated through the jacket by an axial flow circulating impeller attached to the main motor shaft. The coolant shall be pumped through an integrated heat exchanger in the base of the motor whenever the motor is running, allowing excess heat to be transferred to the process liquid. Cooling systems that circulate the pumped medium through the cooling jacket, or those that use a toxic cooling liquid shall not be acceptable. The use of external heat exchangers, fans, or the supply of supplemental cooling liquid shall not be required.

Each phase of the motor shall contain a normally closed bi-metallic temperature monitor switch imbedded in the motor windings. Normally closed bi-metallic temperature switches shall also be installed in the upper and lower bearing housings to monitor the temperature of the bearings and provide high bearing temperature warning signals. These thermal switches shall be connected in series and set to open at 140°C +/- 5°C (284°F). They shall be connected to the Pump Station Control Panel to provide a high stator/high bearing temperature shutdown signal, and are used in conjunction with external motor overload protection. The bi-metallic system shall be connected in the Pump Station Control Panel to provide positive shutdown of the motor in the event of an overheat condition. This is required in order to conform to FM rules for explosion-proof equipment.

Bearings: Each pump shaft shall rotate on high quality permanently lubricated, greased bearings. The upper bearing shall be an insulated cylindrical roller bearing. The lower bearings shall be a matched set of at least three heavy duty bearings; two angular contact ball bearings and one cylindrical roller bearing. All three lower bearings shall have identical outer race diameters to provide maximum bearing load capacity. Designs which utilize a roller bearing with a smaller outer diameter than the other bearings in the assembly do not provide maximum load capacity and shall not be considered equal. Bearings shall be of sufficient size and properly spaced to transfer all radial and axial loads to the pump housing and minimize shaft deflection. L-10 bearing life shall be a minimum of 100,000 hours at flows ranging from ½ of BEP flow to 1½ times BEP flow (BEP is best efficiency point). The bearings shall be manufactured by a major internationally known manufacturer of high quality bearings, and shall be stamped with the manufacturer's name and size designation on the race. Generic or unbranded bearings from other than major bearing manufacturers shall not be considered acceptable.

Cable Entry/Junction Chamber: The cable entry design shall not require a specific torque to ensure a watertight seal. The cable entry shall consist of cylindrical elastomer grommets, flanked by stainless steel washers. A cable cap incorporating a strain relief and bend radius limiter shall mount to the cable entry boss, compressing the grommet ID to the cable while the grommet OD seals against the bore of the cable entry. The junction chamber shall be isolated and sealed from the motor by means of sealing glands. Electrical connections between the power cables and motor leads shall be made via a compression or post type terminal board, allowing for easy disconnection and maintenance.

Power Cables: The power cables shall be sized according to NEC and CSA standards and shall be of sufficient length to reach the disconnect switches on the equipment rack, plus 6 feet. The outer jacket of the cable shall be of chlorinated polyethylene (CPE) and be oil, water, and UV resistant, capable of continuous submerged operation underwater to a depth of 65 feet.

Pilot Cables: The pilot cables shall be designed specifically for use with submersible pumps and shall be type SUBCAB (SUBmersible CABLE). The cable shall be multi-conductor type with stainless steel braided shielding, a chlorinated polyethylene rubber outer jacket and tinned copper conductors insulated with ethylene-propylene rubber. The conductors shall be arranged in twisted pairs. The cable shall be rated for 600 Volts and 90°C (194°F) with a 40°C (104°F) ambient temperature and shall be approved by Factory Mutual (FM). The cable length shall be adequate to reach the junction box on the equipment rack, plus 6 feet.

Lifting Bail: The pump shall be equipped with an open lifting hoop suitable for attachment of standard chain fittings, or for hooking from the wet well surface. The hoop shall be duplex stainless steel (ASTM A890), and shall be rated to lift a minimum of four times the pump weight. A 4-foot length of stainless steel chain and shackle, rated for four times the pump weight, shall be furnished with each pump.

Guide Rail Base Assembly: In the new wet well, the discharge base & elbow assemblies shall be permanently installed in the wet well and connected to the discharge piping as shown on the project plans. In order to prevent binding or separation of the pump from the guide rail system, the pumps shall each connect to the guide rail base automatically and firmly, guided by one 2-inch stainless steel guide pipe extending from the base elbow to the top of the station. The sliding guide bracket shall be a separate part of the pumping unit, capable of being attached to standard pump flanges, so that the pump mounting is nonproprietary, and any pump with a standard discharge flange can be mounted on the base assembly. Base or bracket assemblies with proprietary or nonstandard flange dimensions shall not be considered acceptable.

A field replaceable Nitrile (Buna-N) rubber profile gasket or O-ring shall accomplish positive sealing of the pump flange/guide rail bracket to the discharge elbow. The discharge elbow and sliding guide bracket shall be rated to operate at the shut-off head of the specified pumps with no leakage.

H. Spare Parts:

Contractor shall furnish one (1) set of spare parts as follows:

1. One (1) spare pump
2. One (1) lower seal assembly
3. One (1) upper seal assembly
4. One (1) set of bearings
5. One (1) complete set of O-rings

I. Existing Pump Station Control Panel (PSCP):

The existing Pump Station Control Panel (PSCP) was previously modified for the planned expansion of the pump station to four pumps.

The Contractor shall be furnished wiring diagrams for the PSCP that will indicate the terminal numbers that are to be used for the field wiring of the new pump thermal and seal leakage inputs to the Panel.

The PSCP has a quadruplex alternating relay. This alternating relay utilizes First On – First Off output logic. The starting and stopping of the four pump motor loads shall be controlled by this relay; however, the relay shall only have four float switch inputs:

Off
Lead
Lag
Lag-Lag

The PSCP shall only start three of the four pumps automatically. The existing generator is not capable of starting the fourth pump with three pumps operating, and the fourth operating pump would only contribute a small incremental increase in the pump station flow output. It is possible that the fourth pump could be switched into the "Hand" position if the alternator has the other three pumps operating and only if the station is operating on utility power, but the increase in flow rate would be minimal.

The operating sequence for the alternating relay is described herein. An increasing water level in the wetwell will start the Lead pump when the Off and Lead float switches are closed. The closing of the Lag float switch would start the Lag pump, and the closing of the Lag-Lag float switch would start the Lag-Lag pump. The three pumps would continue to operate until the water level starts to fall in the wetwell. The falling water level would first open the Lag-Lag float switch, which would not affect the continued operation of the three pumps. The opening of the Lag float switch would then cause the Lead pump to cease operation. The subsequent opening of the Lead float switch would then cause the Lag pump to cease operation. The opening of the Off float switch would then cause the Lag-Lag pump to cease operation. At the end of the each cycle the Lead advances one position for each load that was energized in the cycle.

The pump supplier shall provide four float switches and aluminum float switch cable holder for the new wetwell. The wiring for these secondary float switches shall be extended from the wetwell to the PSCP, but shall not be terminated. Should the existing wetwell need to

be taken out of service for maintenance, the operator will be able to remove the primary float switch wiring and terminate the secondary float switch wiring in the PSCP in the same order. The operator would also have to add jumpers to the output side of the quadruplexing relay so that only Pumps 3 and 4 would be operated while the other wetwell was not in service.

J. Solid State Reduced Voltage Starters:

The Contractor shall furnish and install two solid state reduced voltage starters (RVSS, also referred to as soft starters or soft starts) as indicated on the project plans. The RVSSs shall be as manufactured by ABB to match the existing RVSS cabinets for Pumps 1 and 2. The electronic soft starters shall be assembled in an enclosure by a panel building facility that is approved in accordance with UL 508 - Industrial Control Equipment.

The new RVSS enclosures shall be floor mounted, and shall be limited to a maximum width of 30-inches. The height of the enclosure shall allow the location of all switches, digital displays, etc. convenient and compliant with all NEC requirements.

General Description:

The soft starters shall be provided by the RVSS manufacturer mounted in an enclosure rated as UL Type 12 for indoor use by the panel builder. The enclosure shall include a door mounted digital keypad for adjusting the soft starter parameters, viewing process values, and viewing the motor and soft starter status without opening the enclosure door. Provisions shall be available for padlocking the enclosure door in the off position.

The enclosure shall be provided with one inverse-time circuit breaker disconnecting means. The motor must be automatically protected from solid state component failure by shunt trip coil to trip the disconnect in the event of a soft starter trip condition, including a shorted SCR condition.

The soft starter shall utilize at least two SCRs per phase to control the starting and stopping of industry standard motors. The soft starter shall be controlled by a microprocessor that continuously monitors the current and controls the phasing of the SCRs. Analog control algorithms shall not be allowed.

All soft starter power ratings shall utilize a common control board/module. An internal shorting contactor shall be standard on soft starters. Protective features and deceleration control options integral to the soft starter shall be available even when the shorting contactor is engaged.

The soft starter shall be designed to operate a NEMA design B Premium Efficiency motor with a nameplate rating of 168 horsepower, rated for 176 amps continuous at 460 volts +10% / - 15%. The solid-state reduced-voltage controller shall accept an input voltage from 480V AC, three-phase, plus 10 percent or minus 15 percent. The unit shall have an operating ambient temperature range of 14°F to 104°F, and a relative humidity range of 5% to 95% non-condensing, conforming to IEC 60068-2-3. The soft start shall automatically adapt for operation at 50 or 60 Hz, with a frequency tolerance of +/- 5%. By configuration, it shall

be capable of operation at a supply line frequency that can vary by +/- 20% during steady state operation.

The soft start shall be capable of supplying 350% of rated full load current for 40 seconds from a cold state, and 300% of rated full load current for 20 seconds, or 200% of rated full load current for 40 seconds, with a load factor of 95% and 3 starts per hour. The SCRs shall have a minimum P.I.V. rating of 1800 VAC. Lower rated SCRs with MOV protection are not acceptable. After the motor reaches speed, internal contacts shall close to bypass the SCRs. A contactor shall be provided on the load side of the RVSS by the panel builder; the contactor shall be closed when the RVSS is not operating a pump, to protect the solid state components from potential damage by the megger system used to automatically check the resistance of the insulation of the motor windings after each pump operation.

Adjustments and Configurations:

All programming/configuration devices, display units, and field control wiring terminals shall be accessible on the front of the control module. Exposure to control circuit boards or electrical power devices during routine adjustments is prohibited. Digital indication shall provide, as a minimum, the following conditions:

1. Soft starter status - ready, starting/stopping, run.
2. Motor status - current.
3. Detected Fault status - Motor thermal overload, soft starter thermal fault, loss of line or motor phase, line frequency, low line voltage, motor underload, maximum start time exceeded, serial communication error, line phase reversal, and motor overcurrent.

The soft starter must be preset to the following for adjustment-free operation in most applications:

1. Current limitation to 300% of the motor full load current rating.
2. Class 10 overload protection.
3. Motor current preset per NEC / NFPA 70 table 430.250 for standard HP motors.

A digital keypad shall be utilized to configure the following operating parameters as required:

1. Motor full load amperes adjustable from 40 to 110% of the soft starter's rating
2. Current limitation on starting adjustable from 200 to 700% of the motor current rating, not to exceed 350% of the soft starter rating.
3. Linear acceleration ramp adjustable from 1 to 60 seconds.
4. Maximum start time adjustable from 1 to 250 seconds.
5. Selection of freewheel or soft stop, with initial setting to be freewheel.
6. Linear deceleration ramp time adjustable from 1 to 60 seconds.
7. Threshold to change to freewheel from a controlled deceleration ramp to freewheel stop: adjustable from 0 to 10% of the nominal motor torque.
8. Selection of Class 10, 20, or 30 motor thermal overload protection.

A digital keypad shall be utilized to configure the following controller parameters as required:

1. Assignment of soft starter inputs and output control terminals.
2. Activation of line phase reversal and phase loss protection.

3. Selection of motor thermal protection by overload class or PTC.
4. Return to factory settings.

Output relays shall provide the following status indications:

1. One Form C (N.O./N.C.) for indication of trip status.
2. One Form C (N.O./N.C.) for indication that the soft start is in acceleration, running or deceleration state.

Additional inputs and outputs shall be available to provide the following status indications:

1. Two assignable control inputs for the following functions: force to freewheel stop, external fault input, disable serial link control, external motor overload reset or general fault reset.
2. Two assignable logic-level signal outputs for the following functions: motor thermal overload alarm, "motor powered" signal, motor overcurrent alarm, or motor underload alarm.

Normally closed auxiliary contacts shall be provided with each soft starter. The powered lead from the motor insulation resistance tester shall be wired through the NC aux contact to prevent the motor insulation being tested when the motor is operating.

Protection:

A microprocessor-based thermal protection system shall be included which continuously calculates the temperature-rise of the motor and soft starter and provides:

1. A motor overload fault will stop the motor if the windings have exceeded 125% of temperature-rise.
2. An electronic circuit with a time-constant adjustable to the motor's thermal cooling time-constant ensuring the memorization of the thermal state even if power is removed from the soft starter.

The soft starter shall provide line and motor phase loss, phase reversal, underload, stall, and jam protection. The integral protective features shall be active even when the shorting contactor is used to bypass the SCRs during steady state operation.

Control Options:

The soft starter control circuit shall be fed from the line supply and be completely independent of the power circuit and separate from the control logic. The peripheral soft starter control circuitry shall be operated at 120 VAC 60 Hz from a control power transformer included within the enclosure.

Operator devices shall be door mounted and shall be:

1. Three position H-O-A switch which provides for manual (HAND) start or remote signal (AUTO) start from user-supplied relay contacts.
2. Green RUN pilot light illuminated whenever the soft starter is provided a run command and no fault condition is present.

Shorting Contactor

A microprocessor shall control the operation of the shorting contactor. The shorting contactor shall close, shorting the SCRs after the acceleration ramp is complete and motor current is below 130% of motor FLA, and open on a stop command to allow a deceleration ramp.

Overload protection integral to the soft starter shall continue to protect the motor when shorting is engaged. The shorting contactor shall be contained within the soft starter frame.

K. Installation:

Installation by the Contractor of each equipment item shall be in strict accordance with the pump manufacturer's and Engineer's instructions and recommendations in the locations shown on the drawings. The Contractor shall be responsible for bringing the pump power and pilot cables through the installed conduits and into the disconnect switches and junction boxes on the new electrical rack, and all electrical connections and construction beyond that point.

L. Start-Up Services:

The pump manufacturer shall provide an authorized representative to provide start-up and training services for the pumps and modifications to the Pump Station Control Panel. Pump checks shall include pump rotation, proper seating of the pumps on the base elbows (no blow-by), current draw, and pump down tests to confirm pumping rates. All alarm inputs shall be checked. Provide the services of the authorized representative for a minimum of 8 hours of start-up and instructional services for the pumps and modifications to the Pump Station Control Panel. A written start-up report shall be furnished to the Engineer upon completion of the start-up, stating the representative's findings, noting any deficiencies, and how they are to be corrected. A follow up inspection and report will be furnished, at the Contractor's expense, after the noted deficiencies have been corrected.

The supplier of the Solid State Reduced Voltage Starters shall provide a qualified, experienced technician to perform all start-up services for the soft starters. Start-up services shall include pre-power check (megger motor resistance phase to phase and phase to ground; verify system grounding, verify power and signal grounds, check connections, etc.); power up and commissioning (measuring incoming power phase to phase and phase to ground, measure AC current unloaded and loaded, measure output voltage phase to phase and phase to ground, etc.); recording of all measurements; tuning for system operation; and providing a parameter list.

There will also be one session of on-site training, to instruct the operators on the operational and maintenance requirements of the controller, to review the engineering drawings and identify the components shown on the drawings, to review the starting and stopping options for the controller, to review the programming and monitoring operations, and to review safety concerns with operating the controller. Provide the services of the authorized representative for a minimum of 8 hours of start-up and instructional services for the Solid State Reduced Voltage Starters. A written start-up report shall be furnished to the Engineer upon completion of the start-up, stating the representative's findings, noting any deficiencies, and how they are to be corrected. A follow up inspection and report will be

furnished, at the Contractor's expense, after the noted deficiencies have been corrected.

M. Operations and Maintenance Manuals:

Three bound copies of the Operations and Maintenance Manual shall be provided. Manuals shall address all components furnished under this specification system. Suppliers shall also submit 1 copy on a CD in a commonly used format (Word, Adobe, etc.).

N. Warranty:

A twelve-month warranty shall be provided on materials and workmanship from date of acceptance by the Owner.

End Section 11-A

DIVISION 11 - EQUIPMENT

11-J: CARBON ADSORPTION ODOR CONTROL SYSTEM

A. General:

The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and complete installation of one carbon adsorption odor control system, as shown on the drawings and as specified herein and accordance with provisions of the contract documents.

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure, complete and compatible installation shall be furnished and installed as part of this work.

B. Scope:

This section includes fabrication, delivery, installation, and placement into successful operation of a carbon adsorption system complete with carbon media, fan and controls system. All materials shall be provided in accordance with these specifications.

All components of this system shall be compatible with the conditions and chemicals to which they are subjected to during normal operation of the system. Compounds with which the materials must be compatible with include, but are not limited to:

Hydrogen Sulfide Gas
Dilute Sulfuric Acid Solution
Water

C. Manufacturer and Quality Assurance:

The system shall be provided by Evoqua Water Technologies of Sarasota, FL. The manufacturer of this equipment shall be one recognized and established in the design, production, and operation of carbon adsorption systems. The equipment shall be constructed and certified in accordance with appropriate specifications and standards.

The manufacturer shall maintain regular production facilities at their place of business. These facilities shall be open for inspection by a representative of the Owner or Engineer at any time during construction and testing of the equipment. The manufacturer of the carbon unit shall be an Underwriters Laboratories listed manufacturer of Enclosed Industrial Control Panels

All components of the carbon unit shall be provided by a single manufacturer who shall have sole-source responsibility for the system. All equipment shall be furnished by a single manufacturer who shall be responsible for the coordination of the system design.

D. Process Description:

The system shall provide for a carbon adsorption vessel, media, electrical control panel, and to enable the system to remove 99.9% of inlet hydrogen sulfide concentration in the process stream. The hydrogen sulfide concentration shall be no greater than 50 parts per million by volume (ppmv) peak with an average concentration no greater than 15 ppmv. Maximum air flow shall be 800 cubic feet per minute with an average operating airflow of 360 cfm.

The odor control system shall demonstrate the following system performance when operating under the parameters design flow conditions:

Inlet Concentration of 1- 50 ppm H₂S → Outlet Concentration of 0.1 ppm H₂S or less

E. Submittal:

The manufacturer shall submit complete shop drawings and engineering data to the Engineer. These submittals shall include, at a minimum:

1. Drawings showing plan and elevation views of the carbon filter.
2. Control system layout drawing
3. Control systems electrical diagram
4. Manufacturer's catalogue information on major system components including, but not limited to:

Carbon filter vessel
Air inlet fans
Dampers and ducting
Electrical control cabinet

5. Statement of design conditions and performance
6. Statement of warranty
7. A reference list of no less than ten (10) installations of the type and size of system proposed. The installations must have been in service for a minimum of five (5) years. The list shall include the following information:
 - a. Owner name with current contact information
 - b. Date of placement into service
 - c. Design conditions including airflow rate and inlet hydrogen sulfide loading
 - d. Provide graphical performance data from a minimum of ten (10) systems showing inlet and outlet concentrations of hydrogen sulfide
 - e. Failure to submit references as described may deem the proposal non-responsive and will be rejected without further consideration.

Operation and maintenance manuals shall be provided by the Manufacturer prior to installation of all major equipment components. These manuals shall include at a minimum:

1. Information in hazards associated with the system and the appropriate safety precautions.
2. All appropriate Materials Safety Data Sheets
3. Equipment installation instructions
4. Equipment startup instructions
5. Equipment maintenance procedures
6. Troubleshooting guide
7. Individual operation and maintenance information on major system components, including but not limited to:

Air exhaust fan

Variable Frequency Drive, include parameter settings for all parameters

Electrical components

F. Delivery:

Fabricated assemblies shall be shop assembled and properly marked for ease of field installation. All components will be erected by the Contractor immediately upon receipt from the Manufacturer or stored in strict conformance with storage recommendations provided by the Manufacturer. Delivery shall be coordinated with the Contractor

G. Substitutions:

Any substitutions or deviations in equipment or arrangement from that shown on the drawings specified herein shall be the responsibility of the Manufacturer or Contractor. Any deviations must be accompanied by detailed structural, mechanical, electrical drawings and data for review by the Engineer. All costs associated with review of the substitutions or deviations and costs associated with project drawing changes as a result of approval shall be borne by the Manufacturer or Contractor. There shall be no additional costs to the Owner due to substitutions or deviations.

H. Product Information:

H.1 General: Each carbon filter shall be vertical, counter-current flow, and shall consist of polyethylene vessel, carbon media, mist eliminator, sump, and all internals. Process support equipment shall include the electrical cabinet with variable frequency drive for the fan motor.

H.2 Control Cabinet:

The control panel enclosure shall be constructed of FRP and shall be rated NEMA 4X. It shall be equipped with a door with a continuous hinge. The hinged door shall have two

latches and be capable of locking via a padlock. The control panel shall contain, at minimum:

- a. One (1) 1.5 HP (or greater) drive, with VFD indication
- b. One (1) On/Off Blower Switch
- c. One 30 Amp non-fused disconnect switch (located below the Control Cabinet)

H.3 Carbon Adsorption Vessel:

Maximum Air Flow Rate, cfm	800
Minimum Bed Depth, inches	36
Vessel Diameter, inches	48
Vessel Straight Wall Height, inches	70.5
Foul Air Inlet Diameter, Inches	6
Working Pressure, Scrubber Portion	4 inches WC
Sump Section	Hydrostatic load of specific gravity = 1.1

The Carbon unit shall be cylindrically shaped with up-flow air passage. Vessel size and configuration shall be as shown on the drawings. Unit shall be complete with flanges, nozzle, manways, lifting lugs, anchor lugs, and other appurtenances. Anchor bolt design and supply is by Contractor.

The carbon vessel shall be constructed of polyethylene and shall be manufactured in one piece construction by rotational molding. The vessel shall be molded from FDA conforming linear polyethylene or crosslinked polyethylene for above ground installation and is capable of containing contents at atmospheric pressure. The polyethylene vessel shall be designed and molded with a uniform wall thickness equal to or greater than the minimum thickness requirement per the Barlow Formula shown in this specification.

The polyethylene vessel shall be air cooled in chambers with a high velocity fan to give a controlled temperature drop, insuring a more uniform resin cure, less stress on the part, improved shrinkage parameter, and a more consistent product.

The following ASTM standards shall apply.

- D648 Heat Resistance
- D638 Tensile Properties
- D790 Flexural properties of plastic
- D883 Definitions of terms relating to plastics
- D1505 Density by gradient technique
- D1693 Environmental stress crack resistance
- D1921 Particle size of plastic
- D2765 Degree of cross-linking ethylene plastics as determined by solvent extraction.

D2837 Standard method for obtaining hydrostatic design basis for thermoplastic pipe materials

F412 Definitions of terms relating to plastic piping.

Association of Rotational Manufacturers Standard Low Temperature Impact Resistance

Resins used shall be virgin FDA conforming polyethylene or cross-linked polyethylene.

Vessel shall contain a suitable ultraviolet stabilizer, minimum 0.3% 2-hydroxy-4-n-Octoxy-benzophenone or equivalent. The stabilizer shall be compounded into the polyethylene. Cross-linked and LMDPE materials must be black pigmented. Standard loading is limited to 0.02% to avoid degradation of materials. Tanks molded in cross-linked polyethylene shall be Marlex resins supplied by Phillips 66 (CL-200) or equivalent. No fillers shall be added. Maximum material use temperature for Crosslinked resin is 150 degrees F.

Published chemical resistance charts shall be used as a general guide to chemical compatibility with regard to the polyethylene resins used.

Materials Properties Table			
Property	ASTM	Value	Units
Density	D1505	0.937-0.940	g/cc
ESCR spec. thickness 0.125"	D1693	>1,000	Hrs.
Tensile Strength Ultimate 2"/min.	D638	2,600	PSI
Heat Distortion Temperature	D648	66 @ 66 psi 48 @ 264 psi	Deg C
Impact		450	Ft-lbs

Minimum required wall thickness of the cylindrical straight shell at any level shall be determined by the following equation, but shall not be less than 3/16 in. thick. Dimensions and tolerances as listed previously shall apply.

$$T = (P \times O.D.) / 2 SC = 0.433 \times S.G. \times H \times (O.D. / 2 SD)$$

T = Wall thickness, inches

SD = Hydrostatic design stress, psi

P = Pressure (0.433 x S.G. x H), psi

S.G. = Specific gravity of contained fluid

O.D. = Outside Diameter, inches

H = Height, feet

Hydrostatic design shall be determined by multiplying the hydrostatic design basis by a design factor selected for the application. Vessels shall be engineered using a maximum hydrostatic design stress of 600 psi for XLPE and 550 psi for LMDPE.

Top head shall be integrally molded (one piece) with the cylinder shell. The maximum thickness of the top head shall be 3/16 in. Dimensions and tolerances as listed previously shall apply.

Vessels shall be designed with mounting flats to enhance fixture assemblies.

The bottom head of the vessel shall be integrally molded (one piece) with the cylinder shell. The maximum thickness of the top head shall be 3/16 in. Dimensions and tolerances as listed above shall apply.

All fittings shall be chemically compatible with the intended contents of the vessel as previously specified.

Vessel dimensions shall be taken with vessel empty.

Thickness tolerance – the tolerance for thickness shall be +/- 3%

Fitting placement tolerance – the tolerance for fitting placement shall be +/- 3% in elevation and degree.

H.4. Air Inlet Fan:

The air inlet fan shall be as designed and manufactured by Plastec Ventilation, Inc. or pre-approved equivalent. The polypropylene casing and wheel shall have a recommended temperature limitation of 190 Deg. F. The fan housing shall be constructed of strong high-density UV treated polypropylene for maximum corrosion resistance. Housing shall be made of one single piece to completely avoid leaks. Split molded housings are not acceptable. Screws holding housing to back plate shall be stainless steel. Housing shall be rotatable to any of eight (8) standard discharge positions. Metal in the airstream shall not be tolerated.

Blower wheel shall be forward-curved type and constructed of uniformly molded polypropylene blades. Wheel shall be both electronically and dynamically balanced. Blower wheel shall be supplied with a motor shaft bushing and hubcap made of polypropylene to protect shaft end. Blower wheel shall be suitable for RPM of up to 3450.

The motor support shall be a standard stand manufactured in galvanized steel with enamel coating. Optional polypropylene motor support or gray powder coated cast aluminum motor support for complete motor protection shall be provided as specified. Motors. Motors shall be direct drive and of heavy-duty ball bearing type for continuous duty with voltage as specified. Motors shall be totally enclosed fan cooled (TEFC). Motor shall be UL and CSA approved for safety. Fan performance shall be based on tests conducted in accordance with AMCA 210-85 and ISO 5801.

H.5 Carbon Media:

Carbon media shall be MIDAS carbon which is virgin activated carbon that is pelletized and derived from high grade bituminous coal. The carbon shall have the following properties:

Carbon Type	Bituminous Coal
Butane Activity	26min
Pellet diameter	4.0 mm
Apparent Density	0.39-0.46 g/cc
Hardness No	95
H ₂ S Capacity, gH ₂ S/cc	0.30min
Pressure Drop	0.7 "wc @ 40 fpm

I. Installation:

The system shall be installed in accordance with the manufacturer's instructions. All installation personnel shall be trained and qualified in the areas of plumbing, electrical work, and instrumentation as required to complete the installation.

The completed system, tank, and other appurtenances shall be located on a foundation as shown in drawing. The following utilities shall be provided at the system site and located as shown on the drawing and as indicated in the approved project proposal. Site preparation and utility service shall be provided by the Contractor. Contractor shall also be responsible for running 8-inch schedule 80 PVC ducting to within 5 feet of the Whisper C48. **The last 5 feet of ducting run to the unit will be provided by Evoqua. The last 5 feet of ducting needs to be straight line run into the blower.**

A 480 VAC, 60Hz, 3-phase, 10 amp minimum electrical service

A minimum 1-inch P.V.C. gravity pad drain is recommended for condensate

Before shipping the odor control system, the Manufacturer shall perform shop tests, which shall include a visual inspection of all equipment, complete system assembly, and system start-up and operation.

J. Field Tests

The performance of the system shall be in accordance with the terms of the process description in paragraph D. Process Description in this specification. If required, Manufacturer shall make any changes to the system, at his own expense, that may be necessary to assure satisfactory and efficient operation of this system.

K. Warranty

The Manufacturer shall guarantee that the system will perform as described in these specifications. The Manufacturer shall warrant the system, complete, to be free from defects in materials or workmanship for a period twelve (12) months from acceptance or eighteen (18) months from shipment, whichever occurs first. The Manufacturer shall repair or provide replacement for any defective components under this warranty.

End Division 11-J

DIVISION 11 - EQUIPMENT

11-Y: PUMP STATION SCADA SYSTEM ADDITIONS

A. General:

The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and installation, complete, of all pump station SCADA system additions as shown on the drawings and as specified in accordance with provisions of the contract documents and completely coordinated with that of all other trades.

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

B. Description of Scope of Equipment and Services from Microcomm:

The Contractor shall provide additional conduit and wiring from various inputs in the pump station to the existing SCADA termination cabinet. The Contractor shall purchase the necessary services for re-programming the SCADA system to accept the added inputs and to make all wiring terminations in the existing SCADA RTU from Microcomm, Inc. of Olathe, Kansas.

C. Description of Scope of Equipment and Services from Contractor:

Contractor shall furnish and install all field wiring from the RTU to the SCADA termination cabinet, and from the cabinet to the various panels as required to provide the discrete inputs listed herein.

C. Shop Drawings:

Submit the following shop drawings for approval:

Electrical schematic control diagrams, which shall include:

1. Terminal identification
2. Unique identification of all control devices and contacts
3. Wire identification
4. Equipment identification
5. Indication of remote and local devices and wiring
6. System voltage and overcurrent protection indication
7. All control logic

D. SCADA System Start-Up and Test:

System shall be tested and all inputs and alarm conditions shall be simulated under the Engineer's supervision and direction. Testing activities shall include the simulation of both normal and abnormal operating conditions. A written report shall be provided by the start-up personnel.

E. Inputs/Outputs for RTU:

All terminals and field wiring for RTU shall be numbered in accordance with the approved shop drawings. Any field changes or additions shall be noted, and the Contractor shall furnish accurate as-built drawings of the SCADA system wiring. A laminated copy of the wiring diagram shall be mounted in the SCADA cabinet. Wiring for discrete inputs to be # 14 stranded MTW blue color Pull wiring and cables in separate conduits from AC power circuits.

TABLE 1 – ADDED INPUTS FOR TWELVE OAKS RTU		
DATA TYPE	DEFINITION	INPUT ORIGIN/OUTPUT DESTINATION
DI	PUMP NO. 3 HOA IN "HAND"	FROM CONTACTS ON SWITCH IN PSCP
DI	PUMP NO. 3 HOA IN "OFF"	FROM CONTACTS ON SWITCH IN PSCP
DI	PUMP NO. 3 HOA IN "AUTO"	FROM CONTACTS ON SWITCH IN PSCP
DI	PUMP NO. 4 HOA IN "HAND"	FROM CONTACTS ON SWITCH IN PSCP
DI	PUMP NO. 4 HOA IN "OFF"	FROM CONTACTS ON SWITCH IN PSCP
DI	PUMP NO. 4 HOA IN "AUTO"	FROM CONTACTS ON SWITCH IN PSCP
DI	PUMP 3 RUNNING	FROM DRY CONTACTS IN PSCP
DI	PUMP 4 RUNNING	FROM DRY CONTACTS IN PSCP
DI	PUMP 3 OVERTEMPERATURE	FROM DRY CONTACTS IN PSCP
DI	PUMP 4 OVERTEMPERATURE	FROM DRY CONTACTS IN PSCP
DI	PUMP 3 SEAL LEAKAGE	FROM DRY CONTACTS IN PSCP
DI	PUMP 4 SEAL LEAKAGE	FROM DRY CONTACTS IN PSCP
DI	SOLIDS GRINDER FAIL	FROM DRY CONTACTS IN NEW GRINDER CONTROL PANEL (EXIST. INPUT, NEW WIRING)

End of Section 11-Y

DIVISION 14 - CONVEYING SYSTEMS

14-B: JIB CRANE WITH MOTORIZED TROLLEY AND ELECTRIC CHAIN HOIST

A. General:

The contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and installation, complete, of one jib crane with motorized trolley and electric chain hoist as shown on drawings and as specified herein, and in accordance with provisions of the contract documents.

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

B. Description of Work:

Furnish and install one **3-ton** capacity electric chain hoist with motorized trolley mounted on a free standing base mounted jib crane of 360 degree swing.

The jib crane, motorized trolley, and electric chain hoist shall be furnished by one vendor for sole source responsibility. Electric chain hoist and trolley shall be as manufactured by Harrington, Acco Handling Solutions, Gorbelt, Coffing, or approved equal.

C. Jib Crane:

The jib crane shall be base mounted on a hexagonal or circular rigid steel base plate. The mast of the jib crane shall have six reinforced gussets equally spaced and welded to the mast and base plate. The base plate shall be suitable for mounting on concrete slab with anchor bolts. The base plate and anchor bolts shall be of sufficient strength to support the jib crane and all loads imposed.

The mast shall be a circular structural steel pipe of proper diameter to give a minimum of deflection and sufficient wall strength to resist crushing and wear at the lower roller assembly. The mast shall be of sufficient size and strength to fully support the jib crane and a 3-ton load. The mast shall be sized to withstand all loads imposed on the jib crane. The mast shall be of sufficient height to provide a minimum of 15 feet clearance between the bottom of the jib crane boom and the top of the pump station wet well (height under beam).

The boom shall be constructed from standard S-beam structural steel sections reinforced where necessary with channel capping for added strength and lateral stability. A back plate welded to the boom, and an angle welded to the front of the head assembly serve

as connecting points for the bolted connection of the boom and head assembly. The boom shall have a 20-foot span from the centerline of the mast to the end of the boom.

Boom beam shall be constructed in accordance with AISC specifications. Under full load the beam deflection shall not exceed 1/150 of the span. Design load for deflection calculation shall be based upon the capacity plus 15%. Boom beam shall provide level and straight tread surfaces for the hoist trolley. The beam shall have adequate lateral stiffeners with minimum lateral moment of inertia of 1/20 that of the vertical movement of inertia.

The head assembly shall be constructed of standard steel plate and designed to limit deflection and provide resistance to dislodgement in both outward and upward directions. The boom shall be attached to the jib head front and back through large, heavy duty plates and channels which will distribute boom loading forces through reinforcing channels to the lower roller assembly of the head, and through the bearing to the pivot pin on top of the jib mast.

The head assembly shall allow for an enclosed bottom entrance collector assembly to be installed inside the head, and be able to be independently of the boom.

The boom support top bearing shall be heavy-duty tapered roller bearings with a minimum average life of 10,000 hours. The bearing assembly shall have provision for a retaining pin in double shear above the top pivot bearing. The lower roller assembly bearing shall be adjustable and have two large diameter rollers with each roller having a minimum of two heavy-duty roller bearings operated on hardened bolts with provisions for pressure grease lubrication. Boom shall be capable of rotating 360 degrees, but end stops shall be provided to prevent boom rotation greater than 270 degrees. Rotation shall be limited to 270 degrees, as indicated on the drawings.

Jib crane manufacturer shall provide all anchor bolts necessary for erection. Provide angles on the boom to act as trolley stops at each end of the boom. Provide power trolley and cable hoist power and control cable festoon system to allow cable extension and retraction without tangling.

D. Painting:

Provide rust inhibitive shop primer. Touch-up primer and finish coat shall be field painted in accordance with the specifications.

E. Motorized Trolley:

Provide motorized trolley to mount on the jib crane. Motorized trolley shall be capable of supporting electric chain hoist and a 3-ton load, and travel along the jib crane. Trolley speed shall be 40 feet per minute. Trolley wheels shall be forged steel with machined and hardened treads complete with pre-lubricated, sealed for life, heavy-duty ball bearings, and shall have flange width adjustability. Motor shall be single speed, approximately 0.50

HP housed in a NEMA 4 enclosure and suitable for operation on 460 volt, 3-phase power. Provide a disc type motor brake.

Power for the trolley and hoist shall be supplied via a spring loaded cable reel. Reel shall automatically rewind and keep power cable taut. Cable reel shall be furnished by trolley and hoist supplier.

F. Electric Chain Hoist:

Electric chain hoist shall be suitable for mounting on motorized trolley and capable of lifting a 3-ton load. Motor shall be standard NEMA flanged 30-minute duty motor, single speed, approximately 4.7 HP, and suitable for operation with a 460 volt, 3 phase power supply. Motor shall be housed in a NEMA 4 enclosure, shall be totally enclosed non-ventilated, and shall have cooling fins. Motor shall have standard motor thermal protection. Hoisting speed shall be a maximum of 17 feet per minute. The gear train shall have quiet, compact alloy steel helical gearing and external spur drum gear enclosed in the same oil-tight housing. All gearing shall be machine cut, heat-treated alloy steel with shock-resistant ductile cores. Gearing shall be designed to AGMA standards for maximum life, and operate in an oil bath. Gear inspection and lubrication shall be easily accessible from the top of the hoist. Bearings shall be precision heavy-duty ball bearings splash lubricated or lifetime pre-lubricated and sealed.

Provide automatic Weston-type multiple disc brakes with weatherproof upgrade. The mechanical load brake shall be adequate to hold a full capacity load independent of motor brake. This brake assures that load does not accelerate while being lowered.

Provide upper and lower limit switches to prevent overwinding by stopping operation in the case of overlifting or overlowering.

The hoist shall have a full floating chain guide to assure positive engagement of chain on load sheave, with at least 5 pockets for better load distribution. Load chain shall be grade 80 case hardened steel and have a high resistance to wear and corrosion. For this application, sufficient load chain shall be provided for a **45 foot lift**. The chain hoist shall be capable of lifting the submersible pumps from the wet well as indicated on the drawings. The load hook from the chain hoist shall attach to the "grip eye" provided by the pump supplier. The "grip eye" shall then be lowered over the pump's lifting chain to the top of the pump. The electric chain hoist shall lift the submersible pumps sufficiently to clear the hatches.

Load hook shall be a forged carbon steel hook with a heavy-duty hook latch. Hook shall have a thrust bearing to allow 360° rotation, to prevent twisting of the load chain.

The chain container shall be sized for the required length of chain and shall securely contain the chain and chain lubricant.

G. Controls:

Motorized trolley and cable hoist shall be operated from a single pushbutton pendant control suspended from the unit. Operation shall be single speed. Contactor shall be magnetic reversing type, mechanically and electrically interlocked with 115-volt control circuit. Control transformer shall be sized to provide a 115 VAC space heater in the hoist and trolley motors. All wiring shall conform to NEC requirements. Provide time-delay fuses and motor thermostat for branch circuit overcurrent protection and motor running overcurrent protection. Enclosure shall be NEMA 4, and shall be designed for use in exterior locations.

Compact hand-held pushbutton control unit shall be arranged to enable one handed operation. Unit shall include a mushroom On-Off button as well as four buttons for left-right motorized trolley operation and up-down chain hoist operation. Control unit shall also have a strain relief system to prevent cable damage. Cable length shall be sufficient to suspend the control unit approximately 4 feet above the wet well top slab.

H. Installation:

Install jib crane, motorized trolley, and chain hoist in strict accordance to manufacturer's instructions and details. Anchor bolts for jib crane shall be provided by equipment manufacturer and installed by Contractor.

Electric hoist and trolley shall be furnished with any optional equipment and accessories as required for permanent operation in an exterior location.

I. Start-Up Services:

The contractor shall include with his bid the services of the motorized trolley and chain hoist equipment manufacturer's field service technician for a period of one (1) trip and one (1) day.

This service shall be for the purpose of check-out, initial start-up, certification, and instruction of operating personnel. The Contractor shall also provide the services of a company qualified to provide crane system testing (including a 125% load test), inspection, and certification of the system per the requirements of OSHA 1910.179, and all other applicable Federal, State, and local regulations. Proof of inspection and compliance shall be furnished to the Owner as a part of the Contractor's scope of services.

A written report covering the technician's findings and installation approval shall be submitted to the engineer covering all inspections and outlining in detail any deficiencies noted.

Provide two bound copies of the Operations & Maintenance manuals for the trolley and hoist, and one copy in PDF format on CD.

J. Shop Drawings Submittal:

Submit detailed dimensional drawings and complete manufacturer's literature. Include all necessary information to enable evaluation of product quality and performance. Include installation, adjustment, and lubrication information. Provide complete installation and wiring diagrams and instructions for review.

Submittal shall also include recommended minimum foundation dimensions for the jib crane, location of rotation stops on jib crane mast, and letter from hoist and trolley manufacturer stating the furnished equipment is designed and rated for permanent operation in an exterior location.

End of Section 14-B

DIVISION 15 - MECHANICAL

15-Y: VALVES

A. General:

The contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and installation complete of all types of valves on drawings and as specified in accordance with provisions of the contract documents.

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

B. Quality Standards:

Verify plan drawings for valve designations and descriptions contained. Furnish valves with end connections as shown upon the drawings and ensure the types comply with the following specifications.

American Society for Testing Materials (ASTM)
American Water Works Association (AWWA)

<u>End Type</u>	<u>Specification Reference:</u>
Screwed	ANSI B2-1
Flanged	ANSI B16.1; Class 125 unless otherwise noted.
Push-On	AWWA C-111
Mechanical (Gland) Type	AWWA C-111

Ensure manufacture of all valves contained in this and referenced sections are produced in full compliance to specified items and any references to codes and standards.

C. Submittals:

Submit to the Engineer shop drawings in compliance to General Conditions, General Requirements, and Special Conditions.

Verify material selections in compliance to the specification. Information contained in submittals shall include but is necessarily limited to the following:

1. Valve pressure, temperature, and specific service rating.
2. Valve body material.
3. Valve trim material.
4. Operator and actuator.

5. Indicator attachments.
6. Valve dimensions.
7. Maximum non-shock shutoff pressure
8. Face to Face and End to End dimensions of valves

D. Delivery, Storage and Handling:

Store all valves in a sheltered location. Observe manufacturer's directions regarding storage, handling and incorporating in the work. Replace any parts or valves damaged during shipping.

E. Specifications Reference:

Refer to the following section for complete specifications for valves included in the project.

<u>Valve Type</u>	<u>Specification Section</u>
General Statement	Parts A-E
Gate Valves	Part F
Plug Valves	Part G
Check Valves	Part H
Reduced Pressure Zone Back Flow Preventer	Part I
Wastewater Surge Relief Valves	Part J
Wastewater Combination Air Valves	Part K
Butterfly Valves	Part L
Valve Boxes and Extensions	Part M

Provide end types in accordance with drawing schedules and notations.

F. Gate Valves:

Not required for this Project.

G. Plug Valves:

Provide all plug valves of the non-lubricated eccentric design with resilient faced plugs and mechanical joints for buried service (or flange joints for exposed piping). Valves shall be fully compliant with AWWA C517 - Resilient-Seated Cast-Iron Eccentric Plug Valves. Mechanical joint ends shall meet the requirements of AWWA C111. Flange joint ends shall meet the requirements of AWWA C115. Valves shall be drop tight at 150 psi. Rectangular port areas of 4" - 20" valves shall be at least 80% of full pipe area. Provide valve bodies of cast iron conforming to ASTM A126, Class B. Valve seat surface shall be welded-in overlay, cylindrically shaped of not less than 90% pure nickel on all surfaces contacting plug face. The machined seat area shall be raised, with raised area completely covered with weld to ensure proper seat contact. The machined seat area shall be a minimum of 0.125 inches thick and 0.50 inches wide. The valve plug shall be one piece and shall be made of cast iron conforming to ASTM-A126, Class B. The plug shall have a cylindrical

seating surface that is offset from the center of the plug shafts. The plug shafts shall be integral. The entire plug shall be 100% encapsulated with Buna-N rubber with a 70 durometer hardness. Provide valves with stainless steel permanently lubricated upper and lower plug shaft bearings. Provide adjustable multiple V-ring type shaft seals on all valves. All packing shall be replaceable without removing the bonnet or actuator. Shaft seals shall be made of Buna N. Provide zinc plated exposed nuts, bolts, springs, and washers. Provide worm gear type actuator and 2" square nut for buried service operation, and bevel gear type actuator with handwheel for valves on exposed piping. Handwheels are to be positioned on the plug valves as shown on the project drawings, to ensure the operator can easily access and operate the handwheel.

Install buried eccentric plug valves with the shaft horizontal and plug at top of valve body when open unless otherwise shown on drawings or directed by the Engineer. Additionally, on applications where the liquid contains suspended solids, the seat end of the valve shall be on the high-pressure side when the valve is closed. On applications where solids are not present, the seat end of the valve shall face the low-pressure side when the valve is closed.

Plug valves shall be as manufactured by Kennedy Valve Company, Dezurik, or approved equal.

H. Check Valves:

Provide two 12" cushion swing checks with oil controlled bottom mounted buffer for this project. Valves shall be constructed in accordance with AWWA C508 and have an ASTM A536 ductile iron body. The exterior and interior of the valve shall be coated with and NSF/ANSI 61 approved fusion bonded epoxy. End connections shall be flanged Class 125/150 per ASME B16.1. Valves shall have a drain plug located on the bottom of the valve. The replaceable Buna-N disc seat shall be locked in place with stainless steel lock screws. The shaft shall be one-piece 303 stainless steel per ASTM A582, protruding through the valve body with a weight and lever mounted on one side of the valve body. The shaft shall have O-ring seals on both ends of the shaft, and shall have an integral retainer to prevent axial shaft movement. The body seat shall be 316 stainless steel, per ASTM A276, with an O-ring seal, and shall be locked into place using stainless steel screws. The disc and disc arm shall be ASTM A536 ductile iron. The disc shall be attached to the disc arm with a double clevis hinge. Disc shall have an independent adjustable full open disc stop. The disc seat shall be nitrile butadiene (NBR) and field replaceable without the use of special tools.

The bottom mounted buffer rod shall be 303 stainless steel per ASTM A582. The final closure is to be adjustable by means of a color-coded micrometer type control valve. Control valve to have a locking set screw to secure final setting. The oil reservoir shall be 316 stainless steel per ASTM A240. Hydraulic hoses are to be S.A.E. certified.

The valve shall have a hydraulic (oil) buffer to permit free open but positive non-slam controlled closure of the disc. The oil hydraulic buffer shaft shall make contact with the disc during the final 10% of closure, to instantly control the disc until shut-off in a manner to prevent slam and water hammer. The last 10% of closure shall be externally adjustable to

create a 1-3 second closing speed. The line media to the buffer must be separated by a combination pressure sensing, oil/water separator device to protect the buffer cylinder against corrosion from the line media. The hydraulic buffer assembly shall be removable from the valve without need to remove the entire valve from the pipeline.

Valves to be APCO Series 6000B cushion swing check valve - oil control bottom buffer (Model CVS-6012-BMB), Valmatic Series 7900B, or approved equal.

I. Reduced Pressure Zone Backflow Prevention Valves:

Not required for this Project.

J. Wastewater Surge Relief Valve:

Not required for this Project.

K. Wastewater Combination Air Valves:

Not Required for this Project.

L. Butterfly Valves:

Provide rubber seated butterfly valves in compliance with latest revision of AWWA C504. Provide wafer style valve bodies of cast iron. Valve discs to rotate 90 degrees from full open to tight shut position, with a manual actuation lever operator. Provide valve shaft sizes as required in AWWA C504. Provide Buna-N or Buna-S valve seats. Furnish shaft bearings of self-lubricating sleeve type. Shaft seals shall be of the "O" ring or self-adjusting Chevron type. Butterfly valves shall be manufactured by Pratt, Mueller, or Valmatic.

M. Valve Boxes and Extensions:

For all buried valves, provide adjustable cast iron valve boxes of proper dimensions to fit it over valve bonnets and to extend to slightly above the finished ground surface or flush with the asphalt surface if located in pavement. Set valve boxes vertical and concentric with valve stem. If the valve box has to be moved from its original position to allow proper application of a valve key, reset the entire valve box at no cost to the owner. Valve box covers shall be marked "SEWER." Secure the valve box with concrete collar as noted on the plans.

For all valves with the operating nut more than 4 feet below ground, provide a valve stem extension kit as required to bring the nut to within 6 to 12 inches of finished grade.

End Section 15-Y

DIVISION 16 - ELECTRICAL

16-A ELECTRICAL: GENERAL REQUIREMENTS

A. General:

The Contractor shall comply with, and all work under this contract shall be in accordance with the Contract Documents, including the conditions of the Contract (General, Special, Supplemental and other conditions as they may be titled). The word "provide" shall mean "furnish and install". Plans, drawings, and specifications are cooperative and supplementary. Portions of the work which can best be illustrated by the plans or drawings may not be included in the specifications, and portions best described by the specifications may not be depicted on the plans or drawings. All items necessary or incidental to complete the work shall be provided, whether called for in the specifications or shown on the plans or drawings. The word "Contractor" when used in the Electrical Specifications or on the Electrical Drawings shall mean the General Contractor or the G.C.'s electrical subcontractor, unless otherwise indicated. The word "Engineer" shall mean Diehl & Phillips, P. A.

Execute work using methods, techniques, connections, and tie-ins which will cause the least interference with and least possible interruption of existing utilities and services; make all arrangements for work which will cause interferences and interruptions; schedule in advance with the Engineer all other affected trades and authorities having jurisdiction.

The drawings show the general location of feeders, transformers, outlets, conduits, and circuit arrangements. Because of the small scale of the drawings, it is not possible to indicate all of the details involved. The Contractor shall carefully investigate the structural and finish conditions affecting all his work and shall arrange such work accordingly, furnishing such fittings, junction boxes, and accessories as may be required to meet such conditions. The Contractor shall refer to Engineer's drawings to verify door swings, special surfaces, such as tile, and location of any equipment, wall cases or other special equipment prior to roughing in for switches and other outlets. Contractor shall verify all equipment dimensions to insure that proposed equipment will fit properly in spaces indicated.

B. Scope of Work:

The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the furnishing and installation, complete, of all electrical work as shown on the drawings and as specified in accordance with the provisions of the Contract Documents and completely coordinated with that of all other trades. Although such work is not specifically shown or specified, all supplementary of miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, and complete installation shall be furnished and installed as part of this work.

The Electrical work includes but is not necessarily limited to:

Furnishing and installing all electrical, controls, and instrumentation equipment, wiring, conduit, and related materials for The Twelve Oaks Pump Station Expansion and Modifications

All electrical work shall be complete and left in operating condition in accordance with the intent of the Drawings and Specifications for electrical work.

C. Local Conditions:

The Contractor shall examine the site and become familiar with conditions affecting work. Investigate, determine, and verify locations of any overhead or buried utilities on or near site. Determine such locations in conjunction with all public and/or private utility companies and with all authorities having jurisdiction.

D. Permits, Fees, Licenses, and Inspections:

The Contractor shall make arrangements, obtain, and pay for all necessary permits, licenses, and inspections; pay all necessary fees in conjunction with all electrical work.

E. Rules, Regulations, and Codes:

The Contractor shall perform all work in strict accordance with all rules, regulations, codes, ordinances, or laws of local, state, and federal governments or of other authorities having lawful jurisdiction. Such rules, regulations, codes, ordinances, or laws shall include but are not necessarily limited to the following:

1. State building, fire, and electrical codes.
2. City/County building, fire, and electrical codes.
3. National Electrical Code (NEC).
4. National Electric Safety Code (NESC).
5. National Fire Protection Association (NFPA).
6. Occupational Safety and Health Act.

F. Applicable Specifications and Standards:

Where referred to in Division 16 of the specifications, the applicable standards of the organizations below form a part of these specifications.

1. American National Standards Institute (ANSI).
2. National Electric Manufacturers Association (NEMA).
3. Institute of Electrical and Electronic Engineers (IEEE).
4. American Society for Testing and Materials (ASTM).

The Contractor shall provide all materials bearing UL labels of approval when the Underwriters Laboratories has established a standard for the particular type of the material to be installed.

G. Substitutions:

Notwithstanding any reference in the specifications or on drawings to any article, device, product, material, fixture, or item of equipment by name, make or catalog number, such references shall be interpreted as establishing the type, function, and standard of quality and shall not be construed as limiting competition; and Contractor, in such cases, may at his option use any article, device, product, material, fixture, or item of equipment which in the judgment of the Engineer expressed in writing is equal to that specified.

The Contractor shall be responsible for providing properly sized circuit breakers to serve equipment and motors furnished which differ from those specified or indicated. This shall be further understood to include branch circuit wiring, conduit, disconnect switches, etc., in accordance with the appropriate codes and specifications. The cost of providing this increased electrical service and related work shall be included under the applicable section under which the equipment and motors are being furnished.

H. Product Requirements:

Unless otherwise indicated, the materials to be provided under this specification shall be the products of manufacturers regularly engaged in the production of such items and shall be the manufacturer's latest design. The products shall conform to the applicable standards of UL and NEMA, unless specified otherwise. All items of the same type or ratings shall be identical. This shall be further understood to include products with the accessories indicated. All equipment and materials shall be new, unless indicated or specified otherwise. The Contractor shall submit proof if requested by the Engineer that the materials, appliances, equipment, or devices that he provides under this contract meet the requirements of the Underwriters Laboratories, Inc., as regards fire and casualty hazards. The label of or listing by the Underwriters Laboratories, Inc., will be accepted as conforming to this requirement.

Notice is hereby given that equipment space is limited. It is the intent of this specification to purchase as compact an arrangement as possible for each class of equipment. Any equipment design which makes poor use of available space or which otherwise requires substantially larger space than contemplated by the design will not be acceptable.

I. Material Handling:

Materials arriving on the job site shall be stored in such a manner as to keep material free of rust and dirt and so as to keep material properly aligned and true to shape. Rusty, dirty, or misaligned material shall be rejected. Electrical conduit shall be stored to provide protection from the weather and accidental damage. Plastic conduit shall be stored on even supports and in locations not subject to direct sun rays or excessive heat. Cables shall be sealed, stored, and handled carefully to avoid damage to the outer covering or insulation and damage from moisture and weather. Adequate protection shall be required at all times for electrical equipment and accessories until installed and accepted. Materials damaged during shipment, storage, installation or test shall be replaced or repaired in a manner meeting with the approval of the Engineer.

J. Sleeves, Cutting and Patching

Avoid cutting insofar as possible by setting sleeves, frames, etc., and by requesting openings in advance. Assist other trades in securing the correct location and placement of rough-frames, sleeves, openings, etc. Use only approved cutting and drilling methods. Lay out holes in advance, locating so as not to affect structural sections. Perform cutting in a manner which will not weaken walls, partitions, or floors. Neatly cut all holes, including locations where sleeves have been omitted. Cut holes as small as possible to admit work. Drill holes in floors without breaking out around the holes. Cut holes through reinforced concrete using rotary type drill. Do not use pneumatic hammer type drills, impact type electric drills, and hand or manual hammer type drills.

Prepare accurate drawings locating all inserts, sleeves, etc., installed in or passing through reinforced concrete. Select locations to permit neat installation of work. Arrange locations to avoid interferences and misalignment. Prepare drawings for own use at earliest practicable date.

Where alterations are necessary or where new or old work join, cut, remove, patch, repair, and restore all cut surfaces which are disturbed to permit installation of new work. Leave work in as good a condition as existed before the start of work.

Sleeves through floors and walls shall be of proper size to accommodate the raceway, shall be flush with walls, ceiling or finished floors, and shall be black iron pipe or styrene plastic conduit. Caulk sleeves through exterior walls with approved compound above grade and with oakum and lead wool below grade. Caulk underground conduits entering building through sleeves.

K. Mounting of Electrical Equipment:

1. Pad Mounted Equipment:

The Electrical Contractor shall provide concrete foundations for electrical apparatus and equipment and shall furnish exact location and dimensions for these foundations. Furnish for installation, all necessary anchor bolts, channel iron sills, etc. This information and material shall be provided well in advance of the scheduled placing of these slabs and other concrete work in the area of the foundations pad and/or curb. Equipment foundations shall be 4" high (unless otherwise called for on the drawings) with top edges chamfered 3/4" and all exposed surfaces rubbed smooth with a carborundum block after stripping of forms. Pads shall be reinforced (unless otherwise called for on the drawings) with steel wire mesh and shall have dowel rods inserted into the floor for anchorage. Carefully level, shim, and align the equipment on the foundations.

2. Pole Mounted Equipment:

The Electrical Contractor shall use 3/8" diameter by 4" long or larger galvanized lag bolts or machine bolts extending through the diameter of the pole to mount equipment to electrical poles. If the equipment is designed for surface mount with more than two mounting holes, the Contractor shall first mount horizontal "U" shaped

metal channel using lag bolts as above. The equipment shall then be mounted to the channel using neoprene bushings and plated or galvanized machine bolts, such that the equipment is rain proof.

3. Wall Mounted Equipment:

All wall mounted panels and/or electrical equipment enclosures shall be separated from the wall with PVC spacers in order to create a 1/4" air space between the equipment and the wall.

L. Excavation and Backfilling:

This Contractor shall perform all excavation and backfill required for the installation of all electrical work. Particular care shall be taken not to disturb or damage work of other trades or existing buried piping or other equipment.

In backfilling trenches, approved fill shall first be compacted firmly and evenly in 6" layers to a depth of 12" over the top of the pipe or duct bank. Remainder of trench shall be backfilled to establish grade in 6" layers. Compact between each layer with high-frequency vibratory tamper. Where compaction requirements are not established for an area, compact fill to 95% maximum density at optimum moisture content. Excess earth shall be distributed on premises as directed.

Where ditches occur outside of building, the surface shall be finished to match existing surfaces. Any existing work or work of other trades which is damaged or disturbed shall be repaired or replaced and left in good order.

M. Concrete:

This section shall conform in every respect to the requirements of Division 3 for 4,000 psi concrete.

N. Painting:

Panels, switchboards, switch gear, safety switches, motor starter equipment, and busways shall be painted standard colors of the manufacturer furnishing the equipment. This Contractor shall touch up all scratches and abrasions after installation with the manufacturer's finish paint.

O. Access to Equipment:

The Electrical Contractor shall locate starters, switches, receptacles, pull boxes, etc., for easy access for operation, maintenance, and repair. Provide access doors where such items are concealed.

P. Labeling of Equipment:

Each motor starter and disconnect switch shall be provided with a 1" x 2" black laminated plastic nameplate engraved with 1/4" high letters indicating equipment served, attached with countersunk screws.

The Contractor shall label all separately mounted safety switches, etc., indicating the item served or system controlled, i.e., "Air Handling Unit No. 2", etc. Abbreviated references, such as "AHU-2", will not be acceptable.

Q. Existing Electrical Systems:

All work shall conform to applicable requirements of this division of the specifications. Existing electrical equipment, conduit, wire, etc., not in use after reworking the existing system shall be removed or de-energized. All equipment not scheduled for replacement shall be kept in operation at all times. All work to be renovated, changed, or modified shall be scheduled so as not to interfere with normal operation.

R. Control, Alarm, and Instrumentation Wiring:

Control wiring diagrams, if included on the drawings, or control descriptions, if included in the specifications or on the drawings, are intended to indicate the scope and requirements of controls, instrumentation, and alarms. The Contractor shall provide wiring and electrical components in accordance with these diagrams and descriptions and with the equipment manufacturer's printed instructions for the equipment to be wired. Where a conflict exists between the contract drawings and the requirements for the equipment to be wired, the Contractor shall provide complete wiring in accordance with the actual requirements as set forth by the manufacturer of the equipment.

Unless otherwise indicated or specified, this Contractor shall provide all control, alarm, and instrumentation wiring and conduit for all equipment for the project.

S. Materials and Equipment Lists:

Within ten days after date of Notice to Proceed and before any materials or equipment are purchased, Contractor shall submit to the Engineer for approval a complete list in quadruplicate of materials and equipment to be incorporated in the work. List shall include catalog numbers, cuts, diagrams, drawings, and other descriptive data as may be required by the Engineer. All data shall be submitted at one time. No consideration will be given to partial lists submitted from time to time. Any materials and/or equipment listed which are not in accordance with specifications may be rejected.

If the Contractor fails to submit the aforementioned list for approval within specified time, the Engineer may select a complete list of materials and equipment. Selection made by the Engineer shall be final and binding, and items shall be furnished by Contractor without change in contract price or time of completion.

T. Additional Shop Drawing Requirements:

The Contractor shall submit to the Engineer shop drawings of all electrical materials apparatus, appliances, equipment, and miscellaneous devices shown or specified.

Shop Drawings shall be sufficiently complete in detail to enable the Engineer to determine compliance with contract requirements. Details and information shown shall include but are not necessarily limited to the following:

1. Performance characteristics.
2. Physical Sizes.
3. Material specifications and construction details.
4. Compliance with rules, regulations, and codes.
5. Accessories.
6. Wiring Diagrams, complete.
7. Voltage, current, KVA, phase ratings.

An item, component, material, or portion of equipment which differs from contract requirements shall be noted and specifically called to attention of the Engineer to permit evaluation of substitute item. Shop drawings will be approved only to the extent of the information shown. Approval of an item of equipment shall not be construed to mean approval for components of that item for which Contractor has provided no information. Approval of shop drawings by the Engineer shall not relieve Contractor of complying with requirements of drawings and specifications.

U. Tests:

Upon completion of installation, the Electrical Contractor shall perform tests for operation, panel load balance, short circuits and ground. Tests shall be made with and to the satisfaction of Owner and Engineer.

The Contractor shall perform all field tests and shall provide all labor, equipment, and incidentals required for testing and shall pay for electric power required for the tests. All defective material and workmanship disclosed shall be corrected by the Contractor at no cost to the Owner. The Contractor shall show by demonstration in service that all circuits and devices are in good operating condition. Tests shall be such that each item of control equipment will function not less than five times.

After all wiring is completed and connected ready for operation but prior to placing systems in service and before any branch circuit breakers are closed, insulation resistance tests shall be made in all feeder and subfeeder circuits for systems 600 volts and less. The insulation resistance between conductors and between such conductor and ground shall be measured. Measurements shall be made with an instrument capable of making measurements at an applied potential of 500 volts. Readings shall be taken after the voltage has been applied for a minimum of one minute. The minimum insulation resistance for circuits of No. 12 AWG conductors shall be 1,000,000 ohms. For circuits of No. 10 AWG or larger conductors, a resistance based on the allowable capacity of the conductor shall be as follows:

Capacity	Resistance
25 through 50 amperes	250,000 ohms
51 through 100 amperes	100,000 ohms
101 through 200 amperes	100,000 ohms
201 through 400 amperes	25,000 ohms
401 through 800 amperes	12,000 ohms
Over 800 amperes	5,000 ohms

The grounding system shall be tested to assure continuity and compliance with the requirement that ground resistances not exceed 25 ohms. Ground resistance measurements of each ground rod shall be taken and certified by the Contractor. Upon completion of the project, the Contractor shall submit to the Engineer the measured ground resistance of each ground rod and grounding system, indicating the location of the rod and grounding system as well as the resistance and soil conditions at the time the measurements were made. Ground resistance measurements shall be made in normally dry weather not less than 48 hours after rainfall and with the ground under test isolated from other grounds. Ground resistance shall also be measured from each piece of equipment to the ground electrode.

V. Cleanup:

At the end of the each work day, the Contractor shall remove from the structure all rubbish and debris resulting from the electrical work.

At the completion of the work and before final acceptance, the Contractor shall clean all spaces occupied by electrical equipment, clean all electrical equipment, apparatus, appliances, and devices; and leave all such items in perfect working order ready for use.

W. Guarantee:

Before final acceptance of the work, the Contractor shall deliver three copies of a written and signed guarantee to the Engineer. Guarantee shall cover all material, workmanship, and the successful operation of all apparatus for a period of one year from date of final acceptance. Guarantee shall agree to repair, or remove and replace, at no additional expense to Owner, any part of the work, material, or apparatus which may show a defect during the life of the guarantee provided such defect is, in the opinion of the Engineer, due to imperfect material, apparatus or workmanship and not due to carelessness or improper use. Guarantee shall be signed by Contractor and electrical installer.

X. Operating and Maintenance Instructions:

The Contractor shall compile and bind three sets of all manufacturer's instructions and descriptive literature on all items of equipment furnished under this work. These instructions shall be delivered to the Engineer for approval before plant construction is 50% complete.

Instruction shall include operating and testing procedures and a parts list of all equipment. The Contractor shall instruct the Owner's personnel in the proper operation of all systems and equipment. The front of the binder shall be titled "Electrical Operating and Maintenance Instructions", with the name of the job and the firm name of the Contractor under the title.

The operating and maintenance instructions shall contain complete elementary wiring diagrams for all equipment and installations provided by this Contractor. These elementary diagrams shall have all connections identified with the same numbers that are required to be on wire markers on the ends of all wires at terminations.

End Division 16-A

DIVISION 16 - ELECTRICAL

16-B: WIRING MATERIALS AND METHODS

A. General:

All wiring materials and methods shall be in accordance with the National Electrical Code.

B. Conduit - General:

Rigid Aluminum Conduit (RAC) shall be manufactured of 6063 alloy in temper designation T-1. It shall be listed to UL 6A "Standard for Electrical Rigid Metal Conduit – Aluminum, Red Brass, and Stainless Steel", and manufactured to ANSI C80.5.

Rigid steel conduit (RGS) shall be standard weight, mild steel pipe, hot dipped galvanized, sherardized or zinc-coated conforming to the requirements of ANSI C 80.1 and listed to UL 6A. PVC conduit shall be installed where routed in poured concrete. Exposed conduit shall be PVC coated rigid steel (Rob Roy or Ocal), or aluminum.

Intermediate metal conduit (IMC) shall be galvanized and UL listed. Installation of intermediate metal conduit shall be in accordance with Article 345 of the National Electrical Code and UL General Information Card #DYBY. IMC shall not be installed in hazardous areas.

Flexible conduit (FC) shall be galvanized steel, single strip, with a copper strip interwoven and shall conform to UL-1.

Liquidtight flexible conduit (LFC) shall be galvanized steel, single strip, with a copper strip interwoven and shall conform to UL-1. LFC shall have an extruded moisture and oil proof PVC jacket. Watertight connectors shall be used with liquidtight flexible conduit.

Plastic conduit (PC) 2" or larger shall be polyvinyl chloride (PVC) and shall conform to NEMA TC-8. PVC conduit for direct burial in earth shall be type DB. PVC conduit for concrete encasement shall be type EB. Plastic conduit smaller than 2" shall be in accordance with UL-651 "heavy-wall" for direct burial and "thin-wall" for concrete encasement. All plastic conduit runs shall contain a green TW insulated copper grounding conductor sized in accordance with the National Electrical Code.

Each length of conduit shall be stamped with the name and trademark of the manufacturer and shall bear the Underwriter's label.

C. Conduit Installations – Project Specific:

For this project, all buried conduits shall be heavy duty PVC conduit with a minimum bury depth of 24 inches below grade. All above ground and exterior exposed conduit shall be rigid galvanized steel conduit. The transition from PVC conduit to RGS (from conduits buried or embedded in concrete to exposed conduits) shall be made at a point 12-inches or more below ground/slab surface. All conduits to equipment and other items located on concrete slabs or pedestals shall be embedded in the concrete, as noted on the plans. The embedded

conduit shall be PVC. The exposed conduit within the control building shall be rigid galvanized steel.

Liquidtight flexible conduit shall be used for connections to motors and other equipment subject to vibration. Flexible conduit shall be used for connections to recessed or semi-recessed fixtures. Liquidtight flexible metal conduit shall be installed for final conduit connections to dry type transformers, motors, and other equipment with rotating or moving parts. Length of installed flexible conduit shall be a maximum of 48 inches. No flexible metal conduit without the outer covering shall be used on the project. Refer to the drawings for use of non-metallic flexible conduit.

Conduit shall be installed concealed unless otherwise indicated or specified. Conduit may be run exposed on walls of equipment rooms and wire closets. On prefabricated water and waste treatment plants and equipment, run conduit exposed and anchored to the structure.

Maintain a minimum distance of 6" from parallel runs of hot water pipes. For floor mounted equipment, conduit may be run overhead and dropped down, where underfloor installation is not practicable. Groups of conduits shall be uniformly spaced, where straight and at turns. Conduit shall be cut with a hacksaw or an approved conduit-cutting machine and reamed after threading to remove all burrs. Securely fasten conduit to outlets, junction and pull boxes to effect firm electrical contact. Join conduit with approved couplings. Expansion fittings shall be installed in conduit where it passes through structural expansion joints. Trapped conduits shall be avoided. Plaster, dirt or trash shall be prevented from lodging in conduits, boxes, fittings and equipment during construction. Clogged conduits shall be freed of all obstructions.

Empty conduit system shall be provided as indicated and shall have pull wires installed. The pull wire shall be No. 14 AWG zinc-coated steel, or of plastic having not less than 200 pound tensile strength. No less than 12" of slack shall be left at each end of the pull wire.

All bends shall be made with standard conduit elbows or conduit bent to not less than the same radius than a standard conduit elbow. Bends with kinks shall not be acceptable.

Conduit shall be supported every 8' and shall be installed parallel with or perpendicular to walls, structural members, or intersections of vertical plans and ceilings with right angle turns consisting of fittings or symmetrical bends. Conduits shall be supported within 1' of all changes in direction. Supports shall be approved pipe straps, wall brackets, hangers or ceiling trapeze. Perforated strap hangers will not be accepted. In no case shall conduit be supported or fastened to other pipe or installed to prevent the ready removal of other pipe for repairs. Fastenings shall be by wood screws to wood; by toggle bolts on hollow masonry units; by expansion bolts on concrete or brick; by machine screws, welded threaded studs, or spring tension clamps on steel work. Explosive-drive equipment may be used to make connections where the use of this equipment complies with safety regulations. Wooden plugs inserted in masonry and the use of nails as fastening media are prohibited. Threaded C-clamps may be used on rigid steel conduit only.

Conduits or pipe straps shall not be welded to steel structures. The load applied to fasteners shall not exceed 1/4 of the proof test load. Fasteners attached to concrete ceiling shall be vibration and shock resistant. Holes cut to a depth of more than 1-1/2" in reinforced concrete beams or to a depth of more than 3/4" in concrete joints shall not cut the main reinforcing bars. Holes not used shall be filled. In partitions of light steel construction, sheet-metal screws shall be used. Spring steel fasteners may only be used to support lighting branch circuit conduits to structural steel members. Conduits shall be fastened to all sheet-metal boxes and cabinets with two locknuts where required by the National Electrical Code, where insulated bushings are used, and where bushings cannot be brought into firm contact with the box. Locknuts shall be the type with sharp edges for digging into the wall of metal enclosures. Bushings shall be installed on the ends of all conduits and shall be of the insulating type where required by the National Electrical Code.

Conduit installed in concrete floor slabs or walls shall be located so as not to affect the designed structural strength of the slabs. Conduit shall be installed within the middle one-third of the concrete slab except where necessary to not disturb the reinforcement. Outside diameter of conduit shall not exceed one-third of the concrete slab except where necessary to keep from disturbing the reinforcement. Outside diameter of conduit shall not exceed one-third of the slab thickness, and conduits shall be spaced not closer than three diameters except at cabinet locations. Curved portions of bends shall not be visible above the finish slab. Where embedded conduits cross expansion joints, suitable watertight expansion fittings and bonding jumpers shall be provided. Conduit larger than one inch trade size shall be parallel with or at right angles to the main reinforcement; when at right angles to the reinforcement, the conduit shall be close to one of the supports of the slab. Conduits shall not be stacked more than 2 diameters high in floor slabs. Where plastic conduit is installed in or below floor slabs, or the concrete walls, bridges, or other structures of concrete basins at water and waste treatment plants, a transformation from plastic conduit to steel conduit shall be provided for each conduit using approved couplings. This transformation shall be embedded in the concrete, and all stub-ups out of the concrete shall be rigid galvanized steel conduit.

All conduits buried in the earth outside of the building shall have a minimum of 24" of cover above the top of the conduit, or conduit encasement, if the conduit is noted to be encased in concrete. Encasement shall be 3" thick all around the conduit. Concrete encasement shall be reinforced where called for on the drawings. Joints in conduit shall be staggered so as not to occur side by side. PVC shall be changed to metal conduit at the point where it leaves the ground, with the transition to metal conduit occurring inside the concrete encasement.

No more than three 90 degree bends will be allowed in any one conduit run. Where more bends are necessary, a conduit or pull box shall be installed. All bends in 1/2" and 3/4" conduit shall be made with a conduit bender, and all larger sizes shall have machine bends. Joints in threaded conduit shall be made up watertight with compound applied to male threads only; and all field joints shall be cut square, reamed smooth, and properly threaded to receive couplings. No running threads will be permitted. All conduit ends at switch and outlet boxes shall be fitted with an approved lock nut and bushing forming an approved tight bond with box when screwed up tightly in place.

D. Conduit Fittings:

Fittings for rigid metal conduit, nonmetallic conduit, and flexible metal conduit shall conform to UL 467 and UL 514, as applicable. Fittings for electrical metallic tubing shall be raintight and concrete tight and shall conform to UL 467 and UL 514, as applicable and be plated steel hexagonal threaded compression type. Set screw or indenter type connectors shall not be used. Fittings shall be of the same material and manufacture as the conduit. Fittings for conduit installed in wet locations and underground shall provide a watertight joint. Fittings for rigid conduit and intermediate metal conduit shall be threaded.

Sealing fittings or bushings of appropriate type shall be used where conduits pass from cold areas, such as refrigerated rooms, into areas of normal atmosphere, or from hazardous areas to areas of normal atmosphere. Fittings or bushings shall be installed in easily accessible locations. Fittings and outlets shall be designed for Class I, Division 1 explosion-proof installations where called for on the drawings and in hazardous areas unless otherwise indicated.

Where conduits pass through building expansion joints, approved waterproof telescopic type expansion fittings shall be used. Fittings shall be OZ type AX watertight and permit a movement up to 4" and shall be equipped with approved bonding jumpers around or through each fitting.

Bonding jumpers shall be by Appleton, Crouse-Hinds, or equal.

Conduit fittings, "condulets" shall be used on exposed conduit work for lighting and power outlets, convenience outlets, telephone or signal outlets, changes in direction of conduit runs and breaking around beams. "Condulets" shall be cast ferrous alloy, galvanized or cadmium plated, as manufactured by Crouse-Hinds, Pyle, National, Killark, Appleton Company, or equal. Covers and gaskets shall be furnished with the condulets, which shall be of a design suitable for the purpose intended. In damp areas, the outside, condulets shall be made watertight. Install all condulets with the covers accessible.

E. Outlet Boxes, Switch Boxes, and Small Junction and Pull Boxes:

Boxes shall conform to UL 514, except that boxes for hazardous locations shall conform to UL requirements for the class and group indicated or specified. Boxes shall be provided in the wiring or raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures. Boxes for metallic raceways shall be of the cast metal hub type when located in normally wet locations, when surface mounted on outside of exterior surfaces, in hazardous areas, and when installed exposed up to 7' above interior floors and walkways. Boxes in other locations shall be sheet steel. Boxes shall be sized and installed according to the National Electrical Code. Boxes for use with raceway systems shall not be less than 1-1/2" deep except where shallower boxes, required by structural conditions, are approved. Boxes for other than lighting-fixture outlets shall be not less than 4" square except that 4" by 2" boxes may be used where only one raceway enters the outlet. Boxes less than 4" for mounting lighting fixtures may be installed as required by

fixture configuration, as approved.

All lighting outlet boxes shall be hot dipped galvanized 4" octagon boxes as manufactured by Appleton Electric Company, Steel City, Racor, or equal. Extension and plaster rings shall be installed where required. Switch boxes for concealed wiring shall be hot dipped galvanized standard steel switch boxes as manufactured by Appleton Electric Company, Steel City, Racor, or equal. Where fixtures are to be mounted on the box, they shall have suitable studs and supports for carrying the weight of the fixture. Boxes in finished walls shall be flush mounted and have flush cover plates.

Where outlets occur in exposed masonry or tile construction, they shall be adjusted where practical to occur in the nearest joint to the height specified or indicated.

In concrete, boxes shall be 4" concrete type.

Gang-switch and junction boxes not dimensioned, for concealed wiring, shall be hot dipped galvanized 4" square boxes as manufactured by Appleton Electric Company, Steel City, Racor, or equal.

Boxes for outlets, switches, receptacles, and for junction boxes used in the following locations shall be cadmium-plated cast malleable iron type with threaded hubs and cover gasket, Crouse-Hinds, Appleton, or equal.

1. Any exterior location.
2. Where exposed to rain.
3. In all surface mounted, exposed, conduit systems.
4. Where exposed to moisture laden atmosphere.
5. Where shown on the drawings.

Exposed boxes for use in Chlorine rooms and other chemical storage or pump rooms at water and waste treatment plants shall be polyvinyl chloride coated cast iron as manufactured by Appleton, Crouse-Hinds, or equal. No damage to the covering shall be permitted.

Boxes with unused punched-out openings shall have the openings filled with proper closures. Outlet boxes in lay-in acoustical tile ceilings shall be supported by bar hangers anchored to the ceiling construction members without interference with adjacent tile removal.

Where sizes of boxes are not shown on the drawings, the Contractor shall provide box sizes in accordance with the National Electrical Code.

F. Large Junction and Pull Boxes:

Where junction or pull box size exceeds the standard box sizes or where shown on the drawings, boxes shall be provided as specified for large junction and pull boxes. Where box size is not shown on the drawings, the Contractor shall provide box sizes in accordance with

the National Electrical Code.

Provide pull boxes or junction boxes in conduit runs where indicated or where required to facilitate the pulling of wires or the making of connections. All pull boxes and junction boxes except where cast iron boxes are specified or indicated shall be code size galvanized steel and shall be provided with plain blank removable covers held in place with screws unless otherwise shown; and covers of all boxes shall be accessible. Boxes shall be constructed of 12-gauge minimum hot rolled sheet steel and shall be hot dipped galvanized inside and outside.

In damp and wet locations and where indicated on the drawings, cast iron junction boxes shall be provided. Cast iron junction boxes shall be galvanized finish, OZ Russell & Stoll, Crouse-Hinds, or equal. Gaskets shall be used where required.

Where large junction and pull boxes are recessed, the box covers shall be installed flush with the surface.

Where large junction and pull boxes are surface mounted, install stainless steel standoffs to provide a 1/4" air space between the back of the box and the mounting surface.

G. Other Outlets:

Floor outlets shall be adjustable concrete-tight, and each outlet shall consist of a cast metal body with threaded openings for conduits, adjustable ring, brass flange ring, and cover plate with 3/4" threaded plug. Each telephone outlet shall consist of a horizontal cast brass housing with a one inch bushed side opening.

Outlets shall have provision to accommodate a ten wire telephone terminal block. Each receptacle outlet shall consist of a horizontal cast brass housing with a duplex receptacle as specified hereinafter. Gaskets shall be used where necessary to insure watertight installation.

Conduits stubbed up through concrete floors for connections to free-standing equipment shall be provided with an adjustable top or coupling threaded inside for plugs, set flush with the finished floor. Wiring shall be extended in rigid threaded conduit to equipment, except that where required, flexible conduit may be used 6" above the floor. Screwdriver operated threaded flush plugs shall be installed in conduits from which no equipment connections are made.

Where shown on drawings, provide 15 amp, 125 V duplex GFI receptacle with NEMA 5-15R configuration, test and reset buttons. Provide feed-through type to protect additional outlets installed on load side of device, Leviton No. 6195-I, General Electric No. TGTR115F, or approved equal. Provide indoor or weatherproof wall plate as required, of stainless steel or other approved material, to suit shape of GFI receptacle.

Pedestal-type floor-mounted or counter-mounted duplex receptacles; back and side wired, rated 15 amp, 125 V, 3 W, grounding type, ivory, NEMA 5-15R complete with horizontal design housing with threaded conduit fittings in base, with brushed aluminum finish

protected with clear enamel, and installed on suitable adjustable 4 in. flush floor or under counter box. National Electric No. 830GC with National Electric No. 800 series or similar box, Hubbell No. SC-3091 or SC-3092 with No. B-88 series or B-5501 series or similar box, or approved equal.

Where outlets are shown near identified equipment furnished by this or other contractors, it is the intent of the specifications and drawings that the outlet be located at the equipment to be served. This Contractor shall coordinate the location of these outlets to be near the final location of the equipment served whether placed correctly or incorrectly on the drawings.

H. Wiring Troughs:

Rigid steel wiring troughs shall be square in shape, constructed of stainless steel, totally enclosed with hinged cover or cover fastened with screws, and sized as indicated or as required by NFPA 70. The wireway shall be provided complete with all necessary accessories and fittings.

Where wiring troughs are indicated in damp or wet locations, provide NEMA 3R construction.

I. Surface Metal Raceway:

Surface metal raceway and fittings shall conform to UL 5 and shall be the two-piece painted steel, totally-enclosed snap-cover type complete with all fittings and other items to make a complete installation. Alternate receptacles shall be wired on different circuits. Receptacles shall be spaced a minimum of one every 18", except where indicated otherwise. Surface metal raceway and plug strips shall be complete with connectors, covers, entrance boxes, end caps, grounding clips, and connectors and accessories as required to make a complete installation.

J. Light Switches:

Lighting switches shall be Leviton, Hubbell, Pass, and Seymour or equal, and shall conform to UL 20 and shall be "Specification Grade" quiet-operating flush toggle type for back and side wiring, 15 amperes, 120-277, volts, AC only.

<u>Leviton No.</u>	<u>Hubbell No.</u>	<u>Pass & Seymour No.</u>	
1201	1201	15AC1	Single Pole Brown
1201-I	1201-I	15AC1-I	Single Pole Ivory
1203	1203	15AC3	Three Way Brown
1203-I	1203-I	15AC3-I	Three Way Ivory
1204	1204	15AC4	Four Way Brown
1204-I	1204-I	15AC4-I	Four Way Ivory

Where indicated, provide switches identical to above except rated 20 amperes. Where switches are to have pilot lights, the unit shall be Hubbell Unit 1277, Leviton 5226 or equal.

Switches for use in wet locations shall be installed in type "FS" boxes, fitted with a

weatherproof cover with gasket and with external operating handle integral with the cover.

K. Receptacle Outlets:

Convenience outlets shall be "Specification Grade" flush duplex ivory 0-wire grounding type, for side and back wiring for #12 and #10 wire, rated 15 amp., 125 volts, NEMA 5-15R, Leviton, 5262-I, Hubbell 5262-I, or equal, with screw-type terminals. Screwless pressure-type terminals are not acceptable. Receptacles on emergency circuits shall be red color.

Where indicated or required by NFPA 70 for individual branch circuits, provide convenience outlets identical to above except rated 20 amperes, NEMA configuration 5-20R.

Convenience outlets installed in wet locations shall be 15A, 125V duplex 3-wire grounding type complete with cast metal double lift cover plate for Type "FS" cast metal boxes, including gasket.

20A, 250V receptacles shall be duplex, 3-wire grounding type, side and back wired, NEMA 6-20R, Leviton No. 5462, Pass & Seymour, 6800, or Hubbell 5462, or equal.

30A, 125V receptacles shall 1-phase, single, 3-wire grounding type, black, NEMA 5-30R, Leviton 5371, Hubbell 9308, or Pass & Seymour 5920, or equal.

30A, 125/250V receptacles shall be 1-phase, single, 4-wire grounding type, black, NEMA 14-30R, Leviton 278, Hubbell 9430, or Pass & Seymour 5744, or equal.

50A, 125/250V receptacles shall be 1 phase, single, 4-wire grounding type, black, NEMA 14-50-R, Leviton 279, Hubbell 9450, or Pass & Seymour 5754, or equal.

Ground fault circuit interrupter receptacle shall conform to UL 943, as applicable and shall be the duplex receptacle feed-through type for mounting in a standard outlet box. The device shall be capable of detecting a current leak of 5 milli-amperes.

Where receptacle is mounted in a wet location, provide single-gang, self-closing, corrosion-resistant metal, weatherproof cover and gasket.

Some portable equipment is shown on the drawings with a cord and plug indicated. For this equipment, the Contractor shall provide a plug-cap to match the receptacle and the necessary heavy duty rubber covered 3, 4, or 5 wire cord of the required size and install the plug caps thereon and attach to the equipment.

L. Device Plates:

All wiring devices in boxes shall be equipped with a steel plate of the required configuration.

Flush plates shall be brushed-finish type 430 stainless steel to suit the device to be covered and shall be single or ganged in one piece where indicated and as shown on the plans, Leviton, Hubbell, Bryant, Arrow-Hart, Pass & Seymour, General Electric, or equal. Beveled edges of all flush plates shall be finish brushed to match the faces of plates. All flush plates

shall be of one manufacturer. All screws for fastening shall be stainless steel countersunk machine screws. Plates shall be installed with all four edges in continuous contact with finished wall surfaces without the use of mats or similar devices. Plaster fillings will not be permitted. Plates shall be installed with an alignment tolerance of 1/16". The use of sectional type device plates will not be permitted. Plates installed in wet locations shall be gasketed.

Device plates for surface-type boxes shall be galvanized sheet steel designed for the application.

Device plates for wet locations shall be cast metal with spring loaded covers as specified.

Device plates for single 30 Amp, 50 Amp, and 60 Amp receptacles shall be stainless steel designed to fit the application.

M. Conductors:

Conductor sizes are expressed in American Wire Gage (AWG) or in circular mils. Minimum conductor size shall be No. 12 AWG except control wires and cables shall be minimum No. 14 AWG. Wires No. 8 and larger shall be stranded. All secondary service, feeder, and branch circuit wire and cable shall be single conductor, soft drawn copper wire with 600 volt insulation, type THW or THWN. Wire and cable shall be as manufactured by Anaconda, Paranite, General Cable, U. S. Rubber, Okonite, Phelps-Dodge, or equal.

All secondary service, feeder, branch and control circuit conductors shall be color-coded. **Conductor identification shall be provided within each enclosure where a tap, splice, or termination is made. Conductor identification shall be by color coded insulated conductors, plastic coated self-sticking printed markers, colored nylon cable ties and plates, or heat-shrink type sleeves. Control circuit terminations shall be properly identified.** Colors to be used in coding shall be:

240 or 208 Volt, 3-Phase

Neutral - White
Phase A - Black
Phase B - Red
Phase C - Blue
Grounding Conductor - Green

480 Volt, 3 Phase System:

Neutral - White
Phase A - Brown
Phase B - Orange
Phase C - Yellow
Grounding Conductor-Green

120/240 Volt, 1-Phase System:

Neutral - White
X1 - Black
X2 - Red
Grounding Conductor – Green

Control circuit conductors shall be AWG #14 unless otherwise indicated,

stranded copper, red THWN insulation.

Conductors for grounding, bonding, and other uses requiring bare copper wire shall be solid bare copper wire conforming to ASTM B1 for sizes No. 8 AWG and smaller and shall be stranded bare copper wire conforming to ASTM B8, Class B, for sizes No. 6 AWG and larger.

Nonmetallic-sheathed cable shall be provided only where called for on the drawings. Nonmetallic-sheathed cable shall be type NM or type UF conforming to UL 719. Nonmetallic-sheathed cable shall be installed concealed behind ceiling or wall finish where practicable. Cables shall be threaded through holes bored on the approximate centerline of wood members; notching of end surfaces will not be permitted. Sleeves shall be provided through concrete or masonry for threading cables. Exposed cables shall be installed parallel or at right angles to walls or structural members. Exposed nonmetallic-sheathed cables less than 4' above floors shall be protected from mechanical injury by installation in conduit or tubing. When nonmetallic-sheathed cable is used with metal stud construction, plastic stud grommets shall be inserted in the studs at each point through which the cable passes.

Flexible cable for connection to movable equipment shall be heavy-duty type SO cord. The cable shall have a green equipment ground conductor, in addition to the current carrying conductors.

All branch circuit conductors run through fluorescent fixtures shall be type RHH or THHN rated 90° C.

Splices and Terminations shall conform to UL 486. Tapes for splices and terminations shall conform to UL 510. Connections in wires No. 10 AWG and smaller shall be made with insulated pressure type connectors or wirenut type connectors. Splices for wires No. 8 AWG and larger shall be made with a solderless connector. Splices and terminations shall be made in outlet or junction boxes and shall be mechanically and electrically secure, using proper thickness of tape. Mechanical connectors of every kind shall be taped. Splices and terminations shall be covered with an insulation material equivalent to the conductor insulation. Connections involving aluminum conductors shall utilize approved type fittings and joint compound. Flashover or insulation value of joints shall be at least 100% in excess of wire insulation. Terminal strips shall be used for interconnecting or splicing control cables, communication cables and other conductors where called for on the drawings. These terminal strips shall be of the proper voltage, properly labeled and mounted in a cabinet.

Make splices and taps for smaller than No. 6 AWG wire with Minnesota Mining Co., "Scotchlok" or "Hyflex" or Ideal "Wingnut" Insulated conical spring-type connectors. Make splices and taps for No. 6 AWG wire and larger cable with approved solderless lugs and screw-type connectors as manufactured by Penn Union, Thomas & Betts, or approved equal.

1. Use premium grade heat, cold, moisture and sunlight resistant vinyl electrical tape for insulating connections. For connections of No. 8 AWG wire and smaller, use 7 mil vinyl electrical tape, 3M Scotch No. 33, Permacel No. 29, or approved equal. For splices and taps of No. 6 AWG wire and larger, use 10 mil vinyl electrical tape, 3M

Scotch No. 22, Permacel No. 30, or approved equal. For connections made in cold weather or in outdoor locations, use all-weather 8.5 mil thick vinyl electrical tape, 3M Scotch No. 88, Permacel No. 295, or approved equal.

2. Do not make splices and taps with crimp or indenter-type connectors, except as specified for control circuits landed on terminal strips.

Tape of proper color may be used to identify the phase conductors of the larger feeders (larger than No. 6 AWG). Painting or taping will not be acceptable on conductors No. 6 AWG or smaller. All feeders, subfeeds to panels, motors, etc., shall be completely phased out as to sequence and rotation. Phase sequence shall be A-B-C from rear to front, top to bottom, or left to right when facing equipment.

N. Outlet and Equipment Locations:

Outlets must be centered with regard to paneling, furring, trim, etc. Where several outlets occur in a room, they shall be symmetrically arranged. Any outlet which is improperly located must be corrected at Contractor's expense. Outlets must be set plumb or horizontal and shall extend to the finished surface of the wall, ceiling or floor as the case may be without projecting beyond same. Receptacles, switches, etc., shown on wood trim, cases or other fixtures shall be installed symmetrically on such trim or fixture and where necessary, shall be set with the long dimension of the plate horizontal or shall be ganged in tandem.

Mounting heights above finished floor, or finished grade if applicable, for the below-named items, to center, shall be as follows unless otherwise shown or indicated in these specifications or on the drawings.

Single-pole and 3-way light switches, unless otherwise noted	48"
Duplex receptacles in offices and corridors	14"
Duplex receptacles in mechanical equipment rooms	48"
Telephone outlets in offices	14"
Push button motor control stations	48"
Bracket lights above lavatories	6'-6"
Safety switches to center	54"
Panelboards to top	72"
Motor starters to center	54"

O. Installation:

Unless otherwise indicated, the wiring method shall be insulated conductors and cables installed in conduit.

All power wiring for the connection of motors and control equipment as indicated on the electrical drawings shall be provided under this section of the specification.

Suitable equipment shall be used to pull conductors through conduit, exercising due care to avoid damage to insulation. Wires shall not be pulled through conduits before the conduit system is complete and has been carefully freed from obstruction of any kind. Soapstone or an approved compound may be employed to facilitate pulling wires. If aluminum conductors are provided, care shall be used in making up joints and terminations. Surface oxides shall be removed by cleaning with a wire brush or emery cloth. Joint compound shall be used for connecting aluminum to aluminum. For connecting aluminum to copper, connectors shall be the circumferentially compressed, metallurgically-bonded type.

Cable-pulling lubrication compound shall not contain petroleum or other products which will have a deteriorating effect on cable insulation.

Conduit for roof exhaust fans shall be installed through the fan housing with no conduit showing exposed. Where weatherproof safety switches are shown on the drawings, they shall be mounted on the outside of the housing of the fan. Enclosure shall be NEMA 4-watertight cast metal or stainless steel type.

Neoprene-jacketed flexible galvanized steel conduit shall be used for all motor connections and equipment. The connections shall be a maximum of 24" in length and used with proper liquidtight connectors on both ends.

Obtain approved shop drawings showing wiring diagrams, connection diagrams, roughing-in and hook-up details, for all equipment and comply therewith.

Conduit and wire installation in hazardous locations shall conform to the National Electrical Code for Class 1, Division 2, Group D hazardous location unless indicated on the drawings for another class, division, and group.

Home runs may be combined in one conduit, provided all connections are in accordance with National Electrical Code requirements and the maximum unbalanced current in the neutral does not exceed the capacity of the conductor; and the conductors are not required to be derated to below circuit capacity.

Wire connections to terminals of disconnecting switches, starters, motors, panelboards and similar connections shall be effected with mechanical connections.

Connections to the elevator shall include providing a circuit to the line terminals of the elevator controller, a disconnect switch ahead of this controller in the circuit to it, an outlet for control power, an outlet receptacle and work light at the mid height of the elevator shaft

and a work light and outlet receptacle in the elevator pit.

P. Grounding and Bonding:

Grounding and bonding equipment shall be in accordance with UL 467.

Ground rods shall be rolled to a commercially round shape from a welded copper-clad steel manufactured by the molten-welding process or by the electro-formed process (molecularly bonded). They shall have an ultimate tensile strength of 75,000 pounds per square inch (psi) and an elastic limit of 49,000 psi. The rods shall be not less than 3/4" in diameter by 10' in length and shall have a hard, clean, smooth, continuous copper surface; and the proportion of copper shall be uniform throughout the length of the rod. The copper shall have a minimum wall thickness of 0.013" at any point on the rod.

ALL GROUND RODS WILL BE MEGGERED IN THE PRESENCE OF THE ENGINEER, AND THE MAXIMUM RESISTANCE TO GROUND OF A DRIVEN GROUND ROD SHALL NOT EXCEED 25 OHMS UNDER NORMALLY DRY CONDITIONS WHEN CHECKED WITH A GROUND ROD MEGGER. WHERE THE RESISTANCE OBTAINED WITH ONE GROUND ROD EXCEEDS 25 OHMS, ADDITIONAL GROUND RODS SHALL BE INSTALLED NOT LESS THAN 6' ON CENTERS, OR THE GROUND ROD SHALL BE DRIVEN DEEPER UNTIL THE MAXIMUM RESISTANCE IS LESS THAN 25 OHMS.

All exposed non-current-carrying metallic parts of electrical equipment, metallic raceway systems, grounding conductor of nonmetallic-sheathed cables, grounding conductor in nonmetallic raceways and neutral conductor of wiring systems shall be grounded. The ground connection shall be made at the main service equipment and shall be extended to the point of entrance of the metallic water service. Connection to the water pipe shall be made by a suitable ground clamp or lug connection to a plugged tee. If flanged pipes are encountered, connection shall be made with the lug bolted to the street side of the flanged connection. If there is no metallic water service to the building, ground connection shall be made to driven ground rods on the exterior of the building. Where ground fault protection is employed, care shall be taken so that the connection of ground and neutral does not interfere with the correct operation of the fault protection.

A green-colored equipment grounding conductor, which shall be separate from the electrical system neutral conductor shall be provided in all conduits. Provide green equipment grounding conductor in all nonmetallic conduits whether indicated or not indicated. A main telephone service equipment ground shall be provided. Each telephone ground shall consist of a separate #6 AWG ground wire in conduit between the equipment and a readily accessible grounding connection. The equipment end of the ground wire shall consist of a coiled length at least twice as long as the terminal cabinet or backboard height.

Equipment grounds shall be solid and continuous from a connection at earth to all distribution panelboards. Ground connections at panelboards, outlets, equipment, and apparatus shall be made in an approved and permanent manner.

Each outside lighting standard shall be provided with a driven ground rod and shall be grounded to the ground rod and also through or a separate grounding conductor to the ground bus in the panelboard to which the lighting circuit is routed.

End Section 16-B

DIVISION 16 - ELECTRICAL

16-C: ELECTRICAL DISTRIBUTION EQUIPMENT

A. General:

All electrical distribution equipment shall conform to the applicable NEMA specification and shall bear the Underwriters Label where the class of equipment is listed by UL.

B. Circuit Breaker Panelboards:

Panelboards shall be of the dead-front safety type suitable for operation on the voltage and phase shown on the drawings. The panels shall have main lugs or main breaker and branch circuits as scheduled. Branch circuits and mains shall be protected by thermal magnetic ambient compensated quick make, quick break automatic, trip free air circuit breakers.

Bus withstand rating and circuit breaker interrupting rating shall be 10,000 symmetrical RMS amperes minimum and greater where indicated.

Circuit breaker handles shall have three positions, "OFF", "ON", and "TRIPPED". When a circuit breaker opens on overload or short circuit, the operating handle shall automatically assume the "TRIPPED" position and shall thus clearly indicate the abnormal condition of the circuit.

Panelboards shall conform to UL 67 and UL 50, as applicable. Special features such as subfeed lugs, feed-through lugs, split bus, lighting contactors, extra-width gutters, etc., shall be furnished when indicated or required.

An insulated neutral bus for each panel for connection of both feeder and branch circuit neutral wires shall be provided. A separate ground bus, bonded to the steel cabinet, shall be provided for each panel connection of all ground wires and shall be marked with a green stripe along the front of the bus. Bus bars shall be copper and shall be securely fastened to bases and shall not depend upon breakers for support. All main buses and back pans shall be so designed that branch circuits may be changed without additional machining, drilling, or tapping.

All breakers shall be designed to accept copper, copper-clad, and aluminum conductors. Multipole circuit breakers shall be of the common-trip type having a single operating handle. All multipole breakers shall be so designed that an overload in one pole automatically causes all poles to open. Any three adjacent breaker poles shall be connected to Phases A, B, and C, respectively and that same relationship of phase sequence shall be maintained. Complete panelboard assembly shall be so designed that any individual breaker can be removed without disturbing adjacent units or without loosening or removing supplemental insulation supplied as a means of obtaining clearances and other requirements of the Underwriters' Laboratories.

Circuit breaker units shall be operable in any position and removable from the front of the panelboard without disturbing adjacent units. The panelboard shall be of such design that a combination of one, two and three pole circuit breakers can be readily assembled in the same panel. Tandem or half-size circuit breakers will not be accepted.

Where indicated, provide circuit breakers listed by UL for manual switching duty.

Bus bars shall be constructed of rectangular solid copper bars of the size required by latest NEMA and UL standards, securely mounted and braced to give adequate short circuit protection or to withstand short circuit current shown on the drawings. All connections to bus bars shall be made through high conductive metal and shall be securely bolted.

Plug-in circuit breaker shall be provided only where indicated.

Ground fault circuit interrupting breaker shall be sized as indicated, shall conform to NEC, shall be UL listed, and shall have a "Push-to-test" button and visible indication of a tripped condition, and shall detect a current imbalance of approximately 5 milli-amperes.

Panelboards shall be mounted in enclosed cabinets consisting of a code gauge, sheet steel box with trim and door. Box shall be manufactured from commercial galvanized sheet steel.

The trim shall be manufactured from one piece of full-finish sheet steel, not galvanized, painted with two coats of paint, the first being a prime coat and the second a finish coat of neutral gray lacquer.

Cabinets shall be 5-3/4" deep minimum unless otherwise indicated and of sufficient size to allow gutter space of at least 4" on all sides around lighting panelboards and greater for power panels. Trim shall be fastened to cabinet by means of approved adjustable clamps. Trim shall have door equipped with chrome-plated combination lock and catch; two milled keys being supplied with each lock. Locks shall be keyed alike, and directory frame shall be provided on inside of door.

The Contractor shall identify all circuit locations in each respective panel as indicated and shown on the drawings. Panels are identified on the drawings by alphabetical letters and numerals with branch circuit breaker sizes and type indicated in the panel schedules or one-line-diagram or electrical equipment schedules on the plans. The Contractor shall prepare a typed circuit directory correctly identifying the destination and the item served by the circuit breaker. This identification shall be typed on the directory beside the circuit breaker number as it appears on the panelboard. Circuit numbers on the drawings shall not be accepted for circuit breaker numbers. For lights and receptacles, the directory shall list all room numbers served by the breaker. For individual branch circuits, the item name as it appears on the electrical or mechanical drawings shall be listed. The completed directory shall be mounted behind a protective plastic cover on the inside of the panelboard door. Any circuit mislabeled shall be corrected by the Contractor before final acceptance.

Engraved non-metallic nameplates of phenolic materials shall be provided for each panelboard, engraved with the panelboard designation as indicated. Panels shown exposed to the weather shall be provided in NEMA 3R weatherproof enclosures supplied only by the manufacturer of the panelboards. Where indicated, the weatherproof enclosure shall be separate from the door and trim of the panelboard enclosed within.

Where conduits terminate in the top or sides of weatherproof enclosures, such terminations shall be made with Myers type hubs or universal interchangeable hubs installed to prevent the entry of water into the enclosure.

Main distribution panelboards shall be General Electric Co., type "CCB", Square D type "I" Line, or approved equal.

Panelboards for 480 volt, 3 phase, 3 wire service or 277/480 volt, 3 phase, 4 wire service shall be Square D type "I-Line", General Electric "Spectra Series", or approved equal.

Panelboards for 240 volt, 3 phase, 3 wire, 120/240 volt, 3 phase, 4 wire, 120/208 volt, 3 phase, 4 wire, or 120/240 volt, 1 phase, 3 wire service shall be Square D type "NQ", General Electric type "A Series", or equal.

Provide light duty plug-in type load center panelboards only where indicated. Panel shall be General Electric "Power Mark" series, Square D type "QO", or equal, and shall be supplied in NEMA 3R weatherproof enclosure where exposed to the weather.

C. Safety Disconnect Switches:

Safety switches shall be type "HD" heavy duty fusible, or non-fusible, single throw, or double throw, quick make quick break, 2, 3, or 4 pole, 250 or 600 volt as required, NEMA Type 1 enclosure, and shall be as manufactured by Square D, General Electric, Westinghouse, or equal. The switches shall be fused or non-fused as indicated on the drawings.

Weatherproof NEMA Class 3R safety switches shall be installed at all outside locations or where indicated on the drawings, unless shown otherwise on the drawings.

Miscellaneous accessories for mounting the switches, including steel angles where required, shall be furnished and installed.

Fused safety switches shall be complete with appropriately sized fuses for circuits controlled.

Switches serving as service disconnecting means shall be UL labeled as service entrance switches.

Where switches are mounted outdoors and serve well pumps, sewage lift stations, sewage monitoring stations, and elevated water tanks, provide a heavy machined brass padlock to lock the switch cover closed. The Contractor shall keep the switch locked except when work is being done in the switch. Turn over the padlock keys to the Owner when the project is complete.

Switches serving motor loads shall be horsepower rated and provided in accordance with NEC.

D. Fuses:

Fuses shall conform to NEMA FU-1 and UL 198. A complete set of fuses for all switches, panels, bus plugs, control centers and switchgear shall be provided. Time current characteristic curves of fuses serving motors or connected in series with circuit breakers shall be coordinated for proper operation. Fuses shall have voltage rating not less than the circuit voltage.

Cartridge fuses, dual-element time-lag type, shall be non-renewable with an interrupting rating no less than 200,000 amperes. At 500 percent current, time-lag fuses shall not blow in less than 10 seconds. Dual-element time-lag fuses shall be used for circuits rated in excess of 30 amperes or 125 volts, except where current-limiting fuses are indicated.

Cartridge fuses, current-limiting type shall be non-renewable with a tested interrupting capacity not less than 100,000 amperes. Fuse holders shall be of the type that will reject all class H fuses.

Contractor shall furnish and install fuses of the various types as required with the continuous ampere ratings as shown on the drawings.

Fuses shall be manufactured by Federal Pacific Electric, Buss, Chase Shawmut, or equal.

E. Motor Control Centers:

Not Applicable to this Project.

F. Separately Mounted Motor Starters:

Separately mounted magnetic motor starters shall be combination type with circuit breaker. Starters shall be rated 480 volts, 3 pole, NEMA size 1 unless otherwise indicated. Provide starters mounted indoors in NEMA 1 enclosure, and starters mounted outside NEMA 4, stainless steel enclosures.

Provide manual reset overload relay in each phase sized in accordance with NEC. Provide cover mounted control components as indicated. Starters shall be Cutler Hammer Type A40, Westinghouse A206, Square D Class 8539, or equal, with all coils and controls for 120 volt operation.

Control transformers shall be provided in accordance with the specifications for control transformers for motor control centers.

Provide ambient compensated overload relays where starter is located outdoors.

The Contractor is responsible for the provision of correct size overload heaters based on the rating of the motor installed.

Unless otherwise indicated, the controls shown for the separately mounted motor starters shall be mounted in the covers of the respective enclosures. Pushbuttons, selector switches, and pilot lights shall be heavy duty, oil tight type with provisions to maintain the NEMA 4 ratings of starter enclosures. Nameplates indicating switch positions shall be provided for each control switch. Pilot lights shall be incandescent type with integral voltage dropping resistor.

G. Manual Motor Starters:

Manual motor starters shall be the toggle type, 120 volt, 1 phase, NEMA Size 1, General Electric Company Type CR 101, Square D class 2510, or equal. Provide starters in NEMA 1 enclosures where mounted separately. Where starters are panel mounted provide a stainless steel flush plate. The Contractor is responsible for the provision of correct size overload heaters.

H. Individual Circuit Breakers:

Circuit breakers shall be the molded case type of the frame and trip rating noted on the drawings in NEMA 1 enclosure unless noted otherwise. Circuit breakers shall be General Electric, Square D, Westinghouse, or equal. All circuit breakers shall be calibrated for an ambient temperature of 40 degrees centigrade, or ambient compensated where indicated.

I. Dry-Type Transformers:

Dry-type transformers shall be quiet design, air cooled, three phase, two winding type. Three phase units 15-KVA size and above shall have one coil per phase.

Voltage rating shall be 480/208/120 volts wye, 60 cycle, unless otherwise indicated. The KVA rating shall be as shown on the drawings. The transformers for 30-KVA and above shall have four 2-1/2% FCBN taps and 2-above, shall be suitable for indoor service and arranged for floor or wall mounting as shown on the drawings. Insulation for 30-KVA and above shall be Class H with an average temperature rise not to exceed 150 degrees centigrade based on forty degrees centigrade ambient at full load. Below 30-KVA, Class B, F or H insulation and two 5% FCBN taps.

Transformer core-and-coil assemblies shall be mounted on rubber in shear vibration dampeners. Rated sound level shall be not less than 5% below NEMA maximums.

All external wiring connections to units shall be made with flexible steel conduit having connectors on each end.

Transformers shall meet the requirements of ANSI, NEMA, and IEEE standards, and shall be General Electric, Square D, Westinghouse, or equal. Transformers shall be complete with necessary mounting brackets or hangers and an enclosure shall be furnished suitable for indoor or outdoor use, where indicated on the drawings.

J. Power Centers:

Provide Square D type MPZ packaged assembly consisting of 480 V, 2 pole main circuit breaker, 480-120/240 V transformer, and 120/240 V, 1 phase panelboard all in weatherproof enclosure, where noted on the plans.

End Section 16-C

DIVISION 16 - ELECTRICAL

16-L: WIRE AND CABLE

A. General

Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

All conductors except as otherwise noted on drawings shall be in copper and shall conform to Underwriters' standards, marked in accordance with NEC requirements and the ICEA where applicable. All conductors (cables, including conductor identifications) and other components (copper, coating, stranding, insulation, jacket, and, where applicable, tape and filler) shall meet the requirements specified and also the requirements of the latest revisions of Insulated Cable Engineers Association (ICEA) Spec. No. S-66-524. The size of conductors shall be based on American Wire Gauge (AWG) or circular mils.

Each insulated conductor shall be marked on the outer covering, giving voltage, type, and size so that it can be readily identified after installation.

B. MATERIALS:

600 Volt Power and Control Cable:

All conductors are to be made of stranded soft annealed bare copper per ASTM B3. Stranding shall be Class B.

The insulation shall be 90° C polyvinyl chloride (PVC) to the thickness required by UL for Type THHN and THWN. A nylon sheath jacket shall be placed over the PVC insulation.

Control wire shall be number 14 AWG stranded unless otherwise noted.

All cable shall be UL listed Type TC for installation in conduit duct, tray, rack, or direct burial.

Cable for VFD output to motors shall be Belden, or approved equal, Cat. No. 29502, 29504, or 29505 as noted on the plans.

Instrumentation Cable:

Cable used in the instrumentation system shall be AWG #18, twisted shredded pair, with overall outer covering.

C. Inspection:

Installer must examine the areas and conditions under which cable, wire, and connectors are to be installed and notify the Contractor in writing of the conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

D. Installation:

Install electrical cable, wire, and connectors as indicated, in accordance with the manufacturer's written instructions, the applicable requirements of NEC and the National Electrical Contractors Association's "Standard of Installation", and in accordance with recognized industry practices to insure that products serve the intended functions.

Pull conductors together where more than one is being installed in a raceway.

Use pulling compound or lubricant, when necessary; compound must not deteriorate conductor and insulation.

Do not use a pulling means, including fish tape, cable, or rope which can damage the raceway.

Install exposed cable, parallel and perpendicular to surface or exposed structural members and follow the surface contours, where possible.

Conductor splices must be approved by Engineer before making.

Install splices and taps which have equivalent-or-better mechanical strength and insulation as the conductor.

Use splice and tap connectors which are compatible with the conductor material.

E. Field Quality Control:

Prior to energization, check cable and wire for continuity of circuitry and for short circuits. Correct malfunction when detected.

Subsequent to wire and cable hook-ups, energize circuitry and demonstrate functioning in accordance with requirements.

F. Acceptance Tests:

Upon completion of any electrical installation by the Contractor and prior to acceptance by the Engineer, the installation will be tested to insure its reliability and corrections will be made where deficiencies are found.

These tests will be carried out by the Contractor in the presence of the Engineer and the equipment manufacturer's engineers if applicable.

The Contractor will furnish skilled personnel who are familiar with the installation to perform the tests and record the results.

Wire and cable rated 600 volt and of size 250 MCM and larger shall be tested for insulation between conductors and ground with a 1000 volt megger. All other 600 V wire and cable need to be tested only where damage is suspected.

All cables shall be disconnected from bus and equipment at each end before being tested.

All necessary safety precautions must be exercised during the tests.

A record shall be made of all tests and provided to the Engineer.

End Section 16-L

APPENDIX A

May 12, 2021

John Phillips, P.E.
DIEHL & PHILLIPS, P.A.
1500 Piney Plains Road, Suite 200
Cary, NC 27518

Re: Report of Subsurface Investigation
Twelve Oaks Development Wet Well Addition
Ancient Oaks Drive
Holly Springs, North Carolina
GeoTechnologies Project No. 1-21-0300-EA

Dear Mr. Phillips:

GeoTechnologies, Inc. has completed a subsurface investigation for the addition of a new wet well and associated equipment at the existing Twelve Oaks Development pump station which was constructed in 2006. Conditions were investigated with two soil test borings (Figure 1) which were extended to a depth of (+/-) 40 feet. During advancement of the borings, the consistency and density of the soils encountered was evaluated with standard penetration testing (SPT) techniques. This report presents the findings of the investigation and our recommendations based on the test boring data.

PROJECT DESCRIPTION

The new wet well will extend about 30 to 35 feet below grade. The project site is located in the geologic formation known as the Triassic Basin which generally has partially weathered rock at about 10 feet or less. However, we understand that construction documents for the 2006 installation required that the area of the new wet well be blasted to grade to limit future disturbance to the existing construction.

SUBSURFACE CONDITIONS

A generalized subsurface profile prepared from the borings is attached to this report as Figure 2 to graphically illustrate subsurface conditions encountered at this site. More detailed descriptions of the conditions encountered are then presented on the attached boring records.

Below surface topsoil, the borings encountered 21 to 27 feet of fill or possible fill which was typically silty. Penetration resistances in these soils were on the order of 5 to 10+ blows per foot (bpf), indicative to marginal (5 bpf) to well compacted fill. Below 21 feet, boring B-2 encountered a hard silt to about 25 feet. Below 25 to 27 feet, both borings encountered partially weathered rock (PWR). PWR is defined as material that could be penetrated with the soil drilling augers but that exhibited penetration resistances in excess of 100 bpf. The borings were terminated at auger refusal at about 38 to 42 feet in very hard PWR/rock.

Groundwater was encountered at 12.5 to 13 feet in the borings at the time of completion. It should be noted that the subsurface soils are conducive to the development of a temporarily higher perched groundwater condition during periods of inclement weather, and that regional groundwater levels will fluctuate with seasonal and climatic changes and may be different at other times.

RECOMMENDATIONS

The following recommendations are made based upon a review of the attached boring data, our understanding of the proposed construction, and experience with similar projects and subsurface conditions. Should plans change significantly from those now under consideration, we would appreciate being provided with that information so that these recommendations may be confirmed, extended, or modified as necessary. Additionally, should subsurface conditions adverse to those indicated by this report be encountered during construction, those differences should be reported to us for review and comment.

Excavation Considerations. Our borings indicate that excavatable fill or residual soils are present within the upper 25 to 27 feet of grade. Below these depths, the borings encountered PWR which was typically very hard. It is possible that this is material which was previously blasted and not removed; however, if it is intact it will be difficult to remove with a conventional excavator. In our experience, confined rock is demonstrated with an excavator equivalent to a CAT 330 or 345 equipped with a narrow rock bucket with rock teeth. For approximate reference purposes, our experience has been that an appropriate excavator such as a CAT 330 with a narrow bucket and rock teeth can remove material in the range of 50 blows per 4 to 6 inches of penetration. A CAT 345 with a narrow bucket and rock teeth can sometimes remove material as hard as 50 blows per 2 inches of penetration, but the excavation rate is slow and removal is hard on the equipment. If the contractor will be expected to use a CAT 345 to excavate hard PWR, that should be outlined in the specifications.

The most common technique to remove confined rock which cannot be removed with conventional rock excavation equipment is blasting; however, we expect that consideration will also be given to removing these materials with equipment such as a ram-hoe to help limit vibrations. Removal means and methods should be left to the discretion of the contractor, with appropriate consideration being given to vibrations and their impact on adjacent structures. Vibration monitoring is recommended during construction.

If the project will be bid on a classified basis, we recommend establishing a fair unit price for difficult excavation, with payable quantities based on in-place surveyed measurements. Additionally, we recommend that project specifications clearly indicate what equipment should be used to demonstrate difficult excavation.

Dewatering Considerations. Our borings encountered groundwater at about 12.5 to 13 feet below grade. In our experience, dewatering in the Triassic basin can typically be accomplished with some type of shallow perimeter trench and a sump; however, it is always possible that a more proactive dewatering system could be needed. In any event, selection of dewatering methods and depths should be left to the discretion of the contractor

Where excavations are carried below the water table, the contractor should be prepared to cut the last several feet in short sections prior to placing a geotextile fabric and stone to protect the subgrade. If the excavation is not properly dewatered and/or if the contractor cuts the entire excavation to grade before placing stone, the subgrade materials may soften requiring undercut.

Temporary Shoring. Means and methods for implementing the required excavations should be left to the discretion of the contractor. There are several alternatives including the use of soldier piles or other bracing techniques to limit the amount of excavation. If side slopes are used, they should be in compliance with OSHA guidelines, including for submerged slopes and slopes greater than 20 feet in height.

We recommend that all sloped excavations be observed and evaluated by qualified personnel at the time of excavation to verify compliance with OSHA regulations. Modifications to the excavation geometry should be performed as necessary. If slopes are used, they should be observed daily by qualified personnel. Excavations deeper than 20 feet should be designed on a case-by-case basis by a qualified engineer.

Uplift Considerations. Excessive hydrostatic uplift can be resisted by increasing the size of the foundation to engage additional soil if desired. Alternatively, rock anchors (PWR or rock) can be used to provide additional resistance. If rock anchors are used to provide additional resistance to uplift loads, we recommend that the anchors be designed for an ultimate grout to rock shear strength of 50 psi where the anchors are extended into PWR or bedrock. Lower design values should be used for anchors in soil. We recommend load testing anchors to 2.5 times the design capacity for verification.

Below Grade Walls. Below grade walls may be designed using the soil parameters indicated in the table below. Material placed within 4 feet of walls should be compacted with hand held rather than with heavy mechanized equipment. Backfill should be compacted to at least 95% of the standard Proctor maximum dry density, with 98% being achieved within the upper 12 inches of grade in any pavement areas. The values assume level grade behind or in front of the wall and should be modified for sloping grades. Appropriate safety factors should be applied to design calculations.

At-rest EFP Above Water	At-rest EFP Below Water	Active EFP Above Water	At-rest EFP Below Water	Passive EFP	Base Friction
55 pcf	90 pcf	40 pcf	80 pcf	300 pcf	0.35

Borrow Materials/Placement. The on-site soils, excluding topsoil, will be suitable for reuse as structural fill if the material can be brought to within about 2% of the optimum moisture content with drying as required. As such, the contractor should be prepared to dry any wet of optimum soils. Rock fill should not be used unless the material can effectively be processed down to particle sizes of less than about 2 to 3 inches.

Where wet soils cannot be dried effectively, consideration should be given to replacing the on-site soils with a suitable import. Off-site borrow should consist of a quarry aggregate. Alternately, silty and clayey sands or low plasticity silts and clays having Unified Soil Classifications of SM, SC, ML, or CL can be considered. Fill should be placed in loose lifts not exceeding 8 to 10 inches in thickness, except where smaller equipment is needed to backfill trenches or below grade walls. For these cases, the loose lift thickness should not exceed 4 to 6 inches. All fill materials should be compacted to not less than 95% of the standard Proctor maximum dry density except in the final foot where this requirement should be increased to 98% of the standard Proctor maximum.

It is recommended that quality control testing be performed to verify that the proper soil density specifications are being met and to confirm that fill placement is being performed in a controlled manner. We have seen numerous instances where deep excavations were improperly backfilled resulting in excessive settlement of structures and/or pavements which are then supported over the backfill. If the contractor is not able to achieve adequate density, consideration should be given to using helical piers to support any structures located within the backfill wedge. Additionally, it is recommended that settlement points be established in the backfill zone to verify when fill induced settlement has subsided. Even when properly compacted, the deeper fill will experience some amount of settlement from the overlying soils, and we recommend that this component of settlement subside before any at-grade settlement sensitive structures are started.

Foundations. Wet well foundations will bear on PWR and may be designed for an allowable soil bearing pressure of 10,000 psf. Settlements are expected to be less than 1 inch for these conditions. The foundation subgrade should be evaluated by a geotechnical engineer to verify that conditions are as expected, to include verification that the subgrade has not been over blasted. Repairs should be made as directed.

All other foundations bearing closer to grade may be designed for an allowable bearing of 3,000 psf assuming that all backfill is properly compacted. Foundations should bear at least 18 inches below grade for frost

Diehl & Phillips
Re: Twelve Oaks Wet Well
May 12, 2021

protection and all subgrades should be evaluated by the geotechnical engineer to determine if repairs are warranted. Settlement estimates should be prepared for all structures, and GeoTechnologies can provide those estimates for review by the structural engineer if we can be provided with loading and foundation details. It is worth noting again that if the contractor is not able to achieve adequate backfill density, consideration should be given to using helical piers to support any structures located within the backfill wedge.

SUMMARY

In summary, subsurface conditions appear suitable for the proposed project. PWR will be encountered above invert elevation and a fair unit rate for rock removal should be established in the contract documents. If harder PWR cannot be removed with an excavator, alternate techniques will have to be used although some restrictions may be placed on blasting or hammering. We anticipate that invert bearing conditions will be suitable provided that the subgrade has not been over blasted. Dewatering and shoring means and methods are the responsibility of the contractor. Foundation bearing in the backfill zone should be supported on helical piers if the backfill is not consistently well compacted and placed in proper lift thicknesses.

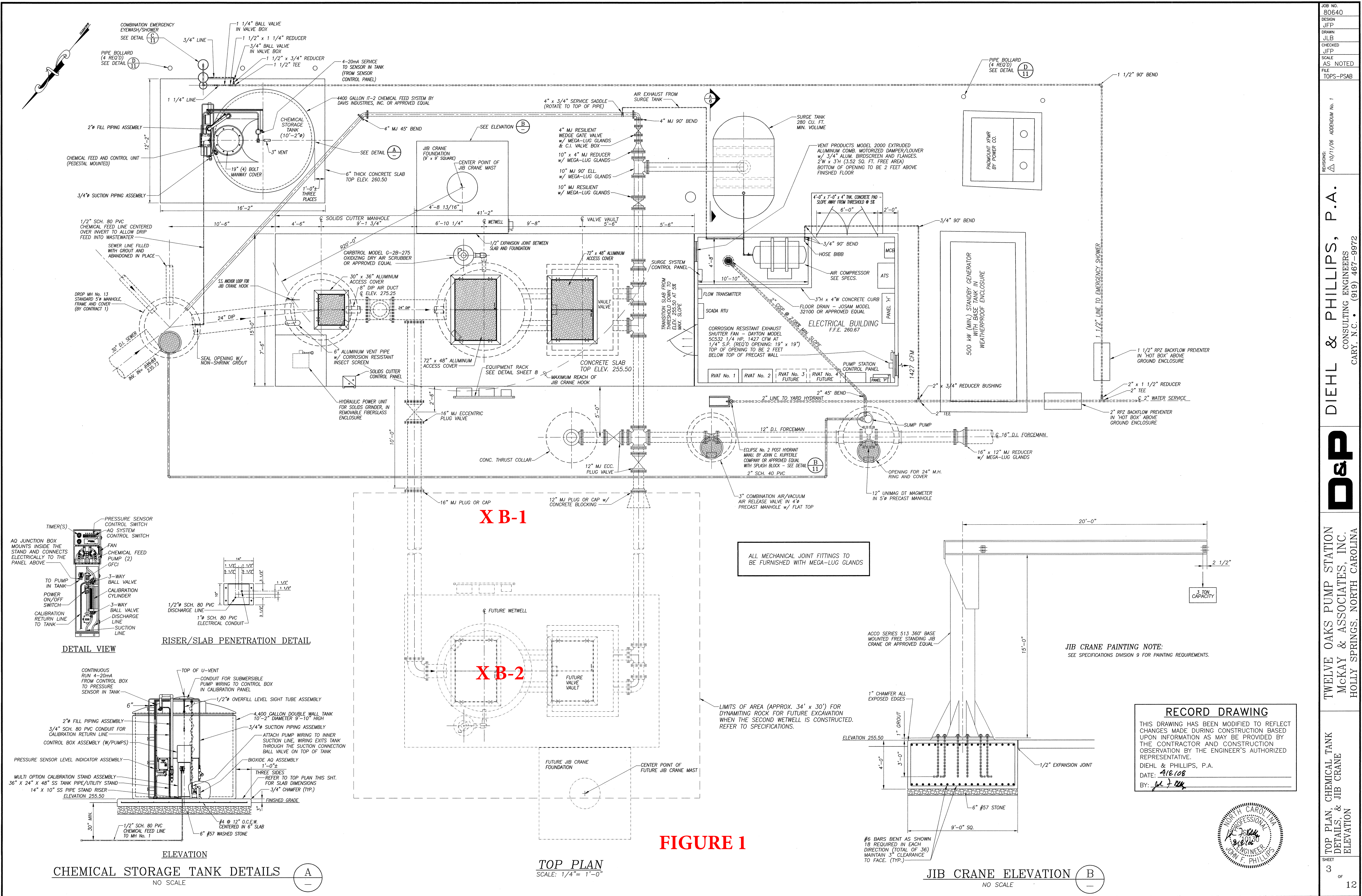
GeoTechnologies, Inc. appreciates the opportunity to be of service on this phase of the project. Please contact us if you have any questions concerning this letter or if we may be of additional service on this or other projects.

Sincerely,

GeoTechnologies, Inc.


Ernest L. Stitzinger, P.E.
NC Registration No. 25534

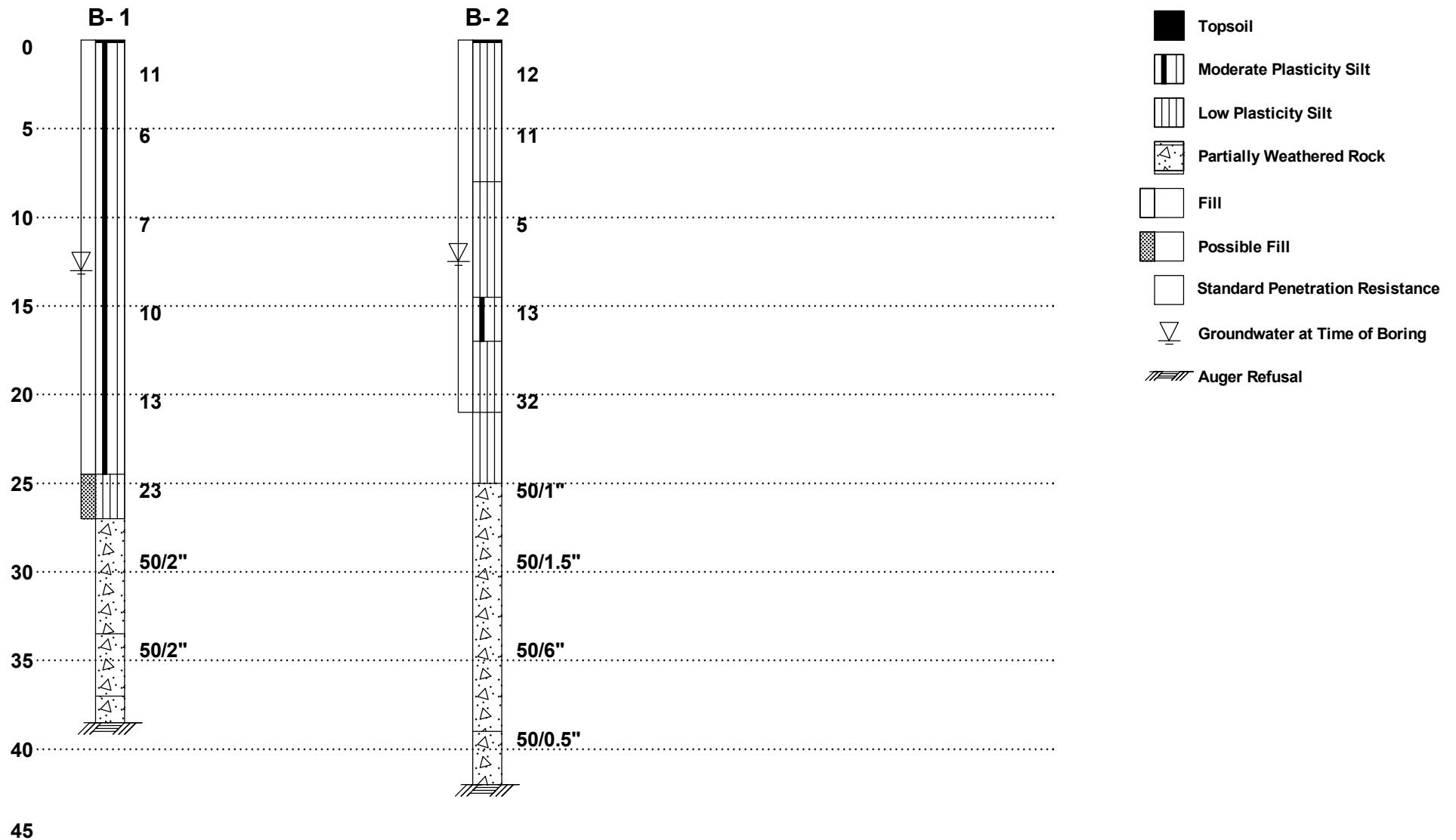




Depth (Feet)

GENERALIZED SUBSURFACE PROFILE

LEGEND



PROJECT:

Twelve Oaks
Lift Station Expansion
Holly Springs, North Carolina



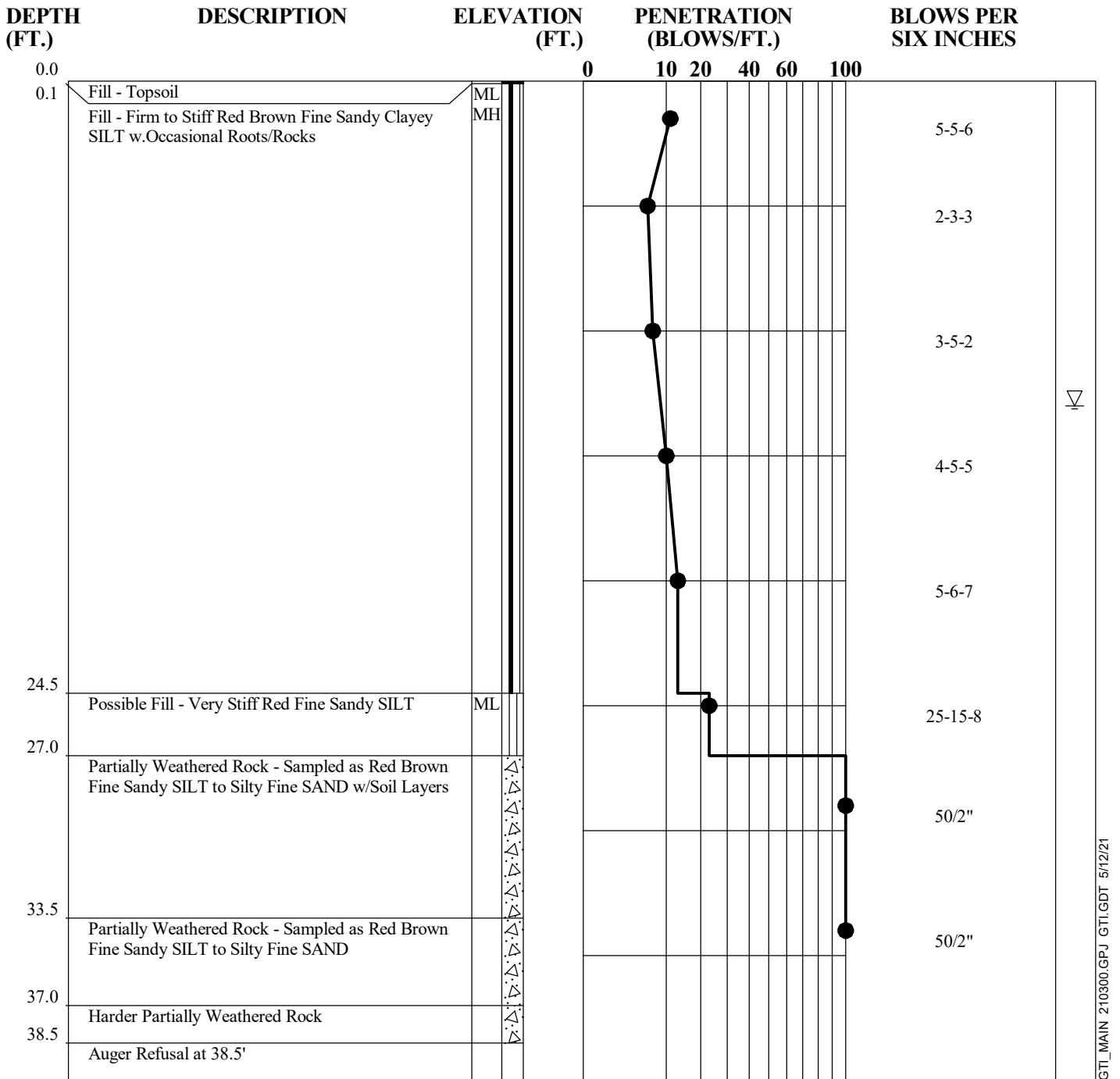
GeoTechnologies, Inc.

SCALE: As Shown

JOB No:1-21-0300-EA

FIGURE No: 2

TEST BORING RECORD



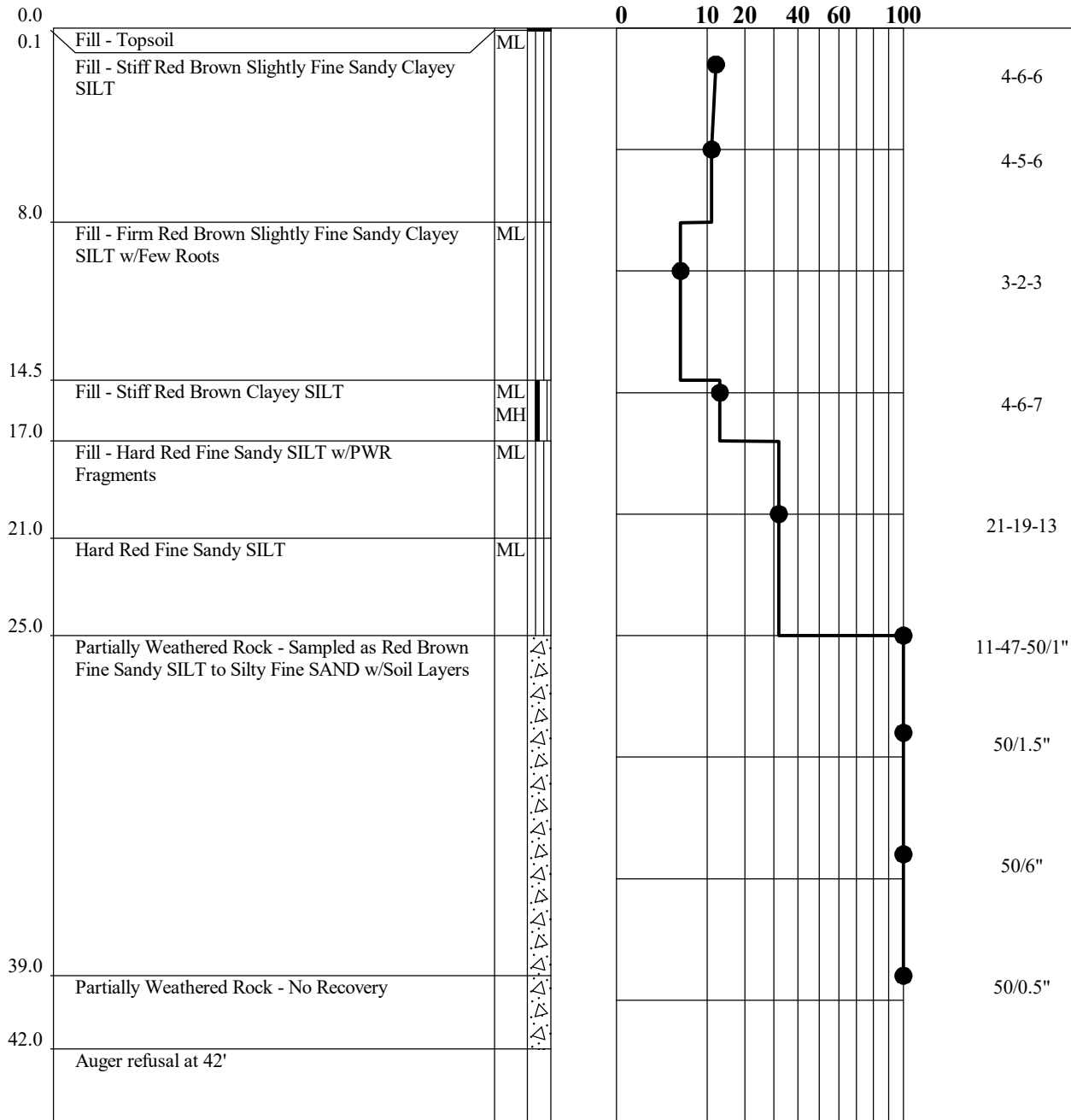
JOB NUMBER 1-21-0300-EA
 BORING NUMBER B-1
 DATE 5-11-21

PAGE 1 OF 1



TEST BORING RECORD

DEPTH (FT.)	DESCRIPTION	ELEVATION (FT.)	PENETRATION (BLOWS/FT.)	BLOWS PER SIX INCHES
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GTI_MAIN 210300.GPJ GTI.GDT 5/12/21

Groundwater encountered at 12.5' at time of boring.

JOB NUMBER 1-21-0300-EA
BORING NUMBER B- 2
DATE 5-11-21

PAGE 1 OF 1



APPENDIX B

Proposal



2219 Leah Drive
Hillsborough, NC 27278
Phone (919)245-5070
Fax (919)245-5071

December 30, 2021

TO: Bidding Contractors
SUBJECT: Twelve Oaks #3&4 Pumps and RVSS

Pete Duty & Associates, Inc. is pleased to offer the following equipment for the above referenced project.

(2)- XFP150M-CB2-PE1250/4 6" 168HP 460v/3ph submersible sewage pumps for pumping 1752GPM @ 235'TDH

- full monitoring with temp sensors on motor, upper and lower bearings
- moisture sensors in the motor chamber, seal chamber, and cable connection chamber
- closed looping cooling system
- PE rated motor
- Cast iron lifting hoop

(2)- 6" GRA w/ Integral Elbow with 304SS Hardware

(2)- Intermediate Guide Bracket, 304SS

(2)- Upper Guide Rail Bracket, 304SS

(4)- 2" X 20' Sch40 304SS Guide Rail Pipe

(1)- Spare Parts per spec

(2)- Solid State Reduced Voltage Combination Starters in Enclosures Per Spec.
460/480V, 3 Phase, 3 Wire, (No Neutral), Motor capacity 168 HP

PRICE: \$ 167,841.00

(1)- Spare XFP150M-CB2-PE1250/4 6" 168HP 460v/3ph submersible sewage pumps for pumping 1752GPM @ 235'TDH

PRICE: \$ 50,772.00

Our price includes freight, but no sales tax. Our terms are net 30 for equipment delivered and services performed.

PAYMENT: Our payment terms are net 30 from date of invoice. A minimum of 90% of the contract price must be paid prior to our start-up procedure. The remaining 10% of the contract price is due 10 days from start-up or 90 days from delivery of equipment (whichever comes first). If the start-up will occur longer than 90 days from delivery, then a start-up fee of \$750 may be retained until 10 days after start-up.

Respectfully submitted,

Pete Duty and Associates, Inc.

Date of Acceptance_____

Accepted By:_____

By Scott Stephens

Note: This proposal may be withdrawn by us if not accepted within 60_ days.

STANDARD TERMS AND CONDITIONS OF SALE

- A. Offer and Acceptance. This purchase order is an offer by Buyer to purchase the Equipment described herein (the "Equipment") and is subject to acceptance by Pete Duty & Associates' duly authorized representative at its home or branch office. Any acceptance of this offer is limited to acceptance of the express terms and conditions hereof. These terms and conditions shall govern the contract for sale of the Equipment to Buyer, and if Buyer proposes any additional or different terms, these terms and conditions shall prevail. Pete Duty & Associates objects to the inclusion of any such additional or different terms.
- B. Warranty. The Equipment is warranted only to the extent provided by the manufacturer in its limited warranty, if any, pertaining thereto, a copy of which is available at Buyer's request. Pete Duty & Associates, however, EXTENDS NO WARRANTY OF ANY KIND WITH RESPECT TO THE EQUIPMENT, AND ANY AND ALL SUCH WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED.
- C. Time of Shipment. Pete Duty & Associates will use reasonable diligence to meet the scheduled shipment dates provided herein, which are estimates and not guarantees of when the Equipment will actually be shipped. In no event shall Pete Duty & Associates be liable for any loss or damage of any kind to any person, incidental or consequential, due to delays in shipments. Buyer's acceptance of delivery shall constitute a waiver of any claim of damage for delay.
- D. Force Majeure. Pete Duty & Associates shall not be liable for damages of any kind caused by delays in shipment, delivery or any other nonperformance of the contract directly or indirectly resulting from or contributed to by any circumstances beyond Pete Duty & Associates' control, including without limitation, accident to Pete Duty & Associates' plant or Equipment, riots, wars or national emergencies, labor disputes of every kind however caused, embargoes, non-delivery by suppliers, inability to obtain supplies through normal sources of supplies, delays of carriers or postal authorities or governmental restrictions, prohibitions or diversions. The occurrence of any such circumstance shall operate to extend Pete Duty & Associates' time of performance hereunder for a period not less than the period of such delay.
- E. Cancellation. Any cancellation of this contract must be in writing signed by Buyer and Pete Duty & Associates. Upon such cancellation, Buyer agrees to pay Pete Duty & Associates immediately all costs and expenses incurred by Pete Duty & Associates in connection with the contract. Such costs and expenses shall include without limitation Pete Duty & Associates' cost of labor applied to the contract, overhead, costs of any materials applied to or ordered for the contract and any charges imposed upon Pete Duty & Associates by its suppliers or subcontractors.
- F. Remedies Upon Breach. If Buyer breaches this contract, Pete Duty & Associates shall be entitled, in addition to any other remedy at law or equity, to recover all costs and expenses incurred by Pete Duty & Associates in connection with the contract. Such costs and expenses shall include, without limitation, Pete Duty & Associates' costs of labor applied to the contract, overhead, costs of any materials applied to or ordered for the contract, and any charges imposed order by its suppliers or subcontractors. If Pete Duty & Associates breaches this contract, Buyer's exclusive remedy shall be to terminate this contract by written notice thereof to Pete Duty & Associates, and to receive a refund of the invoice price, if previously paid, of any Equipment that has not been shipped or otherwise identified to the contract as of the date of such termination. Notwithstanding such termination of the contract, however, Buyer shall immediately pay Pete Duty & Associates the invoice price of any Equipment that has been so shipped or so identified to the contract, if not previously paid, and shall be entitled to receive such Equipment from Pete Duty & Associates upon Pete Duty & Associates' receipt of such payment. In no event, shall Pete Duty & Associates be liable for any additional damages of any kind, including without limitation incidental or consequential damages.
- G. Costs of Collection and Enforcement. Buyer shall pay all of Pete Duty & Associates' costs, including reasonable attorney's fees, of collecting any amount not paid when due hereunder or of otherwise enforcing the terms and conditions of this contract.
- H. Governing Law. This contract shall be governed by North Carolina law. Any action by Buyer seeking to enforce the provisions hereof shall be brought and maintained in a state or federal court of competent jurisdiction located in Orange County, North Carolina. Pete Duty & Associates may, in its sole discretion, bring and/or maintain any action seeking to enforce the provisions hereof in any state or federal court of competent jurisdiction located in Orange County, North Carolina. Buyer, its successors and assigns hereby submit themselves to the personal jurisdiction of any state or federal court of competent jurisdiction located in said county.
- I. General Provisions. Any cause of action arising under this contract must be commenced within six months after such cause of action accrues. Pete Duty & Associates has the right the correct any stenographical or clerical errors in any of the writings issued by it. The terms and conditions stated herein constitute the complete and exclusive statement of the terms and conditions of the sale of the Equipment under this contract and there are no other promises, conditions, understandings, representations or warranties of any kind. This contract may be modified only by a writing signed by Pete Duty & Associates. The failure of Pete Duty & Associates to enforce any right hereunder will not be construed as a waiver of its right to performance in the future.



Customer Service Center
2600 S. Garnsey Street
Santa Ana, CA 92707 USA
Phone: 949 833-3888
Toll Free: 800 331-2277
Fax: 714 549-4007

Customer: 6015643

Town of Holly Springs
PO Box 8
Holly Springs, NC 27540

Quote Number: 63630RevC

Quote Date: 12/22/2021

Terms: Net 30 days

Pricing: Valid 60 Days

FOB: Origin

Lead Time: 3-4 Weeks ARO

Grinder Serial #: 103791-1-1

Ticket #: CAS-105471-M0T5

Project: Twelve Oaks PS

All orders will be billed the applicable sales tax, based on the "ship to address", unless a valid tax exemption certificate is provided prior to shipment.

Part Number	Description	Qty	Unit Price	Extended Price
A34010-0364-29	5HP TENV XP IMM 184TC 230/460 60HZ (12G) Paint Epoxy Green(Wired to 460V)	1	\$8,401.88	\$8,401.88
EA15-012-005-040	CABLE ASSY, 40ft SOW 12 AWG Paint Epoxy Green, Assemble to Motor	1	\$445.28	\$445.28
PC2200	PC2200-000-1-5HP-460V-60HZ Model PC2200 motor controller for 460V (Schematic Drawing # PC2200-000-1-E) in a NEMA 4X fiberglass ENCL. DWG# CF11-374 enclosure accepting 460V/3PH/60HZ input power for use with a 5HP motor. Controller includes an IEC starter with over-current protection, jam-sensing current transformer, one set of spare fuses and micro-PLC, with motor overtemp option (if applicable). Prog. # PC2220-001-A (120VAC control voltage)	1	\$2,861.00	\$2,861.00
RL	Service Tech Labor One Day Lifting to be provide by customer	1	\$1,500.00	\$1,500.00

Please verify serial number is correct.

Sub Total	\$13,208.16
Tax	
Total	\$13,208.16

Notes:

1. Please fax or mail a Purchase Order for the total amount and we can process your order. Please include the following:
Billing Address, Ship to Address, and sales tax exemption certificate.
2. Reference the JWC quote number on your Purchase Order.
3. Sales tax is not included in price.
4. Note on your purchase order that Shipping and Handling will be added to the invoice.
5. Availability of parts are subject to change at any time.
6. 20% restocking fee on all returns.
7. Subject to attached JWC Environmental Standard Terms and Conditions of Sale.



Customer Service Center
2600 S. Garnsey Street
Santa Ana, CA 92707 USA
Phone: 949 833-3888
Toll Free: 800 331-2277
Fax: 714 549-4007

Thank-You for your Business!

JWC Environmental Inc
Erik Martinez
Customer Service



Customer Service Center
2600 S. Garnsey Street
Santa Ana, CA 92707 USA
Phone: 949 833-3888
Toll Free: 800 331-2277
Fax: 714 549-4007

Please provide the following information. Failure to do so may delay processing of order. Quote #: 63630RevC

Bill To Name & Address:

Ship To Name & Address:

Email Address: _____

PO# _____

Payment terms: Net 30 FOB: Origin

Preferred Shipping Method (Required to Process Your Order):

☐ Prepay & Add to Invoice

☐ Collect Account #: _____

Carrier: _____

JWCE will add shipping and handling charges to invoices unless otherwise specified.

Credit cards:

☐ I authorize JWCE to process this order on my credit card and add shipping and handling charges.

Credit card orders are processed after order ships. You will be contacted by JWC Accounting for payment.

Please fax or email your PO and most recent tax certificate to:

Fax (714) 549-4007

Email servicesales@jwce.com

Signature: _____

Date: _____



Customer Service Center
2600 S. Garnsey Street
Santa Ana, CA 92707 USA
Phone: 949 833-3888
Toll Free: 800 331-2277
Fax: 714 549-4007

JWC ENVIRONMENTAL TERMS AND CONDITIONS OF SALE

Unless otherwise specifically agreed to in writing by the buyer ("Buyer") of the products and or related services purchased hereunder (the "Products") and JWC Environmental (the "Seller"), the sale of the Products is made only upon the following terms and conditions. Whether these terms are included in an offer or an acceptance by Seller, such offer or acceptance is conditioned on Buyer's assent to these terms. Seller rejects all additional, conditional and different terms in Buyer's form or documents.

PAYMENT TERMS

Subject to any contrary terms set forth in our price quotation, order acceptance or invoice the full net amount of each invoice is due and payable in cash within 30 days from the date of the invoice. If any payment is not received within such 30-day period, Buyer shall pay Seller the lesser of 1 ½% per month or the maximum legal rate on all amounts not received by the due date of the invoice, from the 31st day after the date of invoice until said invoice and charges are paid in full. Unless Seller's documents provide otherwise, freight, storage, insurance and all taxes, duties or other governmental charges related to the Products shall be paid by the Buyer. If Seller is required to pay any such charges, Buyer shall immediately reimburse Seller for said charges. In all cases, regardless of partial payment, title to the Products shall remain the Seller's until payment for the Products has been made in full. All orders are subject to credit approval by Seller. All offers by Seller and/or acceptance of Buyer's order shall be nullified by any failure of Buyer to obtain credit approval. Furthermore, Buyer shall not assert any claim against Seller due to Buyer's inability to obtain credit approval. Irrevocable Letter of Credit from Buyer in form and term acceptable to Seller is required for Product orders delivered outside the United States of America

DELIVERY

Unless otherwise provided in our price quotation, delivery of the Products shall be made F.O.B. place of manufacture. Any shipment, delivery, installation or service dates quoted by the Seller are estimated and the Seller shall be obligated only to use reasonable efforts to meet such dates. The Seller shall in no event be liable for any delays in delivery or failure to give notice of delay or for any other failure to perform hereunder due to causes beyond the reasonable control of the Seller. Such causes shall include, but not be limited to, acts of God, the elements, acts or omissions of manufacturers or suppliers of the Products or parts thereof, acts or omissions of Buyer or civil and military authorities, fires, labor disputes or any other inability to obtain the Products, parts thereof, or necessary power, labor, materials or supplies. The Seller will be entitled to refuse to make, or to delay, any shipments of the Products if Buyer shall fail to pay when due any amount owed by it to the Seller, whether under this or any other contract between the Seller and Buyer. Any claims for shortages must be made to the Company in writing within five calendar days from the delivery date and disposition of the claim is solely subject to Seller's determination

PRICES

Prices of the Seller's Products are subject to change without notice. Quotations are conditioned upon acceptance within 30 days unless otherwise stated and are subject to correction for errors and/or omissions. Prices include charges for regular packaging but, unless expressly stated, do not include charges for special requirements of government or other purchaser. Prices are subject to adjustment should Buyer place an order past the validity period of the quotation or delay delivery of Products beyond the quoted lead time for any reason.

RETURNS

No Products may be returned for cash. No Product may be returned for credit after delivery to Buyer without Buyer first receiving written permission from the Seller. Buyer must make a request for return of Product in writing to Seller at its place of business in Costa Mesa, California. A return material authorization number must be issued by the Seller to the Buyer before a Product may be returned. Permission to return Product to Seller by Buyer is solely and exclusively the Seller's. Product must be returned to Seller at Buyer's expense, including packaging, insurance, transportation and any governmental fees. Any credit for Product returned to Seller shall be subject to the inspection of and acceptance of the Product by the Seller and is at the sole discretion of the Seller.

LIMITED WARRANTY

Subject to the terms and conditions hereof, the Seller warrants until one year after commissioning (written notification to Seller by Buyer required) of the Product or until 18 months after delivery of such Product to Buyer, whichever is earlier, that each Product will be free of defects in material and workmanship. If (a) the Seller receives written notification of such defect during the warranty period and the defective Products use is discontinued promptly upon discovery of alleged defect, and (b) if the owner ("Owner") forwards the Product to the Seller's nearest service/repair facility, transportation and related insurance charges prepaid. The Seller will cause any Products whose defect is covered under this warranty to either be replaced or be repaired at no cost to the Owner. The foregoing warranty does not cover repairs required due to repair or alteration other than by the Seller's personnel, accident, neglect, misuse, transportation or causes other than ordinary use and maintenance in accordance with the Seller's instructions and specifications. In addition, the foregoing warranty does not cover any Products, or components thereof, which are not directly manufactured by the Seller. To the extent a warranty for repair or replacement of such Products or components not manufactured directly by the Seller is available to Buyer under agreements of the Seller with its vendors; the Seller will make such warranties available to Buyer. Costs of transportation of any covered defective item to and from the nearest service/repair center and related insurance will be paid or reimbursed by Buyer. Any replaced Products will become the property of the Seller. Any replacement Products will be warranted only for any remaining term of the original limited warranty period and not beyond that term.

DISCLAIMER OF WARRANTIES AND LIMITATIONS OF LIABILITIES

THE SELLER'S FOREGOING LIMITED WARRANTY IS THE EXCLUSIVE AND ONLY WARRANTY WITH RESPECT TO THE PRODUCTS AND SHALL BE IN LIEU OF ALL OTHER WARRANTIES (OTHER THAN THE WARRANTY OF TITLE), EXPRESS, STATUTORY OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND ANY STATEMENTS MADE BY EMPLOYEES, AGENTS OF THE SELLER OR OTHERS REGARDING THE PRODUCTS. THE OBLIGATIONS OF THE SELLER UNDER THE FOREGOING WARRANTY SHALL BE FULLY SATISFIED BY THE REPAIR OR THE REPLACEMENT OF THE DEFECTIVE PRODUCT OR PART, AS PROVIDED ABOVE. IN NO EVENT SHALL THE SELLER BE LIABLE FOR LOST PROFITS OR OTHER SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, EVEN IF THE SELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE TOTAL LIABILITY OF THE SELLER TO BUYER AND OTHERS ARISING FROM ANY CAUSE WHATSOEVER IN CONNECTION WITH BUYER'S PURCHASE, USE AND DISPOSITION OF ANY PRODUCT COVERED HEREBY SHALL, UNDER NO CIRCUMSTANCES, EXCEED THE PURCHASE PRICE PAID FOR THE PRODUCT BY BUYER. NO ACTION, REGARDLESS OF FORM, ARISING FROM THIS AGREEMENT OR BASED UPON BUYER'S PURCHASE, USE OR DISPOSITION OF THE PRODUCTS MAY BE BROUGHT BY EITHER PARTY MORE THAN ONE YEAR AFTER THE CAUSE OF ACTION ACCRUES, EXCEPT THAT ANY CAUSE OF ACTION FOR THE NONPAYMENT OF THE PURCHASE PRICE MAY BE BROUGHT AT ANY TIME

The remedies provided to Buyer pursuant to the limited warranty, disclaimer of warranties and limitations of liabilities, described herein are the sole and exclusive remedies.

Unless specifically agreed to in writing by the Seller, no charges may be made to the Seller by Buyer or any third party employed by buyer for removing, installing or modifying any Product.

The Seller and its representatives may furnish, at no additional expense, data and engineering services relating to the application, installation, maintenance or use of the Products by Buyer. The Seller will not be responsible for, and does not assume any liability whatsoever for, damages of any kind sustained either directly or indirectly by any person through the adoption or use of such data or engineering services in whole or in part.

CONFIDENTIAL INFORMATION

Except with the Seller's prior written consent, Buyer shall not use, duplicate or disclose any confidential proprietary information delivered or disclosed by the Seller to Buyer for any purpose other than for operation or maintenance of the Products.

CANCELLATION AND DEFAULT

Absolutely no credit will be allowed for any change or cancellation of an order for Products by Buyer after fabrication of the Products to fill Buyer's order has been commenced. If Buyer shall default in paying for any Products purchased hereunder, Buyer shall be responsible for all reasonable costs and expenses, including (without limitation) attorney's fees incurred by the Seller in collecting any sums owed by Buyer. All rights and remedies to the Seller hereunder or under applicable laws are cumulative and none of them shall be exclusive of any other right to remedy. No failure by the Seller to enforce any right or remedy hereunder shall be deemed to be a waiver of such right or remedy, unless a written waiver is signed by an authorized management employee of the Seller and the Seller's waiver of a breach of this agreement by Buyer shall not be deemed to be a waiver of any other breach of the same or any other provision.

CHANGES IN PRODUCTS

Changes may be made in materials, designs and specifications of the Products without notice. The Seller shall not incur any obligation to furnish or install any such changes or modifications on Products previously ordered by, or sold to, Buyer.

APPLICABLE LAW, RESOLUTION OF DISPUTES AND SEVERABILITY

This agreement is entered into in Costa Mesa, California. This agreement and performance by the parties hereunder shall be construed in accordance with, and governed by, the laws of the State of California. Any claim or dispute arising from or based upon this agreement or the Products which form its subject matter shall be resolved by binding arbitration before the American Arbitration Association in Los Angeles, California, pursuant to the Commercial Arbitration Rules, excepting only that each of the parties shall be entitled to take no more than two depositions, and serve no more than 30 interrogatories, 10 requests for admissions and 20 individual requests for production of documents, such discovery to be served pursuant to the California Code of Civil Procedure. Any award made by the arbitrator may be entered as a final judgment, in any court having jurisdiction to do so. If any provision of this agreement shall be held by a court of competent jurisdiction or an arbitrator to be unenforceable to any extent, that provision shall be enforced to the full extent permitted by law and the remaining provisions shall remain in full force and effect.

ASSIGNMENT

This agreement shall be binding upon the parties and their respective successors and assigns. However, except for rights expressly provided to subsequent Owners of the Products under "Limited Warranty" above, any assignment of this agreement or any rights hereunder by Buyer shall be void without the Company's written consent first obtained. Any exercise of rights by an Owner other than Buyer shall be subject



Customer Service Center
2600 S. Garnsey Street
Santa Ana, CA 92707 USA
Phone: 949 833-3888
Toll Free: 800 331-2277
Fax: 714 549-4007

to all of the limitations on liability and other related terms and conditions set forth in this agreement.

EXCLUSIVE TERMS AND CONDITIONS

The terms and conditions of this agreement may be changed or modified only by an instrument in writing signed by an authorized management employee of the Seller. This instrument, together with any amendment or supplement hereto specifically agreed to in writing by an authorized management employee of the Seller, contains the entire and the only agreement between the parties with respect to the sale of the Products covered hereby and supersedes any alleged related representation, promise or condition not specifically incorporated herein.

SELLER'S PRODUCTS ARE OFFERED FOR SALE AND SOLD ONLY ON THE TERMS AND CONDITIONS CONTAINED HEREIN. NOTWITHSTANDING ANY DIFFERENT OR ADDITIONAL TERMS OR CONDITIONS CONTAINED IN BUYER'S SEPARATE PURCHASE ORDERS OR OTHER ORAL OR WRITTEN COMMUNICATION, BUYER'S ORDER IS OR SHALL BE ACCEPTED BY THE COMPANY ONLY ON THE CONDITION THAT BUYER ACCEPTS AND CONSENTS TO THE TERMS AND CONDITIONS CONTAINED HEREIN. IN THE ABSENCE OF BUYER'S ACCEPTANCE OF THE TERMS AND CONDITIONS CONTAINED HEREIN THE SELLER'S COMMENCEMENT OF PERFORMANCE AND/OR DELIVERY OF THE PRODUCTS, OR THE SELLER'S STATEMENT OF ACKNOWLEDGMENT OF THE RECEIPT OF BUYER'S PURCHASE ORDER, SHALL BE FOR BUYER'S CONVENIENCE ONLY AND SHALL NOT BE DEEMED OR CONSTRUED TO BE ACCEPTANCE OF BUYER'S DIFFERING TERMS OR CONDITIONS, OR ANY OF THEM. ANY DIFFERENT OR ADDITIONAL TERMS ARE HEREBY REJECTED UNLESS SPECIFICALLY AGREED UPON IN WRITING BY AN AUTHORIZED MANAGEMENT EMPLOYEE OF THE SELLER. IF A CONTRACT IS NOT EARLIER FORMED BY MUTUAL AGREEMENT IN WRITING, BUYER'S ACCEPTANCE OF ANY PRODUCTS COVERED HEREBY SHALL BE DEEMED ACCEPTANCE OF ALL OF THE TERMS AND CONDITIONS STATED HEREIN. THE SELLER'S FAILURE TO OBJECT TO PROVISIONS INCONSISTENT HERewith CONTAINED IN ANY COMMUNICATION FROM BUYER SHALL NOT BE DEEMED A WAIVER OF THE PROVISIONS CONTAINED HEREIN.

F360JWCE0107



January 3, 2022

Mr. John Phillips
Diehl & Phillips, P.A.
1500 Piney Plains Road, Suite 200
Cary, NC 27518
919-467-9972 x 5

**RE: WHISPER® CARBON ADSORBER ODOR CONTROL SYSTEM
HOLLY SPRINGS, NC – 12 OAKS PS EXPANSION PROJECT
Evoqua Quote No. 2022-RSIINT**

Dear John,

Thank you for your interest in Evoqua Water Technologies LLC. Evoqua would like to submit the following proposal for our Whisper® 48 Carbon Adsorber to provide point source odor control for the 12 Oaks PS in Holly Springs, NC. This proposal is based upon Evoqua's Standard Equipment Design, Project Drawings, and equipment specifications 11-J for project No.18-005.

Evoqua Water Technologies LLC is established as an industry leader for the supply of odor and corrosion control products and services. The Evoqua Municipal Services Division employs over 175 engineers, chemists, technicians, transportation personnel and managerial/support staff to meet the odor and corrosion control needs of our customers nationwide.

Evoqua is committed to providing the highest standard of odor control and technical services in the industry. If the below proposal does not meet your application requirements, I would appreciate the opportunity to discuss alternatives with you.

If you have any questions, please do not hesitate to contact me at (919) 455-6368.

Sincerely,

Evoqua Water Technologies LLC

Richard Sanchez

Richard Sanchez
Technical Sales Representative

2650 Tallevast Road, Sarasota, FL 34243 USA
Tel: +1 (800) 345-3982
Fax: +1 (941) 359-7985 www.evoqua.com

WHISPER[®] CARBON 48 ADSORBER ODOR CONTROL SYSTEM

12 Oaks PS
Holly Springs, NC

Quotation # 2022-RSIINT
January 3, 2022

Sales Representative

Richard Sanchez
Evoqua Water Technologies LLC
Mobile: (919) 455-6368
Email: richard.sanchez@evoqua.com



2650 Tallevast Road, Sarasota, FL 34243 USA

Tel: +1 (800) 345-3982

Fax: +1 (941) 359-7985

www.evoqua.com

BACKGROUND

The Whisper® 48 Carbon Adsorber is a factory assembled, skid mounted odor control system, engineered for the containment and treatment of wastewater odors. The Whisper® 48 system shall be packed with a mixture of MIDAS® OCM manufactured by Evoqua Water Technologies LLC. MIDAS® OCM is a virgin, pelletized activated carbon derived from high grade bituminous coal with an exceptionally high sulfide capturing capacity.

The Whisper® 48 shall be equipped with a carbon adsorber vessel, carbon media supports, blower, and electrical control panel, enabling the system to remove a minimum of 99.0% of inlet hydrogen sulfide concentration.

1. EQUIPMENT SCOPE

The following equipment and services are included in our scope of work. The Evoqua Whisper® system is completely pre-assembled, pre-wired, and shipped as a single package. All equipment is designed to be installed in a non-hazardous area.

No.	Description	Quantity
1	Air Exhaust Fan w/ Motor	1
2	Fan Outlet / Vessel Inlet Transition	1
3	Whisper® 48 Carbon Adsorber Vessel, including: • Vessel Skid • Odor Control Media • Carbon Media Supports • Removable Top, Drain • Inlet, Mid-bed, and Outlet Sample Ports • All Carbon Adsorber Vessel Connecting Hardware (nuts, bolts, gaskets)	1
4	MIDAS® OCM Media	1,055 lbs.
5	Electrical Control Panel, Skid Mounted, FRP Construction, NEMA 4X, Including: • One (1) On-Off Switch and status light for exhaust fan • One (1) VFD for adjustable speed control of exhaust fan	1
6	Neoprene Pad to be installed underneath the vessel	Included
7	Anchor Bolts	Included
8	Operation Manuals Copies	2
9	Equipment Submittals	1
10	Manufacturer Start-up & Installs Services, which shall consist of one (1) day at eight (8) hours per day, including travel to jobsite. This includes Evoqua installing the last 5ft of straight line 8in ducting, the 6in ducting reducer at the blower, and install of the carbon media.	Included

2. SITE, UTILITIES AND CUSTOMER REQUIREMENTS

The Contractor is to provide/perform all facets of system installation including, but not limited to dewatering, concrete work, trenching, 8in schedule 80PVC ducting to within 5ft of the system blower, excavation, backfill, piping and electrical.

Contractor shall provide all equipment for site preparation and equipment off-loading. Only those items specifically listed in this proposal are included; all other items are specifically excluded. 240 VAC, 3Phase 15amp **OR** 480V, 3Phase, 10amp Electrical Service Required for System Operation.

Additionally, the contractor shall be required to supply the following for each odor control system:

- Power – 240 VAC, 3 Phase, 15amp **OR** 480V, 3Phase, 10amp
- Ductwork – Within 5 feet of air exhaust fan. Includes, duct supports and air dampeners if required.
- Concrete Foundation (per project drawings) –99" x 82"
- Crane / Forklift for offloading carbon vessel, carbon media, and setting of carbon vessel on its final resting location on the pad. The system weighs 2,000lbs with media installed and 1,000lbs without media installed. In some cases, Evoqua will ship the unit pre-loaded with the carbon media and in other circumstances, the unit will be shipped empty, and Evoqua will install the carbon media while onsite.
- Drain – 1" Sch. 80 PVC minimum from the carbon vessel back to the wastewater system (wetwell/manhole). The system drain should be equipped with a 10" barometric P-trap to prevent leakage of foul air.

3. SCHEDULE

Equipment Delivery: 12 – 16 weeks after receipt of approved PO.

The delivery schedule is based on contract approval and receipt of approved P.O.

4. WARRANTY

Evoqua Water Technologies shall warrant the system, complete, to be free from defects in materials or workmanship for a period twelve (12) months from acceptance or eighteen (18) months from shipment, whichever occurs first. The Manufacturer shall repair or provide replacement for any defective components under this warranty.

5. PRICING

The Whisper® Carbon Adsorber can be provided at a total price of **\$ 62,943** delivered to the jobsite. Pricing is based on our standard equipment design offering. Please include the line items listed below on the purchase orders.

Item	Description	Total
A	Whisper® C48 Carbon Adsorber	\$ 58,284
B	Manufacturer Installation / Startup Services	\$ 4,659
	Total Price - Including Installation Services	\$ 62,943

Terms of payment are NET 30 days from date of invoice, subject to Evoqua's review of Buyer's credit. If Evoqua, at its sole discretion, determines that Buyer's creditworthiness requires alternate payment terms, such payment terms will be negotiated. These prices do not include any applicable taxes.

The attached Terms and Conditions are considered part of this proposal and shall prevail.

This price associated with this quote will remain in effect for a period of thirty (30) days. If we are not in receipt of an order by the end of this firm price period, we reserve the right to modify the prices quoted.



Should a purchase order result from this proposal, please return the *entire* proposal, signed where indicated below, and address the order to:

Evoqua Water Technologies LLC
2650 Tallevast Road
Sarasota, FL 34243

If you have any questions, please do not hesitate to contact me at (919) 455-6368.

**RE: WHISPER® CARBON ADSORBER ODOR CONTROL SYSTEM
HOLLY SPRINGS, NC – 12OAKS PS EXPANSION PROJECT
Evoqua Quote No. 2022-RSIINT**

Evoqua will process your order when we receive acceptance of this proposal by signing below and returning to Richard.sanchez@evoqua.com or via fax to: (941) 359-7985.

Company Name: _____

This ____ day of _____ Month _____ Year

By: _____

Title: _____

P.O.Number _____

EVOQUA WATER TECHNOLOGIES LLC

Standard Terms of Sale

1. **Applicable Terms.** These terms govern the purchase and sale of equipment, products, related services, leased products, and media goods if any (collectively herein "Work"), referred to in Seller's proposal ("Seller's Documentation"). Whether these terms are included in an offer or an acceptance by Seller, such offer or acceptance is expressly conditioned on Buyer's assent to these terms. Seller rejects all additional or different terms in any of Buyer's forms or documents.
2. **Payment.** Buyer shall pay Seller the full purchase price as set forth in Seller's Documentation. Unless Seller's Documentation specifically provides otherwise, freight, storage, insurance and all taxes, levies, duties, tariffs, permits or license fees or other governmental charges relating to the Work or any incremental increases thereto shall be paid by Buyer. If Seller is required to pay any such charges, Buyer shall immediately reimburse Seller. If Buyer claims a tax or other exemption or direct payment permit, it shall provide Seller with a valid exemption certificate or permit and indemnify, defend and hold Seller harmless from any taxes, costs and penalties arising out of same. All payments are due within 30 days after receipt of invoice. Buyer shall be charged the lower of 1 ½% interest per month or the maximum legal rate on all amounts not received by the due date and shall pay all of Seller's reasonable costs (including attorneys' fees) of collecting amounts due but unpaid. All orders are subject to credit approval by Seller. Back charges without Seller's prior written approval shall not be accepted.
3. **Delivery.** Delivery of the Work shall be in material compliance with the schedule in Seller's Documentation. Unless Seller's Documentation provides otherwise, delivery terms are ExWorks Seller's factory (Incoterms 2010). Title to all Work shall pass upon receipt of payment for the Work under the respective invoice. Unless otherwise agreed to in writing by Seller, shipping dates are approximate only and Seller shall not be liable for any loss or expense (consequential or otherwise) incurred by Buyer or Buyer's customer if Seller fails to meet the specified delivery schedule.
4. **Ownership of Materials and Licenses.** All devices, designs (including drawings, plans and specifications), estimates, prices, notes, electronic data, software and other documents or information prepared or disclosed by Seller, and all related intellectual property rights, shall remain Seller's property. Seller grants Buyer a non-exclusive, non-transferable license to use any such material solely for Buyer's use of the Work. Buyer shall not disclose any such material to third parties without Seller's prior written consent. Buyer grants Seller a non-exclusive, non-transferable license to use Buyer's name and logo for marketing purposes, including but not limited to, press releases, marketing and promotional materials, and web site content.
5. **Changes.** Neither party shall implement any changes in the scope of Work described in Seller's Documentation without a mutually agreed upon change order. Any change to the scope of the Work, delivery schedule for the Work, any Force Majeure Event, any law, rule, regulation, order, code, standard or requirement which requires any change hereunder shall entitle Seller to an equitable adjustment in the price and time of performance.
6. **Force Majeure Event.** Neither Buyer nor Seller shall have any liability for any breach or delay (except for breach of payment obligations) caused by a Force Majeure Event. If a Force Majeure Event exceeds six (6) months in duration, the Seller shall have the right to terminate the Agreement without liability, upon fifteen (15) days written notice to Buyer, and shall be entitled to payment for work performed prior to the date of termination. "**Force Majeure Event**" shall mean events or circumstances that are beyond the affected party's control and could not reasonably have been easily avoided or overcome by the affected party and are not substantially attributable to the other party. Force Majeure Event may include, but is not limited to, the following circumstances or events: war, act of foreign enemies, terrorism, riot, strike, or lockout by persons other than by Seller or its sub-suppliers, natural catastrophes or (with respect to on-site work), unusual weather conditions.
7. **Warranty.** Subject to the following sentence, Seller warrants to Buyer that the (i) Work shall materially conform to the description in Seller's Documentation and shall be free from defects in material and workmanship and (ii) the Services shall be performed in a timely and workmanlike manner. Determination of suitability of treated water for any use by Buyer shall be the sole and exclusive responsibility of Buyer. The foregoing warranty shall not apply to any Work that is specified or otherwise demanded by Buyer and is not manufactured or selected by Seller, as to which (i) Seller hereby assigns to Buyer, to the extent assignable, any warranties made to Seller and (ii) Seller shall have no other liability to Buyer under warranty, tort or any other legal theory. The Seller warrants the Work, or any components thereof, through the earlier of (i) eighteen (18) months from delivery of the Work or (ii) twelve (12) months from initial operation of the Work or ninety (90) days from the performance of services (the "Warranty Period"). If Buyer gives Seller prompt written notice of breach of this warranty within the Warranty Period, Seller shall, at its sole option and as Buyer's sole and exclusive remedy, repair or replace the subject parts, re-perform the Service or refund the purchase price. Unless otherwise agreed to in writing by Seller, (i) Buyer shall be responsible for any labor required to gain access to the Work so that Seller can assess the available remedies and (ii) Buyer shall be responsible for all costs of installation of repaired or replaced Work. If Seller determines that any claimed breach is not, in fact, covered by this warranty, Buyer shall pay Seller its then customary charges for any repair or replacement made by Seller. Seller's warranty is conditioned on Buyer's (a) operating and maintaining the Work in accordance with Seller's instructions, (b) not making any unauthorized repairs or alterations, and (c) not being in default of any payment obligation to Seller. Seller's warranty does not cover (i) damage caused by chemical action or abrasive material, misuse or improper installation (unless installed by Seller) and (ii) media goods (such as, but not limited to, resin, membranes, or granular activated carbon media) once media goods are installed. THE WARRANTIES SET FORTH IN THIS SECTION 7 ARE THE SELLER'S SOLE AND EXCLUSIVE WARRANTIES AND ARE SUBJECT TO THE LIMITATION OF LIABILITY PROVISION BELOW. SELLER MAKES NO OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE.
8. **Indemnity.** Seller shall indemnify, defend and hold Buyer harmless from any claim, cause of action or liability incurred by Buyer as a result of third party claims for personal injury, death or damage to tangible property, to the extent caused by Seller's negligence. Seller shall have the sole authority to direct the defense of and settle any indemnified claim. Seller's indemnification is conditioned on Buyer (a) promptly, within the Warranty Period, notifying Seller of any claim, and (b) providing reasonable cooperation in the defense of any claim.

9. **Assignment.** Neither party may assign this Agreement, in whole or in part, nor any rights or obligations hereunder without the prior written consent of the other party; provided, however, the Seller may assign its rights and obligations under these terms to its affiliates or in connection with the sale or transfer of the Seller's business and Seller may grant a security interest in the Agreement and/or assign proceeds of the agreement without Buyer's consent.

10. **Termination.** Either party may terminate this agreement, upon issuance of a written notice of breach and a thirty (30) day cure period, for a material breach (including but not limited to, filing of bankruptcy, or failure to fulfill the material obligations of this agreement). If Buyer suspends an order without a change order for ninety (90) or more days, Seller may thereafter terminate this Agreement without liability, upon fifteen (15) days written notice to Buyer, and shall be entitled to payment for work performed, whether delivered or undelivered, prior to the date of termination.

11. **Dispute Resolution.** Seller and Buyer shall negotiate in good faith to resolve any dispute relating hereto. If, despite good faith efforts, the parties are unable to resolve a dispute or claim arising out of or relating to this Agreement or its breach, termination, enforcement, interpretation or validity, the parties will first seek to agree on a forum for mediation to be held in a mutually agreeable site. If the parties are unable to resolve the dispute through mediation, *then* any dispute, claim or controversy arising out of or relating to this Agreement or the breach, termination, enforcement, interpretation or validity thereof, including the determination of the scope or applicability of this agreement to arbitrate, shall be determined by arbitration in Pittsburgh, Pennsylvania before three arbitrators who are lawyers experienced in the discipline that is the subject of the dispute and shall be jointly selected by Seller and Buyer. The arbitration shall be administered by JAMS pursuant to its Comprehensive Arbitration Rules and Procedures. The Arbitrators shall issue a reasoned decision of a majority of the arbitrators, which shall be the decision of the panel. Judgment may be entered upon the arbitrators' decision in any court of competent jurisdiction. The substantially prevailing party as determined by the arbitrators shall be reimbursed by the other party for all costs, expenses and charges, including without limitation reasonable attorneys' fees, incurred by the prevailing party in connection with the arbitration. For any order shipped outside of the United States, any dispute shall be referred to and finally determined by the International Center for Dispute Resolution in accordance with the provisions of its International Arbitration Rules, enforceable under the New York Convention (Convention on the Recognition and Enforcement of Foreign Arbitral Awards) and the governing language shall be English.

12. **Export Compliance.** Buyer acknowledges that Seller is required to comply with applicable export laws and regulations relating to the sale, exportation, transfer, assignment, disposal and usage of the Work provided under this Agreement, including any export license requirements. Buyer agrees that such Work shall not at any time directly or indirectly be used, exported, sold, transferred, assigned or otherwise disposed of in a manner which will result in non-compliance with such applicable export laws and regulations. It shall be a condition of the continuing performance by Seller of its obligations hereunder that compliance with such export laws and regulations be maintained at all times. BUYER AGREES TO INDEMNIFY AND HOLD SELLER HARMLESS FROM ANY AND ALL COSTS, LIABILITIES, PENALTIES, SANCTIONS AND FINES RELATED TO NON-COMPLIANCE WITH APPLICABLE EXPORT LAWS AND REGULATIONS.

13. **LIMITATION OF LIABILITY.** NOTWITHSTANDING ANYTHING ELSE TO THE CONTRARY, SELLER SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, PUNITIVE OR OTHER INDIRECT DAMAGES, AND SELLER'S TOTAL LIABILITY ARISING AT ANY TIME FROM THE SALE OR USE OF THE WORK, INCLUDING WITHOUT LIMITATION ANY LIABILITY FOR ALL WARRANTY CLAIMS OR FOR ANY BREACH OR FAILURE TO PERFORM ANY OBLIGATION UNDER THE CONTRACT, SHALL NOT EXCEED THE PURCHASE PRICE PAID FOR THE WORK. THESE LIMITATIONS APPLY WHETHER THE LIABILITY IS BASED ON CONTRACT, TORT, STRICT LIABILITY OR ANY OTHER THEORY.

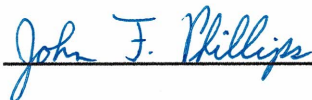
14. **Rental Equipment / Services.** Any leased or rented equipment ("Leased Equipment") provided by Seller shall at all times be the property of Seller with the exception of certain miscellaneous installation materials purchased by the Buyer, and no right or property interest is transferred to the Buyer, except the right to use any such Leased Equipment as provided herein. Buyer agrees that it shall not pledge, lend, or create a security interest in, part with possession of, or relocate the Leased Equipment. Buyer shall be responsible to maintain the Leased Equipment in good and efficient working order. At the end of the initial term specified in the order, the terms shall automatically renew for the identical period unless canceled in writing by Buyer or Seller not sooner than three (3) months nor later than one (1) month from termination of the initial order or any renewal terms. Upon any renewal, Seller shall have the right to issue notice of increased pricing which shall be effective for any renewed terms unless Buyer objects in writing within fifteen (15) days of issuance of said notice. If Buyer timely cancels service in writing prior to the end of the initial or any renewal term this shall not relieve Buyer of its obligations under the order for the monthly rental service charge which shall continue to be due and owing. Upon the expiration or termination of this Agreement, Buyer shall promptly make any Leased Equipment available to Seller for removal. Buyer hereby agrees that it shall grant Seller access to the Leased Equipment location and shall permit Seller to take possession of and remove the Leased Equipment without resort to legal process and hereby releases Seller from any claim or right of action for trespass or damages caused by reason of such entry and removal.

15. **Miscellaneous.** These terms, together with any Contract Documents issued or signed by the Seller, comprise the complete and exclusive statement of the agreement between the parties (the "Agreement") and supersede any terms contained in Buyer's documents, unless separately signed by Seller. No part of the Agreement may be changed or cancelled except by a written document signed by Seller and Buyer. No course of dealing or performance, usage of trade or failure to enforce any term shall be used to modify the Agreement. To the extent the Agreement is considered a subcontract under Buyer's prime contract with an agency of the United States government, in case of Federal Acquisition Regulations (FARs) flow down terms, Seller will be in compliance with Section 44.403 of the FAR relating to commercial items and those additional clauses as specifically listed in 52.244-6, Subcontracts for Commercial Items (OCT 2014). If any of these terms is unenforceable, such term shall be limited only to the extent necessary to make it enforceable, and all other terms shall remain in full force and effect. The Agreement shall be governed by the laws of the Commonwealth of Pennsylvania without regard to its conflict of laws provisions. Both Buyer and Seller reject the applicability of the United Nations Convention on Contracts for the international sales of goods to the relationship between the parties and to all transactions arising from said relationship.

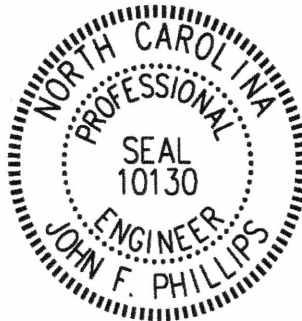
**SUMMARY OF BIDS RECEIVED
TWELVE OAKS PUMP STATION EXPANSION & MODIFICATIONS PROJECT**

I hereby certify that the following Bid Summary for **Contract 1 - Twelve Oaks Pump Station Expansion & Modifications Project (TOHS Project no. 18-005)** is an accurate summary of the Bids received at 2:00 PM EST on Wednesday, February 9, 2022. Bids were submitted to the Town and publicly read aloud (via a Zoom meeting) at Town Hall.

Certified this 9th day of February 2022 by:



John F. Phillips, P.E.
Diehl & Phillips, P.A.



**CONTRACT 1 - TWELVE OAKS PUMP STATION EXPANSION
& MODIFICATIONS PROJECT**

SUMMARY OF BIDS RECEIVED AT 2:00 PM EST FEBRUARY 9, 2022

EBERHART CONSTRUCTION, INC. Clayton, NC NC License No. 37847	\$1,149,000.00
J.S. HAREN COMPANY Athens, TN NC License No. 29925	\$1,417,000.00
TERRAHAWK, LLC Apex, NC NC License No. 75880	\$1,611,988.00
T.A. LOVING COMPANY Goldsboro, NC NC License No. 325	\$2,461,900.00

INSTRUCTIONS TO BIDDERS

A **Non-mandatory** site visit shall be conducted for all interested bidders. The meeting shall be held at **10:00 AM on Wednesday, the 19th of January, 2022 at Twelve Oaks Pump Station (779 Ancient Oaks Drive).**

Each proposal shall be submitted in a sealed envelope on the printed form, or exact copies thereof, contained in the Contract Documents. These proposals shall be plainly marked:

**“Contract 1 – Twelve Oaks Pump Station Expansion and Modifications
Project
Town of Holly Springs Project No. 18-005”**

The envelope shall also be marked with the Bidder's name, address, North Carolina contractor license number, and name and phone number of a contact person. The Bidder must complete the applicable bidding information and return, at minimum, all pages of Sections 00250, 00300, and 00905 of the bid documents. If mailed or delivered, the envelope shall show the date and time of the Bid Opening in order to guard against premature opening of the Bid. **Bids must be delivered to the Town's possession by 2:00 PM Wednesday, February 9, 2022.** Addresses for Delivery of Bids:

US Postal Service	Delivery
Attn: Brent Quick Purchasing Manager Town of Holly Springs Finance Department P O Box 8 Holly Springs, NC 27540	Attn: Brent Quick Purchasing Manager Town of Holly Springs Finance Department 128 South Main Street Holly Springs, NC 27540

Bids submitted by facsimile or email shall not be accepted.

The Owner may consider non-responsive any Bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all Bids.

Each proposal shall be accompanied by a Bid Bond payable to the Town of Holly Springs for an amount of not less than five percent (5%) of the total amount bid; or in lieu of the Bid Bond, the bidder may offer a certified check in an amount of not less than five percent (5%) of the total amount bid. The Bids and bidder's bond or checks of all bidders may be held for a period of ninety (90) days pending award of the contract. Notification of award of contract shall be evidence of intent to contract and shall extend time for holding the contractor's bid surety for a time mutually agreed between the Town of Holly Springs and the bidder.

Each proposal shall have a page providing references, to include the company name, address, phone number, email address, contact name and position, and type of work completed. Reference form is included at the end of these Instructions to Bidders.

The bid opening will be held in the Holly Springs Town Hall on **Wednesday, February 9th, 2022 at 2:00 PM**, at which time the BIDS will be opened and publicly read aloud via a Zoom Meeting (due to Covid concerns, bidders may not attend the Bid Opening in person).

Instructions to join the Bid Opening Zoom Meeting:

Please click the link below to join the Bid Opening:

<https://hollysprings.zoom.us/j/88601987382?pwd=YWpNaIZ3RjZ1dXdzbWIDWm1Gc3Bldz09>

Passcode: 244302

Or One tap mobile :

US: +13017158592,,88601987382# or +13126266799,,88601987382#

Or Telephone:

Dial(for higher quality, dial a number based on your current location):

US: +1 301 715 8592 or +1 312 626 6799 or +1 646 558 8656 or +1 253 215 8782 or +1 346 248 7799 or +1 720 707 2699

Webinar ID: 886 0198 7382

International numbers available: <https://hollysprings.zoom.us/j/88601987382?pwd=YWpNaIZ3RjZ1dXdzbWIDWm1Gc3Bldz09>

AWARDING CONTRACT

"The Town of Holly Springs, in accordance with the provisions of *Title VI of the Civil Rights Act of 1964* (78 Stat. 252) and the Regulations of the Department of Transportation (49 C.F.R., Part 21), issued pursuant to such act, hereby notifies all bidders that it will affirmatively insure that the contract entered into pursuant to this advertisement will be awarded to the lowest responsible bidder without discrimination on the ground of race, color, or national origin".

Award will be made to the lowest responsible and responsive Bidder for each Contract as soon as practicable, provided that in the selection of equipment or materials, a Contract may be awarded to a responsible Bidder other than the lowest in the interest of standardization or if ultimate economy is clearly evident.

Evaluation of Bids

1. All spaces for lump sum and unit prices in the Bid Form shall be filled in with a number. Spaces left blank will be evaluated as zero (\$0.00).
2. Discrepancies between the multiplication of units of Work and Unit Prices will be resolved in favor of the Unit Prices.
3. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
4. Discrepancies between words and figures will be resolved in favor of the words.

The award of the Contract, if it is awarded, will be to the lowest responsive, responsible bidder on the Base Bid and/or Alternate Bid, whose qualifications indicate the award will be in the best interest of the Town of Holly Springs. The Town of Holly Springs reserves the right to waive technicalities and/or reject any or all bids.

The Owner will not consider any bid or award of Contract to any person, firm, or corporation who has defaulted in any obligation to the Owner or who, in the opinion of the Owner, failed to perform their work satisfactorily, either as to character or time. Any Bidder that is currently in litigation with the Town will be disqualified from bidding

A conditioned or qualified bid will not be accepted.

Requirements for any pre-bid submittal information will vary based on the complexity and importance of the product to the project as a whole. Submittals should be prepared in a concise and straightforward manner. Submittals shall clearly identify variances from the specifications. Products that clearly do not meet the requirements of the specifications and plans should not be submitted. Unless noted, products shall be the manufacturer's standard offering, with standard options.

Incomplete submittals, or submittals received after the deadline, shall not be considered.

Submittals are to be delivered to the Engineer at the address indicated in the "Notice to Bidders". The Owner and Engineer shall review all submittals and issue an Addendum to all document holders no later than 7 days prior to the bid opening date, listing the approved products.

Pre-approval of materials or equipment does not, in any manner, preclude the manufacturer from meeting the full requirements of the specifications, including any performance guarantees required, unless specific exceptions are noted in the pre-approval.

No Post-Bid substitutions shall be permitted except as herein provided.

A Performance Bond and a Payment Bond, each in the amount of one hundred percent (100%) of the contract price, with a corporate surety approved by the Town of Holly Springs, will be required for the faithful performance of the contract. Bidders shall provide certification that performance and payment bond sureties are licensed in North Carolina.

Minority Business participation must be documented and submitted with bids, please see contract documents for further direction.

Reference Sheet
(To be filled out with each Bid package)

Company Name	Address	Phone	E-mail	Contact person Name	Contact Person Position	Type of Work Completed
* See attached Reference Sheet at the end of these Bid Documents						

- END OF SECTION 00250 -

SECTION 00300
BID PROPOSAL ("Proposal")
Contract 1 – Twelve Oaks Pump Station Expansion and Modifications Project

TO: THE TOWN OF HOLLY SPRINGS, NORTH CAROLINA ("Owner")

FROM: "BIDDER" Eberhart Construction Inc.
ADDRESS 112 Torrey Pines Drive
Clayton NC 27527
DATE OF BID February 9, 2022.

The Bidder hereby signifies that it is his/her/its intention and purpose to enter into a formal Contract with the Town of HOLLY SPRINGS, North Carolina, to furnish all labor, materials, tools, equipment, apparatus, supplies, and the like required, and to do all the work necessary, for and because of the construction, erection, and/or installation of the proposed "Project":

Contract 1 – Twelve Oaks Pump Station Expansion and Modifications Project

for the Town of HOLLY SPRINGS, North Carolina in accordance with the Contract Documents, including Addenda thereto.** There is deposited, herewith, a certified check in the amount of: _____ Dollars (\$ _____), or a Bid Bond in the amount of five percent (5%) of the total aggregate amount of the Bid, made payable to the Owner, the same to be refunded to the Bidder under the conditions of and in accordance with the terms of this Proposal, which are as follows:

THAT: The Bidder has carefully examined the Plans and Specifications and all other Contract Documents and fully understands them.

THAT: The Bidder has carefully examined the site of the Project and is familiar with the conditions under which the work, or any part thereof, is to be performed and the conditions which must be fulfilled in furnishing and/or installing, erecting or constructing any or all items of the Project.

THAT: The Bidder shall provide all necessary tools, machinery, equipment, apparatus, and all other means necessary to do all the work and shall furnish all labor, materials and all else required to complete such Contract as may be entered into, in the manner prescribed in and in accordance with the terms of the Specifications and the Contract and in accordance with the true intent and meaning thereof, and in accordance with the Plans and/or Drawings and the requirements of the Consulting Engineers under them, in a first class manner.

[Terms continued on the following page.]

** Fill in appropriate Addenda number(s):

Addendum #	<u>1</u>	Dated	<u>1/31/22</u>
Addendum #	<u>2</u>	Dated	<u>2/4/22</u>
Addendum #	<u>3</u>	Dated	<u>2/7/22</u>
Addendum #	_____	Dated	_____
Addendum #	_____	Dated	_____
Addendum #	_____	Dated	_____

THAT: The rights of the Owner and the recommendations of the Consulting Engineers shall not be questioned in the Award of the Contract.

THAT: It is the intention of the Owner to let contracts on the basis of the Bids received in accordance with G.S. 143-129 and in such manner as the Owner may deem to be for the best interests of the Owner.

THAT: The Owner reserves the right to reject any or all proposals and can award any combination of Alternate Bids as may be in the Owner's best interest.

THAT: The work under each Section will be awarded under one Contract and that the Owner shall have the right to include such item or items as the Owner may deem to be in the best interests of the Owner.

THAT: On being awarded the Contract, the Bidder shall execute a Performance Bond and a Payment Bond, on the forms included herein, each equal to one hundred percent (100%) of the Awarded Contract Price (Contract Sum), as security for the faithful performance of the Contract.

THAT: The Bidder shall submit, in the blank spaces provided, all data, guarantees and other information called for.

THAT: The Bidder shall submit, herewith, drawings, or cuts and Specifications showing and describing in detail the equipment and/or apparatus which the undersigned proposes to furnish.

THAT: This Proposal shall be signed and submitted in the manner prescribed in the Instructions to Bidders.

THAT: Should this Proposal not be accepted by the Owner, the certified check, in the amount of:

Dollars (\$ _____) or the five percent (5%) Bid Bond, as applicable, deposited herewith shall be returned to the Bidder.

THAT: Should this Proposal be accepted by the Owner and the Bidder fail or neglect to execute the Contract and furnish the required Bonds within fifteen (15) days after receiving notifications of the acceptance of the Proposal and/or receipt of the formal Contract and Bond forms, the certified check, in the amount of: _____

Dollars (\$ _____), or the Bid Bond, deposited herewith shall be retained by the Owner as liquidated damages, it being understood that the Owner reserves the right to extend the time allowed for executing the Contract and/or furnishing the Bond in its sole discretion.

[Terms continued on the following page.]

THAT: The Bidder shall complete such Contract as may be entered into within the number of consecutive calendar days specified in the Contract from the date of the Notice to Proceed.

THAT: The Bidder proposes to enter into a Contract in accordance with this Proposal, the Plans and Specifications and the Contract Documents included herein, for the prices shown on the following pages.

THAT: The Bidder shall be required to submit a complete detailed itemized unit cost breakdown of the Bid Items on the Itemized Bid Proposal form in Section 00510 along with a computed Total Bid Price amount with this proposal.

THAT: It is the intent of these Contract Documents to obtain a Contract based on Unit Prices with project awarded based upon the lowest qualified total bid based upon unit prices applied to the estimated quantities. Where a discrepancy exists between words and numbers in the Bid amount, the written words shall govern. Where a discrepancy exists between unit prices and mathematical computations in the Itemized Proposal, the unit prices and quantities in the Itemized Proposal shall govern.

THAT: The successful bidder shall be required to apply for and obtain a privilege license from the Town of HOLLY SPRINGS, prior to the Award of the Contract if said bidder has an office within the Town limits of HOLLY SPRINGS

THAT: The successful bidder shall have all proper Bidder licenses and privilege licenses required under North Carolina state laws governing their respective trade(s).

THAT: Notice to Proceed and project available shall occur within 60 days of award of contract by the Town Council.

BID PROPOSAL

GENERAL CONSTRUCTION FOR THE

Twelve Oaks Pump Station Expansion and Modifications Project **Town of Holly Springs Project 18-005** (the "Project")

The work items and materials required by the project plans and specifications shall be made a part of this contract along with the completed price for the installed work. The bid proposal shall consist of the full completion of these work items supplemented with any work item the Contractor deems necessary to complete the project. The Base Bid Price shall include the following allowances items and costs. The actual allowance amounts paid to the Contractor will be the vendor invoice amounts, with no mark-up by the Contractor allowed.

Allowance Item No. 1: For Soil and Concrete Testing and Vibration Monitoring by the Geotechnical Firm selected by the Owner. Allowance Cost to be included in the Base Bid for this item: **Ten Thousand and no/100 Dollars (\$10,000.00).**

The Town of Holly Springs is seeking a best value procurement for products under this contract. The Town has determined that certain equipment items proposed for this project should be supplied by specific equipment manufacturers in order to duplicate existing equipment items that are in service at the Pump Station, to maintain an efficient inventory of spare parts, and to maintain the equipment familiarity and knowledge held by the Town's Utility maintenance staff. In the event that the bidder seeks to use a product other than the one matching the existing component, Bidder shall seek approval from the Executive Director of Utilities & Infrastructure Services.

Allowance Item No. 2: For Submersible Pumps No. 3 and 4 and Reduced Voltage Solid State combination starters No. 3 and 4 in enclosures, as provided by Pete Duty & Associates Inc. to match the existing pumps and starters. See the Appendix for the Scope of Supply and Standard Terms and Conditions of Sale. Allowance Cost to be included in the Base Bid for this item: **One Hundred Eighty Thousand Ten and no/100 Dollars (\$180,010.00) - (sales tax and shipping are included in the stated Allowance Cost).**

Allowance Item No. 3: For the conversion of the existing Muffin Monster solids cutter from a hydraulic drive to an electric immersible motor drive, this Allowance Item will have the Contractor purchase from JWC Environmental the parts necessary for this conversion, a new control panel, and the services of an authorized technician to modify the existing Muffin Monster unit. The Town staff will be responsible for hoisting the solids cutter out of the existing manhole and re-installing it after the conversion is completed by the technician (same day). The Contractor will be responsible for furnishing and installing a new rack for the new control panel, installing the new panel, furnishing and installing the new disconnect switch, and furnishing and installing the conduit and wiring as described on the Project plans. See the Appendix for the Scope of Supply for this Item.

Allowance Cost to be included in the Base Bid for this item: **Fifteen Thousand and no/100 Dollars (\$15,000.00) - (sales tax and shipping are included in the stated Allowance Cost).**

Allowance Item No. 4: For the Carbon Adsorption Odor Control System described in Specification Division 11-J, as manufactured by Evoqua Water Technologies and as represented by Heyward, Inc. The Contractor shall purchase this equipment and shall be responsible for unloading, storing, and installing the System, and for furnishing and installing all the duct piping, conduit, wiring, and any other items shown on the plans and/or specified to deliver a fully functioning Carbon Adsorption Odor Control System. See the Appendix for the Scope of Supply for this Item.

Allowance Cost to be included in the Base Bid for this item: **Sixty-Seven Thousand Two Hundred and no/100 Dollars (\$67,200.00) - (sales tax and shipping are included in the stated Allowance Cost).**

TOTAL "BASE BID" PRICE for the construction of the Project complete, as indicated by the Contract Documents is (complete in words and figures):

One million One hundred forty nine thousand Dollars
and 00/100 Cents (\$ 1,149,000.00)

Optional Spare Pump Bid Add Item: For the provision of a third submersible pump, identical to the pumps to be purchased under Allowance Item No. 2, to be turned over to the Town of Holly Springs and stored as a spare pump for the Twelve Oaks Pump Station. The Contractor shall be reimbursed the amount shown below, in addition to the Base Bid Price, for purchasing the third pump and having it delivered to the Town's Utilities Maintenance shop, if the Town elects to accept this Optional Spare Pump Bid Add Item:

Optional Spare Pump Bid Add Amount: **Fifty Four Thousand Five Hundred and no/100 Dollars (\$54,500.00) - (sales tax and shipping are included in the stated Amount).**

Bidder Eberhart Construction, Inc.
(Print)

NOTE: PROPOSAL SIGNATURE REQUIRED ON PAGES 00300-7 and 300-9. ALL PROPOSALS MUST BE PROPERLY EXECUTED TO BE CONSIDERED A VALID BID.

CERTIFIED LIST OF EQUIPMENT/MATERIAL MANUFACTURERS AND SUB-CONTRACTORS

The Bidder, as part of the procedure for the submission of Bids on the Project, submits the following list of Equipment/Materials Manufacturers and Sub-Contractors to be used in the performance of work to be done on said Project. The list of Manufacturers and all equipment/materials furnished shall be based on requirements of the Contract Documents. Changes to this list after the Bid opening shall only be as approved by the Owner upon request by the Bidder or as required by the Owner based upon review of Bidder's submittals:

<u>EQUIPMENT/MATERIALS/SERVICE</u> <u>SUB-CONTRACTS</u>	<u>MANUFACTURER/SERVICE</u> <u>SUB-CONTRACTS</u>
<u>Precast Concrete Wetwell & Valve Vault</u>	<u>Carolina Pipe and Precast</u>
<u>Ductile Iron Pipe & Fittings</u>	<u>US Pipe/McWane/Sigma/SIP</u>
<u>Check Valves</u>	<u>VSI Waterworks</u>
<u>Plug Valves</u>	<u>VSI Waterworks</u>
<u>Jib Crane, Trolley, and Hoist</u>	<u>Harrington/HIS</u>
<u>Sub-Contract – Electrical Construction</u>	<u>TBD</u>
<u>Other Proposed Sub-Contracts:</u>	
<u> </u>	<u> </u>
<u> </u>	<u> </u>

It is understood and agreed that, if awarded a Contract, the Bidder shall not make any additions, deletions or substitutions to this certified list without the consent of the Owner. Failure to identify a manufacturer for any or all of the items listed shall constitute an entry of one of the manufacturers listed in its respective technical specification.

CERTIFICATION AFFIDAVIT

THE ABOVE INFORMATION IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF. I FURTHER UNDERSTAND AND AGREE THAT, IF AWARDED A CONTRACT, THIS CERTIFICATION SHALL BE ATTACHED THERETO AND BECOME A PART THEREOF.

Eberhart Construction Inc.
[If Bidder is not an individual, enter entity name here]

By: Michelle Eberhart
(Signature)

NAME OF SIGNER: Michelle Eberhart
(Please Print or Type)

TITLE OF SIGNER: President
(Please Print or Type)

DATE: 2/8/22

BID SECURITY:

Accompanying this Proposal is a (1) bid bond in the amount of
(2) 5% of bid Dollars
(\$ _____).

NOTE: (1) Insert the words "bank draft," "certified check," "bid bond", "cash", or "cashier's check", as the case may be.

(2) Amount must be equal to at least five percent (5%) of the total Bid.

BIDDER'S LICENSE:

The Bidder certifies that (he/she/it) is licensed as a Bidder under the specific North Carolina state law regulating his/her/its particular trade and that the number of the license under which he/she/it now operates is 37847.

BIDDER'S CERTIFICATION AS TO ORGANIZATION AND AUTHORITY:

The Bidder certifies that the Affidavit of Organization and Authority, like the other documents attached hereto, form an integral part of the Proposal, and the Bidder acknowledges that the Owner will rely on the information provided therein in reviewing the Proposal and awarding a Contract.

LIQUIDATED DAMAGES:

The Bidder agrees, further, that the Owner may retain those amounts indicated in the Contract from the amount of compensation due the Bidder, under the terms of the Contract, for each and every day that the work remains incomplete and/or unsatisfactory beyond the Substantial Completion and Final Completion date(s) specified in the Notice to Proceed. This amount is agreed upon as the proper measure of liquidated damages the Owner will sustain, per day, by the failure of the Bidder to complete the work within the stipulated time, and it is not to be construed in any sense as a penalty.

The Bidder shall not have or bring a claim against the Owner, or raise as a defense against the imposition of liquidated damages, other construction purportedly impeding Bidder's progress or timely project completion.

(SIGNATURE PAGE)

Dated February 8, 2022

Eberhart Construction Inc (SEAL)

Bidder—Legal Entity

By: Michelle Eberhart (SEAL)
(SIGN HERE)

SEAL-if corporation

Michelle Eberhart
Printed Name

112 Torrey Pines Drive
Clayton NC 27527
Address

(919) 868-5309
Telephone No.

Subscribed and sworn to before me this 8th day of February, 2022

Robert H. Benson
Notary Public

My Commission Expires:

11/11/2026

ROBERT H. BENSON
NOTARY PUBLIC
JOHNSTON COUNTY, N.C.
My Commission Expires 11-11-2026

BID BOND

This is a Bid Bond that is subject to the provisions of Article 3 of Chapter 44A of the North Carolina General statutes.

This Bid Bond is executed on February 9, 2022.

The name of the PRINCIPAL is Eberhart Construction, Inc. (1)

Corporation (2)

The name of the SURETY is Travelers Casualty and Surety Company of America

One Tower Square, Hartford, CT 06183

The TOWN OF HOLLY SPRINGS, NORTH CAROLINA is the OWNER.

The amount of the Bond is Five Percent of Amount Bid

(Dollars) (\$ 5%)

KNOW BY ALL MEN BY THESE PRESENTS, the Principal and Surety above named are hereby held and firmly bound unto the above named OWNER hereinafter called the OWNER in the penal sum of the amount stated above in lawful money of the United States, for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of the above obligation is such that whereas the Principal has submitted to the OWNER a certain Bid Proposal, attached hereto and hereby made a part hereof to enter into a Contract in writing, for the construction of:

Twelve Oaks Pump Station Expansion and Modifications Project – Holly Springs, NC, as described by a document entitled "Specifications, Proposal, Contract, and Bonds for Twelve Oaks Pump Station Expansion and Modifications Project", Project No. 18-005 dated, December 6, 2021; and Twelve Oaks Pump Station Expansion and Modifications Project construction drawings No. 1 through 9, dated December 6, 2021, as prepared by Diehl & Phillips, P.A.

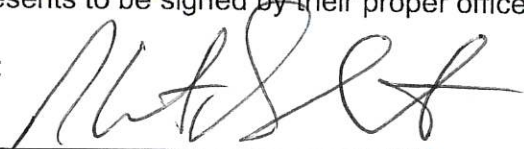
NOW, THEREFORE

- (a) If said Bid Proposal shall be rejected; or in the alternate,
- (b) If said Bid Proposal shall be accepted and the Principal shall execute and deliver a Contract in the form of Contract attached hereto (properly completed in accordance with said Bid Proposal) and shall furnish a bond for his faithful performance of said Contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid Proposal, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its Bid Bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such Bid Proposal; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

ATTEST:



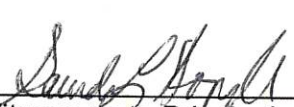
(Principal) Secretary
(SEAL)

Eberhart Construction, Inc.

Principal

BY: Michelle Eberhart (3)
112 Torrey Pines Drive
Clayton, NC 27527

(Address)



Witness as to Principal
112 Torrey Pines Drive
Clayton, NC 27527

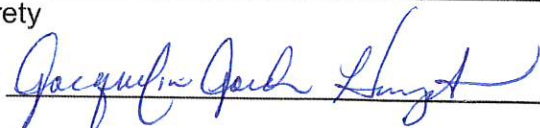
(Address)

ATTEST:



N. C. Resident Agent Jacqueline Jordan Hampton
(SEAL)

Travelers Casualty and Surety Company of America
Surety

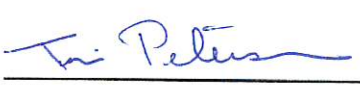
By: 

Jacqueline Jordan Hampton (4)

(Name)
6100 Fairview Road, Suite 800, Charlotte, NC 28210

(Address)
984.255.1091

(Phone Number)



Witness as to Surety Toni Peterson

6100 Fairview Road, Suite 800, Charlotte, NC 28210
(Address)

- (1) Insert the correct name of Principal.
- (2) Insert whether the Principal is a corporation, a partnership, a limited liability company or an individual.
- (3) If Principal is a partnership, all partners should execute the Bid Bond. If Bidder is a limited liability company, all managers (or all members, if the company is member-managed) should execute the Bond.
- (4) Provide contact name, address and phone number for bid bond surety.



**Travelers Casualty and Surety Company of America
Travelers Casualty and Surety Company
St. Paul Fire and Marine Insurance Company**

POWER OF ATTORNEY

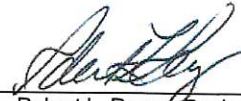
KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **Jacqueline Jordan Hampton** of **Charlotte North Carolina**, their true and lawful Attorney(s)-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **21st** day of **April**, **2021**.



State of Connecticut

City of Hartford ss.

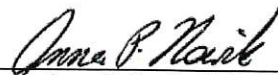
By: 
Robert L. Raney, Senior Vice President

On this the **21st** day of **April**, **2021**, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of each of the Companies, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of said Companies by himself as a duly authorized officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission expires the **30th** day of **June**, **2026**




Anna P. Nowik, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of each of the Companies, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

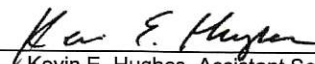
FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of each of the Companies, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this **9th** day of **February**, **2022**




Kevin E. Hughes, Assistant Secretary

**To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.
Please refer to the above-named Attorney(s)-in-Fact and the details of the bond to which this Power of Attorney is attached.**

BIDDER'S CERTIFICATES
AFFIDAVIT OF ORGANIZATION AND AUTHORITY
SWORN STATEMENT

STATE OF North Carolina)

COUNTY OF Johnston)

Michelle Eberhart being first duly sworn on oath deposes and says that the Bidder on the attached Bid Proposal is organized as indicated below and that all statements herein made are made on behalf of such Bidder and that this deponent is authorized to make them.

(Fill Out Applicable Paragraph)

CORPORATION:

The Bidder is a corporation organized and existing under the laws of the State of North Carolina, it operates under the legal name of Eberhart Construction Inc., and the full names of its officers are as follows:

President	<u>Michelle H. Eberhart</u>
Secretary	<u>Robert K. Eberhart</u>
Treasurer	<u>Robert K. Eberhart</u>
Manager	<u></u>

and it does ☒ have a corporate seal. The is/are authorized to sign ~~construction proposals and contracts for the company by action of its Board of Directors taken~~ , a certified copy of which is ~~hereto attached.~~ (Strike out this last phrase if not applicable.)

PARTNERSHIP:

The Bidder is a [limited/general] partnership consisting of individual/corporate partners as follows:

General Partners

Limited Partners

The partnership does business under the name of :

LIMITED LIABILITY COMPANY:

The bidder is a [member-managed/manager-managed] limited liability company consisting of the following individual/corporate members/managers:

Managers

Members

INDIVIDUAL:

The Bidder is an individual whose full name is:

and if operating under a trade name, said trade name is as follows:

The business address of the Bidder is:

112 Torrey Pines Drive
Clayton NC 27527

Its phone number is: 919-868-5309

The contact person for this Proposal is:

Michelle Eberhart

Eberhart Construction, Inc.
Bidder

By: Michelle Eberhart

Subscribed and sworn to before me this 8th day of February, 2022

Robert H. Benson
Notary Public

Johnston
County

My Commission Expires:

11/11/2026

ROBERT H. BENSON
NOTARY PUBLIC
JOHNSTON COUNTY, N.C.
My Commission Expires 11-11-2026

EQUAL EMPLOYMENT OPPORTUNITY ADDENDUM

During the performance of the Contract the Bidder agrees as follows:

- a. The Bidder shall not discriminate against any employee or applicant because of race, color, religion, sex, or national origin. The Bidder shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to race, color, religion, sex, or national origin. Such action shall include but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Bidder agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of the nondiscrimination clause.
- b. The Bidder shall, in all solicitations or advertisements for employees placed by or on behalf of the Bidder, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- c. The Bidder shall send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract understanding, a notice, to be provided, advising the labor union or worker's representative of the Bidder's commitments under the Equal Employment Opportunity Section of the Contract, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- d. In the event of the Bidder's noncompliance with the nondiscrimination clauses of the Contract or with any of such rules, regulations, or orders, the Contract may be canceled, terminated, or suspended in whole or in part and the Bidder may be declared ineligible for further OWNER contracts.
- e. The Bidder will include the provisions of this Addendum in every subcontract or purchase order unless exempted by rules, regulations, or orders of the OWNER so that such provisions will be binding upon each Subcontractor or vendor.

(Use the following form for execution by a CORPORATION):

ATTEST:

[Signature]
(Assistant) Secretary

(CORPORATE SEAL)

Eberhart Construction Inc.
Corporate Name

BY: [Signature]
(Vice) President

(Use the following form for execution by a PARTNERSHIP):

_____(SEAL)
Partnership Name

BY: _____(SEAL)
General Partner

(Use the following form for execution by a LIMITED LIABILITY COMPANY):

_____(SEAL)
Company Name

BY: _____(SEAL)
Manager/Member

(Use the following form for execution by an INDIVIDUAL):

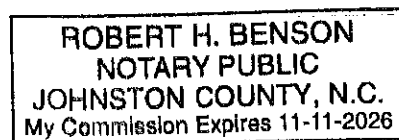
BY: _____(SEAL)

WITNESS:

Subscribed and sworn to before me this 8th day of February, 2022
[Signature] [Signature]
Notary Public County

My Commission Expires:

11/11/2026



See attached at the end of the bid documents

QUALIFICATIONS OF BIDDERS

In order to assist the Owner in determining whether the Bidder is qualified to perform the Work, as set forth in the Contract Documents, the Bidder shall furnish the following information.

1. List of references who are qualified to judge as to his financial responsibility and his experience in work of similar nature to that bid upon:
2. List of previous contracting experience, including dollar values of contracts:
3. List of facilities or equipment that is available for use:
4. Name, City/Town of residence, and title of the individual who will give personal attention to the work:
5. Financial Statement:

ASSETS

CURRENT ASSETS:

Cash	\$ _____
Notes and Accounts Receivable	_____
Inventories	_____

PLANT ASSETS:

Real Estate	\$ _____	
Machinery	_____	
Good Will, Patents, etc.	_____	\$ _____
		Total Assets

LIABILITIES:

Notes Payable	\$ _____	
Accounts Payable	_____	
Accrued Wages	_____	
Other Liabilities	_____	\$ _____
		Total Liabilities
	EXCESS OF ASSETS OR NET WORTH	\$ _____

6. List all pending claims or lawsuits, and any lawsuit within the last 10 years, filed by or against the Bidder, and describe the resolution of each claim or lawsuit:

<u>Claim</u>	<u>Date of Claim</u>	<u>Resolution, if any</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

The existence of unresolved claims against Bidder may disqualify the Bidder from making a Bid Proposal and entering into a Contract.

Notes:

- A. The above is a suggested form for the Financial Statement, but the Bidder is not required to follow the form explicitly. The Financial Statement submitted must clearly show to the satisfaction of the Owner the Bidder's current financial condition. The Owner reserves the privilege of requiring additional information as to financial responsibility of the Bidder prior to awarding Contract.
- B. Bidder shall attach additional pages, if necessary, in order to complete the required information.
- C. The Bidder shall submit detailed information required for above items 1 through 4 with his Bid Proposal package and, at the discretion of the Bidder, the information required under Item 5 may be furnished after Bid Proposals are received if required by the Owner and Engineer to evaluate the financial qualifications of a prospective Bidder.

**AFFIDAVIT OF
STATEMENT OF NON-COLLUSIVE**

State of North Carolina)
County of Johnston) ss.

Michelle Eberhart being first duly sworn,
deposes and says that:

- (1) He/she is the Owner
(Owner, Partner, Officer, Representative or Agent)
of Eberhart Construction Inc., the BIDDER that has
submitted the attached BID PROPOSAL;
- (2) He is fully informed respecting the preparation and contents of the attached BID
PROPOSAL and of all pertinent circumstances respecting such BID PROPOSAL;
- (3) Such BID PROPOSAL is genuine and is not a collusive or sham BID PROPOSAL;
- (4) Neither the said BIDDER nor any of its officers, partners, owners, agents, representatives,
employees or parties in interest, including this affiant, have in any way colluded, conspired,
connived or agreed, directly or indirectly, with any other BIDDER, firm, or person to submit
a collusive or sham BID PROPOSAL in connection with the Contract for which the attached
BID PROPOSAL has been submitted; or to refrain from bidding in connection with such
Contract; or have in any manner, directly or indirectly, sought by agreement or collusion,
or communication, or conference with any BIDDER, firm, or person to fix the price or prices
in the attached BID PROPOSAL or of any other BIDDER, or to fix any overhead, profit, or
cost elements of the BID PROPOSAL price or the BID PROPOSAL price of any other
BIDDER, or to secure through any collusion, conspiracy, connivance, or unlawful
agreement any advantage against The Town of HOLLY SPRINGS, or any person
interested in the proposed Contract;
- (5) The price or prices quoted in the attached BID are fair and proper and are not tainted by
any collusion, conspiracy, connivance, or unlawful agreement on the part of the BIDDER
or any other of its agents, representatives, owners, employees or parties in interest,
including this affidavit.

Eberhart Construction Inc.
BIDDER
BY Michelle Eberhart
ITS President
(Title)

Subscribed and sworn to before me this 08 day of February, 2024.

My commission expires 11/11/2026 Robert H Benson

END OF AFFIDAVIT

Town of Holly Springs

AFFIDAVIT A

AFFIDAVIT of Intent to Perform Contract with Own Workforce.

County of Wake

Affidavit of _____
(Name of Bidder)

I hereby certify that it is our intent to perform a minimum of _____ % of the work required for the _____ contract.
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract substantial elements of work for this type project, and normally performs and has the capability to perform and will perform substantial elements of the work on this project with his/her own current work forces; and

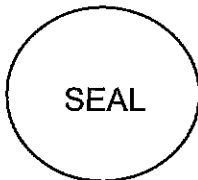
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

NONDISCRIMINATION CLAUSE

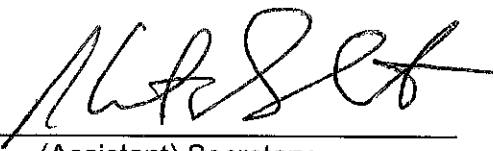
It is specifically agreed as part of the consideration of the signing of this Bid Proposal, and the resulting execution of a Contract, that the parties hereto, their agents, officials, employees or servants shall not discriminate in any manner on the basis of age, handicap, race, color, creed, gender, religious affiliation, or national origin with reference to the subject matter of the Contract, no matter how remote.

This provision, being incorporated for the benefit of the Town of HOLLY SPRINGS and its residents, may be enforced as set out in the ordinances of the Town of HOLLY SPRINGS, enforcement of this provision shall be by action for specific performance, injunctive relief, or other remedy as by law provided.

This provision shall be binding on the successors and assigns of the parties hereto with reference to the subject matter of the Contract.

(Use the following form for signatures by a CORPORATION):

ATTEST:



(Assistant) Secretary

Robert E. Eberhart
(Printed Name)

Eberhart Construction Inc.
Corporate Name

BY: 
(Vice) President

Michelle Eberhart
(Printed Name)

(Corporate Seal)

(Use the following form for signatures by a PARTNERSHIP):

WITNESS

(Printed Name)

Partnership Name (SEAL)

BY: _____ (SEAL)
General Partner

(Use the following form for signatures by a LIMITED LIABILITY COMPANY):

WITNESS

(Printed Name)

Company Name
(SEAL)

BY: _____
Manager/Member
(SEAL)

(Use the following form for signatures by an INDIVIDUAL):

(SEAL)

(Printed Name)

WITNESS

(Printed Name)

Subscribed and sworn to before me this 08th day of February, 2022.

Robert H. Benson
Notary Public

Johnston
County

My Commission Expires:

11/11/2026



SECTION 00905

OUTREACH PLAN AND GUIDELINES FOR RECRUITMENT AND SELECTION OF MINORITY BUSINESSES FOR PARTICIPATION IN TOWN OF HOLLY SPRINGS CONSTRUCTION CONTRACTS

In accordance with G.S. 143-128.2 these guidelines establish goals for minority participation in single-prime bidding, separate-prime bidding, Construction Manager-at-Risk, and alternative contracting methods on Holly Springs construction projects in the amount of \$300,000 or more. The Outreach Plan shall also be applicable to the selection process of architectural, engineering and Construction Manager-at-Risk services.

The Town of Holly Springs current goal for minority participation for public building construction is five percent (5%). The overall goal will be reviewed annually, or as soon as relevant data is available.

INTENT

The intent of these guidelines is that the Town of Holly Springs, as awarding authority for construction projects, and the contractors and subcontractors performing the construction contracts awarded, shall cooperate and in good faith do all things, legal, proper and reasonable to achieve the statutory goal of five percent (5%) for participation by minority businesses in each construction project as mandated by GS 143-128.2. Nothing in these guidelines shall be construed to require contractors or awarding authorities to award contracts or subcontracts to or to make purchases of materials or equipment from minority-business contractors or minority-business subcontractors who do not submit the lowest responsible responsive bid or bids.

DEFINITION

1. Minority - a person who is a citizen or lawful permanent resident of the United States and who is:
 - a. Black, that is, a person having origins in any of the black racial groups in Africa;
 - b. Hispanic, that is, a person of Spanish or Portuguese culture with' origins in Mexico, South or Central American, or the Caribbean Islands, regardless of race;
 - c. Asian American, that is, a person having origins in any of the original peoples of the Far East, Southeast Asia and Asia, the Indian subcontinent, or the Pacific Islands;
 - d. American Indian, that is, a person having origins in any of the original peoples of North America; or
 - e. Female
2. Minority Business - means a business
 - a. In which at least fifty-one percent (51 %) is owned by one or more minority persons, or in the case of a corporation, in which at least fifty-one percent (51 %) of the stock is owned by one or more minority persons or socially and economically disadvantaged individuals; and
 - b. Of which the management and daily business operations are controlled by one or more of the minority persons or socially and economically disadvantaged individuals who own it.

3. Socially and economically disadvantaged individual – means the same as defined in 15 U.S.C. 637. "Socially disadvantaged individuals are those who have been subjected to racial or ethnic prejudice or cultural bias because of their identity as a member of a group without regard to their individual qualities". "Economically disadvantaged individuals are those socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same business area who are not socially disadvantaged".
 4. Public Entity - means State and all public subdivisions and local government units.
 5. Owner – The Town of Holly Springs.
 6. Designer - Any person, firm, partnership, or corporation, which has contracted with the Town of Holly Springs to perform architectural or engineering work.
 7. Bidder - Any person, firm, partnership, corporation, association, or joint venture seeking to be awarded a public contract or subcontract.
 8. Contract - A mutually binding legal relationship, or any modification thereof, obligating the seller to furnish equipment, materials or services, including construction, and obligating the buyer to pay for them.
 9. Contractor - Any person, firm, partnership, corporation, association, or joint venture which has contracted with the Town of Holly Springs to perform construction work or repair.
 10. Subcontractor - A firm under contract with the prime contractor or Construction Manager-at-Risk for supplying materials or labor and materials and/or installation. The subcontractor may or may not provide materials in the subcontract.
3. Minority and Small Business Participation Outreach Plan
1. Work with minority-focused and small business groups that support MBE and small business inclusion in the solicitation of bids.
 2. Place more emphasis on the importance of soliciting certified MBE firms and small businesses for subcontracting opportunities at pre-bid conferences and in the bid documents. Examine specifications to identify special subcontracting opportunities and strongly encourage prime contractors to solicit bids for subcontracts from MBE firms.
 3. Provide detailed information to majority contractors concerning the Guidelines for Recruitment and Selection of Minority Business and Outreach Plan and provide information on G.S. 143-129 by holding meetings with the contractors.
 4. Assess the effectiveness of the MBE Program, and identify opportunities to enhance it, by evaluating MBE participation and compliance and reviewing the "good faith efforts" provided in bid packages.

5. Identify subcontracting opportunities unique to each construction contract and project and concentrate heavily on targeting certified MBE firms and small businesses that have expressed an interest in the Town's projects. Identify these opportunities and contact interested businesses no later than 10 days prior to the bid opening and provide a list of prime contractors plan to participate in the project.
6. Build new business relationships through networking and continue networking with other North Carolina cities and counties to find out how their Outreach Program and MBE program is working and sharing "best practices" and ideas to improve the program.
7. Participate in education opportunities throughout the community as they become available and offer training sessions to share the Town's Outreach Plan with interested businesses and organizations.
8. Be visible through participation in trade shows and business organizations of interest to MBE firms, majority contractors and small businesses, and provide information to the general public about the MBE Program, and continue outreach efforts to the business community.
9. Enhance the Town's web page by including the Outreach Plan and Guidelines, listing good faith efforts, and creating links to MBE resources, and creating awareness of specific subcontracting opportunities.
10. Make available to minority-focused agencies, a list of subcontracting opportunities when they are identified, no later than 10 days prior to the bid opening, and a list of prime bidders that subcontractors may wish to contact for subcontracting consideration.
11. Continue to maintain a database specifically for MBE firms and majority contractors to ensure those firms wishing to do business with the Town of Holly Springs have access to up to date information.
12. Advertise upcoming bid opportunities in minority-focused media.
13. Work with architects and engineers to make subcontracting opportunities more noticeable and more easily understood by potential contractors and subcontractors.

DESIGNER

Under the single-prime bidding, separate prime bidding, dual bidding, Construction Manager-at-Risk, or alternative contracting method, the designer must do all of the following:

- a. Attend the scheduled prebid conference to explain minority business requirements to the prospective bidders.
- b. Assist the owner to identify and notify prospective minority business prime and subcontractors of potential contracting opportunities.
- c. Maintain documentation of any contacts, correspondence, or conversations with minority business firms made in an attempt to meet the goals.

- d. Review jointly with the owner, all requirements of G.S. 143-128.2(c) and G.S. 143-128.2(f) - (i.e. bidders' proposal for identification of the minority businesses that will be utilized with corresponding dollar value of the bid and affidavit listing Good Faith Efforts or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of an award.
- e. During the construction phase of the project, review "MBE Documentation for Contract Payment" form with monthly pay applications to the owner and forward copies to the Town of Holly Springs.

PRIME CONTRACTOR(S) CONSTRUCTION MANAGER-AT RISK. AND ITS FIRST-TIER SUBCONTRACTORS

Under the single-prime bidding, the separate-prime bidding, dual bidding, Construction Manager-at-Risk and alternative contracting methods, contractor(s) must do all of the following:

- a. Attend the scheduled prebid conference.
- b. Identify or determine those work areas of a subcontract where minority businesses may have an interest in performing subcontract work.
- c. At least ten (10) days prior to the scheduled day of bid opening, notify minority businesses of potential subcontracting opportunities listed in the proposal. The notification must include all of the following:
 - (1) A description of the work for which the subbid is being solicited.
 - (2) The date, time and location where subbids are to be submitted.
 - (3) The name of the individual within the company who will be available to answer questions about the project.
 - (4) Where bid documents may be reviewed.
 - (5) Any special requirements that may exist, such as insurance, licenses, bonds and financial arrangements.
- d. During the bidding process, comply with the contractor(s) requirements listed in the proposal for minority participation.
- e. Identify on the bid the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit listing good faith efforts as required by G.S. 143-128.2(c) and G.S. 143-128.2(f) or Intent to Perform Contract With Own Workforce affidavit.
- f. Make documentation showing evidence of implementation of Prime Contractor, Construction Manager-at-Risk and First Tier Subcontractor responsibilities available for review by the Town of Holly Springs upon request.
- g. Provide one of the following upon being named the apparent low bidder: (1) an affidavit that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal. This affidavit shall give rise to a presumption that the bidder has made the required good faith effort; or (2) if the percentage is not equal to the applicable goal, then documentation of all good faith efforts taken to meet the goal. The documentation must include evidence of all good faith efforts that were implemented, including any advertisements, solicitations, and evidence of other specific actions demonstrating recruitment and selection of minority businesses for participation in the contract. Failure

to comply with these requirements is grounds for rejection of the bid and award to the next lowest responsible and responsive bidder.

- h. Identify the name(s) of minority business subcontractor(s) and corresponding dollar amount of work on the schedule of values.
- i. Submit with each monthly pay requests(s) and final payment(s), "MBE Documentation for Contract Payment" for designer's review.
- j. If at any time during the construction of a project, it becomes necessary to replace a minority business subcontractor I immediately advise the owner in writing of the circumstances involved. The prime contractor shall make a good faith effort to replace a minority business subcontractor with another minority business subcontractor.
- k. Make a good faith effort to solicit subbids from minority businesses during the construction of a project if additional subcontracting opportunities become available.

MINORITY BUSINESS RESPONSIBILITIES

The Town of Holly Springs does not certify minority, disadvantaged or woman-owned businesses. Any business which desires to participate as an MBE will be required to complete and submit for certification, documents required by the agencies listed below. Only those firms holding current certification through at least one of the following agencies will be considered eligible for inclusion in meeting the MBE participation percentage goals:

North Carolina Administration Department Historically Underutilized Business (HUB) certification.

North Carolina Department of Transportation Minority/Disadvantage/Woman- owned Business certification.

Small Business. Administration 8(a) certification.

Other governmental agencies on a case-by-case basis.

A copy of these guidelines will be issued with each bid package for the Town of Holly Springs construction projects. These guidelines shall apply to all contractors regardless of ownership.

MINIMUM COMPLIANCE REQUIREMENTS

All written statements, affidavits or intentions made by the Bidder shall become a part of the agreement between the Contractor and the Town of Holly Springs for the performance of the contract. Failure to comply with any of these statements, affidavits or intentions, or with the minority business guidelines shall constitute a breach of contract. A finding by the Town that any information, submitted either prior to award of the contract or during the performance of the contract, is inaccurate, false or incomplete, shall constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the Town of Holly Springs whether to terminate the contract for breach.

In determining whether a contractor has made Good Faith Efforts, the Town will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and results of these efforts. Contractors are required to earn at least 50 points. Failure to file a required affidavit or documentation that demonstrates that the contractor made the required good faith effort is grounds for rejection of the bid.

- (1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed. Value = 10 points.
- (2) Making the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals are due. Value = 10 points.
- (3) Breaking down or combining elements of work in economically feasible. units to facilitate minority participation. Value - 15 points.
- (4) Working with minority trade, community, or contractor organizations identified by the Office for Historically Underutilized Businesses and those included in the bid documents to provide assistance in recruitment of minority businesses. Value = 10 points.
- (5) Attending any prebid meetings scheduled by the public owner. Value = 10 points.
- (6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors. Value = 20 points.
- (7) Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing. Value = 15 points.
- (8) Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit. Value = 25 points.
- (9) Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public building construction or repair project when possible. Value = 20 points.
- (10) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands. Value = 20 points.

Town of Holly Springs

**Intent to Perform Contract With
Own Workforce**

County of _____

Affidavit of _____
(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the
_____ contract.
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type of project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

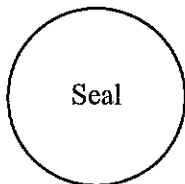
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of North Carolina, County of _____
Subscribed and sworn to before me this _____ day of _____ 20____
Notary Public _____
My commission expires _____

TOWN OF HOLLY SPRINGS, NORTH CAROLINA
"GOOD FAITH EFFORT"

County of Wake

Affidavit of Eberhart Construction Inc.
(Name of Bidder)

I have made a good faith effort to comply under the following areas checked:

(A minimum of 50 points is required to have achieved a "good faith effort")

(Y/N)

- ☒ (1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed. Value = 10 points
- ☒ (2) Making the construction plans, specifications and requirements available for review by prospective minority businesses or providing these documents to them at least 10 days before the bid or proposals are due. Value = 10 points
- ☒ (3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation. Value = 10 points
- ☒ (4) Working with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses. Value = 10 points.
- ☒ (5) Attending any pre-bid meetings scheduled by the public owner. Value = 10 points.
- ☐ (6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors. Value = 20 points.
- ☒ (7) Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of minority business based on lack of qualification should have the reasons documented writing. Value = 15 points.
- ☐ (8) Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily is required. Assisting minority businesses in obtaining the 'same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit. Value = 25 points.

____ (9) Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible. Value = 20 points.

____ (10) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands. Value = 20 points.

In accordance with GSI43-128.2(d) the undersigned will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon execution of a contract with the Owner. Failure to abide by this statutory provision will constitute a breach of the contract.

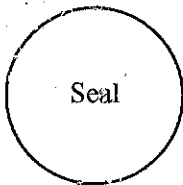
The undersigned hereby certified that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: 2-8-22

Name of Authorized Michelle Eberhart

Officer: Signature: Michelle Eberhart

Title: President



State of North Carolina, County of Johnston

Subscribed and sworn to before me this 8th day of February 2022

Notary Public Robert H. Benson

My commission expires 11/11/2026

ROBERT H. BENSON
NOTARY PUBLIC
JOHNSTON COUNTY, N.C.
My Commission Expires 11-11-2026

Identification of Minority Business Participation

I, Eberhart Construction, Inc.
(Name of Bidder)

do hereby certify that on this project, we will use the following minority business enterprises as construction subcontractors, vendors, suppliers or providers of professional services.

Firm Name, Address and Phone #	Work Type	*Minority Category
* Eberhart is a WBE for your information and will provide certificate for our portion if awarded.		

*Minority categories: Black, African American (B), Hispanic (R), Asian American (A), American Indian (I), Female (F), Socially and Economically Disadvantaged (D)

The total value of minority business contracting will be (\$) 0.

QUALIFICATIONS AND CONTRACTOR EXPERIENCE

Eberhart Construction, Inc. is a North Carolina Unlimited/Unclassified General Contractor that has worked in the state for over 28 years. License Number: 37847

PROJECTS IN PROGRESS WITH REFERENCES

Beaufort County – Chlorination Conversions for Contract #16, #17 and #18

Job Value: \$648,000.00

Completion Date: March 2022

Job Description:

- Removal and Disposal of Existing Gas Chlorination Equipment
- Chlorination Treatment Conversion Installation

Owner: Jeffrey Everette
Beaufort County
(252) 940-8594

Engineer: Richard Moore
McDavid Associates, Inc.
(252) 753-2139

Town of Warsaw – Contract #42 WWTP Improvements

Job Value: \$2,133,884.00

Completion Date: February 2022

Job Description:

- Upgrade Existing Influent Sewage Pump Station
- New Splitter Box and Manhole
- Two New 12' by 12' Tertiary Filters
- Rehab of existing Tertiary Filters
- Two Submersible pumps, Two New Mud pumps

Owner: Scotty Summerlin
Town of Warsaw
(910) 293-7814

Engineer: Cecil Madden
McDavid Associates, Inc.
(919) 736-7630

FTSD – Contract 233 – DWSRF Water Treatment Modifications

Job Value: \$1,182,000.00

Completion Date: February 2019

Job Description:

- Modifications to Water Treatment Plant Building
- Modifications to WTP Fluoridation Feed System and Polyphosphate System
- New Raw Water Chlorination Building
- Raw Water Meter and Manhole
- Convert Chlorine Storage Building to Finished Water Chlorination Building
- Modification to Waste Tank including pipe work, new precast pre-stressed concrete hollow-core slabs, roofing, etc.
- Site Piping and dewatering/removal of waste tank sludge and WTP filter media

**Owner: Tony McCabe
Fork Township Sanitary District
(919) 922-0770**

**Engineer: David Gurley
McDavid Associates, Inc.
(919) 736-7630**

New Salem Elementary School Wastewater Treatment System

Job Value: \$944,412.50

Completed Date: January 2018

Job Description:

- 1 each 8000 gallon septic tank
- 1 each 10,000 gallon flow equalization tank
- 1 each Orenco Advantex AX-MAX 275-42 recirculating textile media filter
- 1 each Orenco Advantex AX-MAX 275-42 with tire chip up flow filter, secondary recirculating textile media filter and clarifier
- 2 each UV disinfection units
- 1 each 30 day minimum lined wet weather storage pond impoundment
- 1 sprayfield with 5 zones

**Owner: Keith Benton
Union County Board of Education
(704) 361-5267**

**Engineer: David DeCaren
Piedmont Design Associates, P.A.
(704) 664-7888**

Pilot Mountain State Park Sewer Improvements

Job Value: \$676,000

Completed Date: August 2017

Job Description: Provide and Install 5 Each On-site Wastewater Septic Systems

- 1 each 1000 gallon septic tank gravity system
- 1 each 2000 gallon septic tank gravity system
- 1 each 3000 gallon septic tank pump to pressure manifold system
- 2 each 3500 gallon septic tank drip irrigation systems
- demo of 62 existing manholes
- demo of existing 10,000 gpd package steel wastewater treatment plant

**Owner: Erin Lawrence
NC DENR- Division of Parks and Rec
919-707-9322**

**Engineer: Victor D'Amato
Tetra Tech Engineering, P.C.
919-485-8278**

Richmond County WTP Solids Handling Capacity Expansion

Job Value: \$1,819,000.00

Completed Date: March, 2015

Job Description: Expansion to the existing plant

- New 60' diameter sludge thickener w/ new Conveying System
- Two New VFD Sludge Pumps (300gpm) and Two New Decant Submersible pumps (700gpm)
- New Two-Meter Belt Press
- Two Metal Buildings (Sludge Pump and Sludge Press Building)
68'x 66' and 20'x 20' pre-engineered metal buildings

**Owner: Brian Land
County of Richmond
(910) 997-8200**

**Engineer: Steve Gandy
Municipal Engineering Services Co, P.A.
(919) 772-5393**

WWTP EXPANSION TO .052 MGD - TOWN OF BEULAVILLE

Job Value: \$3,600,737.00

Completed Date: March, 2015

Job Description: Improvements to bring the existing plant to 520,000 gpd flow.

- New influent pump station w/ three submersible sewage pumps (800gpm)
- New Flow Splitter Box
- New 60' diameter equalization basin w/ floating aerator and dual submersible sewage pumps (800gpm)
- Two new 50' Aeration Basins
- Two new 22' inside diameter clarifiers
- Two new continuous backwashing up flow filters.
- New chlorine contact chamber
- One 20'x 20' brick veneer chemical building
- Two New post aeration basins w/ floating aerators
- New effluent flow monitoring system
- New 40' diameter 116,000 gallon aerobic digester with aerator
- Three blowers, one 20'x 20' brick veneer electrical building w/standby generator

**Owner: Scotty Summerlin
Town of Beulaville
910-289-6219**

**Engineer: Cecil Madden
McDavid & Associates
(919) 736-7630**

Pemberly-Colby Chase Drive Conspan Bridge

Job Value: \$482,000

Completed Date: November, 2014

Job Description: Installing a precast concrete bridge over Middle Creek

- Place temporary 150 ton Capacity Bridge over creek
- Dewater and excavate pile locations
- Drive H-piles
- Excavate end bent pile cap foundation
- Pour in place concrete pile cap
- Erect precast Conspan bridge

Owner: Ashton Woods Homes GC: Kenneth West, Inc. Joel West 919-233-2282

Glade Creek Elementary School Water & Sewer Improvements (Glade Creek, NC)

Job Value: \$613,525

Completion Date: October 2011

Job Description:

- 5 each 10'x20' Precast Concrete Tanks w/ Excavations 14' deep
- 3 each Pump Stations w/ Process Piping and Equipment
- 3,000 LF 8' Water Line and 2,000 Gallon Hydro-pneumatic Tank
- 1,100 LF 8' Gravity Sewer
- 2 15'x 15' brick veneer Control Buildings

Owner: Don Adams
Alleghany County
(336) 372-4179

Engineer: Kevin Heath, P.E.
Adams-Heath Engineering, Inc.
(276) 236-4588

FACILITIES AND EQUIPMENT

200C Hitachi Excavator
315CL Caterpillar Excavator
416C Caterpillar Backhoe
420E Caterpillar Backhoe
Ditch Witch 255sx Vibratory Plow
L5030 Kubota Tractor
Chevy 7500 Dump Truck
Miscellaneous Generators, Tamps, and other Tools
4400 Square Foot Shop Building

PROJECT MANAGER/SUPERINTENDENT

Robert Eberhart
112 Torrey Pines Drive
Clayton, NC 27527
(919) 243-8383 Home or (919) 868-5308 Cell
All projects above were overseen by Robert Eberhart

Education:

A.A.S. Degree in Civil Engineering Technology from Wake Technical Community College.
Graduated in August 1990.

B.S. in Civil Engineering Technology from the University of North Carolina at Charlotte.
Graduated in May 1993.

Obtained North Carolina Unclassified General Contractors License December 1996

FINANCIAL STATEMENT UPON REQUEST

Eberhart Construction, Inc. has no claims or lawsuits pending or any within the last 10 years.