

Section 1

**Durham County**  
**Triangle WWTP Rehabilitation and**  
**Improvements**

Application for Funding

April 2024





# North Carolina Department of Environmental Quality

## Division of Water Infrastructure

### Application for Funding

(Last updated: February 2024)



#### 1. General Information

<b>Applicant Name</b> Durham County	<b>County</b> Durham	<b>Unique Entity Identifier (UEI)</b> L J 5 B A 6 U 2 H L M 7
<b>Project Name</b> Triangle WWTP Rehabilitation and Improvements	<b>Federal Tax ID #</b> 56-6000297	<b>PWSID or NPDES # (if applicable)</b> NC0026051
<b>Applicant Type</b> <input type="checkbox"/> Municipality <input type="checkbox"/> Metropolitan Water/Sewerage District <input checked="" type="checkbox"/> County <input type="checkbox"/> Non-Profit Water Corporation <input type="checkbox"/> Water and Sewer District <input type="checkbox"/> Investor-Owned Drinking Water Corporation <input type="checkbox"/> Water and Sewer Authority <input type="checkbox"/> Council of Government <input type="checkbox"/> Sanitary District <input type="checkbox"/> Other (Specify:        )		<b>Funding Amount Requested</b> \$30,365,940  <b>Total Project Cost</b> \$30,365,940

#### Funding Type(s) Requested

<b>Drinking Water or Wastewater Planning</b> ↳ <input type="checkbox"/> Asset Inventory and Assessment (AIA) (only for LGUs designated as Distressed and have not received AIA funding in the past) ↳ <input type="checkbox"/> Merger/Regionalization Feasibility (MRF) Study (only for LGUs designated as Distressed and have not received MRF funding in the past) ↳ <input type="checkbox"/> Drinking Water Emerging Contaminants Evaluation/Assessment Study (PFAS study)	<b>Construction Project</b> ↳ <input type="checkbox"/> Drinking Water ↳ <input type="checkbox"/> Drinking Water Emerging Contaminants (PFAS project) ↳ <input checked="" type="checkbox"/> Wastewater ↳ <input type="checkbox"/> CWSRF Green Project: stream restoration, stormwater SCM, reclaimed water ↳ <input type="checkbox"/> Stormwater Construction (LASII) ↳ <input type="checkbox"/> CDBG-Infrastructure (CDBG-I)
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**CDBG-I only:**  
 LMI Determination Method:                      LMI Percentage:  
 ACS     Survey

#### Acceptance of Funding Offer (for Construction Projects) *Please read the Instructions page for details.*

Most funding available is in the form of low-interest loans. Offers of grant and principal forgiveness (PF) are based on availability and the applicant's eligibility for grants/PF. Please indicate to the Division your willingness to accept a loan and the minimum amount of grant/PF you would accept for this project. The greatest amount of grant/PF available for your application based on eligibility and availability will be offered to your application if selected, even if you are willing to accept less.

- 1) I am willing to accept a low-interest loan offer for the *full* funding amount requested above.  
 Yes (stop here) or  No (answer the next question).  
*(Answering "Yes" maximizes the chance of your application being selected for funding. The project will still be offered any grant or principal forgiveness for which it can receive based on eligibility and availability).*
  
- 2) I will only accept a funding offer if a minimum of \$\_\_\_\_\_ is offered as a grant or principal forgiveness (PF). I understand that I will not be offered any funding if the minimum requested grant/PF amount cannot be offered, and I cannot change my response after the application deadline.  
*(Keep in mind that in many funding rounds projects will be limited to \$500,000 in grant/PF based on PF availability. Indicating a minimum grant/PF request above \$500,000 has a higher likelihood that a potential funding offer would not meet the minimum grant/PF requested and result in the project being bypassed for funding. The recommendation is to indicate the **lowest** amount of grant/PF you require to make this project possible).*

**2. Drinking Water and Wastewater System Parameters (Not applicable for stormwater projects)**

<b>Residential Sewer Connections</b> 6,199 100% customers, 9,157 80% customers *	<b>Residential Water Connections</b> N/A
<b>Non-Residential Sewer Connections</b> 653 100% customers, 430 80% customers *	<b>Non-Residential Water Connections</b> N/A
<b>Monthly Sewer Bill for 5,000 gallons</b> \$47.04	<b>Monthly Water Bill for 5,000 gallons</b> N/A

\* "100% customers" discharge to the Durham County collection system for treatment at the Triangle WWTP. "80% customers" discharge to the Durham City collection system that discharges to the County's collection system for treatment at the Triangle WWTP.

**Service Population**

Number of individuals directly served, excluding wholesale customers: approximately 47,000

**Percentage of Utility Bills Collected and Rate Increase Percentages**

Year	Percentage of Utility Bills Collected	Rate Increase Percentage
2019	92%	4.9%
2020	93%	6.8%
2021	93%	5.0%
2022	93%	10.1%
2023	88%	10%

**3. Applicant Contact Information (See Instructions regarding the Authorized Representative)**

**Authorized Representative Name:** Dr. Kimberly Sowell

**Authorized Representative Title:** County Manager

**Mailing Address Line 1:** 200 East Main Street

**Mailing Address Line 2:** 3<sup>rd</sup> Floor, Old Courthouse

**City:** Durham

**State:** NC

**Zip Code:** 27701

**Physical Address Line 1:** Same as above

**Physical Address Line 2:**

**Physical Address City:**

**Physical Address State:**

**Physical Address Zip Code:**

**Phone Number:** 919-560-0000

**Email Address:** [County\\_Manager@dconc.gov](mailto:County_Manager@dconc.gov)

**4. Application Preparer Contact Information**

**Firm Name:** CDM Smith

**Contact Name:** Trisha Vincent

**Phone Number:** 704-208-2253

**Email Address:** vincenttd@cdmsmith.com

**5. Engineer Contact Information**

Is the engineering firm different from the application preparer?  Yes  No (skip contact information below)

**Engineering Firm Name:**

**Contact Name:**

**Phone Number:**

**Email Address:**

## 6. Project Description (see Instructions)

The proposed improvements to the Triangle WWTP generally include the items outlined below:

- Headworks
  - Replacement of mechanical equipment at the headworks with two (2) mechanical bar screens and two (2) washer/compactors.
  - Installation of two (2) new submersible pumps in the influent pump station.
  - The existing headworks is greater than 20 years old and at the end of its useable life. Headworks upgrades will replace equipment at or beyond its usable life with no increase in capacity.
- Grit removal
  - Installation of two (2) recessed impeller pumps for grit removal from existing vortex grit units.
  - Demolition of existing grit classifier and replacement with two (2) new grit classifiers.
  - The existing vortex grit removal system and grit classifier are greater than 20 years old and at the end of their usable life. Grit removal modifications will increase efficiency beyond the efficiency of the existing equipment, with no increase in capacity.
- Biological Nutrient Removal (BNR)
  - Modifications to mixers, brush aerators, blowers, and diffused air piping in the BNR trains.
    - Replacement of diffused aeration grid in BNR Treatment Train No. 1 and BNR Treatment Train No. 3.
    - Replacement of aerators with four (4) 75 hp brush aerators equipped with VFDs and four (4) new diversion baffles in BNR Treatment Train No. 2 and four (4) 75 hp brush aerators equipped with VFDs for BNR Treatment Train No. 3.
    - Installation of a third 125 hp blower equipped with inverter duty motor.
    - Installation of a new 125 hp VFD within the existing Electrical Building adjacent to the VFDs.
    - Modifications to existing blower aeration piping to allow one (1) 125 hp blower to serve a single BNR Treatment Train diffused aeration grid.
    - Replacement of submersible mixers throughout BNR Treatment Train No. 3.
    - Compressed air mixing system for all BNR trains including nozzles, valves, headers, and compressors.
  - BNR Train No. 3 is older than 20 years and beyond its usable life. BNR modifications will increase efficiency of the existing BNR system with no increase in capacity.
- Secondary clarifiers
  - Modification to RAS pump controls, piping, and valve operation to improve secondary clarifier drainage.
  - The existing clarifiers, mechanisms, and appurtenances are greater than 20 years old and at the end of their usable life. This modification is like for like with no increase in capacity.
- Tertiary filters
  - Demolition of existing traveling bridge filters and replacement with four (4) new tertiary disc filters.
  - The existing travelling bridge filters are greater than 20 years old and at the end of their usable life. Filter replacement will increase filter efficiency with no increase in capacity.
- Ultraviolet (UV) disinfection
  - Demolition of existing UV disinfection system, which is greater than 20 years old and at the end of its usable life, and replacement with new two-channel inclined UV disinfection system.
  - UV system replacement is like-for-like with no increase in capacity.
- Reclaimed water system
  - Installation of a new sodium hypochlorite bulk storage tank and feed pumps adjacent to existing reclaimed water pump station, to have the reclaimed chemical dosing system closer to the reclaimed water pump station.
  - Relocation of existing vertical turbine pumps.
  - Installation of a solar-powered tank mixer for the above-ground storage tank.
  - Reclaimed water system modifications will not result in an increase in capacity of the reclaimed water system.
- Residuals processing and disposal
  - Modifications to the centrifuges and solids conveyance
    - Replacement of residuals polymer chemical totes with a bulk storage tank.
    - Removal of existing cake pumps, piping, and appurtenances and replacement with a horizontal screw conveyor system.
  - Residuals processing modifications will not increase capacity of residuals processing system.
- Assorted painting and instrumentation and controls upgrades required because of the above improvements.

Equipment upgrades/modifications are like-for-like with no increase in treatment capacity.

**Estimated number of new connections served by Drinking Water or Wastewater construction, Emerging Contaminants (PFAS), or CDBG-I project:**

N/A

**50% or more of the project budget is to directly benefit a Disadvantaged Area.** Both the Application Budget and Narrative must demonstrate that the project area includes a Disadvantaged Area and that 50% or more of the project budget directly benefits the Disadvantaged Area. See Application Guidance for Line Item 4.C.4 for details on the minimum documentation to be included in the Budget and Narrative.

**For Drinking Water and Wastewater construction, Emerging Contaminants (PFAS), CWSRF Green Project, and CDBG-I:**

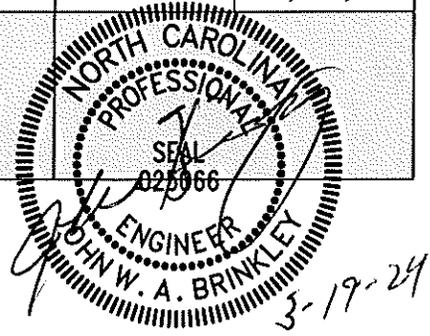
- The proposed project is a result of an Asset Inventory and Assessment grant previously awarded by the Division.
- The proposed project is a result of a Merger / Regionalization Feasibility Study grant previously awarded by the Division.
- None of the above.

## 7. Additional Information for Consideration

**8a. Project Budget for All Construction Projects and for Emerging Contaminants Evaluation/Assessment Studies** Do not use for other planning studies.

Indicate construction costs by line item (e.g., linear feet of different-sized lines, each type of stormwater control measure, each stream restoration reach). Include a more detailed construction cost budget if needed.	Division Funding Requested	Other Secured Funding Source(s)	Total Cost Amount
<b>Construction Costs</b>			
Headworks upgrades (older than 20 yrs)	2,750,700		2,750,700
Grit removal upgrades (older than 20 years)	848,800		848,800
BNR 3 upgrades (older than 20 years)	692,100		692,100
BNR upgrades (not older than 20 years)	3,580,700		3,580,700
Secondary clarifiers - structural rehab (older than 20 years)	68,500		68,500
Upgrade tertiary filter channel and replace filters with new cloth filters (older than 20 years)	8,491,000		8,491,000
Replace UV disinfection system (older than 20 years)	2,200,600		2,200,600
Upgrade reclaimed water system (not older than 20 years)	139,300		139,300
Upgrade residuals processing and disposal system (not older than 20 years)	1,222,700		1,222,700
MOPO	100,000		100,000
Painting allowance	85,000		85,000
I&C allowance	320,000		320,000
<i>Contingency (10% of construction costs):</i>	1,999,440		1,999,440
<b>Construction Subtotal:</b>	<b>22,498,840</b>		<b>22,498,840</b>
<i>% Total older than 20 years</i>	75%		
<i>% Total not older than 20 years</i>	25%		
<b>Engineering Costs</b>			
Engineering Design	3,802,100		3,802,100
Permitting	90,200		90,200
Land Surveying Costs	450,000		450,000
Other:			
<b>Engineering Subtotal:</b>	<b>4,342,300</b>		<b>4,342,300</b>
<b>Administration Costs</b>			
Planning (pre-construction costs)	3,374,800		3,374,800
Easement/Land Acquisition Costs			
Engineering Report Preparation	145,000		145,000
Environmental Documentation Preparation (if applicable)	5,000		5,000
Legal Costs			
Project Funding Administration (if applicable)			
Other:			
<b>Administration Subtotal:</b>	<b>3,524,800</b>		<b>3,524,800</b>
<b>TOTAL FUNDING REQUESTED AND PROJECT COST:</b>	<b>30,365,940</b>		<b>30,365,940</b>

A Professional Engineer seal, signature, and date for the estimate must be provided in the space to the right for the application to be considered complete.  
 (Note: If not using DocuSign to seal and sign the budget, put the seal/signature on the Word document or use a wet seal/signature with a scan of the wet seal/signature.)



<b>8b. Project Budget for AIA and MRF Grants</b>	
Add additional lines as needed. Only include items that are intended to be included in the Scope of Work for the project.	
	<b>Division Funding Requested</b>
N/A	
<b>TOTAL DIVISION FUNDING REQUESTED:</b>	

### Certification by Authorized Representative

The attached statements and exhibits are hereby made part of this application, and the undersigned representative of the Applicant certifies that the information in this application and the attached statements and exhibits are true, correct, and complete to the best of his/her knowledge and belief. By initialing each item and signature at the end of this application, he/she further certifies that:

- \_\_\_\_\_ 1. as Authorized Representative, I have been authorized to file this application by formal action of the governing body (e.g., by resolution) or as defined in this application as the Authorized Representative in Section 3 following the Instructions;
- \_\_\_\_\_ 2. the governing body agrees to provide for proper short-term and long-term maintenance and operation of the approved project after its completion;
- \_\_\_\_\_ 3. the Applicant has substantially complied with or will comply with all federal, state, and local laws, rules, regulations, ordinances, and funding conditions as applicable to this project;
- \_\_\_\_\_ 4. the Applicant will adopt and place into effect on or before the completion of the project a schedule of fees and charges which will provide for the adequate and proper operation, maintenance, and administration and repayment of all principal and interest on loans (if applicable) of the project [if not applicable, initial "N/A"];
- \_\_\_\_\_ 5. the Applicant has followed proper accounting and fiscal reporting procedures, as evidenced by the Applicant's most recent audit report, and that the Applicant is in substantial compliance with provision of the general fiscal control laws of the State;
- \_\_\_\_\_ 6. the Project Budget for all construction projects provided in this application form (Section 8a, if applicable) includes all funding requested from all sources of funding proposed for this project;
- \_\_\_\_\_ 7. the (Town or County), North Carolina is organized and chartered under the laws of North Carolina, or the special purpose unit of local government is incorporated under the laws of North Carolina. All officials and employees are aware of, and in full compliance with NCGS 14-234, "Public officers or employees benefiting from public contracts; exceptions." (For units of local government only. All others should initial "N/A");
- \_\_\_\_\_ 8. the Applicant acknowledges that all loans and Viable Utility Reserve grants are subject to approval by the Local Government Commission;
- \_\_\_\_\_ 9. the Applicant acknowledges that if the application is for a drinking water or wastewater project and any one of the local government units involved in the project is designated as distressed by the State Water Infrastructure Authority and the Local Government Commission, the local government unit(s) must complete the viable utility requirements in NCGS 159G-45(b) by conducting an asset assessment and rate study, participate in a training program, and develop a short-term and long-term action plan considering infrastructure repair, maintenance, and management, continuing education, and long-term financial management plan. Additional conditions may be imposed on the local government(s) designated as distressed by the State Water Infrastructure Authority and/or the Local Government Commission. (Initial "N/A" if does not apply to project type or all local governments involved in the project); and
- \_\_\_\_\_ 10. the Applicant acknowledges that, in accordance with G.S. 120-157.2, for local government debt to be issued greater than \$1,000,000, the local government must report to Committee Chairs, Committee Assistant, and the Fiscal Research Division of the General Assembly at least 45 days prior to presentation before the Local Government Commission (For units of local government only. All others, and CDBG-I applicants should initial "N/A").

## Completeness Checklist

In addition to this application, the following items must be included in the application package to be eligible or to successfully claim priority points. **Failure to include or properly document an item marked with \* will result in an incomplete and ineligible application which will not be considered for funding.** Please initial that each item is included in this submittal. If not applicable for the project, please initial "N/A".

- \_\_\_\_\_ Resolution by Governing Body of Applicant and the Form for Certification/Attestation by the Recording Officer \* †
  
- \_\_\_\_\_ Comprehensive Narrative to Claim Points in the Priority Rating System \*
  
- \_\_\_\_\_ Documentation to Support the Comprehensive Narratives, including maps or images as needed
  
- \_\_\_\_\_ Applicable Priority Rating System Form to Claim Points †
  
- \_\_\_\_\_ Affordability Calculator † or handwritten affordability calculations (not applicable to CDBG-I or LASII stormwater planning)
  
- \_\_\_\_\_ Fund Transfer Certification with appropriate box checked \* † (not applicable to CDBG-I or LASII stormwater)
  
- \_\_\_\_\_ Water & Sewer Financial Information Form † (not applicable to LASII stormwater projects)
  
- \_\_\_\_\_ Stormwater Entity Eligibility Certification form \* † (only for LASII stormwater applications)
  
- \_\_\_\_\_ Commitment of Other Funds Form, Low to Moderate Income Documentation, and all Tab 8 Documents \* † (only for CDBG-I applications). These documents must be complete per CDBG-I Priority Rating System Guidance.
  
- \_\_\_\_\_ Current water and wastewater rate sheets in effect on application deadline (for both water and sewer if the utility provides both water and sewer, or for water or sewer depending on the utility service; not applicable to LASII stormwater)
  
- \_\_\_\_\_ Professional Engineer seal with signature and date on Project Budget \* (for Construction Projects and for Emerging Contaminants Evaluation/Assessment Studies only)

\* Required in the application package. Failure to include or properly document will result in an incomplete and ineligible application which will not be considered for funding.

† Forms and templates are available separately on the [Division's application webpage](#).

**Submittal Information**

**All application packages must be submitted electronically at <https://edocs.deq.nc.gov/Forms/Spring2024DWIFunding>**

See Instructions on completing the form online.

Online submittal of the application package is sufficient for all applications, except for CDBG-Infrastructure applications.

***For CDBG-Infrastructure applications only:*** in addition to submitting the application package electronically at the link above, you **must send one (1) original hard copy\*** of the application package to:

**Physical Address (FedEx, UPS)‡**

Division of Water Infrastructure – 8<sup>th</sup> Floor, Archdale Building  
512 North Salisbury Street  
Raleigh, NC 27604  
919.707.9160

\* Provide a hard copy that is bound (3-ring binders). No paper clips, staples or binder clasps.

‡ For all courier services, please use the physical address, as having a courier deliver to the mailing address will delay package delivery.

**Application Signature**

Original signature is required for the application.

Application with no signature is incomplete and ineligible for consideration.

SIGNATURE OF TOP ELECTED OFFICAL, TOP ADMINISTRATIVE OFFICIAL, OR AUTHORIZED REPRESENTATIVE AS NAMED IN RESOLUTION\*

TYPED NAME

TYPED TITLE

DATE

\*Note: For the CDBG-I program, signature must be of the Authorized Representative who must be named in the Resolution, regardless of their title.



Section 2

**Durham County**  
**Triangle WWTP Rehabilitation and**  
**Improvements**

Project Resolution by  
Governing Body

April 2024







Section 3

**Durham County**  
**Triangle WWTP Rehabilitation and**  
**Improvements**

Financial Information Form

April 2024





**North Carolina Department of Environmental Quality**  
**Division of Water Infrastructure**  
**Water & Sewer Financial Information Form**

(revised July 2023)



Complete the following information related to your system's Enterprise Fund. If your Enterprise Funds are separate for water and wastewater, *please supply sheets for the appropriate fund*. If the application is for a specific District or system with its own fund, provide only that District's or system's financial information.

1. Supply the required information below.

- Combined System
                         
  Water System
                         
  Wastewater System

Unit Name: Durham County Government

Fund Name: Sewer Utility Fund

2. Provide the following information for the past three fiscal years *for which an audit has been completed and submitted to the Local Government Commission (or the equivalent if not a local government unit)*.

	Fiscal Years		
	2023	2022	2021
<b>Operating Revenues</b>			
Customer Charges	\$17,846,190	\$11,183,846	\$10,727,764
Connection Fees	\$5,318,997	\$3,116,394	\$3,107,197
Other Revenue	\$575,137	\$57,125	\$64,590
<b>Total Operating Revenues</b>	<b>\$23,740,324</b>	<b>\$14,357,365</b>	<b>\$13,899,551</b>
<b>Expenditures</b>			
<i>Administration</i>			
Salaries			
Other			
<i>Operations</i>			
Salaries			
Other			
<b>Total Expenditures</b>	<b>(\$6,837,457)</b>	<b>(\$6,098,204)</b>	<b>(\$6,516,176)</b>
<b>Other (do not include depreciation)</b>			
Debt principal	(\$1,491,146)	(\$1,471,145)	(\$1,456,146)
Interest	(\$214,407)	(\$302,824)	(\$339,085)
Capital outlay	(\$4,242,976)	(\$7,134,101)	(\$757,332)
Capital reserve			
Transfer from (to) other funds			
Other (list):			
<b>Total Other</b>	<b>(\$5,948,529)</b>	<b>(\$8,908,070)</b>	<b>(\$2,552,563)</b>
<b>Net Income (Loss)</b>	<b>\$10,954,338</b>	<b>(\$648,909)</b>	<b>\$4,830,812</b>

(OVER)

3. Certification. Please read and sign below.

I attest that the fiscal information provided in this form, to the best of my knowledge, is accurate, complete, true, and matches audits for the past three years (or the equivalent formal financial records for non-local government applicants).

I further attest that, to the best of my knowledge, if Durham County has made any transfers within the past three years, these transfers are shown in Item #2 of this form.

*Tiffany Murray*

SIGNATURE OF  
FINANCE OFFICER

03/01/2024

DATE

Tiffany Murray

TYPED NAME

Chief Financial Officer

TYPED TITLE



Section 4

**Durham County**  
**Triangle WWTP Rehabilitation and**  
**Improvements**

Fund Transfer Certification  
Form

April 2024





**North Carolina Department of Environmental Quality  
Division of Water Infrastructure  
Fund Transfer Certification  
(Not needed for CDBG-I or LASII stormwater projects)**



(Revised: February 2024)

§ 159G-37(b) requires that all local governments applying for funding from the Clean Water State Revolving Fund, the Wastewater Reserve, the Drinking Water State Revolving Fund, the Drinking Water Reserve, and the Viable Utility Reserve for water or wastewater projects certify that no funds received from water or wastewater utility operations have been transferred to the local government's general fund for the purpose of supplementing the resources of the general fund since July 1, 2014. The prohibition contained in § 159G-37(b) shall not be interpreted to include payments made to the local government to reimburse the general fund for expenses paid from that fund that are reasonably allocable to the regular and ongoing operations of the utility, including, but not limited to, rent and shared facility costs, engineering and design work, plan review, and shared personnel costs. **Note:** A payment in lieu of taxes (PILOT) is not a disqualifying transfer so long as the PILOT reimburses these specific expenses. All other PILOTS are considered transfers.

Complete this form and have your Authorized Representative or Financial Officer sign it. **You must check a box; otherwise, the application will be considered incomplete and not eligible for consideration for funding.**

**Applicant's Certification:**

I, as a representative of \_\_\_\_\_ Durham County \_\_\_\_\_, hereby certify that since July 1, 2014,  
(Local Government Unit)  
funds received from the water and/or wastewater utility have: (**CHOOSE ONLY ONE**)

- not been transferred from the water and/or sewer enterprise fund to the general fund, **OR**
- been transferred from the water and/or sewer enterprise fund to the general fund **AND** were reasonably allocable to the regular and ongoing operations of the utility in accordance with § 159G-37(b), **OR**
- been transferred from the water / sewer enterprise fund to the general fund via PILOT. Revenues from PILOT were used only for water / sewer utility operations.

**Any transfers must be consistent with the information provided in the Division's Water & Sewer Financial Information Form and must be accurately reflected in the audits as reported by the Local Government Unit to the Local Government Commission since July 1, 2014.**

Tiffany Murray  
**SIGNATURE OF AUTHORIZED  
REPRESENTATIVE OR FINANCIAL OFFICER**

03/01/2024  
**DATE**

Tiffany Murray  
\_\_\_\_\_  
**TYPED NAME**

Chief Financial Officer  
\_\_\_\_\_  
**TYPED TITLE**



Section 5

**Durham County**  
**Triangle WWTP Rehabilitation and**  
**Improvements**

Priority Rating System Form

April 2024



## Priority Rating System Score Sheet for Wastewater Projects

2023 PRIORITY RATING SYSTEM for Wastewater Projects				
<p><u>Instructions:</u> For each line item, mark "X" to claim the points for that line item. Be sure that your narrative includes justification for every line item claimed. At the end of each category, provide the total points claimed for each program in the subtotal row for that category. Then add the subtotals from each category and enter the Total of Points for All Categories in the last line. Note that some categories have a maximum allowed points that may be less than the total of individual line items.</p>				
Line Item #	EC Line Item <sup>†</sup>	Category 1 – Project Purpose (Points will be awarded for <u>only one</u> Project Purpose)	Claimed Yes/No	Points
1.A		Project will consolidate a nonviable drinking water or wastewater utility		25
1.B		Project will resolve failed or failing infrastructure issues		20
1.C		Project will rehabilitate or replace infrastructure, including replacement by a regionalization projects	X	12
1.C.1		Treatment units, pumps and/or pump stations to be rehabilitated or replaced are greater than 20 years old, <b>OR</b> lines, or tanks to be rehabilitated or replaced are greater than 40 years old	X	8
1.D		Project will expand infrastructure		2
1.D.1		Treatment units, pumps and/or pump stations to be rehabilitated or replaced are greater than 20 years old, <b>OR</b> lines, storage tanks, drinking water wells or intake structures to be rehabilitated or replaced are greater than 40 years old		8
1.E		Project will provide service to disadvantaged areas		20
1.F		Reserved for other programs		
1.G		Project will provide stream/wetland/buffer restoration		10
1.G.1		Restoration project that includes restoration of a first order stream and includes stormwater infiltration SCMs		5
1.G.2		Restoration project that includes restoration and/or protection of riparian buffers to at least 30 feet on both sides of the stream		5
1.H		Project will provide SCMs to treat existing sources of pollution		10
1.H.1		Project that includes SCMs in series that achieve at least 35% nutrient reduction (both TN and TP) and 85% TSS reduction		10
1.I		Project will provide reclaimed water/usage or rainwater harvesting/usage		10

2023 PRIORITY RATING SYSTEM for Wastewater Projects				
<b>1.J</b>		Project addresses PFAS emerging contaminants		
1.J.1	EC	Sole purpose of the project is to address Emerging Contaminants (construction projects) where 100% of the costs are associated with this purpose <b>OR</b>		20
1.J.2	EC	At least 75% of the project costs are to address Emerging Contaminants (construction projects) <b>OR</b>		15
1.J.3	EC	Sole purpose of the project is to evaluate alternatives to address Emerging Contaminants (may include pilot scale treatment study)		5
<b>Maximum points for Category 1 – Project Purpose</b>				<b>25</b>
<b>Subtotal claimed for Category 1 – Project Purpose</b>				<b>20</b>
Line Item #	EC Line Item <sup>†</sup>	Category 2 – Project Benefits	Claimed Yes/No	Points
<b>2.A – 2.B</b>		Reserved for other programs		
<b>2.C</b>		Project provides a specific environmental benefit		
2.C.1		Project replaces or repairs certain sewer lines, eliminates failed onsite wastewater system or non-discharge system, or resolves managerial, technical & financial issues		15
2.C.2		Project eliminates malfunctioning onsite wastewater systems		10
<b>2.D</b>		Project addresses promulgated but not yet effective regulations		10
<b>2.E</b>		Project directly addresses enforcement documents		
2.E.1		Project directly addresses an EPA Administrative Order for a local government Applicant located in a Tier 1 county, or addresses an existing or pending SOC, or a DEQ Administrative Order, <b>OR</b>		5
2.E.2		Project directly resolves a Notice of Violation or Notice of Deficiency	X	3
<b>2.F</b>		Project includes system merger or regionalization		
2.F.1		Project includes system merger <b>OR</b>		10
2.F.2	EC	Project includes system regionalization and/or system partnerships		5
<b>2.G – 2.H.2</b>		Reserved for other programs		
2.H.3	EC	Project addresses any PFAS compounds exceeding 10 ppt or State-established regulatory standards or limits <b>OR</b>		5

2023 PRIORITY RATING SYSTEM for Wastewater Projects				
2.H.4	EC	Project addresses PFAS exceeding proposed MCL or Hazard Index		10
2.I		Project improves treated water quality by adding or upgrading a unit process	X	3
<b>2.J – 2.M</b>		Reserved for other programs		
<b>2.N</b>		Project provides resiliency for critical system functions		
2.N.1		Project relocates infrastructure from inside 100-year floodplain to outside 500-year floodplain <b>OR</b>		8
2.N.2		Project relocates infrastructure out of a 100-year floodplain <b>OR</b>		5
2.N.3		Project relocates infrastructure from between the 100-year and 500-year floodplains to outside the 500-year floodplain <b>OR</b>		3
2.N.4		Project fortifies or elevates infrastructure within floodplain <b>OR</b>	X	4
2.N.5		Project improves ability to assure continued operation during flood events <b>OR</b>		4
2.N.6		Project reduces the size of infrastructure as a result of a buyout or other abrupt loss of population <b>OR</b>		4
2.N.7		Project provides redundancy/resiliency for critical treatment and/or transmission/distribution system functions including cybersecurity and/or backup electrical power source		3
<b>2.O</b>		Project <u>directly benefits</u> subwatersheds that are impaired as noted on the most recent version of the Integrated Report	X	20
<b>2.P</b>		Project <u>directly benefits</u> specific classified waters		10
<b>2.Q</b>		Project will result in elimination of an NPDES discharge		3
<b>2.R</b>		Primary purpose of the project is to achieve at least 20% reduction in energy use		5
<b>2.S</b>		Reserved for other programs		
<b>Maximum points for Category 2 – Project Benefits</b>				35
<b>Subtotal claimed for Category 2 – Project Benefits</b>				30
Line Item #	EC Line Item <sup>†</sup>	Category 3 – System Management	Claimed Yes/No	Points
<b>3.A</b>		Capital Planning Activities		
3.A.1	EC	Applicant has implemented an Asset Management Plan as of the date of application <b>OR</b>		10

2023 PRIORITY RATING SYSTEM for Wastewater Projects				
3.A.2	EC	Applicant has a current Capital Improvement Plan (CIP) that spans at least 10 years and proposed project is included in the plan	X	2
3.B	EC	System Operating Ratio is greater than or equal to 1.00 based on a current audit, or is less than 1.00 and unit cost is greater than 2.5% of MHI	X	5
3.C – 3.E		Reserved for other programs		
Maximum points for Category 3 – System Management				15
Subtotal claimed for Category 3 – System Management				7
Line Item #	EC Line Item <sup>†</sup>	Category 4 – Affordability	Claimed Yes/No	Points
4.A		Residential Connections		
4.A.1	EC	Less than 10,000 residential connections <b>OR</b>		2
4.A.2	EC	Less than 5,000 residential connections <b>OR</b>		4
4.A.3	EC	Less than 1,000 residential connections		8
4.B		Current Monthly Combined Utility Rates at 5,000 Usage		
4.B.1	EC	Greater than \$79 <b>OR</b>		4
4.B.2	EC	Greater than \$90 <b>OR</b>		6
4.B.3	EC	Greater than \$107 <b>OR</b>		8
4.B.4	EC	Greater than \$129		10
4.C		Local Government Unit (LGU) Indicators		
4.C.1	EC	3 out of 5 LGU indicators worse than state benchmark <b>OR</b>		3
4.C.2	EC	4 out of 5 LGU indicators worse than state benchmark <b>OR</b>		5
4.C.3	EC	5 out of 5 LGU indicators worse than state benchmark <b>OR</b>		7
4.C.4	EC	Project benefits disadvantaged areas		5
4.D – 4.G		Reserved for other programs		
Maximum points for Category 4 – Affordability				25
Subtotal claimed for Category 4 – Affordability				0
<b>Total of Points for All Categories</b>				<b>57</b>



Section 6

**Durham County**  
**Triangle WWTP Rehabilitation and**  
**Improvements**

Priority Rating System  
Narrative

April 2024





# Priority Rating System Narrative

## Durham County

### Triangle WWTP Miscellaneous Improvements and Upgrades

#### Category 1 Project Purpose

##### Line Item #1.C Rehabilitation or Replacement without Capacity Increase – 12 points

The Triangle Wastewater Treatment Plant (WWTP, shown in **Appendix A**) was originally constructed in the 1960s and consisted of two facultative lagoons to serve the southeast portion of Durham County. Since that time, the plant has subsequently been expanded in the 1970s, 1980s and 1990s to address growth spurred by Research Triangle Park (RTP), as well as residential and commercial growth. The most recent expansion and upgrade was in the early 2000s to a 12-million-gallon-per-day (MGD) enhanced nutrient removal (ENR) WWTP to address growth and protect the discharge receiving stream, Northeast Creek, which is a Class IV, nutrient sensitive water (NSW) that is part of the Cape Fear River Basin. In 2012, a reclaimed water system was implemented at the plant to provide cooling tower and irrigation water to local industries within RTP, to further reduce the nutrient loading to Northeast Creek and reduce potable demand required by its customers.

The proposed improvements to the Triangle WWTP generally include the items outlined below. After the improvements, the plant will remain rated at its current capacity of 12 MGD. The proposed improvements will not result in an increase in capacity nor an expansion of the plant.

- Headworks
  - Replacement of mechanical equipment at the headworks with two (2) mechanical bar screens and two (2) washer/compactors.
  - Installation of two (2) new submersible pumps in the influent pump station.
  - The existing headworks is greater than 20 years old and at the end of its useable life. Headworks upgrades will replace equipment at or beyond its usable life with no increase in capacity.
- Grit removal
  - Installation of two (2) recessed impeller pumps for grit removal from existing vortex grit units.
  - Demolition of existing grit classifier and replacement with two (2) new grit classifiers.

- The existing vortex grit removal system and grit classifier are greater than 20 years old and at the end of their usable life. Grit removal modifications will increase efficiency beyond the efficiency of the existing equipment, with no increase in capacity.
- Biological Nutrient Removal (BNR)
  - Modifications to mixers, brush aerators, blowers, and diffused air piping in the BNR trains.
    - Replacement of diffused aeration grid in BNR Treatment Train No. 1 and BNR Treatment Train No. 3.
    - Replacement of aerators with four (4) 75 hp brush aerators equipped with VFDs and four (4) new diversion baffles in BNR Treatment Train No. 2 and four (4) 75 hp brush aerators equipped with VFDs for BNR Treatment Train No. 3.
    - Installation of a third 125 hp blower equipped with inverter duty motor.
    - Installation of a new 125 hp VFD within the existing Electrical Building adjacent to the VFDs.
    - Modifications to existing blower aeration piping to allow one (1) 125 hp blower to serve a single BNR Treatment Train diffused aeration grid.
    - Replacement of submersible mixers throughout BNR Treatment Train No. 3.
    - Compressed air mixing system for all BNR trains including nozzles, valves, headers, and compressors.
  - BNR Train No. 3 is older than 20 years and beyond its usable life. BNR modifications will increase efficiency of the existing BNR system with no increase in capacity.
- Secondary clarifiers
  - Modification to RAS pump controls, piping, and valve operation to improve secondary clarifier drainage.
  - The existing clarifiers, mechanisms, and appurtenances are greater than 20 years old and at the end of their usable life. This modification is like for like with no increase in capacity.
- Tertiary filters
  - Demolition of existing traveling bridge filters and replacement with four (4) new tertiary disc filters.

- The existing travelling bridge filters are greater than 20 years old and at the end of their usable life. Filter replacement will increase filter efficiency with no increase in capacity.
- Ultraviolet (UV) disinfection
  - Demolition of existing UV disinfection system, which is greater than 20 years old and at the end of its usable life, and replacement with new two-channel inclined UV disinfection system.
  - UV system replacement is like-for-like with no increase in capacity.
- Reclaimed water system
  - Installation of a new sodium hypochlorite bulk storage tank and feed pumps adjacent to existing reclaimed water pump station, to have the reclaimed chemical dosing system closer to the reclaimed water pump station.
  - Relocation of existing vertical turbine pumps.
  - Installation of a solar-powered tank mixer for the above-ground storage tank.
  - Reclaimed water system modifications will not result in an increase in capacity of the reclaimed water system.
- Residuals processing and disposal
  - Modifications to the centrifuges and solids conveyance
    - Replacement of residuals polymer chemical totes with a bulk storage tank.
    - Removal of existing cake pumps, piping, and appurtenances and replacement with a horizontal screw conveyor system.
  - Residuals processing modifications will not increase capacity of residuals processing system.
- Assorted painting and instrumentation and controls upgrades required because of the above improvements.

Upgrades to existing equipment will be like-for-like or in-kind replacements/modifications with no increase in treatment capacity. Additional treatment processes will improve finished water quality as noted in Line Item 2.I but will not provide a capacity increase to the Triangle WWTP.

### **Line Item #1.C.1 Replace especially old infrastructure – 8 points**

Most of the equipment being replaced, upgraded, or modified installed during the early 2000s as part of the 12-mgd ENR project, as described in Line Item 1.C, are the original equipment and are approaching the end of their useful design life. Proof of equipment age for portions of the plant

Durham County

Triangle WWTP Miscellaneous Improvements and Upgrades – PRS Narrative

April 30, 2024

Page 4

being replaced is shown in the Triangle WWTP Phase 1 record drawings in **Appendix B**, dated from August 2000.

**Subtotal claimed for Category 1 – Project Purpose: 20 points**

## **Category 2 Project Benefits**

### **Line Item #2.E.2 – Project Resolves a Notice of Violation or Notice of Deficiency – 3 points**

The Triangle WWTP received two Notices of Deficiency (NOD) and one Notice of Violation (NOV) in 2022 for BOD<sub>5</sub> exceedances. Another one NOD and one NOV were received in 2023, also for BOD<sub>5</sub>. The previous NOV received prior to these was in 2019 and included an Intent to Assess. As noted in the previous paragraphs, much of the equipment at the Triangle WWTP is approaching the end of or is already beyond its useful life. This project specifically addresses the violations and deficiencies by upgrading and improving the aeration system in the BNRs to improve nutrient and BOD<sub>5</sub> removal prior to discharge. Further, this project replaces older and unreliable equipment that is difficult to maintain with new equipment to improve plant operations through more efficient and reliable equipment to ensure permit compliance and reduce O&M costs. A copy of the NOVs and NODs received throughout 2022 and 2023 are attached in **Appendix C**.

### **Line Item #2.I – Project Improves Treated Water Quality by Adding or Upgrading a Unit Process – 3 points**

While several “in-kind” improvements are being made to process equipment units that are at or beyond their useful life, the proposed improvements also include upgrades that improve treatment performance compared to the original process. Improvements include:

- The addition of baffles to the existing vortex grit removal units to improve grit capture efficiency.
- Two (2) new grit classifiers for promoting better grit removal.
- Increasing the aeration capabilities of the BNR system with new brush aerators, a new fine bubble aeration grid in Treatment Trains No. 1 and 3, and a third rotary lobe blower for improved aeration in the biological system for better nutrient and BOD<sub>5</sub> removal.
- New cloth media disc filters to provide improved tertiary filtration compared to the existing traveling bridge filters to further removal of suspended solids and turbidity in the final treated effluent.

Durham County

Triangle WWTP Miscellaneous Improvements and Upgrades – PRS Narrative

April 30, 2024

Page 5

**Line Item #2.N.5 – Assure Continuous Operation of Infrastructure located within the 100-year floodplain (without relocating it out of floodplain)**

The Triangle WWTP is essentially entirely in the 100-year floodplain for Northeast Creek (see **Appendix A**). Updates and improvements to the Triangle WWTP as part of this project include elevating and maintaining infrastructure that already exists in the 100-year floodplain to have top-of-wall elevations two feet above the base flood elevation of 248.7 feet to maintain operations of all processes located within the 100-year floodplain.

**Line Item #2.O – Benefit subwatersheds that are impaired as noted on the most recent version of the Integrated Report – 20 points**

The Triangle WWTP discharges into Northeast Creek (segment 16-41-1-17-(0.7)), which is classified by the state as a WS-IV and NSW waterbody. According to the NC 2022 Integrated Report as well as the fact sheet for the facility NPDES permit (see excerpts in **Appendix D**), the receiving stream downstream of the WWTP outfall (stream Assessment Unit 16-41-1-17-(0.7)b1) is impaired for fecal coliform as well as turbidity. There is a stream-specific TMDL in place for fecal coliform for the receiving water.

The improvements to tertiary treatment processes at the Triangle WWTP include replacing the existing travelling bridge filter with new, higher-efficiency tertiary cloth disk filters, as well as replacing the ultraviolet disinfection system which has exceeded its useful life with a new, energy-efficient ultraviolet disinfection system. These tertiary treatment improvements to the Triangle WWTP will reduce turbidity and biologically-active discharge and result in higher quality effluent from the facility, thereby providing a direct benefit to Assessment Unit 16-41-1-17-(0.7)b1 and qualifying for points under line item #2.O.

**Subtotal claimed for Category 2 – Project Benefits: 30 points**

**Category 3 System Management**

**Line Item #3.A.2 – Capital Improvement Plan – 2 points**

Durham County has a 10-year capital improvement plan (CIP) that includes improvements to the Triangle WWTP. See **Appendix E** for an excerpt of the CIP regarding the WWTP improvements.

**Line Item #3.B – System Operating Ratio – 5 points**

According to the most recent year of audit data on the Financial Information Form and as shown in the calculation below, the operating ratio for Durham County is 1.86, qualifying for points under this line item.

$$\text{Operating Ratio} = \frac{\text{Operating Revenues}}{(\text{Total Expenditures} + \text{Debt Principal} + \text{Interest} + \text{Capital Outlay})}$$

$$\textit{Operating Ratio} = \frac{\$23,740,324}{(\$6,837,457 + \$1,491,146 + \$214,407 + \$4,242,976)} = 1.86$$

**Subtotal claimed for Category 3 – System Management: 7 points**

#### **Category 4 Affordability**

**Subtotal claimed for Category 4 – Affordability: 0 points**

**TOTAL POINTS CLAIMED: 57 POINTS**



Section 7

**Durham County**  
**Triangle WWTP Rehabilitation and**  
**Improvements**

Supporting Documentation  
for Priority Rating System  
Narrative

April 2024



# Appendix A

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Durham County

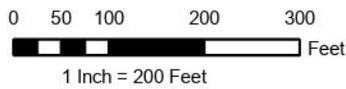
Triangle Wastewater Treatment Plant Location

Figure

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Northeast Creek is an impaired waterbody per the NC 2022 IR



**CDM  
Smith**

Sources: City of Durham Boundary, Stream Centerlines, Waterbodies, Primary and Secondary Roads from Open Data City and County of Durham, Flood Hazard Area and Base Flood Elevations from FEMA National Flood Hazards Layers for Durham County.

**LEGEND**

- Stream Centerline
- Impaired Waterbody
- Waterbodies
- Primary Road
- Secondary Road
- Project Location
- Flood Hazard Area
  - Zone AE Regulatory Floodway
  - Zone AE: 1% Annual Chance Flood Hazard
  - Zone X: Future Conditions

DURHAM COUNTY, NORTH CAROLINA

**Triangle WWTP  
Rehabilitation  
and Improvements**

5926 NC-55, Durham, NC 27713

## Appendix B

### Proof of Equipment Age

Dated record drawings are attached for equipment older than 20 years:

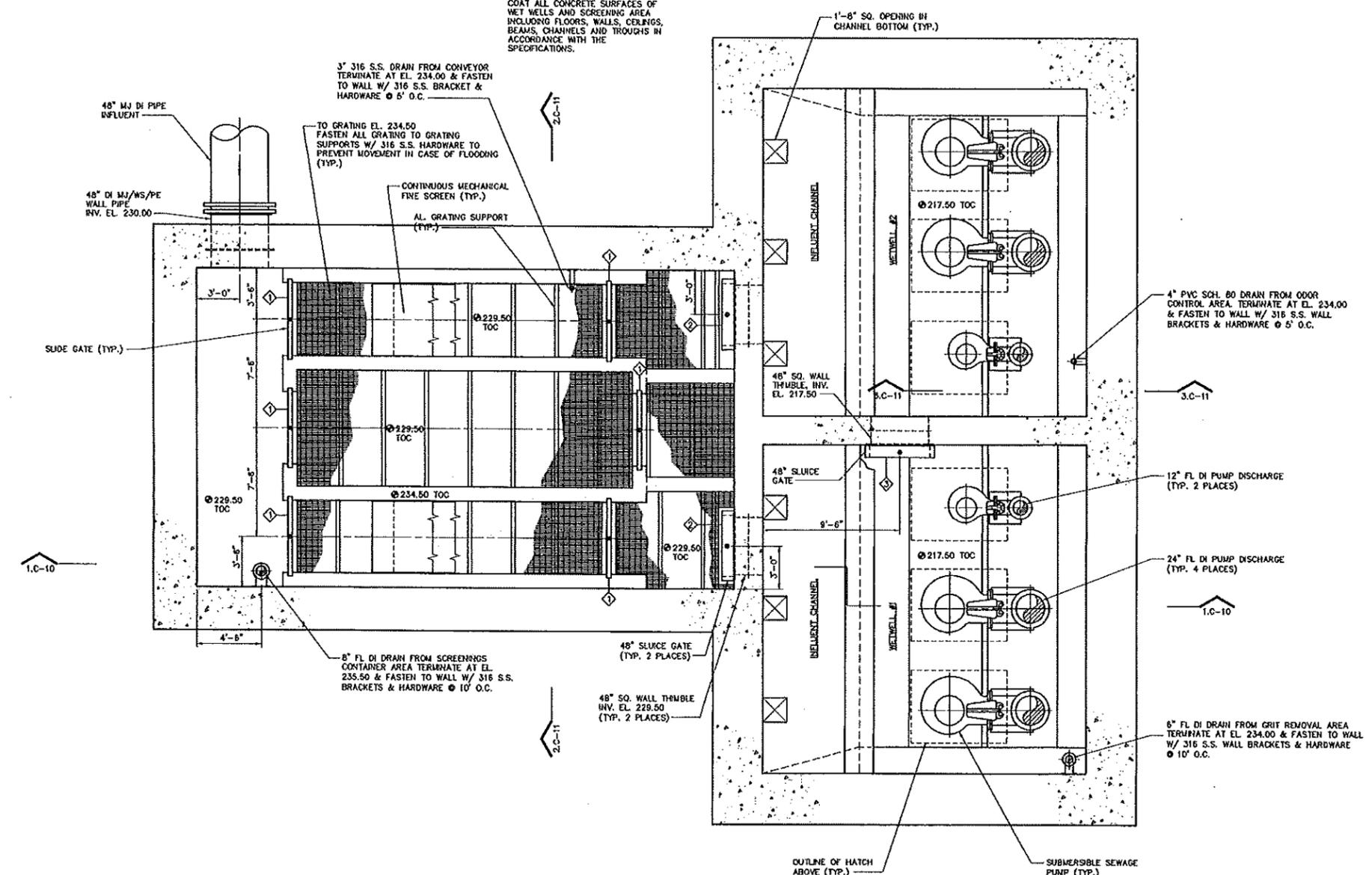
- Bar screens, screenings conveyor, and washer/compactor
- Influent Pumps
- Vortex grit removal and grit classifier
- BNR Treatment Train No. 3
- Secondary clarifier drives
- RAS/WAS pumps
- Traveling bridge filters
- UV disinfection

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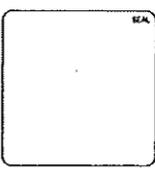
NOTE:  
COAT ALL CONCRETE SURFACES OF  
WET WELLS AND SCREENING AREA  
INCLUDING FLOORS, WALLS, CEILINGS,  
BEAMS, CHANNELS AND TROUGHS IN  
ACCORDANCE WITH THE  
SPECIFICATIONS.



LOWER LEVEL PLAN  
1/4" = 1'-0"



NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMITS	8/1/00
2	FOR CONSTRUCTION	8/1/00
3	REVISED PER COMMENTS	8/1/00
4	REVISED PER COMMENTS	8/1/00
5	REVISED PER COMMENTS	8/1/00
6	REVISED PER COMMENTS	8/1/00
7	REVISED PER COMMENTS	8/1/00
8	REVISED PER COMMENTS	8/1/00
9	REVISED PER COMMENTS	8/1/00
10	REVISED PER COMMENTS	8/1/00



**MCKIM & CREED**  
5625 Dillard Road, Suite 117  
Phone: (919)233-8091 Fax: (919)233-8331  
Cary North Carolina 27511  
AA0002667  
Internet Site: <http://www.mckimcreed.com>



**DURHAM COUNTY**  
NORTH CAROLINA

**DIVISION I**  
**TRIANGLE WASTEWATER TREATMENT PLANT**  
**PHASE I**  
**INFLUENT PUMP STATION**  
**AND SCREENING AREA**  
**LOWER LEVEL PLAN**

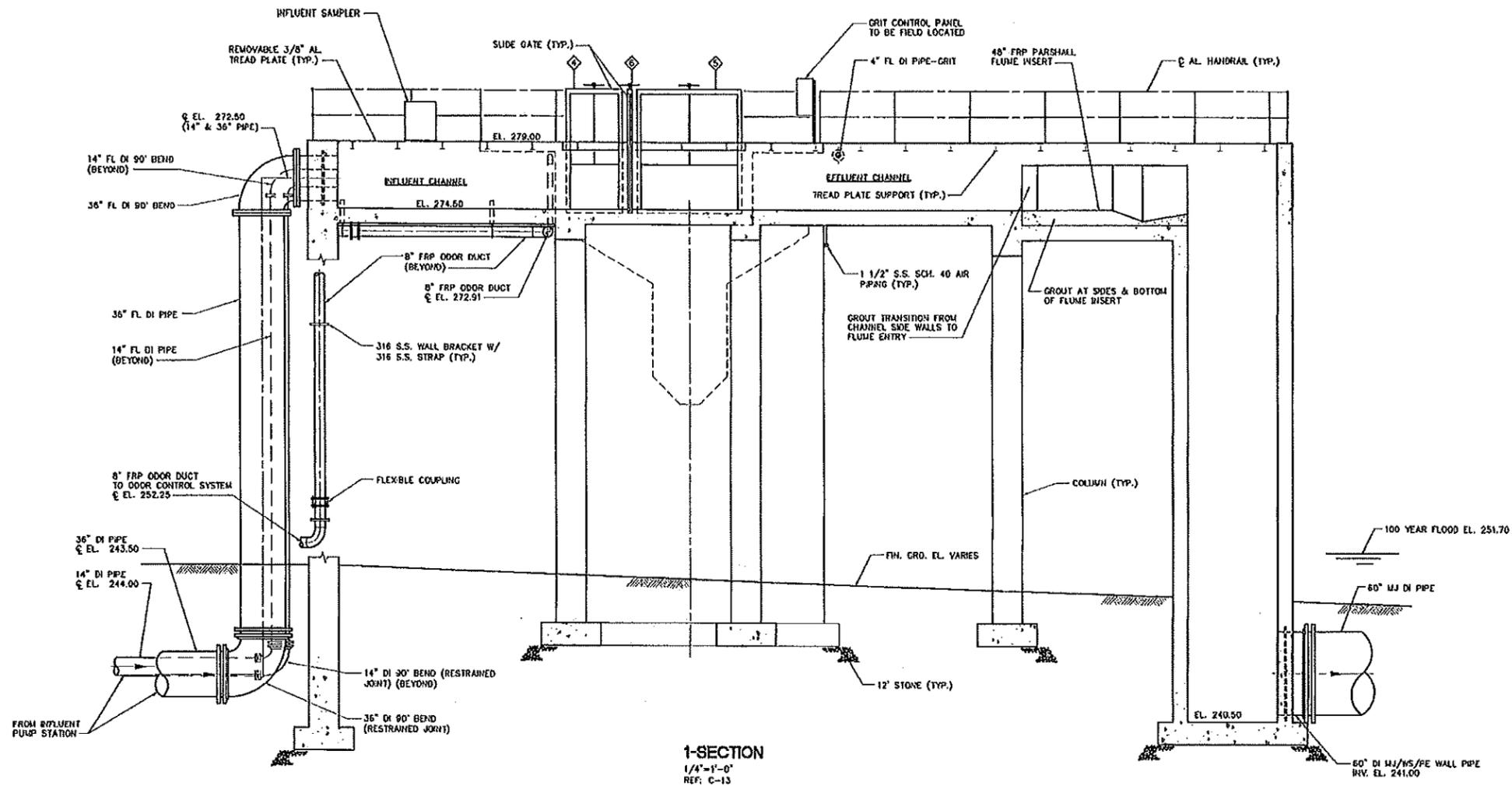
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DESIGNED:	SGO		
CHECKED:	BFB		
PROJ. MGR.	BFB		
STATUS:		REVISION:	3

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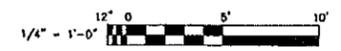








1-SECTION  
1/4" = 1'-0"  
REF: C-13



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NO.	DESCRIPTION	DATE
1	PREPARED FOR CONSTRUCTION	8/21/01
2	FOR RECORDS	8/21/01
3	FOR RECORDS	8/21/01



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**DURHAM COUNTY**  
 DURHAM COUNTY  
 NORTH CAROLINA

**DIVISION I**  
**TRIANGLE WASTEWATER TREATMENT PLANT**  
**PHASE I**  
**GRIT REMOVAL AND FLOW MEASUREMENT SECTION**

DATE: AUGUST 2000	SCALE: CK304
USE PROJ # 01471-0001	VERTICAL: NA
DRAWN: EGO	REVISION: 3
DESIGNED: SCG	
CHECKED: BFB	
PROJ MGR: BFB	





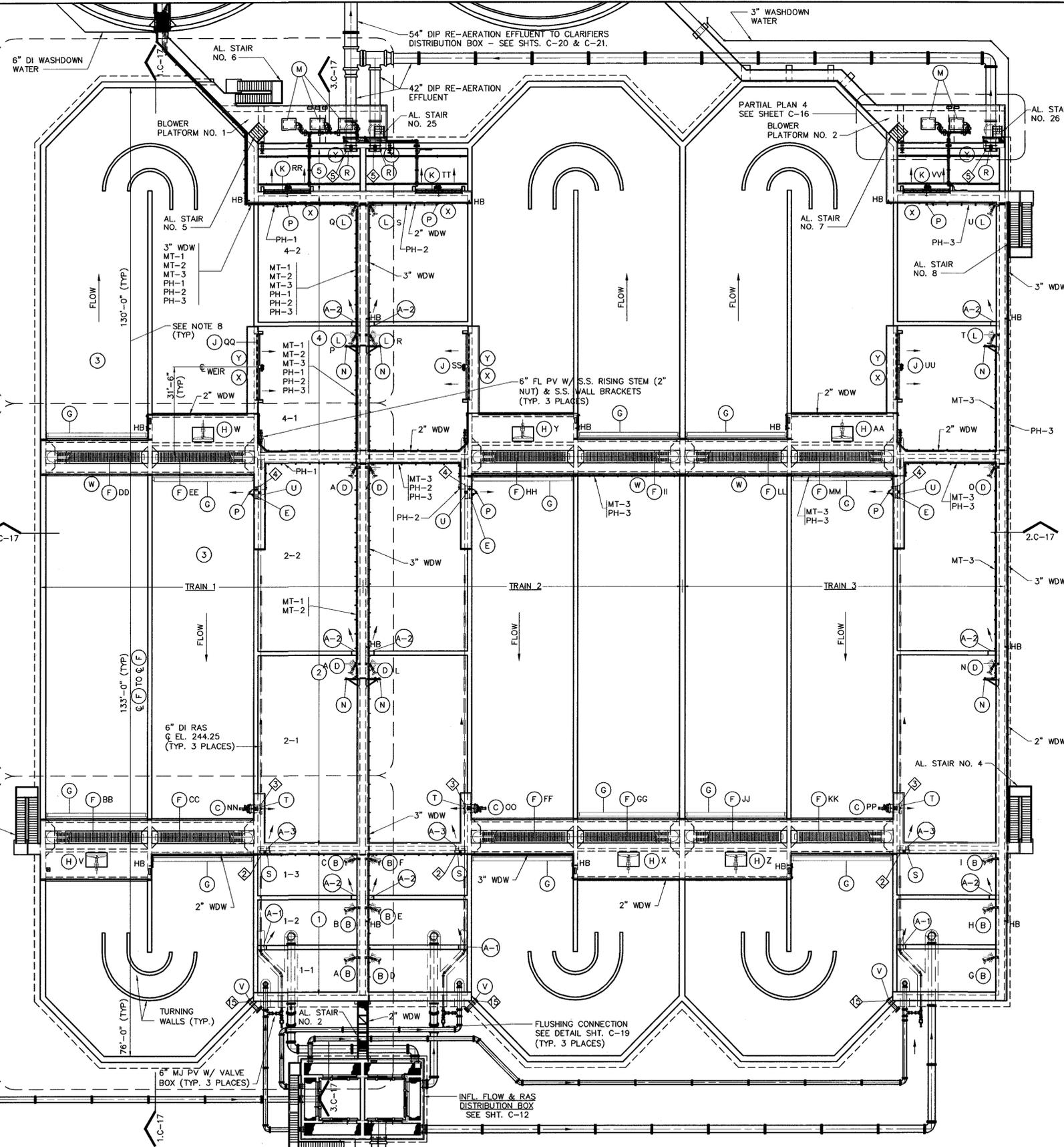
**BNR EQUIPMENT TAGGING**

- A ANAEROBIC MIXER #1
- B ANAEROBIC MIXER #2
- C ANAEROBIC MIXER #3
- D ANAEROBIC MIXER #4
- E ANAEROBIC MIXER #5
- F ANAEROBIC MIXER #6
- G ANAEROBIC MIXER #7
- H ANAEROBIC MIXER #8
- I ANAEROBIC MIXER #9
- J PRIMARY ANOXIC REACTOR MIXER #1
- K PRIMARY ANOXIC REACTOR MIXER #2
- L PRIMARY ANOXIC REACTOR MIXER #3
- M PRIMARY ANOXIC REACTOR MIXER #4
- N PRIMARY ANOXIC REACTOR MIXER #5
- O PRIMARY ANOXIC REACTOR MIXER #6
- P SECONDARY ANOXIC REACTOR MIXER #1
- Q SECONDARY ANOXIC REACTOR MIXER #2
- R SECONDARY ANOXIC REACTOR MIXER #3
- S SECONDARY ANOXIC REACTOR MIXER #4
- T SECONDARY ANOXIC REACTOR MIXER #5
- U SECONDARY ANOXIC REACTOR MIXER #6
- V OXIDATION DITCH #1 MIXER #1
- W OXIDATION DITCH #1 MIXER #2
- X OXIDATION DITCH #2 MIXER #1
- Y OXIDATION DITCH #2 MIXER #2
- Z OXIDATION DITCH #3 MIXER #1
- AA OXIDATION DITCH #3 MIXER #2
- BB OXIDATION DITCH #1 ROTOR #1
- CC OXIDATION DITCH #1 ROTOR #2
- DD OXIDATION DITCH #1 ROTOR #3
- EE OXIDATION DITCH #1 ROTOR #4
- FF OXIDATION DITCH #2 ROTOR #1
- GG OXIDATION DITCH #2 ROTOR #2
- HH OXIDATION DITCH #2 ROTOR #3
- II OXIDATION DITCH #2 ROTOR #4
- JJ OXIDATION DITCH #3 ROTOR #1
- KK OXIDATION DITCH #3 ROTOR #2
- LL OXIDATION DITCH #3 ROTOR #3
- MM OXIDATION DITCH #3 ROTOR #4
- NN WALL PUMP #1
- OO WALL PUMP #2
- PP WALL PUMP #3
- QQ OXIDATION DITCH #1 WEIR #1
- RR OXIDATION DITCH #1 WEIR #2
- SS OXIDATION DITCH #2 WEIR #1
- TT OXIDATION DITCH #2 WEIR #2
- UU OXIDATION DITCH #3 WEIR #1
- VV OXIDATION DITCH #3 WEIR #2

PARTIAL PLAN 3  
SEE SHEET C-16

PARTIAL PLAN 2  
SEE SHEET C-15

PARTIAL PLAN 1  
SEE SHEET C-14



**NOTES:**

1. FOR PIPE SUPPORT DETAILS SEE SHEET D-4.
2. FOR HANDRAIL DETAILS SEE SHEET D-5.
3. FOR STAIR AND STAIR LANDING DATA AND DETAILS SEE SHEET D-5.
4. FOR GRATING & TREAD PLATE SUPPORT DETAILS SEE SHEET D-5.
5. FOR ELEVATED WALKWAY DETAILS SEE SHEET S-7.
6. ALL EXPOSED WASHDOWN WATER LINES SHALL BE INSULATED AND HEAT TRACED WITH HARD JACKET COVER.
7. ALL WASHDOWN WATER LINES TO BE PROVIDED W/PURPLE STRIPE TO INDICATE REUSE WATER.
8. VERIFY EQUIPMENT LOCATIONS WITH EQUIPMENT MANUFACTURER.
9. SEE CHEMICAL SYSTEM SCHEMATICS SHEET C-28.
10. CHEMICAL SUPPLY LINES AND WASHDOWN WATER LINES TO BE RUN ALONG EDGES OF CONCRETE WALKWAYS, AND PLATFORMS. SUPPORT LINES USING AL. ANGLE BRACKETS AT 5'-0\"/>

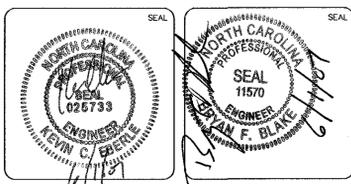
**LEGEND:**

- ⬠ GATE MARK - SEE GATE SCHEDULE AND DETAILS SHEET D-6.
- ⊠ 36\"/>

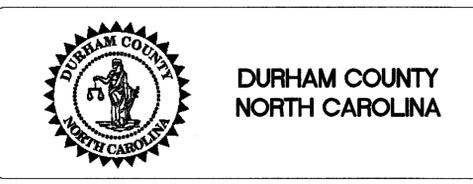
- A, DD, BNR EQUIPMENT TAGGING (SEE LEGEND LEFT SIDE THIS SHEET) ETC.
- ① ANAEROBIC STAGE (1-1, 1-2, 1-3)
- ② FIRST ANOXIC STAGE (2-1, 2-2)
- ③ OXIDATION STAGE
- ④ SECOND ANOXIC STAGE (4-1, 4-2)
- ⑤ RE-AERATION STAGE
- MT-1 METHANOL LINE TO APPLICATION POINT(S) AT BNR TRAIN 1
- MT-2 METHANOL LINE TO APPLICATION POINT(S) AT BNR TRAIN 2
- MT-3 METHANOL LINE TO APPLICATION POINT(S) AT BNR TRAIN 3
- PH-1 POTASSIUM HYDROXIDE LINE TO APPLICATION POINT(S) AT BNR TRAIN 1
- PH-2 POTASSIUM HYDROXIDE LINE TO APPLICATION POINT(S) AT BNR TRAIN 2
- PH-3 POTASSIUM HYDROXIDE LINE TO APPLICATION POINT(S) AT BNR TRAIN 3

**OVERALL PLAN**  
1\"/>

REV. NO.	DESCRIPTIONS	DATE
1	100% REVIEW COMMENTS	12-19-01
2	ISSUED FOR BIDDING	7-2002
3	REVISED AFTER CONSTRUCTION	09-2005



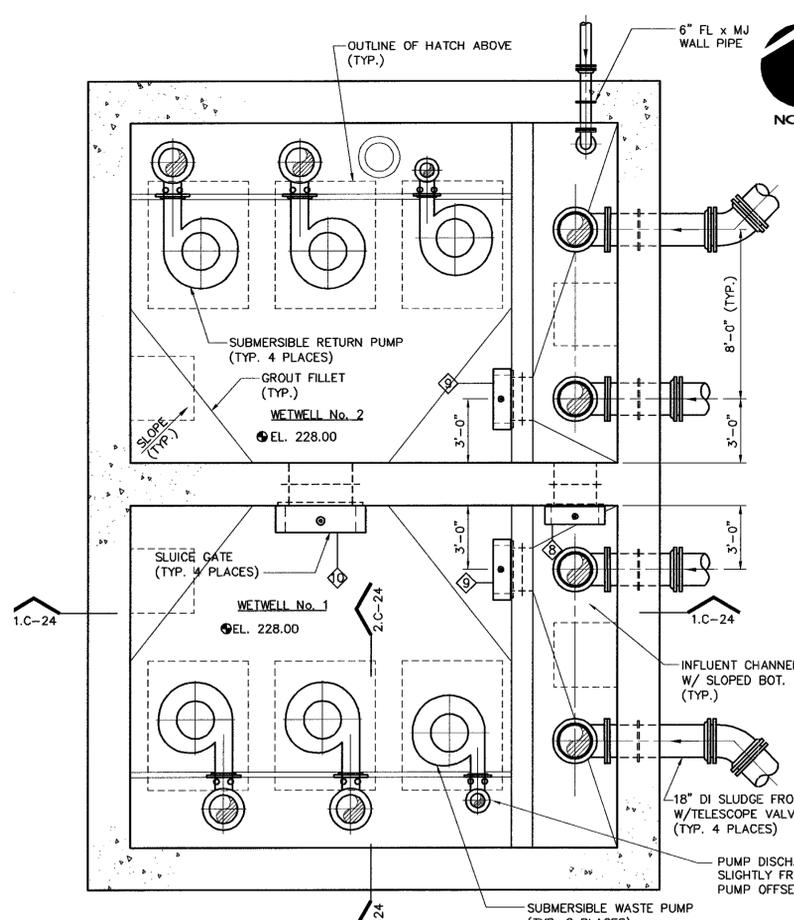
**MCKIM & CREED**  
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 Cary North Carolina 27511  
 AA0002667  
 Internet Site: <http://www.mckimcreed.com>



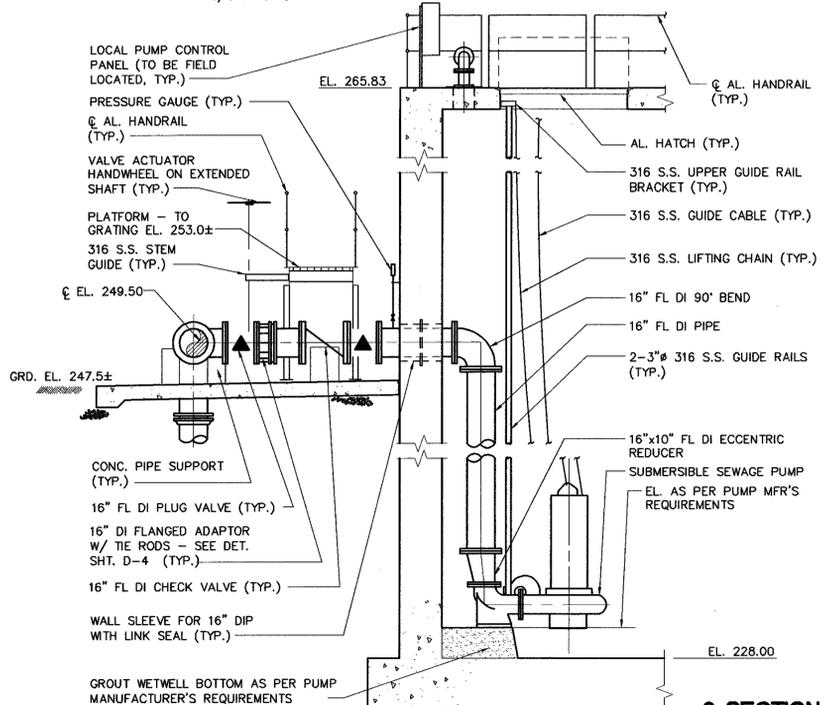
**TRIANGLE WASTEWATER TREATMENT PLANT  
 PHASE II**  
**5 STAGE BNR PROCESS BASIN  
 OVERALL PLAN**

DATE: OCTOBER 2001	SCALE:	M&C DWG NUMBER: CK102
M&C PROJ. # 01471-0003	HORIZONTAL:	SHEET NUMBER:
DRAWN: SGO	AS SHOWN:	<b>C-13</b>
DESIGNED: SGO	VERTICAL:	OF:
CHECKED: BFB	NA	
PROJ. MGR: BFB		
STATUS: REVISED AFTER CONSTRUCTION	REVISION:	<b>3</b>

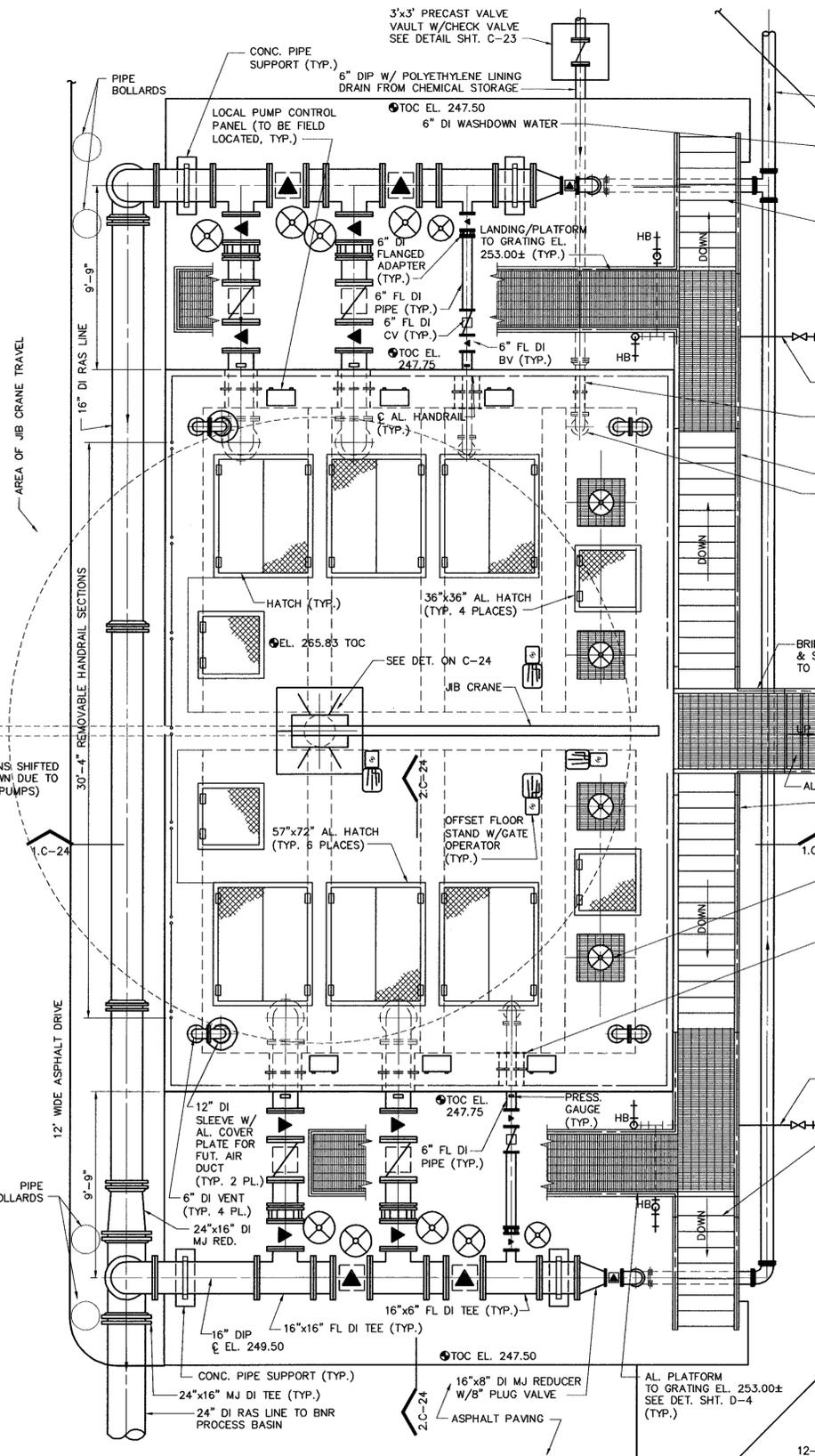
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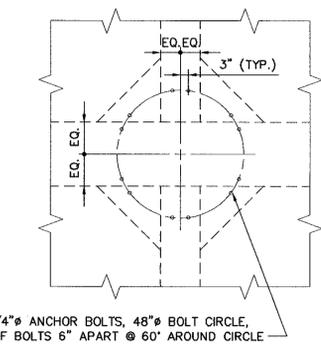
**LOWER PLAN**  
1/4" = 1'-0"



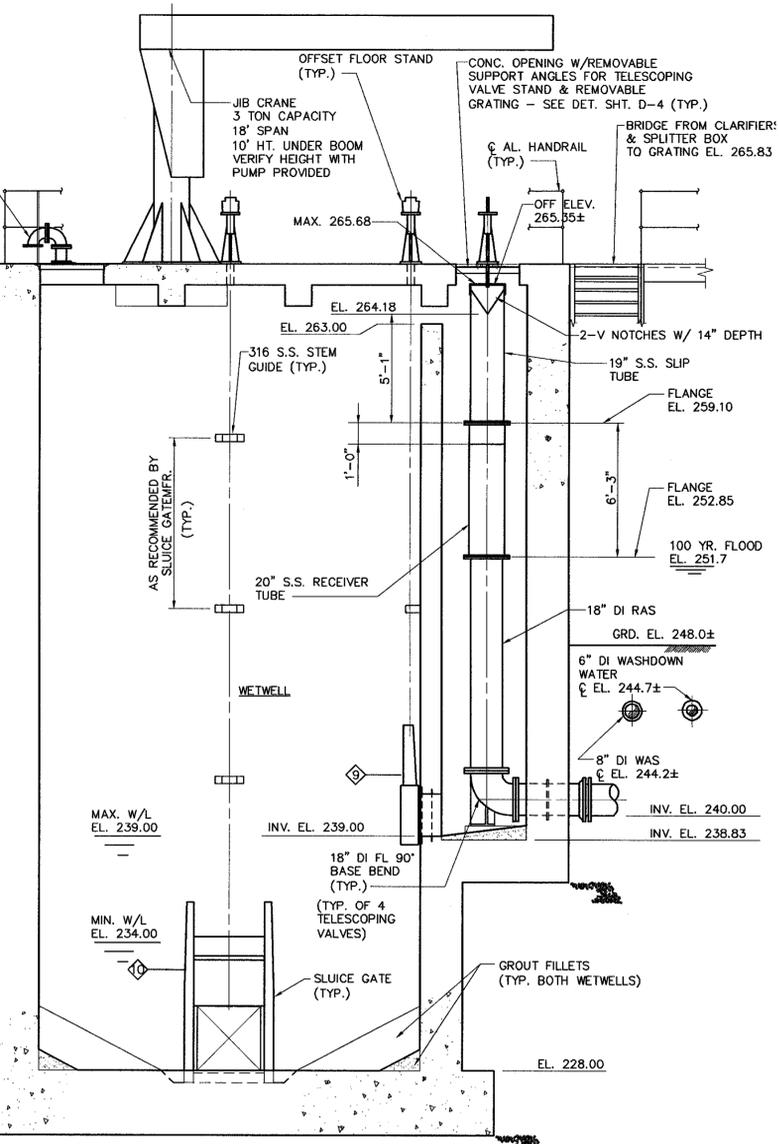
**2-SECTION**  
1/4" = 1'-0"  
REF: C-24



**TOP PLAN**  
1/4" = 1'-0"



**A-DETAIL**  
N.T.S.  
REF: C-8

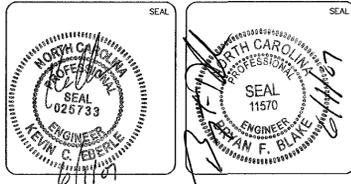


**1-SECTION**  
1/4" = 1'-0"  
REF: C-24

- NOTES:**
- FOR PIPE SUPPORT DETAILS SEE SHEET D-4.
  - FOR HANDRAIL DETAILS SEE SHEET D-5.
  - FOR STAIR AND STAIR LANDING DATA AND DETAILS SEE SHEET D-5.
  - FOR GRATING, TREAD PLATE AND ACCESS PLATFORM SUPPORT DETAILS SEE SHEET D-5.
  - FOR BRIDGE DETAILS SEE SHEET S-8.
  - ALL EXPOSED WASHDOWN WATER LINES SHALL BE INSULATED AND HEAT TRACED WITH HARD JACKET COVER.
  - ALL WASHDOWN WATER LINES TO BE PROVIDED W/PURPLE STRIPE OR PURPLE TAPE TO INDICATE REUSE WATER.
- LEGEND:**
- GATE MARK - SEE GATE SCHEDULE AND DETAILS SHEET D-6.



REV. NO.	DESCRIPTIONS / REVISIONS	DATE
1	ISSUE REVIEW COMMENTS	12-19-01
2	ISSUED FOR BIDDING	7-2002
3	CHANGES TO JIB CRANE	9-4-03
4	REVISED AFTER CONSTRUCTION	09-2005



**MCKIM & CREED**  
5625 Dillard Road, Suite 117  
Phone: (919)233-8091 Fax: (919)233-8031  
Cary North Carolina 27511  
AA0002667  
Internet Site: <http://www.mckimcreed.com>

**DURHAM COUNTY NORTH CAROLINA**

**TRIANGLE WASTEWATER TREATMENT PLANT PHASE II**

**RAS/WAS PUMP STATION PLANS AND SECTIONS**

DATE: OCTOBER 2001  
MCE PROJ. # 01471-0003  
DRAWN: SGO  
DESIGNED: SGO  
CHECKED: BFB  
PROJ. MGR.: BFB

SCALE: HORIZONTAL: AS SHOWN VERTICAL: NA

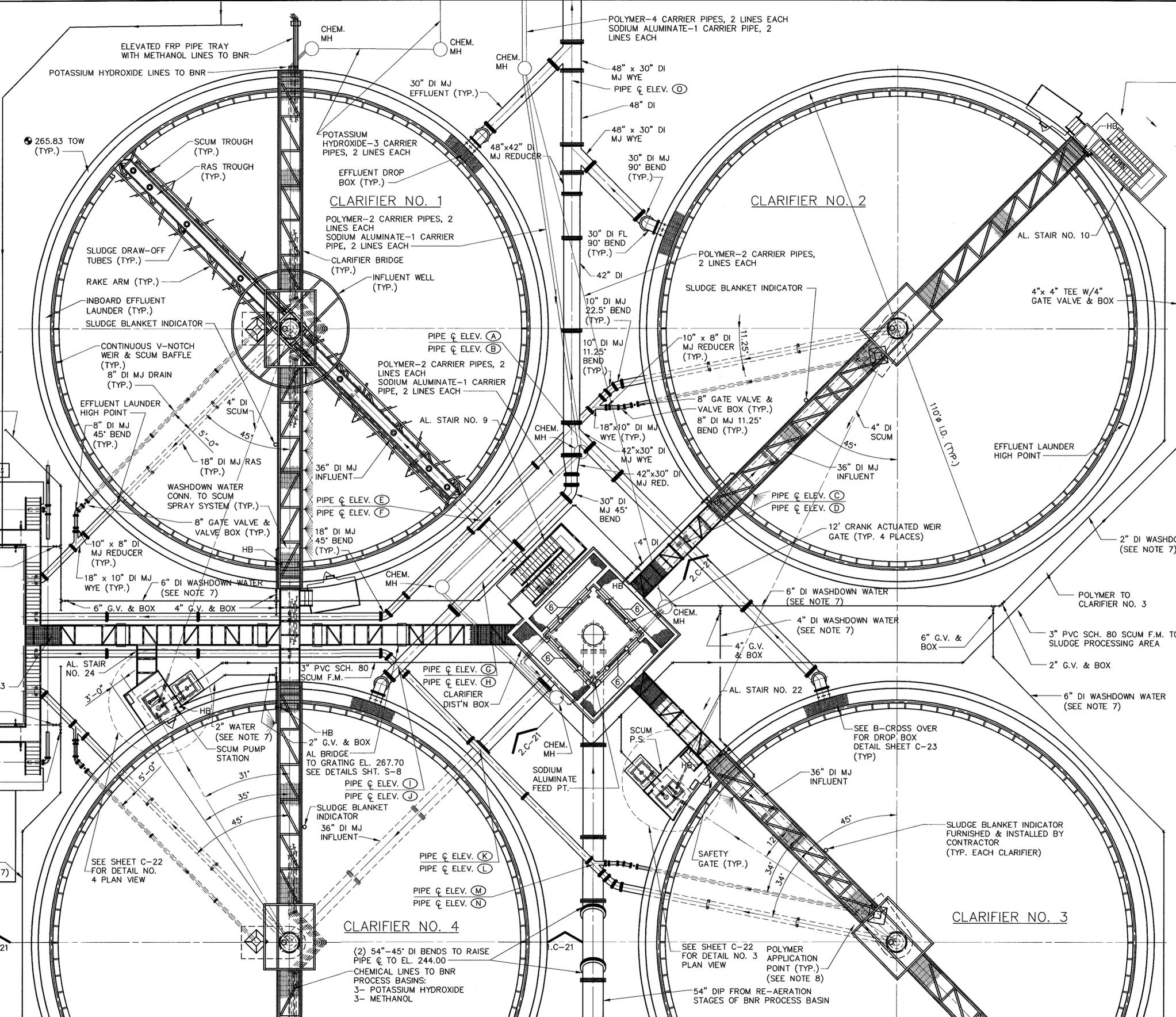
MAC DWG NUMBER: CK108  
SHEET NUMBER: C-24  
OF: 4

STATUS: REVISED AFTER CONSTRUCTION

File: S:\1471\0003\00-Rev0\C-108-014710003.DWG, Layout: C-24, By: ebornea, Plotted: Tue May 29, 2007 at 11:59am, XREFs Used: C-24, B: ebornea, Plotted: Tue May 29, 2007 at 11:59am, XREFs Used: ... \TRIANGL PHASE 2\Unp... \TRIANGL PHASE 2\Unp...



3/32" = 1'-0" 24' 0" 10' 20' 30'



- NOTES:**
1. FOR PIPE SUPPORT DETAILS SEE SHEET D-4.
  2. FOR HANDRAIL DETAILS SEE SHEET D-5.
  3. FOR STAIR AND STAIR LANDING DATA AND DETAILS SEE SHEET D-5.
  4. FOR GRATING & TREAD PLATE SUPPORT DETAILS SEE SHEET D-5.
  5. FOR BRIDGE DETAILS SEE SHEET D-5.
  6. ALL EXPOSED WASHDOWN WATER AND SCUM SPRAY LINES SHALL BE INSULATED AND HEAT TRACED WITH HARD JACKET COVER.
  7. ALL WASHDOWN WATER LINES TO BE PROVIDED W/PURPLE STRIPE OR PURPLE TAPE TO INDICATE REUSE WATER.
  8. POLYMER APPLICATION POINT TO BE FIELD SET PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND:**
- ◇ GATE MARK - SEE GATE SCHEDULE AND DETAILS SHEET D-6.

**PIPE ELEVATIONS:**

- (A) C ELEVATION 42" DI = 246.00
- (B) C ELEVATION 18" DI = 240.75
- (C) C ELEVATION 36" DI = 237.50
- (D) C ELEVATION 30" DI = 246.00
- (E) C ELEVATION 36" DI = 237.50
- (F) C ELEVATION 18" DI = 240.75
- (G) C ELEVATION 30" DI = 246.00
- (H) C ELEVATION 36" DI = 237.50
- (I) C ELEVATION 30" DI = 246.00
- (J) C ELEVATION 18" DI = 240.75
- (K) C ELEVATION 36" DI = 237.50
- (L) C ELEVATION 18" DI = 240.75
- (M) C ELEVATION 54" DI = 229.17
- (N) C ELEVATION 18" DI = 240.75
- (O) C ELEVATION 48" DI = 246.00

**OVERALL PLAN**  
3/32" = 1'-0"

REV. NO.	DESCRIPTIONS / REVISIONS	DATE
1	100% REVIEW COMMENTS	10-19-01
2	FIXED FOR BIDDING	7-2002
3	REVISED AFTER CONSTRUCTION	09-2005

SEAL

SEAL

**MCKIM & CREED**

5625 Dillard Road, Suite 117  
Phone: (919)233-8091 Fax: (919)233-8031  
Cary North Carolina 27511  
AA0002667  
Internet Site: <http://www.mckimcreed.com>

**DURHAM COUNTY**  
NORTH CAROLINA

**TRIANGLE WASTEWATER TREATMENT PLANT**  
PHASE II

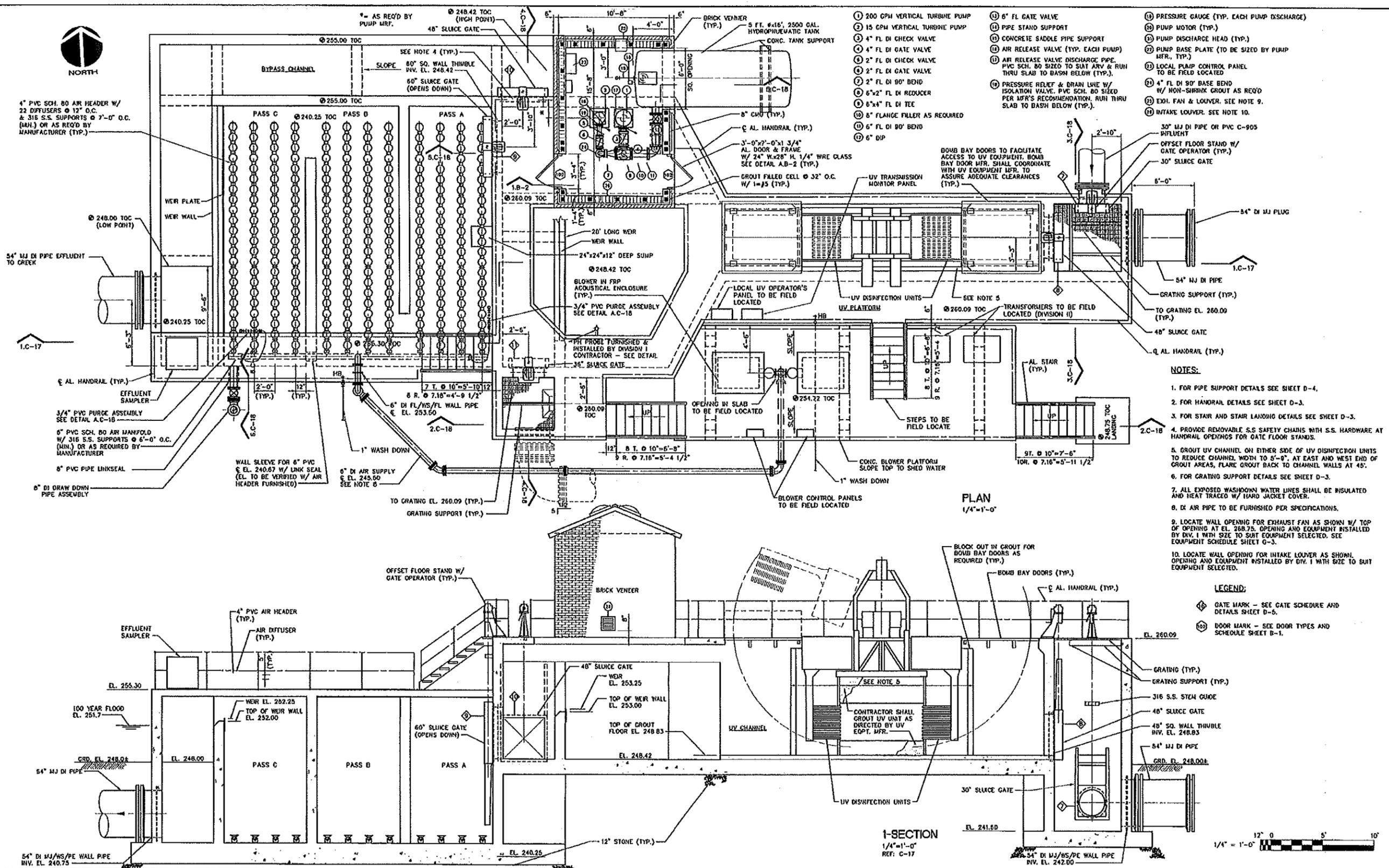
**CLARIFIERS**  
OVERALL PLAN

DATE: OCTOBER 2001	SCALE: AS SHOWN	MAG. DWG. NUMBER: CK107
MCE PROJ. # 01471-0003	HORIZONTAL: AS SHOWN	SHEET NUMBER: C-20
DRAWN: SGO	VERTICAL: NA	OF: 07
DESIGNED: SGO		
CHECKED: BFB		
PROJ. MGR.: BFB		
STATUS: REVISED AFTER CONSTRUCTION		REVISION: 3

File: S:\1471\0033\03-Revise\CK107-014710003.DWG, Layout: C-20, By: abornem, Plotted: Tue May 29, 2007 at 11:17am, XREFs Used: ... \TRIANGLE PHASE 2\C8001.DWG, IMAGES Used: ... \TRIANGLE PHASE 2\image1.rif





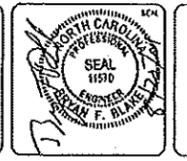
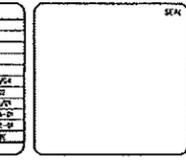


- 1 200 GPM VERTICAL TURBINE PUMP
- 2 15 GPM VERTICAL TURBINE PUMP
- 3 4" FL DI CHECK VALVE
- 4 4" FL DI GATE VALVE
- 5 2" FL DI CHECK VALVE
- 6 2" FL DI GATE VALVE
- 7 2" FL DI 90° BEND
- 8 6"x2" FL DI REDUCER
- 9 6"x4" FL DI TEE
- 10 6" FLANGE FILLER AS REQUIRED
- 11 6" FL DI 90° BEND
- 12 6" DP
- 13 6" FL GATE VALVE
- 14 PIPE STAND SUPPORT
- 15 CONCRETE SADDLE PIPE SUPPORT
- 16 AIR RELEASE VALVE (TYP. EACH PUMP)
- 17 AIR RELEASE VALVE DISCHARGE PIPE. PVC SCH. 80 SIZED TO SUIT AIR & RUN THRU SLAB TO BASH BELOW (TYP.).
- 18 PRESSURE RELIEF & DRAIN LINE W/ ISOLATION VALVE. PVC SCH. 80 SIZED PER MFR'S RECOMMENDATION. RUN THRU SLAB TO BASH BELOW (TYP.).
- 19 PRESSURE GAUGE (TYP. EACH PUMP DISCHARGE)
- 20 PUMP MOTOR (TYP.)
- 21 PUMP DISCHARGE HEAD (TYP.)
- 22 PUMP BASE PLATE (TO BE SIZED BY PUMP MFR. TYP.)
- 23 LOCAL PUMP CONTROL PANEL TO BE FIELD LOCATED
- 24 4" FL DI 90° BASE BEND W/ NON-SHRINK GROUT AS REQ'D
- 25 EXH. FAN & LOUVER. SEE NOTE 9.
- 26 INTAKE LOUVER. SEE NOTE 10.

- NOTES:**
- FOR PIPE SUPPORT DETAILS SEE SHEET D-4.
  - FOR HANDRAIL DETAILS SEE SHEET D-3.
  - FOR STAIR AND STAIR LANDING DETAILS SEE SHEET D-3.
  - PROVIDE REMOVABLE S.S. SAFETY CHAINS WITH S.S. HARDWARE AT HANDRAIL OPENINGS FOR GATE FLOOR STANDS.
  - GROUT UV CHANNEL ON EITHER SIDE OF UV DISINFECTION UNITS TO REDUCE CHANNEL WIDTH TO 5'-0", AT EAST AND WEST END OF GROUT AREAS. FLARE GROUT BACK TO CHANNEL WALLS AT 45°.
  - FOR GRATING SUPPORT DETAILS SEE SHEET D-3.
  - ALL EXPOSED WASHDOWN WATER LINES SHALL BE INSULATED AND HEAT TRACED W/ HARD JACKET COVER.
  - DI AIR PIPE TO BE FURNISHED PER SPECIFICATIONS.
  - LOCATE WALL OPENING FOR EXHAUST FAN AS SHOWN W/ TOP OF OPENING AT EL. 268.75. OPENING AND EQUIPMENT INSTALLED BY DIV. I WITH SIZE TO SUIT EQUIPMENT SELECTED. SEE EQUIPMENT SCHEDULE SHEET G-3.
  - LOCATE WALL OPENING FOR INTAKE LOUVER AS SHOWN. OPENING AND EQUIPMENT INSTALLED BY DIV. I WITH SIZE TO SUIT EQUIPMENT SELECTED.

- LEGEND:**
- ⊕ GATE MARK - SEE GATE SCHEDULE AND DETAILS SHEET D-5.
  - ⊕ DOOR MARK - SEE DOOR TYPES AND SCHEDULE SHEET B-1.

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMITS	7/25/00
2	ISSUED FOR PROPOSALS - GATE SCHEDULE NO. 1	7/25/00
3	FINAL FOR BIDDING	8/15/00
4	ISSUED TO DIVISION I CONTRACTOR	8/15/00
5	FOR RECORD	8/15/00



**MCKIM & CREED**  
 5625 Dilford Road, Suite 117  
 Phone: (919)233-8001 Fax: (919)233-8931  
 Cary North Carolina 27511  
 430002647  
 Internet Site: <http://www.mckimcreed.com>



**DIVISION 1  
 TRIANGLE WASTEWATER TREATMENT PLANT  
 PHASE I**  
**UV DISINFECTION AND POST AERATION  
 PLAN AND SECTION**

DATE: 21 JULY 00	SCALE: CK04
ISSUE NO: 01471-0001	SHEET NO: 17
DESIGNER: BFB	CHECKED: BFB
PROJECT NO: BFB	DATE: 8/15/00

# Appendix C

## Copies of NOVs and NODs from 2022 and 2023

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ROY COOPER  
Governor

ELIZABETH S. BISER  
Secretary

RICHARD E. ROGERS, JR.  
Director



NORTH CAROLINA  
Environmental Quality

September 28, 2022

Claudia O Hager  
Durham County  
200 E Main St 2nd Floor  
Durham, NC 27701

SUBJECT: **NOTICE OF DEFICIENCY**  
Tracking Number: NOD-2022-LV-0118  
Permit No. NC0026051  
Triangle WWTP  
Durham County

Dear Permittee:

A review of the July 2022 Discharge Monitoring Report (DMR) for the subject facility revealed the deficiency(s) indicated below:

**Limit Exceedance Deficiency(s):**

Sample Location	Parameter	Date	Limit Value	Reported Value	Type of Deficiency
001 Effluent	BOD, 5-Day (20 Deg. C) - Concentration (CO310)	7/9/2022	7.5	8.15	Weekly Average Exceeded

Please be aware that non-compliance with your permit could result in enforcement action by the Division of Water Resources for these and any additional violations of State law. The Raleigh Regional Office encourages you to take all necessary actions to bring your facility into compliance.

If you should need any assistance or would like to discuss this non-compliance situation, please contact Cheng Zhang of the Raleigh Regional Office at 919-791-4200.

Sincerely,

DocuSigned by:  
*Vanessa E. Manuel*  
B2916E6AB32144F...

Vanessa E. Manuel, Assistant Regional Supervisor  
Water Quality Regional Operations Section  
Raleigh Regional Office  
Division of Water Resources, NCDEQ

Cc: Laserfiche



ROY COOPER

*Governor*

ELIZABETH S. BISER

*Secretary*

RICHARD E. ROGERS, JR.

*Director*NORTH CAROLINA  
*Environmental Quality*

**Certified Mail # 7020 3160 0000 4115 7171**  
**Return Receipt Requested**

October 5, 2022

Claudia O Hager  
 Durham County  
 200 E Main St 2nd Floor  
 Durham, NC 27701

**SUBJECT: NOTICE OF VIOLATION**

Tracking Number: NOV-2022-LV-0716

Permit No. NC0026051

Triangle WWTP

Durham County

Dear Permittee:

A review of the August 2022 Discharge Monitoring Report (DMR) for the subject facility revealed the violation(s) indicated below:

**Limit Exceedance Violation(s):**

Sample Location	Parameter	Date	Limit Value	Reported Value	Type of Violation
001 Effluent	BOD, 5-Day (20 Deg. C) - Concentration (CO310)	8/13/2022	7.5	8.95	Weekly Average Exceeded
001 Effluent	BOD, 5-Day (20 Deg. C) - Concentration (CO310)	8/31/2022	5	5.12	Monthly Average Exceeded

Remedial actions, if not already implemented, should be taken to correct any noted problems. The Division of Water Resources may pursue enforcement actions for this and any additional violations. If the violations are of a continuing nature, not related to operation and/or maintenance problems, and you anticipate remedial construction activities, then you may wish to consider applying for a Special Order by Consent (SOC).



ROY COOPER  
Governor

ELIZABETH S. BISER  
Secretary

RICHARD E. ROGERS, JR.  
Director



NORTH CAROLINA  
Environmental Quality

November 16, 2022

Claudia O Hager  
Durham County  
200 E Main St 2nd Floor  
Durham, NC 27701

SUBJECT: **NOTICE OF DEFICIENCY**  
Tracking Number: NOD-2022-LV-0150  
Permit No. NC0026051  
Triangle WWTP  
Durham County

Dear Permittee:

A review of the September 2022 Discharge Monitoring Report (DMR) for the subject facility revealed the deficiency(s) indicated below:

**Limit Exceedance Deficiency(s):**

Sample Location	Parameter	Date	Limit Value	Reported Value	Type of Deficiency
001 Effluent	BOD, 5-Day (20 Deg. C) - Concentration (CO310)	9/30/2022	5	5.41	Monthly Average Exceeded

Please be aware that non-compliance with your permit could result in enforcement action by the Division of Water Resources for these and any additional violations of State law. The Raleigh Regional Office encourages you to take all necessary actions to bring your facility into compliance.

If you should need any assistance or would like to discuss this non-compliance situation, please contact Cheng Zhang of the Raleigh Regional Office at 919-791-4200.

Sincerely,

DocuSigned by:  
*Vanessa E. Manuel*  
B2916E6AB32144F...

Vanessa E. Manuel, Assistant Regional Supervisor  
Water Quality Regional Operations Section  
Raleigh Regional Office  
Division of Water Resources, NCDEQ

Cc: Laserfiche



If you have any questions concerning this matter or to apply for an SOC, please contact Cheng Zhang of the Raleigh Regional Office at 919-791-4200.

Sincerely,

DocuSigned by:

*Vanessa E. Manuel*

B2916E6AB32144F...

Vanessa E. Manuel, Assistant Regional Supervisor  
Water Quality Regional Operations Section  
Raleigh Regional Office  
Division of Water Resources, NCDEQ

Cc: Laserfiche



ROY COOPER  
Governor

ELIZABETH S. BISER  
Secretary

RICHARD E. ROGERS, JR.  
Director



NORTH CAROLINA  
Environmental Quality

July 21, 2023

Claudia O Hager  
Durham County  
200 E Main St 2nd Floor  
Durham, NC 27701

SUBJECT: **NOTICE OF DEFICIENCY**  
Tracking Number: NOD-2023-LV-0090  
Permit No. NC0026051  
Triangle WWTP  
Durham County

Dear Permittee:

A review of the May 2023 Discharge Monitoring Report (DMR) for the subject facility revealed the deficiency(s) indicated below:

**Limit Exceedance Deficiency(s):**

Sample Location	Parameter	Date	Limit Value	Reported Value	Type of Deficiency
001 Effluent	BOD, 5-Day (20 Deg. C) - Concentration (CO310)	5/20/2023	7.5	8	Weekly Average Exceeded

Please be aware that non-compliance with your permit could result in enforcement action by the Division of Water Resources for these and any additional violations of State law. The Raleigh Regional Office encourages you to take all necessary actions to bring your facility into compliance.

If you should need any assistance or would like to discuss this non-compliance situation, please contact Cheng Zhang of the Raleigh Regional Office at 919-791-4200.

Sincerely,

DocuSigned by:  
*Vanessa E. Manuel*  
B2916E6AB32144F...

Vanessa E. Manuel, Assistant Regional Supervisor  
Water Quality Regional Operations Section  
Raleigh Regional Office  
Division of Water Resources, NCDEQ

Cc: Laserfiche



ROY COOPER

*Governor*

ELIZABETH S. BISER

*Secretary*

RICHARD E. ROGERS, JR.

*Director*NORTH CAROLINA  
*Environmental Quality*

**Certified Mail # 7017 2680 0000 2237 3291**  
**Return Receipt Requested**

October 17, 2023

Claudia O Hager  
 Durham County  
 200 E Main St 2nd Floor  
 Durham, NC 27701

**SUBJECT: NOTICE OF VIOLATION**

Tracking Number: NOV-2023-LV-0740

Permit No. NC0026051

Triangle WWTP

Durham County

Dear Permittee:

A review of the August 2023 Discharge Monitoring Report (DMR) for the subject facility revealed the violation(s) indicated below:

**Limit Exceedance Violation(s):**

Sample Location	Parameter	Date	Limit Value	Reported Value	Type of Violation
001 Effluent	BOD, 5-Day (20 Deg. C) - Concentration (CO310)	8/26/2023	7.5	8.8	Weekly Average Exceeded

Remedial actions, if not already implemented, should be taken to correct any noted problems. The Division of Water Resources may pursue enforcement actions for this and any additional violations. If the violations are of a continuing nature, not related to operation and/or maintenance problems, and you anticipate remedial construction activities, then you may wish to consider applying for a Special Order by Consent (SOC).



If you have any questions concerning this matter or to apply for an SOC, please contact Cheng Zhang of the Raleigh Regional Office at 919-791-4200.

Sincerely,

DocuSigned by:  
*Vanessa E. Manuel*  
B2916E6AB32144F...

Vanessa E. Manuel, Assistant Regional Supervisor  
Water Quality Regional Operations Section  
Raleigh Regional Office  
Division of Water Resources, NCDEQ

Cc: Laserfiche



## Appendix D

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### Excerpt from North Carolina 2022 Integrated Report for Northeast Creek

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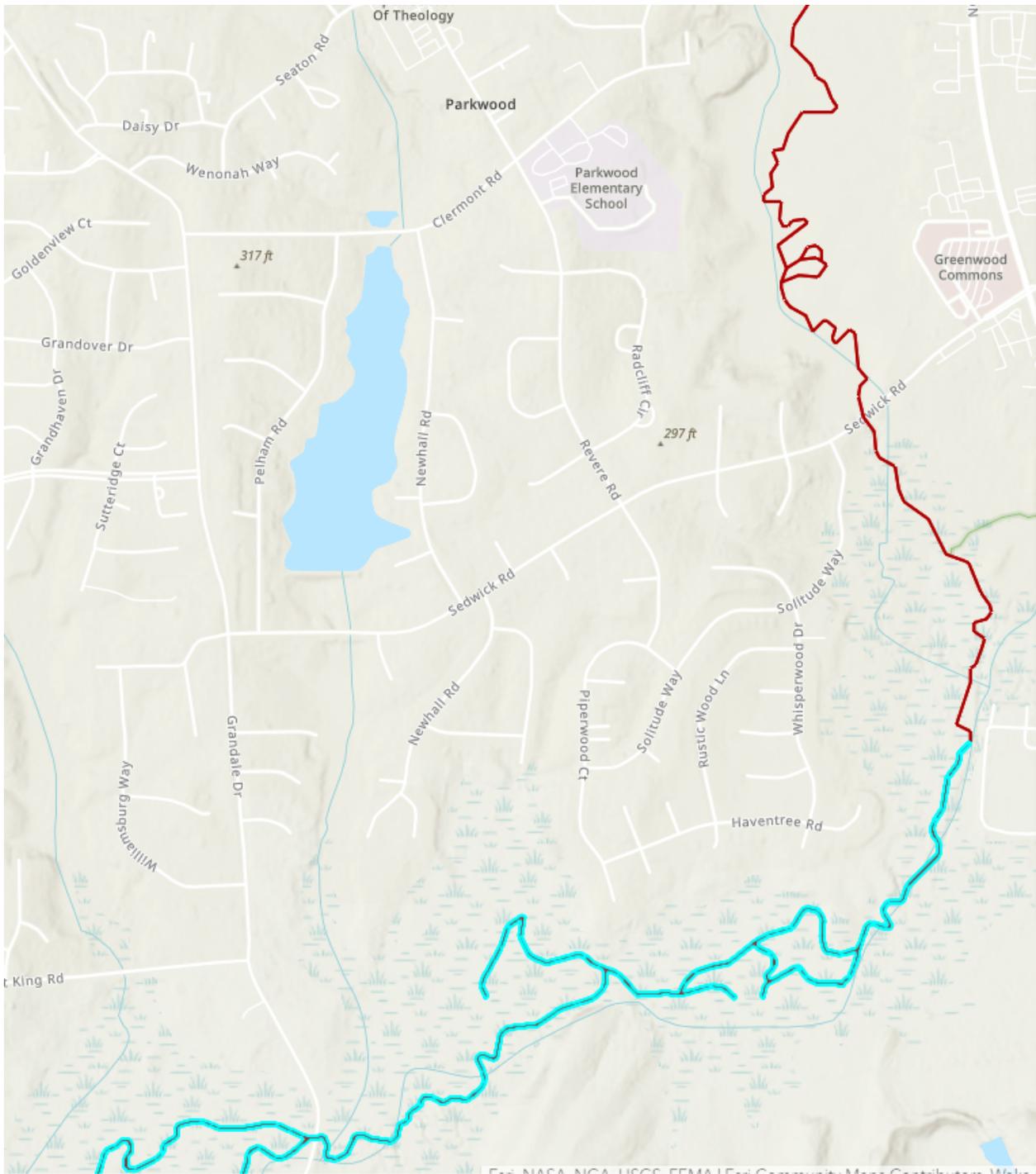
# NORTH CAROLINA 2022 INTEGRATED REPORT

Haw

Cape Fear River Basin

AU Name	AU Number	Classification	AU LengthArea	AU Units
AU ID	Description			
Northeast Creek	16-41-1-17-(	WS-IV;NSW	3.3	FW Miles
4028 From Durham Triangle WWTP to Kit Creek				

2022 Water Quality Assessments		
PARAMETER	IR CATEGORY	CRITERIA STATUS
Turbidity (50 NTU, AL, FW miles)	5	Exceeding Criteria
Water Temperature (32°C, AL, LP&CP)	1	Meeting Criteria
Dissolved Oxygen (4 mg/l, AL, FW)	1	Meeting Criteria
pH (6 su, AL, FW)	1	Meeting Criteria
pH (9.0, AL, FW)	1	Meeting Criteria
NO2+NO3-N (10 mg/l, WS, WS)	1	Meeting Criteria
Hardness (100 mg/L, WS, WS)	1	Meeting Criteria
Chloride (230 mg/l, AL, FW)	1	Meeting Criteria
Sulfate (250 mg/l, WS, WS)	1	Meeting Criteria
Flouride (1.8 mg/l, AL, FW)	1	Meeting Criteria
1,4-Dioxane in Water (0.35 µg/l, WS, WS)	3a	Data Inconclusive
Zinc (50 µg/l, AL, FW)	5	Exceeding Criteria
Fecal Coliform (GM 200/400, REC, FW)	3a	Data Inconclusive
Fecal Coliform (GM 200/400, REC, FW)	4t	Exceeding Criteria



Northeast Creek

Zoom to

The overall category in 2022 was **Exceeding Criteria (Cat. 5)**

**Stream Information**

Stream Description	Northeast Creek, From Durham Triangle WWTP to Kit Creek
Assessment Unit #	16-41-1-17-(0.7)b1
BIMS Index	16-41-1-17-(0.7)
Stream Length	3.30 FW Miles
Stream Classification	WS-IV;NSW
Basin	Cape Fear
8-Digit HUC	3030002 - Haw

**Yearly Overall Rating**

2022	Exceeding Criteria (Cat. 5)
2020	Exceeding Criteria (Cat. 5)
2018	Exceeding Criteria (Cat. 5)
2016	Exceeding Criteria (Cat. 5)
2014	Exceeding Criteria (Cat. 5)



# Fact Sheet

## NPDES Permit No. **NC0026051**

---

Permit Writer/Email Contact [Gary Perlmutter, gary.perlmutter@ncdenr.gov](mailto:gary.perlmutter@ncdenr.gov):

Date: **July 29, 2022**

Division/Branch: NC Division of Water Resources / NPDES Municipal Permitting Unit

Fact Sheet Template: Version 09Jan2017

Permitting Action:

- Renewal
- Renewal with Expansion
- New Discharge
- Modification (Fact Sheet should be tailored to mod request)

Note: A complete application should include the following:

- For New Dischargers, EPA Form 2A or 2D requirements, Engineering Alternatives Analysis, Fee
- For Existing Dischargers (POTW), EPA Form 2A, 3 effluent pollutant scans, 4 2<sup>nd</sup> species WET tests.
- For Existing Dischargers (Non-POTW), EPA Form 2C with correct analytical requirements based on industry category.

Complete applicable sections below. If not applicable, enter NA.

### 1. Basic Facility Information:

Facility Information	
Applicant / Facility Name:	<b>Durham County / Triangle WWTP</b>
Applicant Address:	5926 NC Hwy 55 East, Durham, NC 27713
Facility Address:	5926 NC Hwy 55 East, Durham, NC 27713
Permitted Flow:	12.0 MGD
Facility Type / Waste:	MAJOR Municipal; 88.1% domestic, 11.9% industrial <sup>1</sup>
Facility Class:	Grade IV
Treatment Units:	Screen, Grit Removal, 5-Stage BNRs, Clarifiers, Sand Filters, UV Disinfection, Post Aeration, Sludge Lagoon
Pretreatment Program (Y/N)	Yes
County:	Durham
Region	Raleigh

Footnote.

1. Based on current permitted industrial flow = 1.434 MGD

*Briefly describe the proposed permitting action and facility background:* Durham County had applied for an NPDES permit renewal for its Triangle WWTP, received by DWR on September 10, 2015. Review of the application found it incomplete, lacking the three required PPAs. The PPAs were received upon request on 9/29/2021, sampled in August 2013, November 2014 and February 2015. The four required 2<sup>nd</sup> species

WET tests were sampled in May 2012, February 2013, November 2014 and August 2015. In addition, Durham County submitted a Chemical Addendum upon request on 2/14/2022.

This facility serves Durham County (pop. ~3722) and the City of Durham (pop. ~7117) and treats domestic and industrial wastewater with an active pretreatment program involving 12 Significant Industrial Users. The facility was upgraded from 6.0 MGD to its current design flow of 12.0 MGD in 2005 to anticipate growth; upgrades included of a 5-stage BNR (Biological Nutrient Reduction) process, new tertiary sand filters, and a UV disinfection system. The facility sends its dewatered biosolids for composting.

The permit was renewed in May 2002 for 6.0 MGD with authorization to expand to 12.0 MGD. The plant expansion/upgrade was completed in June 2005. The permit was then modified twice following the 2011 renewal. In 2012, instream sampling locations were clarified and a modified instream monitoring requirements table was issued with the nutrient parameters (Nitrogen species: NH<sub>3</sub>-N, TKN, NO<sub>2</sub>+NO<sub>3</sub>, and Phosphorus species: TP, and PO<sub>4</sub>) removed at the Permittee's request. In 2013, the permit was modified again to reduce monitoring frequencies for BOD, TSS, NH<sub>3</sub>-N and Fecal Coliform to 2/week after eligibility assessment at the Permittee's request. In 2016 electronic reporting requirements was communicated to the Permittee by letter. An Electronic Reporting Requirements special condition will be added to the permit.

The current permit renewal application includes two modification requests by the applicant. The first is to remove instream monitoring requirements entirely due to sampling safety concerns and questionable value that monitoring provides in a 7Q10 zero stream. The other request is to increase nutrient load limits to accommodate additional flow from additional service connections to the WWTP. These requests are addressed in their respective sections below.

## 2. Receiving Waterbody Information

Receiving Waterbody Information	
Outfalls/Receiving Stream(s):	Outfall 001/Northeast Creek
Stream Segment:	16-41-1-17-(0.7)
Stream Classification:	WS-IV; NSW
Drainage Area (mi <sup>2</sup> ):	18
Summer 7Q10 (cfs)	0.0
Winter 7Q10 (cfs):	0.0
30Q2 (cfs):	0.9
Average Flow (cfs):	20
IWC (% effluent):	90%
NC 2020 303(d) listed/parameter:	Copper, Zinc, Turbidity
Subject to TMDL/parameter:	Northeast Creek Fecal Coliform TMDL State-wide Mercury TMDL
Basin/Sub-basin/HUC:	Cape Fear/03-06-05/03030002
USGS Topo Quad:	D23NW/SW Durham, NC

The receiving stream is split into two Assessment Units (AUs): 16-41-1-17-(0.7)a, which is upstream of Triangle WWTP, and 16-41-1-17-(0.7)b1, which is downstream of the WWTP. The upstream AU is impaired for Copper and Turbidity, while the downstream AU is impaired for Zinc and Turbidity; both are impaired for Fecal Coliform for which a stream-specific TMDL is in place. The two metal impairments are

based on legacy total metals assessment, and data are currently inconclusive. The turbidity impairment is based on exceeding the 50 NTU criterion for freshwater aquatic life with statistical confidence.

### 3. Effluent Data Summary

Effluent data for **Outfall 001** is summarized in Table 1 for the period of January 2018 – February 2022.

Table 1. Effluent Data Summary **Outfall 001**.

Parameter	Units	Average	Max	Min	Permit Limit <sup>1</sup>
Flow <sup>2</sup>	MGD	4.17	12.77	2.11	MA = 12.0
Total Monthly Flow	MG/mo.	126.76	175.40	95.85	
BOD <sub>5</sub> (Apr–Oct)	mg/L	2.9	18.1	< 2.0	MA = 5.0 WA = 7.5
BOD <sub>5</sub> (Nov–Mar)	mg/L	2.2	7.5	< 2.0	MA = 10.0 WA = 15.0
BOD removal	%	98.7	99.6	93.8	≥ 85
TSS	mg/L	2.5 <sup>3</sup>	7.6	< 2.5	MA = 30.0 WA = 45.0
TSS removal	%	98.9	99.7	95.2	≥ 85
NH <sub>3</sub> -N (Apr–Oct)	mg/L	0.1	0.8	< 0.1	MA = 1.0 WA = 3.0
NH <sub>3</sub> -N (Nov–Mar)	mg/L	0.2	4.1	< 0.1	MA = 1.8 WA = 5.4
Fecal Coliform (geometric mean)	#/100 mL	1.7	> 390	< 1	MA = 200 WA = 400
Dissolved Oxygen	mg/L	8.4	11.4	6.9	DMin ≥ 6.0
Temperature	°C	21.0	29.0	9.4	
pH	S.U.	7.3	7.7	6.8	6.0–9.0
TRC <sup>5</sup>	µg/L	9.3	10	9	DMax = 17 <sup>4</sup>
Chloroform <sup>5</sup>	µg/L	All values < 1			
Bromodichloromethane <sup>5</sup>	µg/L	All values < 1			DMax = 1.8
Dibromochloromethane <sup>5</sup>	µg/L	All values < 1			DMax = 1.3
TKN	mg/L	1.03	5.03	< 0.2	
NO <sub>2</sub> +NO <sub>3</sub>	mg/L	3.37	10.20	< 0.10	
Total Nitrogen (TN)	mg/L	4.39	12.89	0.74	

Parameter	Units	Average	Max	Min	Permit Limit <sup>1</sup>
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## Appendix E

# Excerpt from Durham County Capital Improvement Plan (CIP)

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	1	2	3	4	5	6	7	8	9	10
Project Cost Estimates	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
Planning	\$200,000									
Land Acquisition										
Construction		\$3,500,000	\$5,000,000	\$2,000,000	\$2,000,000	\$2,000,000				
Equip/Furnishings										
Other		\$1,000,000	\$800,000	\$800,000	\$700,000	\$250,000				
Contingencies										
<b>Project Total</b>	<b>\$200,000</b>	<b>\$4,500,000</b>	<b>\$5,800,000</b>	<b>\$2,800,000</b>	<b>\$2,700,000</b>	<b>\$2,250,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

Funding Sources										
County Contribution										
General Obligation Bonds										
Two Thirds Bonds										
Limited Obligation Bonds										
Bank Financing										
Enterprise Fund	\$200,000	\$4,500,000	\$5,800,000	\$2,800,000	\$2,700,000	\$2,250,000				
Revenue Bonds										
Miscellaneous Revenue										
<b>Funding Total</b>	<b>\$200,000</b>	<b>\$4,500,000</b>	<b>\$5,800,000</b>	<b>\$2,800,000</b>	<b>\$2,700,000</b>	<b>\$2,250,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

Operating Impact										
Personnel										
Utilities										
Operating Costs										
Capital										
Minus Savings										
Net Additional Expenses	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Minus New Revenues										
<b>Operating Total</b>	<b>\$0</b>									

Project Title **TWWTP Phase 4 Rehab Project**  
 Project # Unknown  
 Status New  
 Start Date/Comp. Date  
 Department Name Enterprise Fund - Utilities  
 Department # 7100  
 Address 5926 NC Hwy 55 East

Project Description The TWWTP has a current capacity of 12MGD and treats approximately 6MGD. TWWTP can handle more capacity growth but struggles with aging infrastructure, equipment, and technology. Most of TWWTP was built 20+ years ago and the high concentration of industrial contaminants, the concrete structure integrity is in question, and the equipment lifespan is ending. This project focuses on evaluating existing structures, replacing equipment that has outlived its expected life, incorporating newer technologies and security to optimize treatment performance, ensuring developmental sustainability, and reducing energy consumption.

Scope of Project	1. Evaluate, replace, or rehabilitate existing grit removal equipment.	\$1,200,000
	2. Upgrade existing reclaimed water system.	\$5,000,000
	3. Rehabilitation of Train 3 aeration system.	\$2,000,000
	4. Evaluate and/or add supplemental air to all three trains.	\$1,200,000
	5. Evaluate and replace aging VFDs and soft starts.	\$500,000
	6. Evaluate and replace aging chemical storage tanks and pumping equipment.	\$500,000
	7. Replace the existing centrifuge cake feed system with a more cost-effective conveyor system.	\$1,000,000
	8. Evaluate existing UV disinfection system. Possible upgrade.	\$1,200,000
	9. Evaluate all existing above-ground concrete treatment tanks for overall structural integrity.	\$250,000
	10. Upgrade existing SCADA system for plant, lift stations, and reclaimed water monitoring stations.	\$1,000,000
	11. Upgrade/install plant security system.	\$500,000
	12. Engineering, PER, Grant Writing, and Construction Management	\$3,600,000
	<b>EST TOTAL</b>	<b>\$17,950,000</b>

# Appendix F

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## Affordability Calculator

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**NC Division of Water Infrastructure Spring 2024 Affordability Calculator**

← Complete data entry cells in yellow

Updated 7/28/2023. This tool can be used by Applicants to determine eligibility for grant/principal forgiveness funding and to complete the affordability calculations in the application for funding.

Note: grant/principal forgiveness may be further limited according to funding program caps and by availability.

Enter Name of Applicant: **Durham County**

**STEP 1: Applicant's Designation and Assessment Criteria Score**

Select Applicant from menu:	Durham County
Designated as "Distressed" in accordance with NCGS 159G-45?	No
Current VUR Assessment Score:	0
Wholesale-only service provider?	No

If applying for a project with more than one local government unit, select the local government that is either designated as distressed or has the greatest VUR Assessment Criteria score.

**STEP 2: Residential Connections**

How many wastewater residential connections does your system contain? **14,216**

**STEP 3: Local Government Unit (LGU) Economic Indicators**

Enter your local government unit parameters and service area coverage as shown below. Select local government(s) in your service area.

Select LGU from menu →	Durham County	LGU #2	LGU #3	LGU #4	Total:		State Benchmarks are:	Worse than State Benchmark?
LGU Coverage (% of service area)	100%				100%			
Population	320,146							
Population Change	6.41%				6.41%	<=	3.13%	No
Poverty Rate	13.2				13.2	>=	13.7	No
Median Household Income	\$67,000				\$67,000	<=	\$60,516	No
Unemployment Rate	4.3				4.3	>=	4.9	No
Total Appraised Value of Property	\$47,067,145,997							
Calculated Prop. Val. per Capita	\$147,018				\$147,018	<=	\$133,264	No
						# of Indicators worse →		<b>0</b>

You are only eligible for SRF Principal Forgiveness/SRP grant if you receive 4.C.4 points or BIL EC funding. You are eligible for loans.

**STEP 4: Existing Annual Revenues**

Enter the information below.

Operating Revenues <sub>Water &amp; Sewer</sub> :	\$23,740,324
Total Expenditures <sub>Water &amp; Sewer</sub> :	\$6,837,457
Annual Debt Principal <sub>Water &amp; Sewer</sub> :	\$1,491,146
Annual Debt Interest <sub>Water &amp; Sewer</sub> :	\$214,407
Project Cost (from Application):	\$30,365,940
Calculated Operating Ratio <sub>Future</sub> :	2.36

**Step 5: Water/Sewer Utility Information**

Combined water and sewer provider, or single service?	Single water or sewer provider	Current monthly bill for 5,000 gallons:
Is your project a water or wastewater project?	Wastewater	Sewer Rate
"Effective" combined water & sewer bill for 5,000 gallons:	\$78.41	\$47.04
Number of wastewater non-residential connections:	1,900	
Calculated total number of wastewater connections:	16,116	
Project cost per connection per month:	\$7.85	

**Eligibility for State Revolving Fund (SRF) Principal Forgiveness and State Reserve Program Grants (not Viable Utility Reserve or BIL Emerging Contaminants)**

Eligibility is limited by the percentage below, funding request amount, caps on SRF principal forgiveness or SRP grants based on project type, and PF or grant availability.

**Exceptions:** If you receive 4.C.4 points, your application would be eligible for up to 50% SRF principal forgiveness/SRP grant. VUR and BIL EC funding is 100% grant/principal forgiveness.

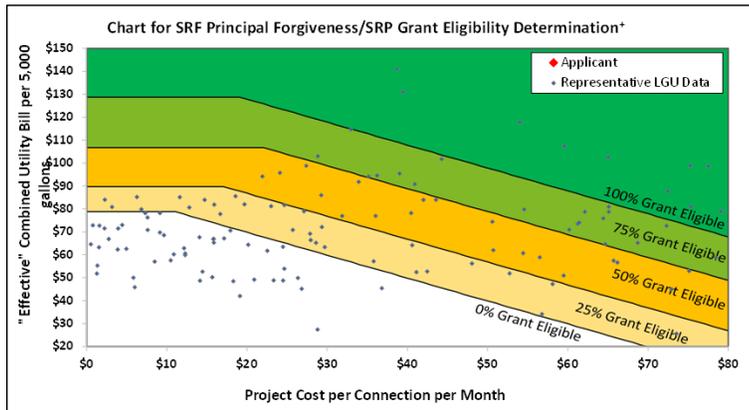
Percentage of funding request amount eligible for SRF Principal Forgiveness or SRP grant<sup>1</sup>:

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<sup>1</sup>Grants and principal forgiveness apply only to projects receiving project purpose points.

<sup>2</sup>Limit may be different for projects receiving 1.A points.

<sup>3</sup>Grants and principal forgiveness will be limited to up to \$500,000 per applicant per round or the percentage above, whichever is less, unless additional grants/principal forgiveness funds are available.



Representative LGU data plotted using Project Cost in Step 4, and project type selection (Water or Wastewater) in Step 5. Graph is truncated: \$0-\$80 (X-axis), \$20-\$150 (Y-axis)

Please print or scan this affordability calculator in pdf prior to submitting with applications

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Section 8

**Durham County**  
**Triangle WWTP Rehabilitation and**  
**Improvements**

Affordability Calculator

April 2024



**NC Division of Water Infrastructure Spring 2024 Affordability Calculator**

← Complete data entry cells in yellow

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Project Cost (from Application):	\$30,365,940
Calculated Operating Ratio <sub>Future</sub> :	2.36

**Step 5: Water/Sewer Utility Information**

Combined water and sewer provider, or single service?	Single water or sewer provider	Current monthly bill for 5,000 gallons:
Is your project a water or wastewater project?	Wastewater	Sewer Rate
"Effective" combined water & sewer bill for 5,000 gallons:	\$78.41	\$47.04
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Calculated total number of wastewater connections:	16,116	
Project cost per connection per month:	\$7.85	

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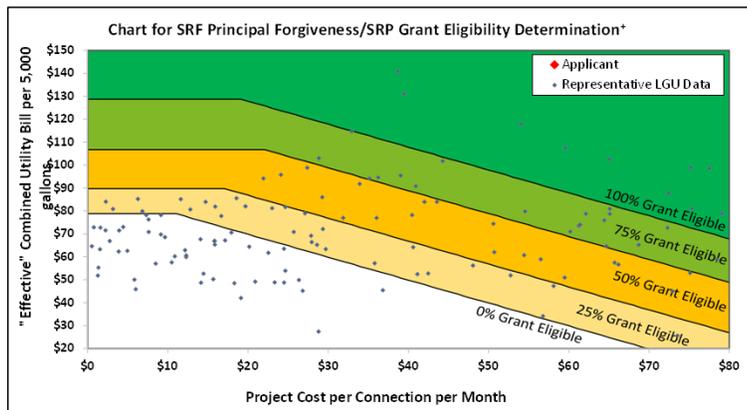
Percentage of funding request amount eligible for SRF Principal Forgiveness or SRP grant<sup>1</sup>:

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<sup>1</sup>Grants and principal forgiveness apply only to projects receiving project purpose points.

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Representative LGU data plotted using Project Cost in Step 4, and project type selection (Water or Wastewater) in Step 5. Graph is truncated: \$0-\$80 (X-axis), \$20-\$150 (Y-axis)

Please print or scan this affordability calculator in pdf prior to submitting with applications



Section 8

**Durham County**  
**Triangle WWTP Rehabilitation and**  
**Improvements**

FY 2023 Fee Schedule

April 2024





## A. SEWER SERVICE CHARGES

### 1. MONTHLY SERVICE FEES FOR COUNTY CUSTOMERS WITH CITY WATER

Consumption Rate Charge: \$6.36 per hundred cubic feet

Water Meter Size	Monthly Service Charge	Water Meter Size	Monthly Service Charge
5/8"	\$4.53	3"	\$21.78
1"	\$6.08	4"	\$49.10
1.5"	\$8.28	6"	\$62.48
2"	\$8.96	8" and above	\$75.55

### 2. MONTHLY SERVICE FOR COUNTY CUSTOMERS WITHOUT CITY WATER

Number of Bedrooms	Monthly Charge
1 or 2 bedrooms	\$34.52
3 bedrooms	\$77.64
4 or more bedrooms	\$124.71
Commercial/Church Facility	\$137.50

## B. ROUGEMONT WATER FEES

*Total Water Usage Fee includes Administrative Fee + Base Facility Charge + Usage Charge*

### 1. ROUGEMONT WATER ADMINISTRATIVE FEE

Fee	Charge
Rougemont Administrative Fee	\$2.00 per month

### 2. ROUGEMONT WATER BASE FACILITY CHARGE

Meter Size	Charge
< 1" Meter	\$18.00 per month

### 3. ROUGEMONT WATER USAGE CHARGE

Water Usage	Charge
< 10,000 gallons	\$6.50 (per 1,000 gallons)
10,000 to 20,000 gallons	\$9.76 (per 1,000 gallons)
> 20,000 gallons	\$13.03 (per 1,000 gallons)

### 4. ROUGEMONT WATER ACCOUNT FEES

Fee	Charge
Rougemont Water New Account Deposit	\$100.00
Rougemont Water Service Initiation Fee	\$20.00
Rougemont Water Security Deposit	\$50.00
Rougemont Water Disconnection Fee	\$75.00
Rougemont Water Reconnection Fee	\$100.00 (must be paid prior to service reconnection)
Rougemont Water After Hour Service Charge	\$40.00
Rougemont Water Late Fee	\$5.00
Rougemont Water Vacancy Service Charge	\$25.00
Rougemont Water Meter Extraction Fee	\$100.00



### C. RECLAIMED WATER FEES

*Total Reclaimed Water Usage Fee includes Administrative Fee + Base Facility Charge + Usage Charge*

#### 1. RECLAIMED WATER ADMINISTRATIVE FEE

Fee	Charge
Reclaimed Water Administrative Fee	\$10.00 per month

#### 2. RECLAIMED WATER BASE FACILITY CHARGE

Meter Size	Charge
5/8" or 3/4"	\$18.00
1"	\$18.00
1.5"	\$24.00
2"	\$30.00
3"	\$80.00
4"	\$120.00
6" or above	\$150.00

#### 3. RECLAIMED WATER USAGE CHARGE

Water Usage	Charge
Flat Rate	\$2.94 (per 1,000 gallons)

#### 4. RECLAIMED WATER ACCOUNT FEES

Fee	Charge
Reclaimed Water New Account Deposit	\$100.00
Reclaimed Water Service Initiation Fee	\$20.00
Reclaimed Water Security Deposit	2x Base Facility Charge
Reclaimed Water Disconnection Fee	\$75.00
Reclaimed Water Reconnection Fee	\$100.00 ( <i>must be paid prior to service reconnection</i> )
Reclaimed Water After Hour Service Charge	\$40.00
Reclaimed Water Late Fee	\$25.00

### D. WATER AND RECLAIMED WATER CONNECTION FEES

#### 1. WATER AND RECLAIMED WATER CONNECTION FEES

Fee	Charge
Water and Reclaimed Meter Fee	At Cost + 10%
Water and Reclaimed Water Tap Fee (installed by DCo)	At Cost + 10%
Water and Reclaimed Water Meter Set Fee ( $\leq$ 2" meter)	\$100.00
Water and Reclaimed Water Meter Set Fee ( $>$ 2" meter)	\$500.00



## E. DEVELOPMENT REVIEW FEES

*NOTE: A 5% non-refundable Technology Fee applies to all Development Review Fees (Fees E.1 Through E.4)*

### 1. PRELIMINARY COUNTY SEWER REVIEW FEE\* (See definitions on Page 8 for when review fees are due)

Submittal Type	Review Fee	Re-Review Fee (Each)
Administrative Site Plan - Level 1	\$50.00	\$25.00
Administrative Site Plan - Level 2	\$100.00	\$50.00
Administrative Site Plan - Level 3	\$300.00	\$150.00
Administrative Site Plan - Level 4	\$500.00	\$250.00
Exempt Plat	\$50.00	\$50.00
Minor Plat / Final Plat	\$75.00	\$75.00
Major Plat	\$250.00	\$250.00
Preliminary Plat	\$500.00	\$500.00
Preliminary Plat Amendment	\$300.00	\$300.00

### 2. CONSTRUCTION DRAWING REVIEW FEES\* (See definitions on Page 8 for when review fees are due)

Submittal Type	Review Fee	Re-Review Fee (Each)
Single Family House	\$400.00	\$200.00
Single-Family / Townhome Development	\$1,500.00 + \$15.00/lateral	\$800.00
Multi-Family Development	\$1,500.00 + \$75.00/bldg.	\$800.00
Municipal / Commercial / Industrial Development	\$1,500.00 + \$0.75/LF of main	\$800.00
Commercial / Industrial Development - Single Lateral only	\$600.00	\$350.00
Restaurant / Cafeteria Plumbing Plans	\$500.00	\$300.00
Core and Shell Building Plumbing Plans	\$500.00	\$300.00
Building Plumbing Plans - Upfit	\$800.00	\$450.00
Grease Trap / Pretreatment Units*	\$250.00	\$50.00
Field Change- Single-Family House	\$50.00 (each review)	-
Field Change- All Other Development	\$500.00 (each review)	-
Sewer Extension Permit Application Re-Review Fee	\$100.00 (each review above two)	-

### 3. AS-BUILT REVIEW FEES\* (See definitions on Page 8 for when review fees are due)

Submittal Type	Review Fee	Re-Review Fee (Each)
As-Built - Single Family House	\$50.00	\$50.00
Commercial / Industrial Development - Single Lateral Only	\$300.00	\$200.00
As-Built - All Other Development	\$300.00 + \$0.25/LF of main	\$200.00

### 4. SEWER VIDEO REVIEW FEES

Submittal Type	Review Fee (Each)
Optional Sewer Video Review*	\$3.00/LF
Sewer Video Review	\$1.50/LF (\$500 minimum)

\*See Fee Schedule Definitions on Page 8 & 9



**E. DEVELOPMENT REVIEW FEES CONT.**

**5. MISC. DEVELOPMENT REVIEW FEES**

Type	Charge
Variance Request*	\$250.00 (each)
Alternative Design Application - Minor*	\$1,000.00 (each)
Alternative Design Application - Major*	\$2,500.00 (each)
Comment Review Meeting*	\$150.00/hour (\$150 minimum)

**F. CONSTRUCTION INSPECTION FEES**

*NOTE: A 5% non-refundable Technology Fee applies to all Construction Inspection Fees (Fees F.1 Through F.3)*

**1. GENERAL INSPECTION FEES**

Inspection Type	Charge
Not Ready Inspection Fee	\$100 for each occurrence (must be paid before as-built approval)

**2. SEWER INSPECTION FEES** (Fee covers one inspection for the construction of sanitary sewer and the applicable testing. Any deficiencies notated during initial inspection or testing that requires a re-inspection will be charged the Re-Inspection/Failed Inspection fee)

Inspection Type	Charge
Sewer Main / Outfall (8" to 12")	\$3.00/LF
Sewer Main / Outfall (> 12")	\$5.00/LF
Sewer Lateral	\$300.00/building connection
Force Main	\$3.00/LF
Private Pump Station (Private)*	\$500.00
Oil/Grease/Sediment Trap Inspection	\$250.00/each unit
Certificate of Occupancy Inspection - Single-Family	\$30.00/lot (each inspection)
Certificate of Occupancy Inspection - All Other Development	\$100.00/building connection
Re-Inspection / Failed Inspection Fee (excluding CO Inspection)	\$100.00/hour (based on scheduled inspection time)

**3. WATER AND RECLAIMED WATER INSPECTION FEES** (Fee covers one inspection for the construction of sanitary sewer and the applicable testing. Any deficiencies notated during initial inspection or testing that requires a re-inspection will be charged the Re-Inspection/Failed Inspection fee)

Inspection Type	Charge
Water Tap Inspection ( $\leq$ 2" meter)	\$250.00
Water Line Inspection (Main extension only)	\$3.00/LF
Water Backflow Preventer Inspection Fee	\$50.00 (each inspection)
Reclaimed Water Tap Inspection Fee ( $\leq$ 2" meter)	\$250.00
Reclaimed Water Tap Inspection Fee (> 2" meter)	\$150.00 per inch diameter of meter
Reclaimed Water Line Inspection (Main extension only)	\$3.00/LF
Reclaimed Water Backflow Preventer Inspection Fee	\$100.00 (each inspection)
Water and Reclaimed Water Inspection Service Charge	\$50.00 (each inspection)
Re-Inspection / Failed Inspection Fee	\$100.00/hour (based on scheduled inspection time*)

\*See Fee Schedule Definitions on Page 8 & 9



## G. INDUSTRIAL USER FEES

*NOTE: A 5% non-refundable Technology Fee applies to the Industrial User Fees listed in Section G.1 through G.5*

### 1. INITIAL PERMIT APPLICATION FEES\*

Type	Charge
Single-Tenant Permit Application Fee	\$1,500.00
Multi-Tenant Permit Application Fee	\$1,500.00 + \$100.00/tenant space
BSL Permit Application Fee	\$1,000.00
Flow Reporting Permit Application Fee	\$800.00

### 2. PERMIT RENEWAL APPLICATION FEES\*

Type	Charge
Single-Tenant Permit Renewal Application Fee	\$600.00/discharge monitoring point
Multi-Tenant Permit Renewal Application Fee	\$600.00 + \$100.00/tenant space
BSL Permit Renewal Application Fee	\$500.00
Flow Reporting Permit Renewal Application Fee	\$300.00

### 3. PERMIT MODIFICATION FEES\*

Type	Charge
Single-Tenant Permit Modification Fee	\$350.00/discharge monitoring point
Multi-Tenant Permit Modification Fee	\$350.00 + \$50.00/tenant space
BSL Permit Modification Fee	\$350.00
Flow Reporting Permit Modification Fee	\$300.00

### 4. PERMIT MAINTENANCE FEES\*

Type	Charge
Annual Multi- or Single-Tenant Permit Maintenance Fee	\$1,200.00
Annual BSL Permit Maintenance Fee	\$600.00
Annual Flow Reporting Permit Maintenance Fee	\$500.00

### 5. MISC. PRETREATMENT FEES\*

Type	Charge
Pollutant Headworks Analysis Fee	At Cost + 10%
Industrial User Re-Inspection Fee	\$200.00
Supplemental Documents Review Fee	\$85.00/document
Authorization to Construct Fee	\$350.00
Building Plumbing Plans - Upfit	\$800.00 initial review, \$450.00 each re-review
Restaurant / Cafeteria Plumbing Plans	\$500.00 initial review, \$300.00 each re-review
Pretreatment Units	\$250.00 initial review, \$50.00 each re-review
Annual FOG Maintenance Fee	\$200.00
FOG Re-Inspection Fee	\$500.00

### 6. SURCHARGE FEES (Surcharges are applied for discharge concentrations that exceed the listed concentration)

Type	Concentration	Charge
BOD (Biochemical Oxygen Demand)	250 mg/L	\$349.18 per 1,000 pounds
TSS (Total Suspended Solids)	180 mg/L	\$60.44 per 1,000 pounds
TKN (Total Kjeldahl Nitrogen)	40 mg/L	\$0.75 per pound
TP (Total Phosphorous)	5 mg/L	\$6.87 per pound

\*See Fee Schedule Definitions on Page 8 & 9



**G. INDUSTRIAL USER FEES (CONT.)**

**7. MONITORING AND SAMPLING FEES**

Type	Charge
Monitoring Administrative Fee	\$100.00
Sampling Fee	\$121.00
Aluminum	\$14.00
Ammonia	\$18.00
Antimony	\$14.00
Arsenic	\$14.00
Beryllium	\$14.00
Bismuth	\$29.00
BOD5	\$26.00
Cadmium	\$14.00
Chloride	\$14.00
Chromium	\$14.00
COD	\$23.00
Copper	\$14.00
Cyanide	\$29.00
Fluoride	\$20.00
Gallium	\$46.00
Indium	\$46.00
Lead	\$14.00
Mercury (Method 1631)	\$150.00
Molybdenum	\$14.00
Nickel	\$14.00
NO2 + NO3	\$18.00
Oil & Grease (total)	\$41.00
Oil & Grease (non-polar)	\$58.00
Oil & Grease (polar)	\$58.00
Organic Compounds (EPA 624 & 625)	\$386.00
Pesticides (EPA 608 & 614)	\$259.00
Selenium	\$14.00
Silver	\$14.00
Tellurium	\$46.00
Tin	\$14.00
TKN	\$26.00
Total Petroleum Hydrocarbons (TPH)	\$87.00
Total Phosphorus	\$20.00
Total Residual Chlorine (TRC)	\$20.00
TSS	\$20.00
Total Toxic Organics (TTO)	\$570.00
Volatile Organic Compounds (VOC) (EPA 8260)	\$127.00
Zinc	\$14.00
Acetone, Ethyl Acetate, Isopropyl Acetate, Methylene Chloride, n-Amyl Acetate	\$110.00 *Price if for all tests at once. If the individual parameter is tested, the price is \$110.00 per parameter



**H. SYSTEM DEVELOPMENT FEES<sup>a</sup>**

Customer Type	Charge
Residential Dwelling Units - 2 Bedrooms or Less	\$4,000.00 each
Residential Dwelling Units - Each Additional Bedroom Above 2	\$2,000.00/bedroom
Motels or Hotels - <b>with</b> In-Room Cooking	\$2,917.00/room
Motels or Hotels - <b>without</b> In-Room Cooking	\$2,000.00/room
Swimming Pool, Bathhouses, Spa	\$167.00/person
Nursing/Rest Home	\$1,000.00/bed
Nursing/Rest Home <b>with</b> Laundry	\$2,000.00/bed
General Business or Office Facilities - per Shift	\$417.00/person
Factories excluding Industrial Waste - per Shift	\$417.00/person
Factories or Businesses with Showers or Food Prep - per Shift	\$583.00/person
Medical, Dental, Veterinary Office	\$4,167.00/practitioner
Warehouse	\$1,667.00/loading bay
Self-Storage Facility	\$17.00/unit
Service Station/Gas Station	\$4,167.00/plumbing fixture
Convenience Store - <b>with</b> Food Prep	\$1,000.00/100 SF
Convenience Store - <b>without</b> Food Prep	\$4,167.00/plumbing fixture
Store, Shopping Center, Mall <b>with</b> Food Service	\$2,167.00/1,000 SF
Store, Shopping Center, Mall <b>without</b> Food Service	\$1,667.00/1,000 SF
Restaurant - Full Service	\$667.00/seat <b>OR</b> \$667.00/15 SF of dining area <b>(whichever is greater)</b>
Restaurant - Single Service (Exclusive of Fast Food)	\$333.00/seat
Restaurant - Catering or Carry Out Only	\$833.00/100 SF
School (Day) - <b>with</b> Cafeteria, Gym, Showers	\$250.00/student
School (Day) - <b>with</b> Cafeteria Only	\$200.00/student
School (Day) - <b>without</b> Cafeteria or Showers	\$167.00/student
School (Boarding)	\$1,000.00/person
Church - <b>with</b> Kitchen	\$83.00/seat
Church - <b>with</b> Day Care, Camps	\$417.00/person
Church - <b>without</b> Food Service, Day Care, Camps	\$50.00/seat
Sports Centers (Mini Golf, Pool Hall, Arcade, etc.)	\$4,167.00/plumbing fixture
Miscellaneous (Based on Average Daily Flow of Facilities Not Described Above)	\$16.69/gallon <i>*For facilities discharging high strength wastewater, this rate will be increased proportional to the maximum strength ratio of the waste concentrations to the respective pollutant surcharge concentrations.</i>

<sup>a</sup>System Development Fees are referred to as Capital Recovery Fees in the Durham County Sewer Use Ordinance until such time the Ordinance is revised.



## Fee Schedule Definitions

**Alternative Design Application - Major:** A request made for a deviation from the Durham County Design Standards that significantly impacts design, construction, or future maintenance while still meeting the State Minimum Design Guidelines.

**Alternative Design Application - Minor:** A request made for a deviation from the Durham County Design Standards that does not significantly impact design, construction, or future maintenance while still meeting the State Minimum Design Guidelines.

**Annual FOG Maintenance Fee:** The Annual FOG Maintenance Fee covers the cost of administration and two required inspections each year. If an additional inspection is required beyond the two required, a FOG Re-Inspection Fee will be charged.

**Annual Permit Maintenance Fee:** The Annual Permit Maintenance Fee for industrial users will be billed for all permits that are in effect as of July 1st of each year and covers but is not limited to: compliance data review and judgement, inspection fees, and site visits required for permit administration.

**As-Built Review Fees:** Base review fee shall be paid at time of initial submittal and covers first two reviews, unless otherwise specified. Base fee applies per phase of project plans (i.e. if a 3-phase project is submitted the fee is 3x the base fee). For each additional review beyond two, the re-review fee shall be charged).

**Authorization to Construct:** The Authorization to Construct fee includes review of all pertinent information and initial inspection but does not include plumbing plan review. Additional fees will apply for plumbing plan review and/or permit modification.

**BSL Permit:** This is a stand-alone permit issued to industrial users that operates one or more Bio-safety Level Laboratories.

**Comment Review Meeting:** A meeting held to discuss questions regarding Durham County Utilities plan review comments. Time slots for these meetings will only be held every Thursday between 2 pm and 4 pm. Contact Durham County Utilities Project Management staff to schedule a time. Meeting will be billed at \$150 per hour (\$150 minimum) and instructions for making payment will be sent at time of meeting confirmation. If fees are not paid a minimum of 24 hours prior to scheduled meeting time, meeting will be canceled.

**Construction Drawing Review Fees:** Base review fee shall be paid at time of initial submittal and covers first two reviews, unless otherwise specified. Base fee applies per phase of project plans (i.e. if a 3-phase project is submitted the fee is 3x the base fee plus lot fees if lot fees apply). Phasing any type of project after construction drawing approval will result in a base fee charge per phase only. For each additional review beyond two, the re-review shall be charged.

**Flow Reporting Permit:** This is a stand-alone permit issued to any non-residential user for the purpose of tracking wastewater flow per current sewer capacity.

**Initial BSL Permit Application Fee:** This fee will be charged to industrial users submitting an initial Industrial User Permit Application. This fee includes review of up to 5 supplemental documents when submitted with the initial Industrial User Permit Application.

**Initial Single-Tenant or Multi-Tenant Permit Application Fee:** This fee will be charged to industrial users submitting an initial Industrial User Permit Application. This fee includes review of up to 10 supplemental documents when submitted with the initial Industrial User Permit Application.

**Multi-Tenant:** Any building or site that leases spaces to more than one Industrial User. Multi-Tenant permits will be issued to the building owner/property manager.

**Preliminary County Sewer Review Fees:** Preliminary County Sewer Review fees will be charged for the review of any site plans and plats located within the Durham County TWWTP Basin. The base review fee covers the first two reviews. For each additional review beyond two, the re-review shall be charged. The Preliminary County Sewer Review fees must be paid in full before site plans will be approved.



**Optional Sewer Video Review:** A voluntary procedure requesting Durham County to review sewer video prior to 30-days after installation or aggregate base course with first layer of asphalt installed. Comments provided as part of this review are preliminary and are not considered final review. Each project is still required to submit for Sewer Video Inspection 30-days after installation or aggregate base course with first layer of asphalt installed.

**Pretreatment Units:** Pretreatment units may include but are not limited to pH neutralization systems, sediment traps, and decontamination equipment.

**Pump Station (Private) Inspection:** Pump Station Inspection is to ensure all major components have been installed as required by NCDEQ. Engineer of Record is responsible to certify the pump station is operational and meets the NCDEQ permit.

**Scheduled Inspection Time:** Scheduled inspection times are based on established inspection timeframes identified within the online Durham County Utilities inspections portal

**Single-Tenant:** Any Industrial User that is the sole industrial occupant of a building or site.

**Supplemental Documents:** Supplemental documents may include but are not limited to biocide worksheets, safety data sheets, special discharge requests, and review of pilot project documents.

**Tenant Space:** This phrase refers to all possible suites, rooms, or spaces in a multi-tenant facility that may be individually leased to an industrial user.

**Variance Request:** A request made for a deviation from the Durham County Sewer Use Ordinance.

