



Addendum 3
Rehabilitation and Replacement of Gravity Sewer in Downtown Wilmington Area
September 21, 2023

BID DATE: The bid opening date has changed to **Tuesday, October 3, 2023 at 11:00 AM.** A revised advertisement is attached.

TO ALL BIDDERS

Below are changes and/or clarifications to the bid documents for this project. This Addendum forms a part of the Contract Documents and modifies the bidding documents as noted below. Acknowledge receipt of this Addendum as required in the bid documents. Failure to do so may subject the Bidder to disqualification.

BID FORM REVISIONS:

A revised Bid Form is attached. **Bids must be submitted on the revised Bid Form.**

1. SECTION 00411 – BID FORM

- **REVISE:** Description for Bid Item 29 has been revised to include manhole diameter and depth for rehabilitation.
- **REVISE:** Bid Items 25 and 26 have been revised to include point repair pipe material and depth.

CHANGES TO SPECIFICATIONS:

1. SECTION 01_27_00 – UNIT PRICES

- **REVISE:** Replace Paragraph 1 immediately following Para. 1.3.A. **Sewer Service Replacement** with the following paragraph:
 - “1) Bid item includes payment for asphalt cutting, removal and disposal, removal and disposal of concrete sidewalk and curb and gutter, excavation, removal and replacement of granite curb, bedding, supplying, and installing materials, backfill and compaction, coordination with and location of existing utilities, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items. Restoration of paved areas will be under separate bid items.”
- **REVISE:** Replace Paragraph 1 immediately following Para. 1.3.A. **Water Services** with the following paragraph:

- “1) Bid item includes water main fittings asphalt cutting, removal and disposal of concrete side walk and curb and gutter, removal and disposal of existing service, excavation, removal and replacement of granite curb, bedding, supplying, and installing materials from tap through meter box and meter setter, backfill and compaction, coordination with and location of existing utilities, distributing notice to customers, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items. Restoration of paved areas will be under separate bid items.”

2. SECTION 01_51_00 – TEMPORARY SEWER BYPASS PUMPING

- **REVISE:** Add the following Location and Firm Capacity (GPM) to Para. 2.2.B:

Location	Firm Capacity (GPM)
McCumber’s Ditch 36-Inch Sewer Outfall	6,000

DRAWING REVISIONS:

No drawing revisions with this Addendum.

QUESTIONS RECEIVED:

- Q1. Can we deviate from proposed water line alignments to avoid conflicts with existing utilities?
- A1. Deviations from the proposed water main alignment due to conditions encountered will be handled on a case-by-case basis.
- Q2. How will we be paid for demo/restoration of the existing median in 5th Avenue?
- A2. Specification Section 01 27 00 – Unit Prices has been revised to indicate that removal and disposal of concrete sidewalk and curb and gutter is incidental to water and sewer service installation. Restoration of paved areas will be paid for with bid items under the Excavations and Repairs section of the Bid Form.
- Q3. Can you add a pay item for granite curb removal and replacement? Or are we to go back with all new concrete curb?
- A3. Removal and replacement of granite curb is incidental to water and sewer service replacement.
- Q4. Can you provide profiles for the 36” outfall to be rehabbed?
- A4. Record drawings for the 36-inch outfall are not available.

- Q5. Can you provide flow rates so we can accurately size the bypass on the 36" outfall?
- A5. The calculated flow rate for the 36-inch sewer outfall flowing pipe full is 6,000 gallons per minute.
- Q6. How are we to gain access to the most downstream MH on the 36" outfall for lining and bypass pumping?
- A6. Manhole 120276 may be accessed via the gravel access driveway at the west end of Shirley Road and Klein Road.
- Q7. Are there any designated laydown areas we can use for material storage on this project?
- A7. The elevated tank site at 9th Street and Dawson Street may be used for laydown and material storage. Please refer to Figure 1 in the attachments for more information.
- Q8. Are there any designated areas we can use to fuse bypass pipe for the outfall bypass?
- A8. Areas for fusing bypass pipe have not been designated. The Contractor is responsible for determining an appropriate area within the limits of disturbance.
- Q9. Please clarify LOD along the 36" outfall.
- A9. The limits of disturbance is 30 feet wide and is centered on the existing 36-inch sewer alignment.
- Q10. Please clarify if there is an intended staging area for the bypass pumps for outfall rehab work.
- A10. Staging areas are to be determined by the Contractor.
- Q11. Can an Excel version of the Bid Form be provided to expedite unit price entry on bid day?
- A11. An Excel version of the Bid Form will not be provided.
- Q12. Is the Owner comfortable taking liability for bypass pumping durations? If the work takes twice as long as the number of days included in the Bid Form, will we be paid accordingly?
- A12. If legitimate delays occur during completion of the work, the Contractor may be paid for bypass pumping days beyond the contract quantities for justified time.
- Q13. Please provide depths and material type for sewer point repairs.
- A13. Descriptions for Bid Items 25 and 26 have been revised to include point repair pipe material and depth.
- Q14. Please provide depths and MH diameter for MH rehab bid item.

- A14. Description for Bid Item 29 has been revised to include manhole diameter and depth for rehabilitation.
- Q15. Are jack and bores to be priced as guaranteed?
- A15. Jack and bores are to be priced per CFPUA standard specification.
- Q16. What permits will be required of the Contractor?
- A16. The Contractor will be responsible for obtaining the following permits: City of Wilmington Right-of-Way Work Permit, City of Wilmington Tree Removal Permit, and Traffic Control.
- Q17. Is there an anticipated start date for this contract or any milestone completion dates?
- A17. Anticipated start date is Fall 2023 with completion anticipated in Fall 2025.
- Q18. Can bid date be extended to 9/28 or 10/3?
- A18. The bid date has been extended to **Tuesday, October 3, 2023 at 11:00 AM.**
- Q19. Are any existing utilities planned to be relocated prior to start date of this project?
- A19. No utility relocations are planned prior to the start date of this project.
- Q20. Section 33 01 30.43 references heavy cleaning as requiring the use of mechanical apparatuses. Can you change the definition of heavy cleaning to match the NASSCO specifications for sewer cleaning? NASSCO specifications state heavy cleaning is using a mechanical/hydraulic spinner nozzle, and a deposit cut requires the use of a mechanical/hydraulic root, chain cutter, etc.
- A20. Cleaning that requires the use of a mechanical or hydraulic apparatus is considered heavy cleaning.
- Q21. Can you define when an existing pipeline is structurally compromised for the purposes of cleaning and/or CIPPL?
- A21. The Engineer will determine if a point repair is necessary to restore structural integrity of the pipeline prior to CIPP lining.
- Q22. Is the Engineer of Record required to approve the CCTV before performing the installation of CIPP?
- A22. Yes.
- Q23. Section 33 01 30.73 Para. 3.8.I states there shall be no holes, dry spots, lifts, fibs, wrinkles, ridges, splits, bulges, cracks, delamination in the lining or other type defects in the CIPP lining. Please confirm that if the Owner/Engineer accepts pipe after heavy

cleaning and there are still obstructions, the Contractor will not be held to this requirement.

A23. Determination of heavy cleaning acceptance will be made by Owner and Engineer in accordance with Section 33 01 30.43.

Q24. NASSCO specifications require Contractor to notify Owner if he believes heavy cleaning will cause a sewer collapse due to existing deterioration of host pipe. Can you confirm that Contractor is not responsible for damage if Owner/Engineer directs Contractor to continue cleaning the pipe?

A24. The Owner/Engineer will not direct Contractor to continued cleaning of a pipe determined to be at risk of collapse by cleaning.

ADDITIONAL INFORMATION DOCUMENTS:

1. Figure 1 – 9th and Dawson Elevated Tank Storage Area

ACKNOWLEDGEMENT BY BIDDER: Bidder shall acknowledge receipt of this Addendum 3 in the space provided in the Bid Form.

All other Terms and Conditions remain unchanged.

Ben Guerrieri
Cape Fear Public Utility Authority
Procurement Manager

Matt Hypes, PE
Cape Fear Public Utility Authority
Engineering Manager

End of Addendum 3



ADVERTISEMENT FOR BIDS

Sealed bids will be received by the CAPE FEAR PUBLIC UTILITY AUTHORITY addressed to the Procurement Manager, **633 Groundwater Way, Wilmington, NC 28411** and marked **Rehabilitation and Replacement of Gravity Sewer in Downtown Wilmington Area**. Bids will be received until **Tuesday, October 3, 2023 at 11:00 AM** and will be received in the Training Room at **633 Groundwater Way, Wilmington, NC 28411**, at which time they will be publicly opened and read.

Sealed bids submitted prior to bid opening must be addressed to:

Cape Fear Public Utility Authority
Attn: Ben Guerrieri, Procurement Manager
633 Groundwater Way
Wilmington, NC 28411

It is the bidder's responsibility to ensure that the bids are received prior to bid closing on Tuesday, October 3, 2023 at 11:00AM.

Pre-Bid Conference: A pre-bid conference was held and **WAS** mandatory. The Conference was located in the Training Room at 633 Groundwater Way, Wilmington, NC 28411 on the 7th day of September 2023 at 3:00 PM.

Bid Opening: Bids must be delivered to the attention of Ben Guerrieri, Procurement Manager at 633 Groundwater Way, Wilmington, NC 28411 by **Tuesday, October 3, 2023 at 11:00 AM**. Bids must be received by Ben Guerrieri, Procurement Manager or designee in the Training Room. The official time will be by the clock in the Training Room and no late bids will be accepted. The Bidders are responsible for allowing time for traffic and parking prior to delivering the bids to the Training Room. It is the bidder's responsibility to ensure that the bids are received on time.

Contract Documents: Plans and specifications relevant to the bid may be viewed at the following locations listed below. Cape Fear Public Utility Authority cannot guarantee the accuracy of documents and information at the plan rooms. Official sets only available from Cape Fear Public Utility Authority.

1. iSqft + bidclerk Plan Rooms: View online at: www.isqft.com or www.bidclerk.com
2. Dodge Data & Analytics/Dodge Plan Room: View online at: www.dodgeprojects.construction.com
3. Construction Journal: View online at: www.ConstructionJournal.com
4. Carolina AGC and Hispanic Contractors Association of the Carolinas: View online at: www.isqft.com
5. North American Procurement Council, Inc.: View online at www.NorthCarolinabids.com
6. The Blue Book Building & Construction Network: View online at www.thebluebook.com

Prospective bidders must register and obtain an official set of the relevant contract documents from Teresa McPherson (Bid Manager). To register and obtain bid documents, prospective bidders will be required to email the Bid Manager at bids@cfpua.org and provide contact information. A OneDrive file share link containing an official set of relevant bid documents for download will then be provided to prospective bidder via email. If you send an email to bids@cfpua.org and do not receive a response within two (2) business days, please call 910-332-6472 or 910-332-6589. Bids received from bidders who cannot prove registration at time bids are due will not be opened or considered.

Bid Bond: A deposit is required with the submission of the bid. When a deposit is required, the bidder must submit with the bid cash or a certified check, drawn on a bank or trust company authorized to do business in the State of North Carolina, payable to Cape Fear Public Utility Authority, in an amount at least equal to five percent (5%) of the total amount of the bid, as a guarantee that a contract will be entered into and that satisfactory performance and payment bonds will be executed. In lieu of making the cash deposit above described, a satisfactory bid bond in the amount of five percent (5%) of the total bid, executed by a corporate surety licensed under the laws of the State of North Carolina to execute such bonds, shall be submitted with each bid, conditioned that the surety will upon demand forthwith make payment to the obligee upon said bond if the bidder fails to execute the contract in accordance with the bid bond. This deposit shall be retained if the successful bidder fails to execute the contract within ten (10) days after the award of the bid or fails to give satisfactory surety as required in North Carolina General Statutes Section 143-129.

Affidavit and Certification of Non-Collusion, Non-Suspension and Non-Conviction: The Affidavit and Certificate of Non-Collusion, Non-Suspension and Non-Conviction provided with bid documents must be completely executed and submitted with bid.

Each bidder must show evidence that it is licensed as a contractor under Chapter 87 of the North Carolina General Statutes. The bidder must have the following NC General Contractor's license to be qualified to perform the work associated with this bid:

Limitation: Unlimited

Classification(s): Public Utility

No bid may be withdrawn after bids have been opened, except as provided in the North Carolina General Statutes.

This project is receiving SRF funding and the EPA MBE/WBE Participation goals are MBE 10.9 % and WBE 10.4%, State of NC MBE/WBE participation goal 10%(combined). See SRF Special Conditions Section for details. Bidders shall make a good faith effort to solicit minority and women owned businesses to participate on the project.

The successful bidder will be required to furnish a construction performance bond and a construction payment bond as security in the amount of one hundred percent (100%) of the contract amount for the faithful performance and the payment of all bills and obligations arising from the performance of the Contract.

If the bidder fails to complete and submit all requirements stated in this Advertisement for Bids and those further requirements stated in the Instruction to Bidders included with the relevant contract documents, the Cape Fear Public Utility Authority may deem such failure nonresponsive and therefore a forfeiture of the bid.

Cape Fear Public Utility Authority reserves the right to reject any and all bids. This is a SRF funded project. Project award is contingent upon approval from the state agency.

All inquiries concerning this bid shall be directed to CFPUA Purchasing Division by e-mail to bids@cfpua.org.



BID FORM

CFPUA Project Name:	Rehabilitation and Replacement of Gravity Sewer in Downtown Wilmington Area
Bid Opening Date/Time:	Tuesday, October 3, 2023 at 11:00 AM
Bid Opening Location:	Training Room
Bids may be submitted and received prior to the Bid opening at this location:	Cape Fear Public Utility Authority Attn: Ben Guerrieri 633 Groundwater Way Wilmington, NC 28411

1. GENERAL

- 1.01 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to complete all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the Bidding Documents.
- 1.02 Terms contained in the Bidding Documents, including this Bid Form, have the same meaning as defined in the general and supplementary conditions made part of the Bidding Documents.
- 1.03 Bidder accepts all the terms and conditions of the Advertisement for Bid and Instruction to Bidders, including without limitation those dealing with the disposition of Bid Security. This bid will remain open and valid for ninety (90) calendar days after the day of the Bid opening. Bidder will sign the Agreement and submit insurance, bonding and other documents required by the Contract Documents within ten (10) calendar days from the date the Owner gives notice to apparent lowest, responsive, responsible Bidder.

2. PROJECT EXPECTATIONS

- 2.01 In submitting this Bid, Bidder represents, as fully set forth in the Agreement, that:
 - A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged.

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

- B. The undersigned Bidder agrees that Bidder has carefully examined and become familiar with the expectations of the Work described in the Bidding Documents, and agrees that he/she has met the bidding responsibilities stated in Section 4 of the Instructions to Bidders.

3. NON-COLLUSION, NON-SUSPENSION, AND NON-CONVICTION

- 3.01 Non-debarment will be verified by the North Carolina Department of Environmental Quality and Natural Resources before Award of Contract.
- 3.02 Bidder represents that this Bid is genuine and is non-collusive.
- 3.03 Bidder further represents that he/she is not suspended or debarred from bidding on this Work, and that Bidder has not been convicted of any charges or engaged in any unlawful act of trade in Federal or any state jurisdiction.
- 3.04 Bidder is fully aware that Bid is not considered responsive, if CFPUA's Affidavit and Certificate of Non-Collusion, Non-Suspension and Non-Conviction is not properly executed and submitted with Bid Form.

4. CONTRACT TIMES

- 4.01 Bidder agrees to the contract times and liquidated damages stated in the Agreement made part of the Bidding Documents.

5. BID AMOUNT

- 5.01 Bidder agrees to perform all the work described in the Bidding Documents for the unit and/or lump sum prices found in the Bid tabulation. *(Bid tabulation to be completed by Bidder can be found on next page. If Bid tabulation intentionally excluded by Owner and Owner is requesting one lump sum price for the complete Work, Bidder shall write out the lump sum amount in both word format and number format at the bottom of this page. Ex: one hundred twenty-five and 12/100 dollars; \$125.12)*

BID FORM
REHABILITATION OF SEWER IN DOWNTOWN WILMINGTON AREA
CWSRF PROJECT No. CS370923-13
WKD PROJECT No. 20210063.00.WL

ITEM NO.	ITEM DESCRIPTION	UNIT MEASURE	EST. QTY	UNIT PRICE	TOTAL
GENERAL WORK					
1S	Mobilization, Bonds & Insurance (1.5% MAX) (Sewer Work)	LS	1		
1W	Mobilization, Bonds & Insurance (1.5% MAX) (Water Work)	LS	1		
2	CIPP Performance Testing - Owner's Allowance (Sewer Work)	LS	1	\$ 15,900.00	\$ 15,900.00
3	Quality Control Testing - Owner's Allowance (Sewer Work)	LS	1	\$ 15,900.00	\$ 15,900.00
4	Quantity Adjustment Allowance (Sewer Work)	LS	1	\$ 100,000.00	\$ 100,000.00
5S	Allowance for Debris Disposal (Sewer Work)	CY	155	\$ 83.00	\$ 12,865.00
5W	Allowance for Debris Disposal (Water Work)	CY	155	\$ 83.00	\$ 12,865.00
6	City of Wilmington Pavement Cut and Right-of-Way Fees (Sewer Work)	LS	1	\$ 5,000.00	\$ 5,000.00
7	Survey of Manholes by NC PLS (Sewer Work)	EA	11		
8S	Delay for Archaeological Investigation of Suspected Cultural Resource Encountered (Sewer Work)	HOUR	3		
8W	Delay for Archaeological Investigation of Suspected Cultural Resource Encountered (Water Work)	HOUR	2		
9S	Delay for Archaeological Recording of Encountered Cultural Resource (Sewer Work)	HOUR	3		
9W	Delay for Archaeological Recording of Encountered Cultural Resource (Water Work)	HOUR	2		
10S	Delay for Archaeological Reporting to NC HPO/OSA (Sewer Work)	DAY	3		
10W	Delay for Archaeological Reporting to NC HPO/OSA (Water Work)	DAY	2		
SEWER REHABILITATION AND REPLACEMENT					
11	Construction Composite Rig Matting	LF	1,400		
12	Temporary Bypass Plan and Pumping during CCTV - 8-Inch Mains	DAY	2		
13	Temporary Bypass Plan and Pumping during CCTV - 36-Inch Mains	DAY	6		
14	Temporary Bypass Plan and Pumping during Heavy Cleaning and Tuberculation Removal - 36-Inch Mains	DAY	12		
15	Temporary Bypass Plan and Pumping during CIPP - 8-Inch Mains	DAY	5		
16	Temporary Bypass Plan and Pumping during CIPP - 36-Inch Mains	DAY	10		
17	Temporary Bypass Plan and Pumping during Manhole Rehabilitation/Replacement - 36-Inch Mains	DAY	5		
18	Temporary Bypass Plan and Pumping during Manhole Rehabilitation/Coating - 8-Inch Mains	DAY	2		
19	Temporary Bypass Plan and Pumping during Sewer Replacement in 5th Avenue - 8-Inch Mains	LS	1		
20	Sewer Main Cleaning & CCTV Inspections - 8-Inch	LF	1,320		
21	Sewer Main Cleaning & CCTV Inspections - 36-Inch	LF	2,314		
22	Heavy Cleaning 36-Inch Mains	LF	2,314		
23	Tuberculation Removal 36-inch DIP	LF	2,314		
24	Manhole Survey and MACP Inspection Level 1	EA	11		
25	Point Repair - 36-inch DIP, 12 foot length, 0'-4' Depth	EA	1		
26	Point Repair - 8-inch PVC, 20 foot length 0'-8' Depth	EA	2		
27	CIPP GRP UV Installation - 8-Inch	LF	1,320		
28	CIPP GRP UV Installation - 36-Inch	LF	2,314		
29	Manhole Rehabilitation, 4' Diameter, 0'-10' Depth	EA	5		
30	Manhole Coating, 4' Diameter	VF	12		
31	Manhole Coating, 5' Diameter	VF	88		
32	Sewer Main 8-Inch DIP, 0'-8' Depth	LF	149		
33	Sewer Main 8-Inch PVC, 0'-8' Depth	LF	3,603		
34	Sewer Main 8-Inch PVC, 8'-10' Depth	LF	854		
35	Sewer Main 8-Inch PVC, 10'-12' Depth	LF	543		
36	Sewer Main Cut In and Replace 8-Inch DIP, 20 LF, 0'-8' Depth	EA	3		
37	Sewer Main 8-Inch DIP with 16-Inch Steel Encasement Pipe for Storm Interference Structures, 0'-8' Depth	LF	20		
38	Manhole Installation - 4 foot, 4' - 8' Depth	EA	27		
39	Manhole Installation - 4 foot, 8' - 12' Depth	EA	12		
40	Manhole Installation - 5 foot with Inside Drop Structure, 8' - 12' Depth	EA	1		
41	Sewer Service Replacement 8' Depth, 70' max.	EA	50		
42	Sewer Service Replacement <8' Depth, 70' Max. by Saw Cutting Roots	EA	50		
43	Pipe Burst Sewer Service 4-Inch	EA	5		
44	Pipe Burst Sewer Service 6-Inch	EA	2		
45	Abandonment of Sewer by Grout Fill	CY	130		

ITEM NO.	ITEM DESCRIPTION	UNIT MEASURE	EST. QTY	UNIT PRICE	TOTAL
46	CIPP Lateral Seal	EA	24		
47	Cut In Lateral Cleanout	EA	1		
48	2'4"x2' Storm Interference Box	EA	1		
49	4'x4' Storm Interference Box	EA	1		
50	2'6"x2'6" Storm Interference Box	EA	1		
51	Removal and Replacement of 2'-6"x4' Storm Catch Basin	EA	3		
52	Removal and Replacement of 12-Inch Storm with 12-Inch RCP	LF	447		
53	Removal and Replacement of 15-Inch Storm with 15-Inch RCP	LF	217		
54	Removal and Replacement of 18-Inch Storm with 18-Inch RCP	LF	62		
55	Removal and Replacement of 24-Inch Storm with 24-Inch RCP	LF	102		
5TH AVENUE WATER REPLACEMENT					
56	Connection to Existing Water Main	EA	30		
57	8-Inch PVC C900 Water Main	LF	4,500		
58	8-Inch RJDIP Water Main	LF	2,414		
59	10-Inch RJDIP Water Main	LF	20		
60	12-Inch RJDIP Water Main	LF	20		
61	16-Inch RJDIP Water Main	LF	20		
62	8-Inch RJDIP Water Main With 16-Inch Dia, 0.281-Inch Thick Steel Encasement Pipe Installed by Bore and Jack Under CSX Railroad	LF	121		
63	8-Inch RJDI Gate Valve and Valve Box	EA	38		
64	10-Inch RJDI Gate Valve and Valve Box	EA	2		
65	12-Inch RJDI Gate Valve and Valve Box	EA	4		
66	16-Inch RJDI Gate Valve and Valve Box	EA	2		
67	Cut In 8-Inch x 8-Inch RJDI Tee	EA	4		
68	Cut In 8-Inch x 8-Inch RJDI Cross	EA	8		
69	Cut In 8-Inch x 10-Inch RJDI Cross	EA	1		
70	Cut In 8-Inch x 12-Inch RJDI Cross	EA	2		
71	Cut In 8-Inch x 16-Inch RJDI Cross	EA	1		
72	Hydrant Assembly	EA	15		
73	Water Service, 1-Inch, Short Side	EA	72		
74	Water Service, 1-Inch, Short Side, Installed by Saw Cutting Roots	EA	11		
75	Water Service, 1-Inch, Long Side	EA	85		
76	Water Service, 1-Inch, Long Side, Installed by Saw Cutting Roots	EA	14		
77	Commercial Water Service (1-1/2-Inch to 2-Inch Services)	EA	13		
78	Commercial Water Service Connection and Valve Vault (3-Inch and Larger Services)	EA	3		
79	Abandonment of Water Mains by Grout Fill	CY	60		
TRAFFIC CONTROL - WATER WORK					
80	Traffic Control Including Lane and Intersection Closures and Variable Message Boards	LS	1		
81	Night Work Additional Charge (Per Night)	EA	10		
TRAFFIC CONTROL - SEWER WORK					
82	Traffic Control Including Lane and Intersection Closures and Variable Message Boards	LS	1		
83	Night Work Additional Charge (Per Night)	EA	6		

ITEM NO.	ITEM DESCRIPTION	UNIT MEASURE	EST. QTY	UNIT PRICE	TOTAL
EXCAVATIONS/REPAIRS					
84	Exploratory Excavation 0' - 6' (Water Work)	EA	1		
85	Exploratory Excavation 6' - 8' (Water Work)	EA	1		
86S	Unsuitable Soil Removal & Replacement (Sewer Work)	CY	5		
86W	Unsuitable Soil Removal & Replacement (Water Work)	CY	5		
87S	Petroleum Contaminated Soils Removal & Disposal (Sewer Work)	CY	10		
87W	Petroleum Contaminated Soils Removal & Disposal (Water Work)	CY	10		
88S	Removal & Disposal of Abandoned Utilities (Sewer Work)	TON	5		
88W	Removal & Disposal of Abandoned Utilities (Water Work)	TON	5		
89S	Tree Removal (12-Inch or Less DBH) (Sewer Work)	EA	4		
89W	Tree Removal (12-Inch or Less DBH) (Water Work)	EA	3		
90S	Tree Removal (Greater than 12-Inch DBH) (Sewer Work)	EA	9		
90W	Tree Removal (Greater than 12-Inch DBH) (Water Work)	EA	8		
91S	Concrete Driveway Replacement (Sewer Work)	EA	18		
91W	Concrete Driveway Replacement (Water Work)	EA	18		
92S	Curb and Gutter Replacement (Sewer Work)	LF	220		
92W	Curb and Gutter Replacement (Water Work)	LF	344		
93S	Sidewalk Replacement (Sewer Work)	LF	285		
93W	Sidewalk Replacement (Water Work)	LF	115		
94S	Flowable Fill for Structural Bridging (Sewer Work)	CY	25		
94W	Flowable Fill for Structural Bridging (Water Work)	CY	25		
95S	Asphalt Driveway Replacement (Sewer Work)	SY	12.0		
95W	Asphalt Driveway Replacement (Water Work)	SY	11.0		
96S	Asphalt Pavement Repair in City Street Cut Areas (Sewer Work)	SY	4,327		
96W	Asphalt Pavement Repair in City Street Cut Areas (Water Work)	SY	5,747		
97	Asphalt Cut and Patch (NCDOT Right-of-Way) (Water Work)	SY	315		
98	Mill and Overlay (NCDOT Right-of-Way) (Water Work)	SY	1,842		
99	Temporary Pavement Marking Legend for School or RR (Water Work)	EA	3		
100	Permanent Pavement Marking DOT Roads, Crosswalk (Water Work)	LF	90		
101S	City Brick and Stone Removal and Replacement (Sewer Work)	SY	20		
101W	City Brick and Stone Removal and Replacement (Water Work)	SY	20		
102S	Stoplight Inductive Detection Loop Replacement (Sewer Work)	EA	16		
102W	Stoplight Inductive Detection Loop Replacement (Water Work)	EA	12		
EROSION CONTROL					
103	Silt Fence (Sewer Work)	LF	1,700		
104S	Curb Inlet Protection (Sewer Work)	EA	18		
104W	Curb Inlet Protection (Water Work)	EA	18		
105	Temporary Construction Entrance (12'x50') (Sewer Work)	EA	2		
106S	Tree Protection (Sewer Work)	EA	13		
106W	Tree Protection (Water Work)	EA	12		
107	Seed and Straw (Sewer Work)	AC	1.2		
BASE BID TOTAL COST:					

Base Bid Total Cost in Words: _____

ITEM NO.	ITEM DESCRIPTION	UNIT MEASURE	EST. QTY	UNIT PRICE	TOTAL
ALTERNATE 1 - GREENFIELD STREET TO KIDDER STREET SEWER REPLACEMENT					
12	Temporary Bypass Plan and Pumping during CCTV - 8-Inch Mains	DAY	1		
15	Temporary Bypass Plan and Pumping during CIPP - 8-Inch Mains	DAY	1		
18	Temporary Bypass Plan and Pumping during Manhole Rehabilitation/Coating - 8-Inch Mains	DAY	1		
20	Sewer Main Cleaning & CCTV Inspections - 8-Inch	LF	26		
27	CIPP GRP UV Installation - 8-Inch	LF	26		
32	Sewer Main 8-Inch DIP, 0'-8' Depth	LF	109		
33	Sewer Main 8-Inch PVC, 0'-8' Depth	LF	549		
38	Manhole Installation - 4 foot, 4' - 8' Depth	EA	8		
41	Sewer Service Replacement 8' Depth, 70' max.	EA	7		
52	Removal and Replacement of 12-Inch Storm with 12-Inch RCP	LF	81		
53	Removal and Replacement of 15-Inch Storm with 15-Inch RCP	LF	68		
92S	Curb and Gutter Replacement	LF	20		
93S	Sidewalk Replacement	LF	15		
96S	Asphalt Pavement Repair in City Street Cut Areas	SY	512		
108	Temporary Bypass Plan and Pumping during Sewer Replacement in 5th Avenue - 8-Inch Mains (Alternate 1)	LS	1		
109	Sewer Main 8-Inch RJPVC with 16-Inch Dia, 0.281-Inch Thick Steel Encasement Pipe Installed by Open-Cut in CSX Right-of-Way	LF	140		
110	Sewer Main 8-Inch RJDIP with 16-Inch Dia, 0.281-Inch Thick Steel Encasement Pipe Installed by Open-Cut in CSX Right-of-Way	LF	41		
111	Steel Sheet Pile (CSX Railroad Right-of-Way)	LF	185		
ALTERNATE 1 TOTAL COST:					

ADD for Alternate 1: _____

ALTERNATE 2 - MARTIN STREET TO KIDDER STREET SEWER REHABILITATION					
12	Temporary Bypass Plan and Pumping during CCTV - 8-Inch Mains	DAY	1		
15	Temporary Bypass Plan and Pumping during CIPP - 8-Inch Mains	DAY	1		
18	Temporary Bypass Plan and Pumping during Manhole Rehabilitation/Coating - 8-Inch Mains	DAY	1		
20	Sewer Main Cleaning & CCTV Inspections - 8-Inch	LF	409		
27	CIPP GRP UV Installation - 8-Inch	LF	409		
30	Manhole Coating, 4' Diameter	VF	18		
38	Manhole Installation - 4 foot, 4' - 8' Depth	EA	1		
ALTERNATE 2 TOTAL COST:					

ADD for Alternate 2: _____

6. SUBCONTRACTS

6.01 Bidder shall list all subcontractors they have selected to use on this project. Bidder is required to submit this information on Table A: Prime Contractor and list of selected subcontractors. Table A is located in the SRP Special Conditions Section. Bidder shall list the Company Name, Address and Phone, Trade/Work to be performed, amount the subcontractor shall be paid, and MBE or WBE certifying agency. Bidders shall only list one subcontractor for each Trade/Work to be performed.

Bidder acknowledges by signing below that all subcontractors to be used on this project are listed on Table. A contractor whose bid is accepted shall not substitute any person as a subcontractor in the place of the subcontractor listed on Table A unless approved by CFPUA with justification from the contractor. MBE/WBE (DBE)-Change or Add a Subcontractor Form must be completed and submitted. Failure to comply with these terms may result in the bid being rejected based on non-responsiveness.

BIDDER SIGNATURE: _____

7. BIDDER LICENSE

7.01 The bidder must have the following North Carolina General Contractor’s License to be qualified to perform the work associated with this bid. Bidder must list License number below and provide copy of North Carolina General Contractors Certificate.

Limitation: Unlimited

Classification(s): Public Utility

NC License Number: _____ **License Expiration Date:** _____

8. BIDDER QUALIFICATIONS

8.01 Other Qualifications:

A. CIPP Sanitary Sewer Main Lining Qualifications

- Contractor or subcontractor performing work in Sections 33 01 30.72 and 33 01 30.73 shall demonstrate a proven technology with experience installing the products specified in Sections 33 01 30.72 and 33 01 30.73. This is defined as a minimum of 1,000 manhole to manhole or open-end to open-end line sections of successful wastewater collection installations worldwide. In addition, 50,000 linear feet of felt resin liners or 25,000 linear feet of glass resin polymer or UV cured liners shall have been in successful service for a minimum of 3 years. Affix spreadsheet labeled "A.1 CIPP Sanitary Sewer Main Lining Qualifications". Spreadsheet shall include project owner contact information and project location. Spreadsheet shall be submitted with bid.
- Contractor or subcontractor performing work in Sections 33 01 30.72 and 33 01 30.73 shall be a licensed, certified installer of the product manufacturer proposed. Letter from the Product Manufacturer shall be submitted with bid.
- Contractor or subcontractors onsite superintendent shall have a minimum of 3 years' experience in the CIPP industry. Superintendent's name shall be provided on Attachment A and resume shall be attached with bid.
- Proposed resin to be used must be premium, non-recycled and contains no fillers or additives and complies with the standard. Product Manufacturers ISO 9002 Certificate or letter of certification shall be included with the bid. Letter from Product Manufacturer approving the resin to catalyst ratio shall also be included with the bid.

B. CIPP Sanitary Service Lateral Lining Qualifications

- Contractor or Subcontractor performing the lateral lining work in Section 33 05 23.23 shall provide projects completed within the past five (5) years with a minimum of five (5) years of continuous experience installing CIPP lateral lining in pipe of similar size, length and configuration as proposed in this project. Affix spreadsheet labeled "B.1 CIPP Sanitary Service Lateral Lining Qualifications". Spreadsheet shall include project owner's name, contact name with phone number, contract name, start and completion dates and quantity of laterals lined, and the contractors

or subcontractors superintendent that completed the work. Spreadsheet shall be submitted with bid.

- Contractor or subcontractor performing work in Section 33 05 23.23 shall be licensed by the system manufacturer. Letter from the System Manufacturer shall be submitted with bid.
- Product system shall have a minimum of a five (5) year history of satisfactory performance with a minimum of 2,000 CIPP lateral installations. References from the System Manufacturer shall be included with the bid.

C. Pipe Bursting Qualifications

- Contractor or Subcontractor performing the pipe bursting work in Section 33 05 23.24 shall provide projects completed within the past three (3) years with a minimum of two (2) years of continuous experience of pipe bursting in pipe of similar size, length and configuration as proposed in this project. Affix spreadsheet labeled "Pipe Bursting Qualifications". Spreadsheet shall include project owner's name, contact name with phone number, contract name, start and completion dates and linear footage of pipe bursting successfully performed, and the contractors or subcontractors superintendent that completed the work. Spreadsheet shall be submitted with bid.
- Contractor or subcontractor performing work in Section 33 05 23.24 shall be licensed by the system manufacturer. Letter from System Manufacturer shall be submitted with bid.
- The product system must have a minimum of a two (2) year history of satisfactory performance with a minimum of 500,000 linear feet of successful installation worldwide. References from System Manufacturer shall be submitted with bid.

D. Bypass Pumping Qualifications

- Contractor or subcontractor shall provide a minimum of three (3) projects successfully completed within the last five (5) years installing dewatering points, pumps, and discharge. Information shall be provided on Attachment A and submitted with bid.

E. Traffic Control

- Contractor or subcontractor shall provide a minimum of three (3) projects successfully completed within the last five (5) years installing traffic control and maintaining traffic control for NCDOT and City of

Wilmington. Information shall be provided on Attachment A and submitted with bid.

F. Jacking and Boring

- Contractor or subcontractor performing the work in Section 33 05 07.23 shall provide a minimum of five (5) utility references for which similar work has been performed in the last two years, along with documentation showing successful completion of the referenced projects. The references should include a name and telephone number where contact can be made to verify the Contractor's capability.
- The supervisory personnel of the Contractor or subcontractor performing the work in Section 33 05 07.23 will have at least 10 years of experience in jack and boring operations and must submit the names and resumes of all supervisory field personnel prior to the start of construction.

9. BIDDER CONTACT

9.01 Communications concerning this Bid shall be sent to the Bidder at the following:

Name: _____

Address: _____

Phone: _____ Email: _____

BIDDER SIGNATURE

Please see section 10 of the Instructions to Bidder for additional information.

If a Corporation:

Bidder Name: _____
(As it appears on NC General Contractor's License)

By: _____ Date: _____
(Officer as registered with the NC Secretary of State, or authorized person and provide evidence of authority to sign)

Printed Name: _____ Title: _____

Business Address: _____

Phone: _____ Email: _____

Bidder is conducting Business under an Assumed Name (DBA) ___ Yes ___ No

If the above answer is Yes, please provide the Corporate Name as filed with the NC Secretary of State, and Provide Certificate of Assumed Name:

(Corporate Name as filed with NC Secretary of State)

If a Limited Liability Company

Bidder Name: _____
(As it appears on NC General Contractor's License)

By: _____ Date: _____
(Member-Manager)

Printed Name: _____ Title: _____

Business Address: _____

Phone: _____ Email: _____

Bidder is conducting Business under an Assumed Name (DBA) ___ Yes ___ No

If the above answer is Yes, please provide the Company Name as filed with the NC Secretary of State, and Provide Certificate of Assumed Name:

(Name as filed with NC Secretary of State)

If a Partnership

Bidder Name: _____

(As it appears on NC General Contractor's License)

By: _____ Date: _____

(Partner)

Printed Name: _____ Title: _____

Business Address: _____

Phone: _____ Email: _____

Bidder is conducting Business under an Assumed Name (DBA) ____ Yes ____ No

If the above answer is Yes, please provide the Partnership Name as filed with the NC Secretary of State, and Provide Certificate of Assumed Name:

(Name as filed with NC Secretary of State)

If an Individual

By: _____ Date: _____

Printed Name: _____

Doing business as: _____

Business Address: _____

Phone: _____ Email: _____

If a Joint Venture (other party must complete below)

Contractor: _____

Type (Ind., Part., Corp.) / Name: _____

By: _____ Date: _____

Printed Name: _____ Title: _____

Doing business as (if Individual): _____

Business Address: _____

Phone: _____ Email: _____

ATTACHMENT A - DETAILS OF EXPERIENCE AND PAST PROJECTS FORM
Rehabilitation and Replacement of Gravity Sewer in Downtown Wilmington Area

The Bidder shall answer all questions and complete all requests contained in this document. If bidder fails to answer all questions and complete all request, the bid may be deemed non-responsive and rejected. The Bidder shall use black or blue ink and when additional space is needed, Bidder shall affix additional sheet(s) of paper to this document. Statements made on the additional sheet(s) shall include the number of the question/request and be in the order of that question/request.

A. CIPP Sanitary Sewer Main Lining Qualifications

1. Contractor or subcontractor performing work in Sections 33 01 30.72 and 33 01 30.73 shall demonstrate a proven technology with experience installing the products specified in Sections 33 01 30.72 and 33 01 30.73. This is defined as a minimum of 1,000 manhole to manhole or open-end to open-end line sections of successful wastewater collection installations worldwide. In addition, 50,000 linear feet of felt resin liners or 25,000 linear feet of glass resin polymer or UV cured liners shall have been in successful service for a minimum of 3 years. Affix spreadsheet labeled "A.1 CIPP Sanitary Sewer Main Lining Qualifications". Spreadsheet shall include project owner contact information and project location.

2. Contractor or subcontractor performing work in Sections 33 01 30.72 and 33 01 30.73 shall be a licensed, certified installer of the product manufacturer proposed.

Attached Letter from the Product Manufacturer attached.

3. Contractor or subcontractors onsite superintendent shall have a minimum of 3 years' experience in the CIPP industry.

Superintendent's Name: _____

Attach Superintendent's Resume.

4. Proposed resin to be used must be premium, non-recycled and contains no fillers or additives and complies with the standard.

Attach Product Manufacturers ISO 9002 Certificate or letter of certification.

Attach Letter from Product Manufacturer approving the resin to catalyst ratio.

ATTACHMENT A - DETAILS OF EXPERIENCE AND PAST PROJECTS FORM
Rehabilitation and Replacement of Gravity Sewer in Downtown Wilmington Area

B. CIPP Sanitary Service Lateral Lining Qualifications

1. Contractor or Subcontractor performing the lateral lining work in Section 33 05 23.23 shall provide projects completed within the past five (5) years with a minimum of five (5) years of continuous experience installing CIPP lateral lining in pipe of similar size, length and configuration as proposed in this project. Affix spreadsheet labeled "B.1 CIPP Sanitary Service Lateral Lining Qualifications". Spreadsheet shall include project owner's name, contact name with phone number, contract name, start and completion dates and quantity of laterals lined, and the contractors or subcontractors superintendent that completed the work.
2. Contractor or subcontractor performing work in Section 33 05 23.23 shall be licensed by the system manufacturer.

Attach Letter from the System Manufacturer.

3. The product system must have a minimum of a five (5) year history of satisfactory performance with a minimum of 2,000 CIPP lateral installations.

Attach references from System Manufacturer.

ATTACHMENT A - DETAILS OF EXPERIENCE AND PAST PROJECTS FORM
Rehabilitation and Replacement of Gravity Sewer in Downtown Wilmington Area

C. Pipe Bursting Qualifications

1. Contractor or Subcontractor performing the pipe bursting work in Section 33 05 23.24 shall provide projects completed within the past three (3) years with a minimum of two (2) years of continuous experience of pipe bursting in pipe of similar size, length and configuration as proposed in this project. Affix spreadsheet labeled "Pipe Bursting Qualifications". Spreadsheet shall include project owner's name, contact name with phone number, contract name, start and completion dates and linear footage of pipe bursting successfully performed, and the contractors or subcontractors superintendent that completed the work.

2. Contractor or subcontractor performing work in Section 33 05 23.24 shall be licensed by the system manufacturer.

Attach Letter from the System Manufacturer.

3. The product system must have a minimum of a two (2) year history of satisfactory performance with a minimum of 500,000 linear feet of successful installation worldwide.

Attach references from System Manufacturer.

ATTACHMENT A - DETAILS OF EXPERIENCE AND PAST PROJECTS FORM
Rehabilitation and Replacement of Gravity Sewer in Downtown Wilmington Area

D. Bypass Pumping

1. Contractor or subcontractor performing Bypass Pumping: _____
2. Contractor or subcontractor shall provide a minimum of three (3) projects successfully completed within the last five (5) years installing dewatering points, pumps, and discharge.

PROJECT 1

- I. Project Owner Name: _____
- II. Contact Name: _____ Contact Phone: _____
- III. Contract Name, Location and Description Summary:

- IV. Start Date: _____ Completion Date: _____

PROJECT 2

- I. Project Owner Name: _____
- II. Contact Name: _____ Contact Phone: _____
- III. Contract Name, Location and Description Summary:

- IV. Start Date: _____ Completion Date: _____

PROJECT 3

- I. Project Owner Name: _____
- II. Contact Name: _____ Contact Phone: _____
- III. Contract Name, Location and Description Summary:

ATTACHMENT A - DETAILS OF EXPERIENCE AND PAST PROJECTS FORM
Rehabilitation and Replacement of Gravity Sewer in Downtown Wilmington Area

E. Traffic Control

1. Contractor or subcontractor performing traffic control: _____
2. Contractor or subcontractor shall provide a minimum of three (3) projects successfully completed within the last five (5) years installing traffic control and maintaining traffic control for NCDOT and City of Wilmington.

PROJECT 1

- I. Project Owner Name: _____
- II. Contact Name: _____ Contact Phone: _____
- III. Contract Name, Location and Description Summary:

- IV. Start Date: _____ Completion Date: _____

PROJECT 2

- I. Project Owner Name: _____
- II. Contact Name: _____ Contact Phone: _____
- III. Contract Name, Location and Description Summary:

- IV. Start Date: _____ Completion Date: _____

PROJECT 3

- I. Project Owner Name: _____
- II. Contact Name: _____ Contact Phone: _____
- III. Contract Name, Location and Description Summary:

- IV. Start Date: _____ Completion Date: _____

ATTACHMENT A - DETAILS OF EXPERIENCE AND PAST PROJECTS FORM
Rehabilitation and Replacement of Gravity Sewer in Downtown Wilmington Area

F. Jacking and Boring

1. Contractor or subcontractor performing jacking and boring: _____
2. Contractor or subcontractor performing the work in Section 33 05 07.23 shall provide a minimum of five (5) utility references for which similar work has been performed in the last two years, along with documentation showing successful completion of the referenced projects. The references should include a name and telephone number where contact can be made to verify the Contractor's capability.

PROJECT 1

- I. Project Owner Name: _____
- II. Contact Name: _____ Contact Phone: _____
- III. Contract Name, Location and Description Summary:

- IV. Start Date: _____ Completion Date: _____

PROJECT 2

- I. Project Owner Name: _____
- II. Contact Name: _____ Contact Phone: _____
- III. Contract Name, Location and Description Summary:

- IV. Start Date: _____ Completion Date: _____

PROJECT 3

- I. Project Owner Name: _____
- II. Contact Name: _____ Contact Phone: _____
- III. Contract Name, Location and Description Summary:

ATTACHMENT A - DETAILS OF EXPERIENCE AND PAST PROJECTS FORM
Rehabilitation and Replacement of Gravity Sewer in Downtown Wilmington Area

IV. Start Date: _____ Completion Date: _____

PROJECT 4

I. Project Owner Name: _____

II. Contact Name: _____ Contact Phone: _____

III. Contract Name, Location and Description Summary:

IV. Start Date: _____ Completion Date: _____

PROJECT 5

I. Project Owner Name: _____

II. Contact Name: _____ Contact Phone: _____

III. Contract Name, Location and Description Summary:

IV. Start Date: _____ Completion Date: _____

3. The supervisory personnel of the Contractor or subcontractor performing the work in Section 33 05 07.23 will have at least 10 years of experience in jack and boring operations and must submit the names and resumes of all supervisory field personnel prior to the start of construction.

Names of all supervisory field personnel. Attach Resumes.

SECTION 01 27 00
UNIT PRICES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. List of unit prices, for use in preparing Bids.
- B. Measurement and payment criteria applicable to Work performed under a unit price payment method.
- C. Defect assessment and non-payment for rejected work.

1.2 COSTS INCLUDED

- A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services, and incidentals; erection, application, or installation of an item of the Work; overhead and profit.
- B. Each pay item in the Bid includes all work that is permanent and measurable. The bid for the pay item shall include the cost of all new material, labor, equipment, taxes, overhead, profit and all equipment and materials necessary and incidental to complete the work for each pay item.
- C. Incidental and necessary items are as follows, but not limited to inspections, material removal and disposal, restoration in grassed areas, vegetative pruning, dams, plugs, dewatering, and or anything necessary to complete all pay items as directed.

1.3 PAY ITEM DESCRIPTION

- A. Pay items have been set up in the Bid for all work that is permanent and measurable. The bid for each pay item shall include the cost of all new material, labor, equipment, and all else required to complete that pay item as specified. Payment for work will only be made after the work is complete and has been inspected by the Authority.

The Bid includes the following abbreviations:

LF = linear foot
VF = vertical foot
EA = each
LS = lump sum
CY= cubic yard

SY = square yard
DAY= day
CIPP = cured-in-place pipe
TON = ton

Mobilization, Bonds & Insurance: This item includes the cost to mobilize equipment, materials, and work forces to the project area as indicated on overview figure and special scheduling necessary to complete the project work tasks in an orderly manner. Mobilization will be for all work and operations which shall be performed or for costs incurred prior to beginning work. This will include costs associated with preparatory work and operations, including, but not limited to insurance and bond fees, etc. necessary for the prosecution of work.

- 1) Payment for this item shall not exceed 3% of the total bid price. Payment will be made on a lump sum basis.

Allowance - CIPP Field Performance Testing: Item includes all materials, equipment, and work required for performing the specified CIPP product tests (flexural modulus, flexural strength, tensile strength and thickness). Direction from Engineer's representative is required for utilization of the allowance. Allowances will be paid based on the following:

Material Testing - Contractor Invoice Plus 10 Percent

- 1) The Bid Item for performing the CIPP tests includes payment for capturing the sample, labeling the sample as to the sewer segment and date of installation, cutting the samples for testing and providing a 1-inch-wide sample to the independent testing laboratory for testing, correspondence and coordination with the testing laboratory.
- 2) The CIPP testing shall include determining flexural strength, flexural modulus, tensile strength and thickness of each sample. These four separate individual tests make up one completed CIPP test.

Allowance - Quality Control Testing: Utilization of funds from this allowance shall be payment of quality control testing in accordance with section 01 40 00 Quality Requirements. Direction from Engineer's representative is required for utilization of the allowance. Allowances will be paid based on the following:

- Material testing contractor invoice plus 10 percent

Allowance - Quantity Adjustment: This pay item includes an allowance for adjusting the quantities as authorized by the engineer.

Allowance - Sewer Cleaning Debris Disposal: This pay item includes an allowance for transportation and dumping of debris removed from the sewer system at the Southside Wastewater Treatment Facility. Payment will be made based on cubic yards of material transported and disposed.

Allowance - City Pavement Cut and ROW Permit Fees: Utilization of funds from this allowance shall be payment for City of Wilmington fees for compliance with its Street Cut Policy and ROW Work Permit as indicated in the Reference Documents Section. Allowances will be paid based on the following:

- City fees paid plus 10 percent

Survey of Manholes by PLS: This pay item includes all labor, materials and equipment needed for survey of manholes and sewer mains post rehabilitation.

- 1) Payment will be made upon completion and submittal of survey information sealed by a Professional Land Surveyor (PLS) registered in North Carolina. Manhole survey with professional survey seal of rim and invert shall be paid per manhole.

Delay for Archaeological Investigation/Recording/Reporting of Cultural Resources Encountered: This pay item includes payment for delays resulting from archaeological investigation, recording, and reporting of cultural resources and artifacts if such items are discovered by the Archaeological Monitor during excavation work.

- 1) Payment will be made on the basis of the cause and duration of the delay at the unit price bid.

Composite Rig Matting: Item includes furnishing all materials, equipment, and labor required to access the McCumber’s Ditch Outfall by composite rig matting. Contractor shall provide and maintain rig matting until work is completed and then remove the matting.

- 1) Payment shall be paid for at the unit price bid per linear foot.

Temporary Bypass Plan & Pumping: This item includes the cost to provide an approvable bypass pumping plan to CFPUA’s system ORC and to operate and maintain said pumping system for bypassing existing wastewater flow while performing the work in accordance with the specifications. In accordance with the NC Board of Examiners for Engineers and Surveyors, design plans and calculations for bypass pump systems is the practice of engineering, meaning the work shall be done by professional engineers and companies licensed to practice in North Carolina.

- 1) Bypass pumping of sewage flows shall include the mobilization and demobilization of all equipment between segments to be rehabilitated. The price shall include, but not be limited to, pump cost/rental, fuel, hoses, maintenance, regular inspection, operation, etc.
- 2) Payment will be made for each day of CCTV, heavy cleaning, tuberculation removal, CIPP, and manhole rehabilitation that requires bypass pumping of the sewer.
- 3) Payment will be made for each day of sewer replacement that requires bypass pumping of the sewer on 5th Avenue.

Sewer Main Cleaning & CCTV Inspection: Item includes furnishing all materials, equipment, and labor required to clean and televise sewer pipe, including accessing the lines.

- 1) Prior to televising, verification of adequate cleaning shall be made for each sewer main section. The Contractor shall televise for cleanliness and condition assessment and shall

provide a digital recording of sewer main sections, as specified. Plugging or blocking of the sewer flows shall be considered incidental to the work and shall not be considered for payment.

- 2) Sewer line cleaning and televising shall be paid for at the unit price bid per linear foot.
- 3) Measurement of the actual number of feet cleaned and televised shall be made from the center of the manholes.

Heavy Cleaning 36-Inch Mains: Item includes furnishing all materials, equipment, and labor required to perform heavy cleaning and debris removal of 36-inch mains, including accessing the lines.

- 1) Heavy Cleaning shall be paid for by the unit price bid item per linear foot. No additional payment will be made for CCTV beyond sewer main cleaning and CCTV Inspection.
- 2) Measurement for heavy cleaning shall be made per the actual number of feet loosened debris is moved to the nearest point of extrication (i.e., manhole) from the sewer.

Tuberculation Removal 36-Inch Mains: Item includes furnishing all materials, equipment, and labor required to perform tuberculation removal of 36" mains, including accessing the lines.

- 1) Tuberculation removal shall be paid for by the unit price bid item per linear foot. No additional payment will be made for CCTV beyond sewer main cleaning and CCTV Inspection.

Manhole Survey and MACP Inspection: Inspection of manholes with Level 1 manhole assessment and certification program protocol shall be paid per manhole.

Point Repair: Includes all labor, materials, tools, equipment and incidentals, for performing point repairs to existing sewers, as shown on the Contract Drawings including pipe, pipe fittings, couplings and adapters, concrete collars, excavation, embedment, backfill, removal, hauling away and lawful disposal of excess excavated materials, old piping materials and debris, connection to existing pipe and manholes, reconnection of existing service laterals sedimentation and erosion control measures, temporary bypass pumping as required, testing and any required retesting, restoration of disturbed areas (restoration of paved areas shall be paid under separate bid item), post-installation video inspection and any incidentals necessary to complete point repairs in a satisfactory manner.

- 1) Point repairs shall be paid for at the unit price bid.

CIPP Installation: Items include all materials, equipment, and work required to install cured-in-place pipe lining (CIPP). Work shall be as specified and in accordance with the specification.

- 1) Bid items include payment for preparing the existing sewer and performing pre-construction inspections including additional pre-cleaning and television inspection of the sewer as required prior to CIPP installation, supplying and installing the pipe lining, providing a watertight seal at the manhole-pipe interface, accessing sewers and manholes for lining installation as specified, performing post-rehabilitation television inspections, distributing project notices, coordination with and location of existing utilities, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items. Payment will not be made until the final post-rehabilitation television inspections are submitted and reviewed by the Engineer. In addition, results of the CIPP tests for each liner shall be submitted within 30 days after the liner is installed or payment will be withheld.
- 2) Installation of CIPP will be measured in place on a linear foot basis to the nearest foot. Measurement will be along the horizontal centerline of the pipe from center of manhole to center of manhole. Payment will be made on the basis of the unit prices bid.

Manhole Rehabilitation: Includes all materials, equipment, and work required to install new inverts, benching, slides, and lateral drops. This item includes working in any location (unpaved areas or paved areas) for 3-foot, 4-foot, and 5-foot manholes with irregular inside dimensions.

- 1) Item includes pre-construction inspection of manholes, manhole cleaning, root removal and grease removal, other work required to prepare the manhole for rehabilitation, stopping active leaks and filling voids in the manhole wall or between brick layers, boot repair, traffic control, complete restoration of all areas disturbed by the work, and all else incidental to the work.
- 2) Manhole rehabilitation shall be performed in a manner that conforms to CFPUA detail S-1, specification section 33 31 11 Sanitary Sewer Gravity Mains, and specification section 33 01 37 Manhole Rehabilitation and Repairs. Plugging or blocking of the sewer flows shall be considered incidental to the work.
- 3) Payment will be made for each at the unit price bid.

Manhole Coating: Includes all materials, equipment, and work required to install a protective coating on existing manhole ceilings, walls, benches and inverts as specified. This item includes working in any location (unpaved areas or paved areas) for 3-foot, 4-foot, and 5-foot manholes with irregular inside dimensions.

- 1) This item includes pre-construction inspection of manholes, manhole cleaning, root removal and grease removal, other work required to prepare the manhole for coating including, but not limited to, stopping active leaks and filling voids in the manhole wall or between brick layers, furnishing and installing a protective coating inside the manhole sealing around the manhole wall/pipe interfaces, performing specified product tests and acceptance testing, accessing manholes, traffic control, complete restoration of all areas disturbed by the work, and all else incidental to the work.

- 2) Manhole protection shall be performed in a manner that conforms to specification section 33 01 37 Manhole Rehabilitation and Repairs. Plugging or blocking of the sewer flows shall be considered incidental to the work.
- 3) Payment will be made based on vertical feet (VF) from manhole rim to invert at the unit price bid.

Sewer Mains: Items include all materials, equipment, and work required to install gravity sewer. Work shall be as specified and in accordance with the specification.

- 1) Bid item includes payment for asphalt cutting, removal and disposal, excavation, bedding, supplying, and installing materials, connection to proposed and existing sewer, couplings and adapters, backfill and compaction, and testing, distributing project notices, coordination with and location of existing utilities, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items.
- 2) Installation of sewer mains will be measured in place on a linear foot basis to the nearest foot. Measurement will be along the horizontal centerline of the pipe from center of manhole to center of manhole. Payment will be made on the basis of the unit prices bid.

Manhole Installation: Items include all materials, equipment, and work required to install manholes. Work shall be as specified and in accordance with the specification.

- 1) Bid item includes payment for asphalt cutting, removal and disposal, excavation, bedding, supplying, and installing materials, backfill and compaction, and testing, coordination with and location of existing utilities, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items.
- 2) Payment will be made on the basis of the unit prices bid.

Sewer Service Replacement: Items include all materials, equipment, and work required to replace sewer services. Work shall be as specified and in accordance with the specification and details.

- 1) Bid item includes payment for asphalt cutting, removal and disposal, removal and disposal of concrete sidewalk and curb and gutter, excavation, removal and replacement of granite curb, bedding, supplying, and installing materials, backfill and compaction, coordination with and location of existing utilities, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items. Restoration of paved areas will be under separate bid items.
- 2) Payment will be made on the basis of the unit prices bid.

Pipe Bursting Sewer Service: This item includes all materials, equipment, and labor to replace existing sanitary sewer service using a pipe bursting system. This includes asphalt cutting, removal and disposal, excavation, bedding, supplying and installing materials, backfill and compaction, and testing, distributing project notices, coordination with and location of existing utilities, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items.

- 1) Pipe bursting shall be paid for at the unit price bid per linear foot.

Abandonment of Gravity Sewer by Grout Fill: Item includes all materials, equipment and work required to abandon gravity sewer by grout fill of the existing pipe in place.

- 1) Bid item includes payment for asphalt cutting, excavation, connections to existing pipe, providing all materials, filling pipe with grout, backfill and compaction, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items.
- 2) Payment will be made on the basis of the unit prices bid.

CIPP Service Lateral Seal: Payment for this item will be full compensation for accessing the sewers and manholes as specified, locating existing service connections, sewer flow control, public notification, any required excavation and restoration to uncover cleanouts, sewer pipe cleaning, root removal, cutting & brushing service line connection (if necessary), installation of the lateral seal, inspection, pre- and post- construction CCTV inspection, equipment retrieval, testing, and clean-up in accordance with the specifications.

- 1) Payment will be made based on the number of service laterals sealed in accordance with the unit price bid.

Cut-In Service Lateral Cleanout: Item includes all materials, equipment, and work required to cut in a lateral cleanout where directed or required. Special effort shall be taken on placing the service lateral cleanout within existing rights-of-way or easements.

- 1) Item includes payment for installing a new cleanout into an existing lateral as needed for cleaning, CCTV inspection, CIPP lining, and future maintenance.
- 2) Item includes 4-inch lateral mains per details S-9 through S-13.
- 3) Payment will be made on the basis of the unit price bid.

Storm Drainage Structure and Pipe Replacement: Includes all materials, equipment, and labor required for excavation, bedding, pipe, joints, fittings, concrete collars, and backfill.

- 1) Storm drainage replacement structures and interference structures shall be paid for at the unit price bid for each size of structure.

- 2) Storm drainage replacement pipe shall be paid for at the unit price bid for each size of storm pipe by linear foot.

Connection to Existing Water Main: Includes all materials, equipment, and labor required to connect to existing water main by installing fittings, valve, valve box, support, accessories, and witness by CFPUA.

- 1) Bid item includes fittings, concrete thrust restraints, tied joint restraints, and metal bars and bolts used in thrust restraint. This item includes asphalt cutting, removal and disposal, excavation, bedding, supplying and installing materials, backfill and compaction, and testing, coordination with and location of existing utilities, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items.
- 2) Payment shall be by unit price of connection.

Water Mains: Includes all materials, equipment, and labor required for pipe construction. Work shall be as specified and in accordance with the specification.

- 1) Bid item includes fittings, concrete thrust restraints, tied joint restraints, and metal bars and bolts used in thrust restraint. This item includes asphalt cutting, removal and disposal, excavation, bedding, supplying and installing materials, backfill and compaction, and testing, coordination with and location of existing utilities, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items.
- 2) Payment shall be by unit price of pipe.

Water Mains with Steel Encasement Pipe Installed by Bore and Jack Under CSX Railroad: Includes all materials, equipment, and labor required for installation of restrained-joint ductile iron pipe and steel encasement pipe by bore and jack method under CSX railroad. Work shall be as specified and in accordance with the specifications and shall meet CSX requirements.

- 1) Bid item includes fittings, concrete thrust restraints, tied joint restraints, and metal bars and bolts used in thrust restraint. This item includes asphalt cutting, removal and disposal, excavation, shoring, bedding, horizontal and vertical controls, bore steering mechanism, steel casing, casing spacers, ductile iron carrier pipe, concrete grouting and closure, supplying and installing materials, backfill and compaction, and testing, coordination with and location of existing utilities, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items.
- 2) Measurement shall be made along the pipe crown from end of encasement to end of encasement. Payment shall be by unit price of pipe.

Cut-In Water Fittings and Water Valve Replacement: Includes all materials, equipment, and labor required to install sleeve, cross, tee, valve, valve box, fittings, support, accessories, and witness by CFPUA.

- 1) Bid item includes fittings, concrete thrust restraints, tied joint restraints, and metal bars and bolts used in thrust restraint. This item includes asphalt cutting, removal and disposal, excavation, bedding, supplying and installing materials, backfill and compaction, and testing, coordination with and location of existing utilities, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items.
- 2) Payment shall be by unit price of fitting or valves.

Hydrant Assembly: Includes all materials, equipment, and labor required for fire hydrant assembly.

- 1) Bid item includes fittings, concrete thrust restraints, tied joint restraints, and metal bars and bolts used in thrust restraint. This item includes asphalt cutting, removal and disposal, excavation, bedding, supplying and installing materials, backfill and compaction, and testing, coordination with and location of existing utilities, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items.
- 2) Payment shall be by unit each hydrant assembly.

Water Services: Includes all materials, equipment, and labor required for water services except the water meter.

- 1) Bid item includes water main fittings asphalt cutting, removal and disposal of concrete side walk and curb and gutter, removal and disposal of existing service, excavation, removal and replacement of granite curb, bedding, supplying, and installing materials from tap through meter box and meter setter, backfill and compaction, coordination with and location of existing utilities, distributing notice to customers, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items. Restoration of paved areas will be under separate bid items.
- 2) Payment shall be by unit each size and type of water service bid.

Abandonment of Water Main by Grout Fill: Item includes all materials, equipment and work required to abandon water main by grout fill of the existing pipe in place.

- 1) Bid item includes payment for asphalt cutting, excavation, connections to existing pipe, providing all materials, filling pipe with grout, backfill and compaction, complete

restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items.

2) Payment will be made on the basis of the unit prices bid.

Traffic Control Plan and Traffic Control: This item includes the cost to provide a traffic control plan and traffic control for City of Wilmington (COW) or NCDOT roads as required. COW or NCDOT shall approve the traffic control plan submitted. Traffic control to be provided based on the latest NCDOT Temporary Shoulder, Lane, or Road Closure Details.

- For Collector/Local/Alley designations as defined by the COW:
 - Detail 1101.02 Sheet 1 or 2 shall be utilized as appropriate.
- For Minor Thoroughfares and Major Thoroughfares as defined by the COW:
 - Detail 1101.02 Sheet 3 through Sheet 15 shall be utilized as appropriate.
- For Temporary Road Closures:
 - Detail 1101.03 Sheet 1 through 9

Road closures and detours shall be indicated on the traffic control plan and approved by NCDOT or the COW prior to use.

This item includes the cost to provide, operate and maintain variable (changeable) message sign for traffic control in the City of Wilmington and NCDOT roads as required for traffic control and public information.

1) Payment will be based on specified road closure condition on a lump sum basis.

Night Work Additional Charge: This item includes the cost of providing equipment, materials, and labor for work night work.

1) Payment will be made for each night.

Exploratory Excavation: Includes excavating to required elevations, moving to fill areas, scarifying substrate surface, placing, compacting, and removing excess material from site. No payment will be made for over-excavating or for replacement materials. Payment shall be at the unit price bid each at specified depths.

Unsuitable Material Undercut Excavation and Replacement: Should compaction testing or proof-rolling reveal unsuitable subgrade, this unit price item shall be used to remove and dispose existing material and then replace and compact new suitable material. The undercut depth required shall be determined on-site.

Payment will be based on an area and depth measurement in feet then converted to cubic yards (CY). Measurement shall be made after all existing material is removed and prior to placement and compaction of new material.

The unit prices bid shall include all costs in connection therewith, including hauling, disposal,

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new material, and compaction.

Petroleum Contaminated Soil Removal and Disposal: This item includes the cost of providing equipment, materials and labor for excavation and disposal of petroleum contaminated soil material and backfilling with compacted structural fill.

- 1) Payment will be made based on the cubic yard of contaminated soil excavated and removed.

Demolition by Removal of Abandoned Utilities: Includes all materials, equipment, and labor required for demolition, loading, and material removal from site. Unit prices bid shall be by ton.

Tree Removal: This item includes the cost of providing equipment, materials and labor for tree and stump removal and disposal.

- 1) Payment will be made based on each tree removed according to the size of tree.

Concrete Paving: Includes forms, reinforcement and concrete, accessories, placing, finishing, curing, and testing.

- 1) Payment will be made based on each driveway.
- 2) Payment will be made based on linear feet (LF) of curb and gutter limited to 2 feet per sewer or water service cut.
- 3) Payment will be made per linear feet (LF) of sidewalk.

Flowable Fill for Structural Bridging: Includes all materials, equipment, and labor required for placing flowable fill in utility excavation for structural bridging. Unit prices bid shall be by cubic yard.

Asphalt Driveway Replacement: Includes all materials, equipment, and labor required for replacement of asphalt driveway.

- 1) Payment shall be at the unit price bid per square yard of asphalt driveway replacement.

Asphalt Pavement Repair in City Streets Cut Areas: Provide asphalt pavement repair per detail WS-1 or WS-2. Payment will be by square yards of pavement area.

Layout and limits of repair shall be in accordance with City of Wilmington Street Cut Policy, Pavement Restoration Guidelines – Figure 1 and other repair details.

Contractor shall follow the City of Wilmington Street Cut Policy contained in the Reference Drawings and shall be responsible for **all street cut policy fees**.

The unit prices bid for asphalt pavement removal and replacement shall include all costs in connection therewith, including cutting, removal, and disposal of old pavement; construction

of aggregate base course, new pavement and all compaction required for pavement.

Cut backs shall be made in accordance with the reference drawings such that old to new pavement ties are outside the trench excavation and new pavement overlays are at least 2 inches thick.

Asphalt Cut and Patch (NCDOT Right-of-Way): Provide compacted aggregate base course (CABC) for pavement repairs per detail WS-3. Payment will be based on square yards of asphalt cut and patch.

Contractor shall follow the City of Wilmington Street Cut Policy contained in the Reference Drawings and shall be responsible for **all street cut policy fees**.

The unit prices bid for CABC for utility cuts and typical road rebuilds shall include all costs in connection therewith, including construction of new aggregate base course, subgrade; and all extra compaction effort required for backfill beneath CABC.

Mill and Overlay 1.5-Inch (NCDOT Right-of-Way): Includes the milling of asphalt to restore areas of pavement cut. Payment shall be at the unit price bid per square yard. The payment for overlay paving will be by pavement unit prices per ton.

Pavement Markings: Includes furnishing, installing, inspecting, and maintaining pavement markings, and related maintenance and protection of traffic. Payment will be based on linear foot bid price regardless of color.

- 1) Payment will be made based on linear feet (LF) of temporary markings for railroad crossing and school zone legend.
- 2) Payment will be made based on linear feet (LF) of permanent thermoplastic paint crosswalk in DOT ROW of Market, Wooster, and Dawson Streets.

City Brick and Stone Removal and Replacement: Includes all materials, equipment and work required for compliance with the City of Wilmington Brick and Stone Streets Policy as indicated in the Reference Documents Section.

The unit prices bid for Brick and Stone removal and replacement by square yard shall include all costs in connection there with, including removal, palletization, replacement of damaged bricks or stones due to contractor's negligence, delamination of asphalt from bricks and stones, delivery to the City of Wilmington and reinstallation within work area.

Stoplight Inductive Detection Loop: Includes saw cutting pavement and permanent repair of stoplight sensor loop including all associated labor and materials. The payment shall be by unit price by each sensing loop.

Erosion Control: Includes all materials, equipment, and labor required for excavating, furnishing stakes and wire fence, furnishing geotextile fabric, clearing, temporary and permanent seeding, removing unsuitable material, backfilling, placing embankment, placing

aggregate, compaction, required grouting. Includes the cost of providing equipment materials and labor to install and maintain erosion control measures.

- 1) Payment will be made based on linear foot of silt fence.
- 2) Payment will be made per each curb inlet protection.
- 3) Payment will be made based on each temporary construction entrance.
- 4) Payment will be made for each tree protection.
- 5) Payment will be made for acres of seed and straw.

Sewer Mains with Steel Encasement Pipe Installed by Open Cut in CSX Railroad Right-of-Way (Alternate 1): Includes all materials, equipment, and labor required for open-cut installation of restrained joint ductile iron or PVC sewer mains and steel encasement pipe within CSX railroad Right-of-Way. Work shall be as specified and in accordance with the specifications and shall meet CSX requirements.

- 1) Bid item includes asphalt cutting, removal and disposal, excavation, shoring, bedding, steel casing, casing spacers, carrier pipe, concrete grouting and closure, tied joint restraints, and metal bars and bolts used in thrust restraint, supplying and installing materials, backfill and compaction, and testing, coordination with and location of existing utilities, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under other bid items.
- 2) Installation of sewer mains with steel encasement pipe will be measured in place on a linear foot basis to the nearest foot. Measurement will be along the horizontal centerline of the pipe from center of manhole to center of manhole. Payment will be made on the basis of the unit prices bid.

Steel Sheet Pile (CSX Railroad Right-of-Way) (Alternate 1): Includes all materials, equipment, and labor required for installation of interlocking steel sheet pile protect railroad track during excavation within CSX railroad right-of-way. Item also includes sheet pile design in conformance with CSX requirements, and locating and protecting existing and proposed utilities during sheet pile installation. Work shall be as specified and shall meet CSX requirements.

- 1) Steel sheet pile installed within 10 feet of centerline of railroad track is to be cut off 3 feet below final grade and left in place. Payment will be made on the basis of horizontal linear feet of steel sheet pile installed at a depth to be determined by the sheet pile designer.

1.4 MEASUREMENT OF QUANTITIES

- A. Light Towers: This item includes the artificial lighting as may be necessary to provide for safe and proper construction and to provide for adequate inspection of the work per NCDOT Standard Specifications. Payment will be inclusive of the unit price of work being performed.
- B. Measurement methods delineated in the individual specification sections complement the

criteria of this section. In the event of conflict, the requirements of the individual specification section govern.

- C. Take all measurements and compute quantities. Measurements and quantities will be verified by Owner.
- D. Assist by providing necessary equipment, workers, and survey personnel as required.
- E. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
- F. Measurement by Area: Measured by square dimension using mean length and width or radius.
- G. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.

1.5 DEFECT ASSESSMENT

- A. Replace Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of Owner, it is not practical to remove and replace the Work, Owner will direct one of the following remedies:
 - 1. The defective Work will be partially repaired to the instructions of the Owner, and the unit sum/price will be adjusted to a new sum/price at the discretion of Owner.
- C. The authority of Owner to assess the defect and identify payment adjustment is final.

END OF SECTION

SECTION 01 51 00

TEMPORARY SEWER BYPASS PUMPING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Temporary bypass pumping for daily system shutdowns of sewer systems.
 - 2. Temporary bypass pumping for overnight or extended shutdowns of sewer systems.
- B. Related Requirements
 - 1. CFPUA Material Specification Manual (MSM).

1.2 REFERENCES

- A. Abbreviations and Acronyms
 - 1. ORC Operator in Responsible Charge (CFPUA)
 - 2. SSO Sanitary Sewer Overflow
- B. Definitions
 - 1. Daily System Shutdowns: System gravity flows shall be restored daily before the end of regular work hours.
 - 2. Firm Capacity: The pumping capacity of a temporary bypass pumping system with the largest pump out of service.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordination
 - 1. Coordinate temporary bypass pumping system testing with Engineer and ORC. Provide a minimum of three business days' notice prior to system testing. Engineer or ORC representative must observe testing for it to be accepted.
 - 2. Coordinate system shutdowns with Engineer and ORC.
- B. Sequencing
 - 1. Operate temporary bypass pumping systems in accordance with the sequencing and phasing indicated on the Drawings.
- C. Scheduling
 - 1. The Project Schedule shall include the sequencing and coordination of maintaining wastewater flow during all phases of construction including but not limited to:
 - a. Sewer pump station upgrades and replacements
 - b. Drainage, cleaning, and replacement of sewer mains, manholes, and force mains
 - c. Trenchless rehabilitation of sewer and force mains
 - d. Inspection and testing of new or rehabilitated sewers
 - e. Connections to existing sewer mains and force mains

1.4 SUBMITTALS

- A. Provide in accordance with Section 01 33 00 – Submittals.
 - 1. Temporary Bypass Pumping Plans designated by type and location.
 - a. The Engineering Committee of the NC Board of Examiners for Engineers and Surveyors (NCBELS) ruled that providing design plans and calculations for temporary bypass pump systems is the practice of engineering and requires licensure with NCBELS per G.S. 89C-23 and -24, meaning the design work shall be done by Professional Engineers and companies licensed to practice engineering in North Carolina.
 - 2. System test results and operation logs.
 - 3. Obtain Engineer and ORC approval of submittals prior to mobilization of equipment included in the plans.

- B. Temporary Bypass Pumping Plan – For Daily System Shutdowns
 - 1. Outline provisions and precautions to be taken to convey and maintain existing wastewater flows during construction.
 - 2. Ensure proper protection of existing facilities, the project area, and surrounding properties from damage due to the discharge of flows.
 - 3. Provide adequate standby equipment available and ready for immediate operation and use in the event of an emergency or breakdown. One standby pump for each size pump utilized shall be located at the mainline flow bypassing locations, ready for use in the event of primary pump failure. In this event, promptly repair or replace the failed equipment.
 - 4. Include the following as a minimum:
 - a. Manufacturer's product data for bypass pumps including sizes, capacities, power requirements, and number of each size to be on site including primary, secondary, and spare pumps.
 - b. Manufacturer's product data for bypass piping including make, material, material properties, diameter, thickness, pressure rating, and number to be on site.
 - c. Calculations to demonstrate sufficient pump capacity for potential flows.
 - d. Method of noise control for pumps, motors, and generators.
 - e. Location and method of connection to the existing sewer on each side of the bypass if not provided in the Contract Documents.
 - f. Number, size, material, and method of installation of suction and discharge piping, valves (isolation and air release), fittings, and other components for connection to the existing sewer system.
 - g. Sewer isolation or plugging method and types of plugs or valves and fittings.
 - h. Emergency plan for adverse weather and flooding for various phases of the Work.
 - i. Incidental items required to ensure proper protection of the facilities.
 - j. Traffic Control Plan where roads are impacted.
 - k. Plan to divert pedestrian access where sidewalks are impacted.

- C. Temporary Bypass Pumping Plan – For System Shutdowns Overnight or for Extended Periods
 - 1. Prepare and submit a project- and site-specific detailed temporary bypass pumping plan that provides detailed descriptions and layout drawings of the proposed temporary bypass pumping system(s). Outline provisions and

- precautions to be taken by the Contractor to convey and maintain existing wastewater flows during construction.
2. Ensure proper protection of existing facilities, the project area, and surrounding properties from damage due to the discharge of flows.
 3. Include the following as a minimum:
 - a. Size of pipeline or conveyance system to be bypassed.
 - b. Staging areas for pumps.
 - c. Manufacturer's product data for temporary bypass pump sizes, capacities, power requirements, and number of each size to be on site including primary, secondary, and spare pumps. Provide method of operation and control, and redundancy sufficient to prevent SSOs.
 - d. Provisions for standby power including generator size and location.
 - e. Provisions for stand-by lighting.
 - f. Method of noise control for pumps, motors, or generators.
 - g. Location and method of connection to the existing sewer on each side of the bypass if not provided in the Contract Documents.
 - h. Size and location of manholes or access points for suction and discharge hose or piping.
 - i. Plan indicating location of temporary bypass pumping pipe locations.
 - j. Number, size, material, location, and method of installation of suction and discharge piping, valves (isolation and air release), fittings, and connections to the existing sewer system.
 - k. For buried piping, typical sections showing suction and discharge pipe depth, embedment, select fill and special backfill.
 - l. Thrust and restraint block sizes and locations. Provide details necessary to demonstrate the integrity of restraint of suction and discharge piping including piping and fittings associated with primary and secondary pumping units.
 - m. Sewer isolation or plugging method and types of plugs or valves and fittings.
 - n. Discharge plan including method of protecting discharge manholes or structures from erosion and other damage.
 - o. Access plans to temporary bypass pumping locations indicated on the drawings.
 - p. Heavy equipment required for installation of pumps, piping, valves, fittings, and other materials.
 - q. Temporary pipe supports and anchoring.
 - r. Calculations of static lift, friction losses, and flow velocity (pump curves showing pump operating range shall be submitted).
 - s. Calculations for selection of temporary bypass pumping pipe size.
 - t. Schedule for installation, operation, maintenance, and removal of the temporary bypass pumping system(s).
 - u. Emergency plan for adverse weather and flooding for various phases of the Work.
 - v. Contractor's plan for providing continuous (24-hour) monitoring of the temporary bypass pumping operation as well as the monitoring persons' qualifications. Additionally, an auto-dialer alarm system shall be provided for loss of primary pump or high level at suction location.
 - w. Plan for refueling pump sets on demand.
 - x. Demonstration of compliance with the requirements and permit conditions specified in the Contract Documents.
 - y. Incidental items necessary to insure proper protection of the facilities.

1.5 QUALITY ASSURANCE

- A. Demonstrate, or employ the services of a subcontractor, who can demonstrate that they specialize in the design and operation of temporary sewer bypass pumping systems.
- B. Comply with North Carolina OSHA Standards, Underwriter Laboratories, and other authorities having jurisdiction. The temporary bypass pumping system shall meet the requirements of codes and regulatory agencies having jurisdiction.
- C. Materials and appurtenances shall be clearly, legibly, and appropriately marked for identification purposes. Marking shall include listing/approval stamp, label, or other marking indicating conformance with specified standards.
- D. Perform temporary bypass pumping system testing in accordance with Part 3.

PART 2 PRODUCTS

2.1 TEMPORARY SEWER BYPASS PUMPING SYSTEMS FOR SYSTEM SHUTDOWNS EXTENDING OVERNIGHT

- A. Pumps shall be fully automatic self-priming units that do not require the use of foot-valves or vacuum pumps in the priming system. Pumps may be electric, or diesel powered. Diesel powered pumps shall include critical grade silencing when used in residential settings or areas where excessive noise levels would create a disturbance. Critical grade silencing is not required on redundant bypass pumping.

Silencing Grade	Expected Attenuation (dBA)
Industrial	15 to 20
Residential	20 to 25
Critical	25 to 32
Super Critical	30 to 38
Hospital	35 to 42
Hospital Plus	35 to 50
Extreme	40 to 55
Super Extreme	45 to 60

- B. Provide level detection equipment, alarms, drives, controls, fittings, valves, air release valves, fuel tanks, auxiliary fuel tanks, and other components for a reliable stand-alone system. Provide sufficient components for a redundant system.
- C. Include 100 percent on-line pumping redundancy. Include a redundant bypass pump, intake and discharge conduit, and other equipment necessary to provide continuous wastewater flow and prevent the backing up of sewage in the event of primary system failure.

2.2 PERFORMANCE REQUIREMENTS

A. Design, install, operate, and maintain a temporary bypass pumping system to maintain continuous wastewater service to customers of CFPUA. The Contractor shall be responsible for bypass pumping of wastewater as required to prevent backing up of sewage (except as approved by CFPUA) and provide appropriate conditions for proper drainage, inspection, replacement, rehabilitation, testing or reconnections to existing sewers.

B. Temporary Bypass Pumping System Capacities

Location	Firm Capacity (GPM)
McCumber's Ditch 36-inch Sewer Outfall	6000

C. Operation

1. Operators

- a. Provide on-site manual oversight by a responsible operator of temporary bypass pumping operations 24 hours per day, 7 days per week when the temporary bypass pumping systems are in operation.
- b. The 24-hour monitoring operator shall be properly trained, experienced, and mechanically qualified so that they can quickly and effectively address potential emergency and non-emergency situations associated with the pumps and temporary bypass pumping system.

2. Controls

- a. Pumps shall operate on redundant control systems and be equipped with an auto-dialer, cellular, or SCADA monitoring and control. Controls shall be set so that the systems do not surcharge and create an SSO in upstream manholes or a backup of wastewater into residential or commercial facilities.

3. Operation Sequences

- a. Comply with operating sequences provided by Engineer and ORC.

PART 3 EXECUTION

3.1 EXAMINATION

A. Inspect Work area and verify that existing conditions match the conditions depicted on the Drawings. Notify Engineer immediately of any discrepancies.

B. System Testing

1. Perform leakage and pressure tests of the temporary bypass pumping discharge piping using clean water prior to operation. Pressure and leakage tests shall be conducted at 1.5 times the maximum working pressure, based on the approved Temporary Bypass Pumping Plan, for a period of two hours. No leakage is permitted during this test. Provide a leakage and pressure test report that documents start time and pressure, pressure at 15-minute intervals, stop time, end

of test pressure, and amount of leakage. Report shall be signed by the Contractor's on-site superintendent and project manager, and the Engineer or CFPUA representative.

2. Demonstrate that the temporary bypass pumping system is in good working order and is sufficiently sized to successfully convey wastewater flows by operating the system in automatic mode for a period of 24 hours prior to beginning Work.
3. Demonstrate alarms function as designed.
4. Demonstrate back-up pumps and systems operate as designed.

3.2 PREPARATION

- A. Temporary bypass pumping operations shall not proceed until submittals have been approved.
- B. Do not interrupt sewer service without prior approval of CFPUA.
- C. Precautions
 1. Locate existing utilities in proximity to the temporary bypass pumping system. Install temporary bypass pumping system components to minimize disturbance to existing utilities and in accordance with the Temporary Bypass Pumping System Plan. Costs associated with relocating existing utilities and obtaining approvals shall be borne by the Contractor.
 2. During temporary bypass pumping system operation, protect the existing sanitary sewer facilities from damage inflicted by any equipment. The Contractor shall be responsible for physical damage to the existing sanitary sewer facilities caused by human or mechanical failure.
- D. Protect existing facilities in accordance with Section 01 50 00 – Temporary Facilities and Controls.

3.3 INSTALLATION

- A. General
 1. Prevent damage to existing structures. Discharge piping to gravity sewer systems shall be designed in such a manner as to prevent discharge from contacting manhole walls or benching. Full discharge shall go into the downstream pipe in a manner to minimize turbulence. It may be necessary to remove manhole cones to provide sufficient space for the bypass piping. Contractor is responsible for any damage to manholes. Repair damaged manholes to preconstruction condition.
 2. Make connections to the existing sewer and construct temporary bypass pumping structures only at the access locations indicated on the Drawings.
 3. The new sewer may be used by the Contractor to convey the sanitary flows after the new sewer has passed inspection and testing. CFPUA shall approve any temporary connections to the new sewer.
 4. Plugging or blocking of sewage flows shall incorporate a primary and secondary plugging device. When plugging or blocking is no longer needed for performance and acceptance of work, it is to be removed in a manner that permits the sewage flow to slowly return to normal without surge and that prevents surcharging or causing other major disturbances downstream.

5. When working inside a manhole or force main in the presence of sewer gases, combustible or oxygen-deficient atmospheres, and confined spaces, the Contractor shall exercise caution and comply with OSHA requirements.
 6. Installation of bypass pipelines is prohibited in wetland areas unless specifically indicated or allowed in the Contract Documents. The pipeline must be located off streets (except where streets are shut down and detours or lane shifts are provided) and sidewalks and on shoulders of the roads or within easements. When the bypass pipeline crosses local streets and private driveways, install temporary road ramps.
- B. Steel Pipe shall be installed in accordance with manufacturer recommendations. Locking pins shall be placed in couplings.
- C. HDPE pipe shall be installed in accordance with AWWA M55 "PE Pipe – Design and Installation" and the "Handbook of Polyethylene Pipe" by the Plastics Pipe Institute. The pipe shall be joined by the butt fusion procedure outlined in ASTM F 2620 or PPI TR-33. Fusion joints shall be made in compliance with the pipe or fitting manufacturer's recommendations. Fusion joints shall be made by qualified fusion technicians per PPI TN-42.

3.4 OPERATION

- A. Maintain flows in the existing upstream pumps stations, sewer interceptors, and tributary collector and lateral lines at all times and under all weather conditions except for brief periods when mains and services are disconnected and reconnected. Take actions and precautions necessary to prevent discharge of wastewater during disconnection and reconnection of mains including performing those tasks during off peak hours or providing additional temporary bypass measures. Interruption of flows that result in the discharge of wastewater will not be permitted.
- B. Maintain sewer flow at the work area in a manner that will not cause surcharging of sewers or damage to sewers, and that will protect public and private property from damage and flooding.
- C. Anticipate severe weather conditions and increases in peak flows during rain events and design and plan for these accordingly.
- D. Immediately notify CFPUA should a sanitary sewer overflow (SSO) occur. Take necessary action to clean up and disinfect the spillage to the satisfaction of CFPUA and other governmental agencies with jurisdiction. If sewage is spilled onto public or private property, wash down, clean up, and disinfect the spillage to the satisfaction of the property owner, utility owner, and governmental regulatory agencies.
- E. Overflows from temporary bypass operations shall not be permitted to enter streams or bodies of water. The Contractor shall be solely responsible for paying fines imposed and legal actions taken by state and federal regulatory agencies if overflows occur as a result of the temporary bypass pumping operations. Reimburse CFPUA for any damages, operational costs, fines, and other effects. Immediately remove and dispose of wastewater and waste material spilled during the temporary bypass pumping at his own expense.

- F. Make every effort to avoid causing unplanned service outages. CFPUA will investigate service outages resulting from Contractor's operations. If the investigation determines that the Contractor could have avoided the service outage, then the outage shall result in disciplinary actions including but not limited to reimbursement to the CFPUA for any damages, operational costs, fines, and other effects.
- G. Provide pipeline plugs, temporary suction piping, pumps of adequate size to handle peak flow, and temporary discharge piping to ensure that the total flow of the sewer main can be safely diverted around the section of sewer designated for rehabilitation. Do not stop or impede the main flows without prior approval by CFPUA.
- H. Temporary bypass pumping systems for system shutdowns extending overnight shall be operated 24 hours per day.
- I. Where portions of the Work require that tributary pump stations be taken out of service for prolonged periods, the Contractor shall construct a temporary bypass pumping system for those pump stations that discharge into either the existing piping downstream of the affected area, or to a neighboring gravity sewer (as identified by CFPUA) that flows to an unaffected pump station.
- J. Temporary road ramps shall be used where necessary to maintain traffic flow in accordance with the Traffic Control Plan as required by Section 01 35 00, Special Procedures.
- K. Cease bypass pumping operations and return flows to the new or existing sewer when directed by CFPUA.
- L. Contractor shall repair, at his own expense, any damage to public or private property caused by his operations.
- M. A copy of the CFPUA approved Temporary Bypass Pumping Plan shall be available onsite at all times during temporary bypass pumping operations.

3.5 MONITORING

- A. Operators shall perform inspections of the temporary bypass pumping system and operation at a minimum of hourly intervals. Inspections shall include at a minimum:
 - 1. Observation of all components of the temporary bypass system, including all piping and appurtenances, to ensure the system is operating as specified and no leakage or damage is occurring.
 - 2. Observation of the suction and discharge locations of the temporary bypass pumping system, including upstream and downstream sewers, to ensure flow levels are as expected and no surcharging of the sewer or damage is occurring.
 - 3. Verification of adequate fuel supply.
- B. Inspections shall be documented in the operation log at the time that the inspection is performed.

3.6 PROTECTION

- A. Protect temporary bypass pumping systems from traffic in proximity to system components and vandalism. Repair or replace damaged components immediately.

3.7 MAINTENANCE

- A. Ensure that the temporary bypass pumping system is properly maintained in accordance with the Temporary Bypass Pumping Plan and manufacturer recommendations. There shall be no leakage from the temporary bypass pumping system.
- B. Sufficient spare parts for pumps and piping shall be kept on site to maintain operation of the redundant system. Immediately replace spare parts that are placed into service.

3.8 DISASSEMBLY AND REMOVAL

- A. When bypass operations are complete, bypass piping shall be flushed with fresh water and drained into the wastewater system prior to disassembly. Piping shall be disassembled in a manner to prevent an SSO.
- B. Upon completion of the bypass pumping operations, and after the receipt of written permission from CFPUA, the Contractor shall disassemble and remove piping and restore property to pre-construction condition.

END OF SECTION

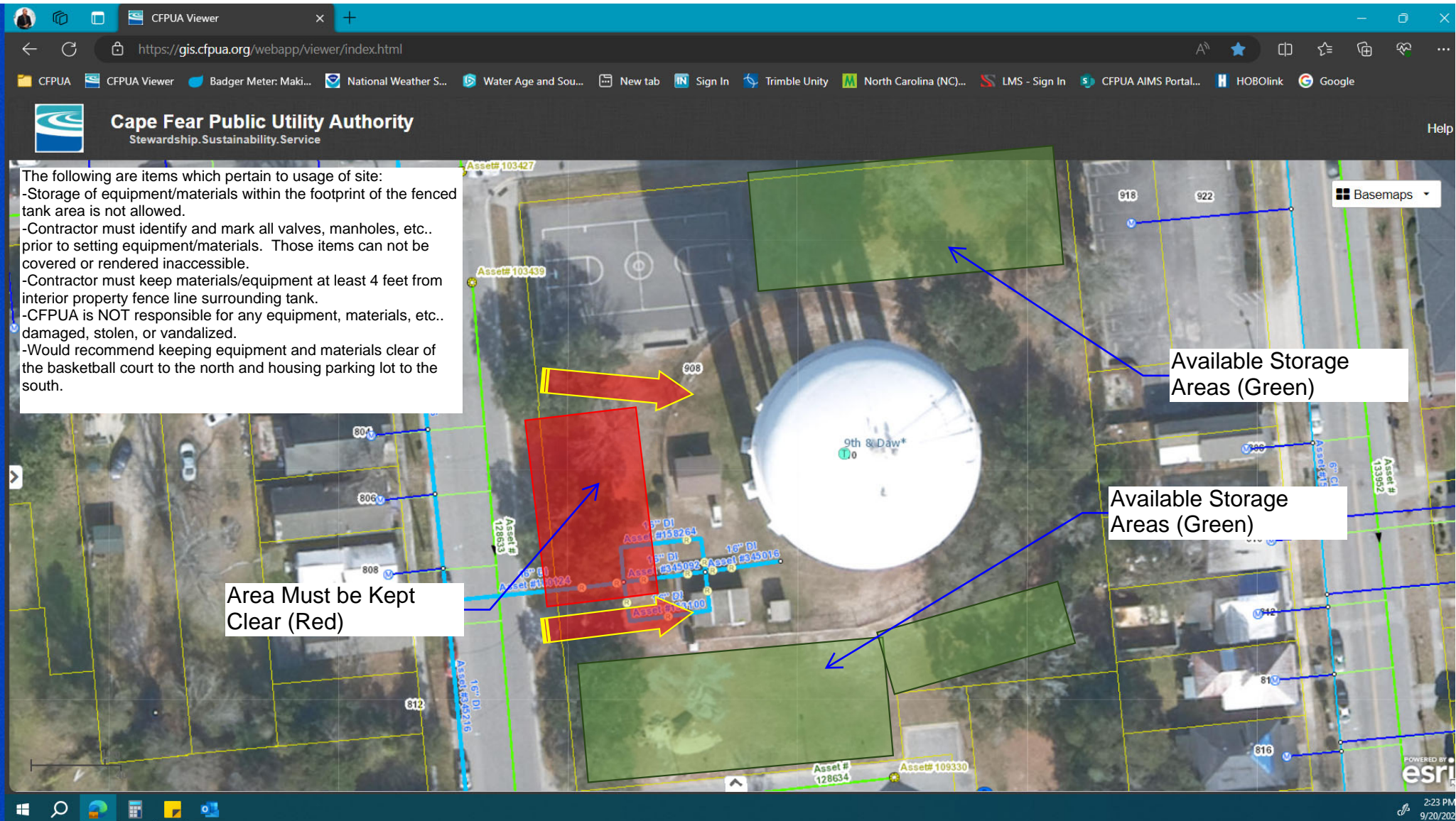


Figure 1 - 9th and Dawson Elevated Tank Storage Area