

THE WATER AND SEWER AUTHORITY OF CABARRUS COUNTY (WSACC)

**LOWER CODDLE CREEK PARALLEL INTERCEPTOR PROJECT**

February 9, 2024

To: All Holders of Contract Documents

Subject: Addendum No. 4

Please make the following revisions/changes to the contract documents:

**Contract Documents and Technical Specifications**

1. 00 10 00 Instructions to Bidders

REPLACE "Questions shall be received until 5:00 PM on January 29, 2024." in Section 6.01 with "Questions shall be received until 10:00 AM on February 13, 2024."

Explanation: Question period has been revised.

2. 00 30 00 Bid Form

REPLACE entire document with attached revised Bid Form.

Explanation: Revisions to this section are as follows:

- Bid Form revisions listed in prior Addenda were addressed.
- 5% contingency was added for Phase 1 (Base Bid) and Phase 2 (Bid Alternate) and line item numbers were revised accordingly.
- Line items under item 3 were restructured to accommodate need for "Improved Trench".
- Revised Bid Item 8 & 59 from "Manhole Lining" to "Epoxy Polymer Lining of New Manholes".
- Revised quantity of Bid Item 8 Manhole Lining from "1709 VF" to "1789 VF". The change in quantity accounts for lining of new cut in manholes within the rehabilitation scope of work.
- Revised quantity of Bid Item 40 Epoxy Polymer Lining from "454 VF" to "374 VF".

3. 01 22 00 Measurement and Payment

REPLACE entire document with attached revised Measurement and Payment.

Explanation: Revisions to this section are as follows:

- Measurement and Payment revisions listed in prior addenda were addressed.
- Revised line item numbering to reflect revisions to Bid Form list in this addendum.

- Revised first sentence of Item 3 and 53 from “Payment shall be made for each size, type and class of pipe to the nearest linear foot by depth ranges and as indicated on the Bid Form.” to “Payment shall be made for each size, type and class of pipe and required bedding to the nearest linear foot by depth ranges and as indicated on the Bid Form.”
- Inserted “Payment for Improved Trench pay item will only be made where noted on the plans or at the direction of the Engineer. Payment for improved trench will be made under the associated improved trench pay item for that depth and diameter for the specified minimum trench width.” as second paragraph of Item 3 and 53.
- Revised “DIP Vent Pipe” to “Vent Pipe” under Items 6 and 57.
- Added “Related work which is provided under other bid items shall include the following: a. Manhole Lining.” to Bid Item 35 at end of last paragraph.
- Revised Bid Item 8 & 59 from “Manhole Lining” to “Epoxy Polymer Lining of New Manholes”.

4. Project Manual Volume 2 Index of Permits

ADD “Permit Approval” under NCDEQ Erosion and Sediment Control heading and INSERT attached “Letter of Approval with Modifications” document.

**Construction Plans**

1. INSERT attached Improved Trench Detail 7-G on plan sheet D-7.

Explanation: Improved trench detail is required where poor soil conditions are present.

2. ADD “INSTALL PIPE WITH IMPROVED TRENCH PER DETAIL 7-G” on plan sheets where applicable per the following table.

Improved Trench Plan Locations				
Plan Sheet	Stationing		Pipe Diameter (in)	New/Realignment
	From	To		
SS-2, SS-3	0+38.24	7+46.14	30	Realign
SS-5A	0+00	2+85.26	30	Realign
SS-2	0+00	5+44.35	48	New
SS-4, SS-5	13+97.54	20+20.67	48	New
SS-5, SS-6	21+17.58	29+63.98	48	New
SS-6	31+25.87	38+78.81	48	New
SS-2, SS-3	0+00	0+38.24	54	Realign
SS-2	-	0+00	60	Realign

**Contract Documents and Technical Specifications Clarification**

1. Excel spreadsheet file of Bid Form is included as an attachment.
2. All new manholes, including cut-in manholes specified in the rehabilitation scope of work, shall be polymer lined as per Bid Item 8 & 59.
3. Use of an Improved Trench shall be required where noted on the plans and as per this Addendum. The Improved Trench is required where noted due to the poor soil characteristics noted in the geotechnical data report. The Improved Trench will require additional trench width and stone backfill. Improved Trench, where noted, will be installed continuously from manhole to manhole.

**Attachments to Addendum 4**

1. Attachment 1 – 00 30 00 Bid Form
2. Attachment 2 – 01 22 00 Measurement and Payment
3. Attachment 3 – NC DEQ Letter of Approval with Modifications
4. Attachment 4 – Improved Trench Detail 7-G
5. Attachment 5 – Bid Form in Excel format

END OF ADDENDUM 4



**Section 00 30 00**

**BID FORM**

PROJECT IDENTIFICATION:

**LOWER CODDLE CREEK PARALLEL INTERCEPTOR PROJECT**

THIS BID IS SUBMITTED TO:

Water and Sewer Authority of Cabarrus County  
Attention: Chad VonCannon, PE  
232 Davidson Highway  
Concord, NC 28027

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 perform 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 other terms and conditions of the Bidding Documents.

2.01. Bidder accepts all of the terms and conditions of the Invitation to Bid and the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the day of bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner. Bidder will sign and submit the Agreement with the Bonds and other documents required by the Bidding Documents within 10 days after the date of Owner's Notice of Award.

3.01. In submitting this Bid, Bidder represents 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 which is hereby acknowledged:

No. \_\_\_\_\_ Dated \_\_\_\_\_

No. \_\_\_\_\_ Dated \_\_\_\_\_

No. \_\_\_\_\_ Dated \_\_\_\_\_

No. \_\_\_\_\_ Dated \_\_\_\_\_

No. \_\_\_\_\_ Dated \_\_\_\_\_

- B. Bidder has visited the site and become familiar with and is satisfied as to the general, local, and site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all technical data, if any, of subsurface and physical conditions at or contiguous to the site which have been identified Paragraph 5.03 of the General Conditions, and technical data of hazardous environmental conditions, if any, at the site which has been identified in Paragraph 5.06 of the General Conditions.
- E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data not specifically identified in the Contract Documents concerning conditions (surface, subsurface, and underground facilities) at or contiguous to the site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including any specific means, methods, techniques, sequences, and procedures of construction required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto..
- F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid or performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of Work to be performed by Owner and others at the site that relates to the Work indicated in the Bidding Documents.
- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
- I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding

Documents and confirmed that the written resolution thereof by Engineer is acceptable to Bidder.

- J. Bidder has determined that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- K. Bidder further represents that this Bid is genuine and is not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted pursuant to any agreement or rules of any group, association, organization, or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

4.01. Bidder will complete the Work for the following unit prices, computed in accordance with Paragraph 13.03.B of the General Conditions. Bidder acknowledges that estimated quantities are not guaranteed and are solely for the purpose of comparison of Bids, and that final payment for all Unit Price Bid items will be based on actual quantities provided, determined as provided in the Contract Documents.

Lower Coddle Creek Parallel Interceptor Bid Form					
ITEM	DESCRIPTION	QTY.	UNITS	UNIT PRICE	EXTENDED AMOUNT
<b>Base Bid (Phase 1)</b>					
1	Mobilization (3% of Base Bid)	1	LS		
2	Clearing and Grubbing	1	LS		
3	Installation of New Sanitary Sewer Pipe, including rock excavation				
3a	30-Inch FRP (8'-12' Deep) SN46	55	LF		
3b	30-Inch FRP (8'-12' Deep) SN46, Improved Trench (8' Min. Width)	423	LF		
3c	30-Inch FRP (12'-16' Deep) SN46, Improved Trench (8' Min. Width)	255	LF		
3d	30-Inch FRP (16'-20' Deep) SN46, Improved Trench (8' Min. Width)	129	LF		
3e	30-Inch FRP (20'-24' Deep) SN46, Improved Trench (8' Min. Width)	188	LF		
3f	36-Inch DIP (Any Depth)	70	LF		
3g	48-Inch FRP (8'-12' Deep) SN46	20	LF		
3h	48-Inch FRP (12'-16' Deep) SN46	442	LF		
3i	48-Inch FRP (16.1'-20' Deep) SN46	9257	LF		
3j	48-Inch FRP (16.1'-20' Deep) SN46, Improved Trench (10' Min. Width)	512	LF		
3k	48-Inch FRP (20.1'-24' Deep) SN46	4072	LF		
3l	48-Inch FRP (20.1'-24' Deep) SN46, Improved Trench (10' Min. Width)	2255	LF		
3m	48-Inch FRP (24'-28' Deep) SN46	636	LF		
3n	48-Inch FRP (28.1'-32' Deep) SN46	431	LF		
3o	48-Inch DIP (Any Depth)	886	LF		
3p	54-Inch FRP (20'-24' Deep) SN46, Improved Trench (12' Min. Width)	39	LF		
3q	60-Inch FRP (24'-28' Deep) SN46, Improved Trench (14' Min. Width)	39	LF		
3r	Connect 60" to Existing Manhole	1	EA		
3s	Connect 48" to Existing Manhole	4	EA		
4	Buried Stream Crossings, including rock excavation				
4a	Station 10+93.52 to 11+53.52 (Inc. 60 lf of 48-inch DIP)	1	LS		
4b	Station 20+20.67 to 21+17.58 (Inc. 97 lf of 48-inch DIP)	1	LS		
4c	Station 29+78.76 to 30+88.76 (Inc. 110 lf of 48-inch DIP)	1	LS		
4d	Station 58+72.30 to 59+92.30 (Inc. 120 lf of 48-inch DIP)	1	LS		
4e	Station 95+83.79 to 96+43.79 (Inc. 60 lf of 48-inch DIP)	1	LS		
4f	Station 107+40.05 to 108+69.42 (Inc. 129 lf of 48-inch DIP)	1	LS		
4g	Station 109+65 to 110+65 (Inc. 100 lf of 48-inch DIP)	1	LS		
4h	Station 136+10.78 to 136+96.50 (Inc. 86 lf of 48-inch DIP)	1	LS		
4i	Station 145+59.18 to 146+74.18 (Inc. 115 lf of 48-inch DIP)	1	LS		
4j	Station 155+78.26 to 156+90.71 (Inc. 112 lf of 48-inch DIP)	1	LS		
4k	Station 160+19.03 to 161+21.03 (Inc. 102 lf of 48-inch DIP)	1	LS		
4l	Station 165+35.69 to 166+51.58 (Inc. 116 lf of 48-inch DIP)	1	LS		
4m	Station 187+06.28 to 188+18.28 (Inc. 112 lf of 48-inch DIP)	1	LS		
4n	Station 191+25.32 to 192+20.32 (Inc. 95 lf of 48-inch DIP)	1	LS		
4o	Station 203+37.62 to 204+47.95 (Inc. 110 lf of 48-inch DIP)	1	LS		
4p	Station 0+00 to 1+00.35 (Inc. 100 lf of 36-inch DIP) Collector (Wolf Meadow)	1	LS		
5	48" Interceptor constructed beneath Existing Sanitary Sewer Main, complete, in place, excluding Interceptor Sewer itself ("Go Under"), including bypass pumping				
5a	Approximate Station 95+57 (Ex. 6" Dia.)	1	LS		
5b	Approximate Station 146+72 (Ex. 30" Dia.)	1	LS		
5c	Approximate Station 149+53 (Ex. 8" Dia.)	1	LS		
5d	Approximate Station 164+46 (Ex. 8" Dia.)	1	LS		
5e	Approximate Station 168+61 (Ex. 8" Dia.)	1	LS		
5f	Approximate Station 186+00 (Ex. 30" Dia.)	1	LS		
5g	Approximate Station 204+52 (Ex. 24" Dia.)	1	LS		
6	New Manhole Installation with Specified Base Diameter and Depth				
6a	Precast Interceptor Manhole with 5' Dia. Base (0'-10' Deep)	1	EA		
6b	Precast Interceptor Manhole with 5' Dia. Base (10.1'-12' Deep)	3	EA		
6c	Precast Interceptor Manhole with 5' Dia. Base (12.1'-16' Deep)	3	EA		
6d	Precast Interceptor Manhole with 5' Dia. Base (16.1'-20' Deep)	1	EA		
6e	Precast Interceptor Manhole with 7' Dia. Base (16.1'-20' Deep)	26	EA		
6f	Precast Interceptor Manhole with 7' Dia. Base (20.1'-24' Deep)	40	EA		
6g	Precast Interceptor Manhole with 7' Dia. Base (24.1'-28' Deep)	4	EA		
6h	Precast Interceptor Manhole with 7' Dia. Base (28.1'-32' Deep)	2	EA		
6i	Precast Interceptor Manhole with 8' Dia. Base (20.1'-24' Deep)	1	EA		
6j	Precast Interceptor Manhole with 10' Dia. Base (16.1'-20' Deep)	2	EA		

ITEM	DESCRIPTION	QTY.	UNITS	UNIT PRICE	EXTENDED AMOUNT
6k	Precast Interceptor Manhole with 10' Dia. Base (24.1'-28' Deep)	1	EA		
6l	Flattop Precast Concrete Cut In Manhole with 7' Dia. Base on Existing Line (24.1'-28' Deep)	1	EA		
7	Vent Pipes	25	EA		
8	Epoxy Polymer Lining of New Manholes	1789	VF		
9	48" Concrete Anti-Seep Collars	2	EA		
10	Abandon Existing Manholes in Place	1	EA		
11	Remove and Dispose of Existing Pipe, Not in Same trench as New Sewer, where indicated on Drawings	40	LF		
12	Cast-in-Place Concrete Diversion Structures, complete, in place, including bypass pumping				
12a	Diversion Structure No. 1 (#27A)	1	LS		
12b	Diversion Structure No. 2 (#74A)	1	LS		
12c	Wolf Meadow Branch (#73A)	1	LS		
13	Remove and Replace Existing Storm Drain Culvert and Associated Appurtenances				
13a	24" HDPE	100	LF		
13b	15" RCP, Class III	150	LF		
13c	36" RCP, Class III	60	LF		
13d	36" Concrete Flared End Section	1	EA		
14	Permanent Piped Stream Crossings				
14a	Approximate Station 11+25, per Detail 3-B	1	LS		
14b	Approximate Station 40+75, per Detail 3-B	1	LS		
14c	Approximate Station 158+50, per Detail 3-B	1	LS		
14d	Approximate Station 185+25, per Detail 3-B	1	LS		
15	Permanent At Grade Stream Crossings, per Detail 3-D	8	EA		
16	Temporary Bridge Mat Stream Crossings, per Detail 3-C	1	LS		
17	Silt Fence	32200	LF		
18	Silt Fence Stone Outlets	215	EA		
19	Inlet Protection	2	EA		
20	Temporary Construction Entrance	19	EA		
21	Permanent Seeding and Mulching	1	LS		
22	Maintenance of Erosion and Sediment Control Devices (Must Equal 25% of the Sum of Items 16 to 21)	1	LS		
23	Streambank Stabilization				
23a	Rip Rap, per Detail 5-A	900	SY		
23b	Mat and Plantings, per Detail 5-A	1600	SY		
23c	Boulder Toe, per Detail 4-F	5100	SF		
23d	Vegetated Geogrid, per Detail 4-F	3500	SF		
24	Wetland Restoration				
24a	Herbaceous Seeding	2200	SY		
24b	Herbaceous Seeding plus Live Stakes	900	SY		
25	Subgrade Stabilization Stone	1000	CY		
26	Select Backfill Material	1000	CY		
27	Soil Stabilization Fabric - Trench (Type 4)	1500	SY		
28	Gravel Path	1950	SY		
29	Concrete Curb & Gutter, Remove & Replace				
29a	2'-0" Concrete Valley Gutter, CLDS 10.17B	50	LF		
29b	2'-6" Concrete Curb and Gutter	50	LF		
30	Asphalt Surface Repair, Asphalt Surface Course	100	TN		
31	Asphalt Surface Repair, ABC Base Course	100	TN		
32	Asphalt Milling, 0" to 3"	100	SY		
33	Temporary Access Gate	1	EA		
34	Tree Protection	1	EA		
<b>Existing Pipeline Rehabilitation Pay Items</b>					
35	Install New 5' Diameter Flattop Precast Concrete Cut In Manhole on Existing Line				
35a	10.1'-12' Deep	2	EA		
35b	12.1'-16' Deep	3	EA		
35c	16.1'-20' Deep	1	EA		
36	Pre-Rehabilitation Clean and CCTV (any size)	1898	LF		
37	CIPP Lining (30")	1898	LF		
38	4' Long CIPP Spot Repair (30")	4	EA		
39	Performing CIPP Product Tests	16	EA		

ITEM	DESCRIPTION	QTY.	UNITS	UNIT PRICE	EXTENDED AMOUNT
Existing Manhole Rehabilitation					
40	Epoxy Polymer Lining	374	VF		
41	Cementitious Lining	506	VF		
42	Install Frame Chimney Seal	6	EA		
43	Raise Ex. Manhole Frame and Cover (6")	1	EA		
44	Rebuild Bench & Invert	1	EA		
45	Seal Pipe Connections	7	EA		
46	Remove and Replace Manhole Vent	40	EA		
47	Remove and Replace Frame & Cover	1	EA		
48	Subtotal Base Bid (Sum of Items 1 to 47):				
49	Contingency (5% of Item 48)				
50	Total Base Bid (Sum of Items 48 and 49)				
Bid Alternate (Phase 2)					
51	Mobilization (3% of Bid Alternate)	1	LS		
52	Clearing and Grubbing	1	LS		
53	Installation of New Sanitary Sewer Pipe, including rock excavation				
53a	30-Inch FRP (8'-12' Deep) SN46	69	LF		
53b	30-Inch FRP (12'-16' Deep) SN46	259	LF		
53c	36-Inch FRP (12'-16' Deep) SN46	20	LF		
53d	36-Inch FRP (16.1'-20' Deep) SN46	4042	LF		
53e	36-Inch FRP (20.1'-24' Deep) SN46	2460	LF		
53f	36-Inch FRP (24'-28' Deep) SN46	349	LF		
53g	36-Inch DIP (Any Depth)	278	LF		
53h	Connect 36" to Existing Manhole	1	EA		
54	Buried Stream Crossings, including rock excavation				
54a	Station 16+78.97 to 18+42.97 (Inc. 164 lf of 36-inch DIP)	1	LS		
54b	Station 32+88.64 to 33+97.42 (Inc. 109 lf of 36-inch DIP)	1	LS		
54c	Station 40+72.86 to 41+77.33 (Inc. 104 lf of 36-inch DIP)	1	LS		
54d	Station 55+49.69 to 56+53.69 (Inc. 104 lf of 36-inch DIP)	1	LS		
54e	Station 66+73 to 67+73 (Inc. 100 lf of 36-inch DIP)	1	LS		
55	36" Interceptor constructed beneath Existing Sanitary Sewer Main, complete, in place, excluding Interceptor Sewer itself ("Go Under"), including bypass				
55a	Approximate Station 3+63 (4" Dia.)	1	LS		
55b	Approximate Station 7+20 (8" Dia.)	1	LS		
55c	Approximate Station 16+09 (8" Dia.)	1	LS		
55d	Approximate Station 27+84 (30" Dia.)	1	LS		
55e	Approximate Station 29+32 (8" Dia.)	1	LS		
55f	Approximate Station 43+93 (4" Dia.)	1	LS		
55g	Approximate Station 55+39 (30" Dia.)	1	LS		
55h	Approximate Station 68+17 (30" Dia.)	1	LS		
55i	Approximate Station 70+29 (8" Dia.)	1	LS		
56	Guaranteed Trenchless Crossings, per Project Specifications				
56a	Trenchless Installation of 36-Inch Sewer - Roberta Road (127.27 LF)	1	LS		
57	New Manhole Installation with Specified Base Diameter and Depth				
57a	Precast Interceptor Manhole with 5' Dia. Base (12.1'-16' Deep)	2	EA		
57b	Precast Interceptor Manhole with 5' Dia. Base (16.1'-20' Deep)	1	EA		
57c	Precast Interceptor Manhole with 6' Dia. Base (16.1'-20' Deep)	11	EA		
57d	Precast Interceptor Manhole with 6' Dia. Base (20.1'-24' Deep)	16	EA		
57e	Precast Interceptor Manhole with 6' Dia. Base (24.1'-28' Deep)	3	EA		
58	Vent Pipes	9	EA		
59	Epoxy Polymer Lining of New Manholes	664	VF		
60	Cast-in-Place Concrete Diversion Structures, complete, in place, including bypass pumping				
60a	Diversion Structure No. 4 (#105)	1	LS		
61	Temporary Bridge Mat Stream Crossings, per Detail 3-C	1	LS		
62	Silt Fence	15604	LF		
63	Silt Fence Stone Outlets	101	EA		
64	Temporary Construction Entrance	8	EA		
65	Permanent Seeding and Mulching	1	LS		
66	Maintenance of Erosion and Sediment Control Devices (Must Equal 25% of the Sum of Items 61 to 65)	1	LS		

ITEM	DESCRIPTION	QTY.	UNITS	UNIT PRICE	EXTENDED AMOUNT
67	Streambank Stabilization				
67a	Rip Rap, per Detail 5-A	450	SY		
67b	Mat and Plantings, per Detail 5-A	350	SY		
67c	Boulder Toe, per Detail 4-F	1600	SF		
67d	Vegetated Geogrid, per Detail 4-F	1000	SF		
68	Wetland Restoration				
68a	Herbaceous Seeding	400	SY		
68b	Herbaceous Seeding plus Live Stakes	50	SY		
69	Subgrade Stabilization Stone	200	CY		
70	Select Backfill Material	400	CY		
71	Soil Stabilization Fabric - Trench (Type 4)	400	SY		
72	Gravel Path	2200	SY		
73	Concrete Curb & Gutter, Remove & Replace				
73a	2'-0" Concrete Valley Gutter, CLDS 10.17B	50	LF		
73b	2'-6" Concrete Curb and Gutter	50	LF		
74	Asphalt Surface Repair, Asphalt Surface Course	100	TN		
75	Asphalt Surface Repair, ABC Base Course	100	TN		
76	Asphalt Milling, 0" to 3"	100	SY		
77	Subtotal Bid Alternate (Sum of Items 51 to 76):				
78	Contingency (5% of Item 77)				
79	Total Bid Alternate (Sum of Items 77 and 78)				
80	Grand Total (Sum of Base Bid (Item 50) and Bid Alternate (Item 79)):				

## 5.01 Tabulation of Major Equipment Items

EQUIPMENT	VENDOR
Gravity Sewer Pipe	_____
Ductile Iron Gravity Sewer Pipe	_____
Steel Casing Pipe	_____
Precast Concrete Manholes	_____

The Owner's Contingency Allowance is to be used for minor change order items authorized by the Owner.

6.01. Bidder agrees that all excavation is unclassified.

6.02. Bidder agrees that the Work will be substantially completed within 700 days continuous calendar days and be completed and receive Engineer's written recommendation of final payment in accordance with Paragraph 15.06.B of the General Conditions within 730 days continuous calendar days, after the commencement of Contract Times as defined in the General Conditions.

6.03. Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above.

7.01. Communications concerning this Bid shall be sent to Bidder at the following address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8.01. The terms used in this Bid have the meanings indicated in the Instructions to Bidders and General Conditions.

SIGNATURE OF BIDDER

**Contractor's License Number** \_\_\_\_\_

**License Expiration Date** \_\_\_\_\_

If an Individual

By \_\_\_\_\_  
(signature of individual)

doing business as \_\_\_\_\_

Business address \_\_\_\_\_

\_\_\_\_\_

Phone No. \_\_\_\_\_

Date \_\_\_\_\_, 20\_\_\_\_

ATTEST \_\_\_\_\_ TITLE \_\_\_\_\_

If a Partnership

By \_\_\_\_\_  
(firm name)

\_\_\_\_\_  
(signature of general partner)

Business address \_\_\_\_\_

\_\_\_\_\_

Phone No. \_\_\_\_\_

Date \_\_\_\_\_, 20\_\_\_\_

ATTEST \_\_\_\_\_ TITLE \_\_\_\_\_

If a Corporation

By \_\_\_\_\_  
(corporation name)

By \_\_\_\_\_  
(signature of authorized person)

\_\_\_\_\_  
(title)

Business address \_\_\_\_\_

Phone No. \_\_\_\_\_

Date \_\_\_\_\_, 20\_\_\_\_

ATTEST \_\_\_\_\_ TITLE \_\_\_\_\_

(SEAL)

If a Joint Venture (Other party must sign below.)

**Contractor's License Number** \_\_\_\_\_

**License Expiration Date** \_\_\_\_\_

If an Individual

By \_\_\_\_\_  
(signature of individual)

doing business as \_\_\_\_\_

Business address \_\_\_\_\_

\_\_\_\_\_

Phone No. \_\_\_\_\_

Date \_\_\_\_\_, 20\_\_\_\_

ATTEST \_\_\_\_\_ TITLE \_\_\_\_\_

If a Partnership

By \_\_\_\_\_  
(firm name)

\_\_\_\_\_  
(signature of general partner)

Business address \_\_\_\_\_

\_\_\_\_\_

Phone No. \_\_\_\_\_

Date \_\_\_\_\_, 20\_\_\_\_

ATTEST \_\_\_\_\_ TITLE \_\_\_\_\_

If a Corporation

By \_\_\_\_\_  
(corporation name)

By \_\_\_\_\_  
(signature of authorized person)

\_\_\_\_\_  
(title)

Business address \_\_\_\_\_

Phone No. \_\_\_\_\_

Date \_\_\_\_\_, 20\_\_\_\_

ATTEST \_\_\_\_\_ TITLE \_\_\_\_\_

(SEAL)

END OF SECTION 00 30 00

## SECTION 01 22 00

### MEASUREMENT AND PAYMENT

#### PART 1 SCOPE

- A. This section covers methods of measurement and payment for items of Work under this Contract.
- B. Bid Alternate:
  - a. Decision to include or not include the Alternate in the Work resides with the sole discretion of the Owner.
  - b. If Owner elects to include Alternates in Work, requirement will be stated in Owner-Contractor agreement.
  - c. The bid alternate herein covers additional work to be “ADDED TO” the base bid by extending the length of the pipeline further upstream.

#### PART 2 GENERAL

- A. The total Bid Price shall cover all Work required by the Contract Documents. All costs in connection with the proper and successful completion of the Work, including furnishing all materials, equipment, supplies, and appurtenances; providing all construction plant, equipment, and tools; and performing all necessary labor and supervision to fully complete the Work, shall be included in the unit prices bid. All Work not specifically set forth as a pay item in the Bid Form shall be considered a subsidiary obligation of Contractor and all costs in connection therewith shall be included in the prices bid.
- B. All quantities stipulated in the Bid Form or other Contract Documents are approximate and are to be used only (a) as a basis for estimating the probable cost of the Work and (b) for the purpose of comparing the bids submitted for the Work. The actual amounts of work done and materials furnished under unit price items may differ from the estimated quantities. The basis of payment for work and materials will be the actual amount of work done and materials furnished. Contractor agrees that he will make no claim for damages, anticipated profits, or otherwise on account of any difference between the amounts of work actually performed and materials actually furnished and the estimated amounts therefore.
- C. Except where otherwise specified, the unit or lump sum price bid for each item of Work shall include the following:
  - a. Excavation or Trenching: Excess materials (soil, rock, etc.) from sewer construction shall be hauled off-site and disposed of in approved manner. Ground elevation after construction shall match original grades;
  - b. Rock Excavation: No separate payment shall be made for rock excavation. Excavation and trenching work shall include the removal and subsequent handling of all materials excavated or otherwise removed in performance of the contract Work, regardless of the type, character, composition, or condition thereof.
  - c. Backfilling with Excavated Materials;
  - d. Exploratory excavation;
  - e. Bracing and Shoring;

- f. Trench Dewatering including well point system if needed. No additional payment for undercut will be allowed as a result of improper dewatering of trenches;
- g. Pipe Bedding;
- h. Stream Bypass including stream bypass pumping, coffer dams, and other required measures;
- i. Temporary sanitary sewer bypass pumping;
- j. Connection of Existing Sanitary Sewer Mains to New Manholes;
- k. Connection of New Sanitary Sewer Mains to Existing Manholes;
- l. Pipe plugs, temporary or permanent;
- m. Coordination with, Location and Protection of Existing Utilities;
- n. Tracer wire;
- o. Accessing Sewers and Manholes as Specified;
- p. Off-Site Disposal of Existing Soil, Trees, Debris, Organic material, Concrete, Asphalt, and Sewer Pipe and Manholes Excavated During Trench Excavation;
- q. Temporary Seeding;
- r. Traffic Control;
- s. Work Hours: No Additional Payment Shall Be Due the Contractor for Complying with Work Hour Requirements of the Owner and the NCDOT;
- t. Public Notification: Public Notification Including the Distribution of Door Hangars Is a Mandatory Subsidiary Obligation Under the Contract, And All Costs of Public Notification Shall Be Included in The Unit Prices Bid.
- u. Coordination with all with other regulatory agencies including Piedmont Gas, Duke Energy and NC Railroad or compliance with all requirements of those regulatory agencies to allow for use of easements for project access;
- v. Pre-construction photographs and videography of existing conditions;
- w. Construction progress photographs;
- x. Post-Construction CCTV;
- y. Testing, Inspection and Final Acceptance;
- z. Construction Surveying & Staking;
- aa. As-Built Surveying & Record Drawings;
- bb. Temporary Field Office: Providing a temporary field office for use of the Engineer is a mandatory subsidiary obligation under the Contract, and all costs of a temporary field office shall be included in the unit prices bid; and
- cc. Project Identification signs.

No direct payment shall be made for any item listed above.

### PART 3 UNIT PRICE ITEMS

#### A. The Bid Form includes the following abbreviations:

- 1. CY = cubic yard
- 2. EA = per each
- 3. HR = per hour
- 4. LF = linear foot (horizontal)
- 5. LS = lump sum
- 6. SY = square yard
- 7. TN = ton
- 8. VF = vertical foot

B. The following items shall be measured in place and paid for using the unit prices indicated on the Bid Form.

1. Items 1 and 51 - Mobilization: Mobilization consists of the movement of personnel, equipment, supplies and incidentals to the project site; obtaining all bonds and insurance; establishment of field offices; and all other activities required to begin performing the Work. Partial payments for the item of "Mobilization" will be made with the first and second partial pay estimates paid on the Contract and will be made at the rate of 50 percent of the lump sum price for "Mobilization" on each of these partial pay estimates, less retainage. Mobilization shall not exceed 3.0 percent of the total project cost. Mobilization will only be paid on the original contract amount, and not for change orders or added work. The only exception shall be if the Contractor has completely demobilized from the site prior to issuance of any change order.
2. Items 2 and 52 - Clearing and Grubbing: A separate payment will be provided for clearing and grubbing. Payment shall be made for the defined Limits of Disturbance as indicated on the Drawings. Work shall be in accordance with the Specifications and Standard Details. Payment will be made according to the lump sum bid price stated in the bid.
3. Items 3 and 53 - Installation of New Sanitary Sewer Pipe: Payment shall be made for each size, type and class of pipe and required bedding to the nearest linear foot by depth ranges and as indicated on the Bid Form. This item includes all materials, equipment, and work required to install new gravity sewer. The work shall be performed as specified and in accordance with the plans, specifications, and details. Pipe material, pipe thickness, pipe lining, joint type, fittings, embedment and bedding as specified. Payment also includes tracer wire, dewatering, temporary bypass pumping, plugging, excavation, removal, and off-site disposal of existing sanitary sewer pipe and manholes encountered during installation of new sanitary sewer pipe.

Payment for Improved Trench pay item will only be made where noted on the plans or at the direction of the Engineer. Payment for improved trench will be made under the associated improved trench pay item for that depth and diameter for the specified minimum trench width.

Pipe shall be considered for payment after CCTV inspection (when required), compaction and pipeline acceptance testing have been performed, completed and accepted. Contractor may provide DIP and PVC in lieu of FRP where FRP is called for on the Bid Form.

No separate payment shall be made for rock excavation. No payment shall be made for any required over excavation due to improper dewatering of the trench.

If unsuitable materials are encountered and Engineer approves over excavation and replacement with suitable materials, payment quantities for stabilization stone, select backfill material, etc. shall be limited to the maximum trench width specified in the plans. No additional payment will be made for trench widths greater than maximum allowed.

Installation of new sanitary sewer pipe work shall include the removal and subsequent handling of all materials excavated or otherwise removed in performance of the contract Work, regardless of the type, character, composition, or condition thereof.

Item 3r – Connect 60" to Existing Manhole: Payment shall be made for each gravity main connection made to an existing manhole with a flexible sleeve. A Concrete Pipe Collar will be allowed if the existing manhole will not accommodate a tight seal with a flexible sleeve as approved by Owner.

Item 3s – Connect 48” to Existing Manhole: Payment shall be made for each gravity main connection made to an existing manhole with a flexible sleeve. A Concrete Pipe Collar will be allowed if the existing manhole will not accommodate a tight seal with a flexible sleeve as approved by Owner.

Item 53h – Connect 36” to Existing Manhole: Payment shall be made for each gravity main connection made to an existing manhole with a flexible sleeve. A Concrete Pipe Collar will be allowed if the existing manhole will not accommodate a tight seal with a flexible sleeve as approved by Owner.

4. Items 4 and 54 - Buried Stream Crossings: Lump sum payment shall be made for each Buried Stream Crossing as indicated on the bid form by station and diameter. Lump sum price shall include furnishing all labor, materials, tools, equipment, fittings, jointing materials and pipe to install the sewer as detailed in the plans, specifications and details. The lump sum price shall include:
- a. Furnishing and Installation of pipe material, pipe thickness, pipe lining, joint type, fittings, tracer wire and bedding as specified;
  - b. Installation of concrete anchor blocks and collars;
  - c. Installation of temporary coffer dams;
  - d. Install sediment and erosion control measures in the stream including pump-around with silt sack;
  - e. Removing existing sewers (in same trench) where encountered and disposing material offsite;
  - f. Plugging existing sewers to be abandoned (in same trench) where encountered;
  - g. Rock excavation;
  - h. Removal and subsequent handling of all materials, including rock, excavated or otherwise removed in performance of the contract Work, regardless of the type, character, composition, or condition thereof.

Related work which is provided under other bid items shall include the following:

- a. Streambank Stabilization – Rip Rap;
- b. Streambank Stabilization – Vegetated with Matting;
- c. Remove and Dispose of Existing Pipe (not in same alignment) where specified.

Pipe shall be considered for payment after CCTV inspection (when required), compaction and air testing have been performed, completed and accepted.

5. Item 5 and 55 - 48” and 36” Sewer Pipe Go Under: This lump sum pay item includes all work necessary to construct the interceptor beneath an existing sanitary sewer main as shown in Detail 2-B at the specified Stationing. Such payment shall be full compensation for temporary bypass pumping, protecting and supporting the existing pipe and/or replacing the existing pipe with mechanical joint DIP, stone backfill, geotextile fabric, concrete collars, couplings, mechanical joint sleeves, CCTV inspection of the existing main(s), and coordination with and attendance of meetings as required by the City of Concord (including applying for an encroachment permit).

Payment for the new interceptor sewer shall be made under pay item 3 and 53.

6. Items 6 and 57 - New Precast Manhole Installation: Payment shall be made for each size and type by depth ranges as indicated in the Bid Form. Manholes installed deeper than proposed (due to Contractor error) shall be paid for at the proposed depth. Manholes installed shallower than proposed shall be paid at the shallower depth. Depth shall be measured from the rim elevation to the invert out elevation. If accepted by Engineer, payment per each shall include:
- a. Excavation, removal and off-site disposal of existing soil, sewer pipe and manhole (when replacing existing manholes or junction boxes);
  - b. Rock excavation;
  - c. Removal and subsequent handling of all materials, including rock, excavated or otherwise removed in performance of the contract Work, regardless of the type, character, composition, or condition thereof.
  - d. Temporary bypass pumping;
  - e. Minimum 12-inches foundation stone beneath the new manhole;
  - f. Complete installation of new manhole including new frame and cover (as noted on plans);
  - g. Manhole steps;
  - h. Connecting new manholes to existing sewers with minimum seven (7) linear feet of ductile iron pipe and associated repair coupling;
  - i. Installing concrete benching and forming invert channel,
  - j. Vacuum testing;

Related work which is provided under other bid items shall include the following:

- a. Vent Pipe;
- b. Epoxy Polymer Lining of New Manholes

Manholes shall be considered for payment after all work is completed including vacuum testing.

7. Items 7 and 58 - Vent Pipe: Payment shall be made for each 3" steel manhole vent, any height, as indicated on the bid form. Manhole vents shall be installed in conformance with the Owner's standards and the Drawings. The unit price bid shall include furnishing all labor, materials, tools, equipment, jointing materials, stainless steel mesh, pipe coating, and associated appurtenances required for the installation of the vent pipe and coating, complete, tested, and placed into satisfactory service, in accordance with the Contract Documents and Plans; and all other costs not included in other bid items.
8. Items 8 and 59 - Epoxy Polymer Lining of New Manholes: This item includes furnishing all new materials, equipment, work and testing required to install polymer manhole linings of walls and benches on new manholes provided under pay Items 6, 35, and 57. This item includes payment for furnishing and installing epoxy lining on the manhole walls to the limits shown on the Details or as directed by the Engineer (any height of manhole wall required or specified by the Engineer to be coated) and on the benching to the bottom of the invert channel, sealing around the manhole wall/pipe interfaces, providing inspector training, performing specified product tests and vacuum tests, accessing manholes as specified, traffic control, compliance with required working hours, complete restoration of all areas disturbed by the work, and all else incidental thereto for which separate payment is not provided under other bid items.

Installation of polymer lining in manholes will be measured in place on a vertical foot (VF) basis to the nearest one-tenth of a foot. Measurement will be from the point of intersection

between the manhole benching and the manhole invert channel to the point of termination of the lining as specified by the Engineer and/or as shown in the details.

This pay item does not include payment for lining of diversion structures or existing manholes.

Payment will be made on the basis of the unit price in the Bid.

9. Item 9 - Concrete Anti-Seep Collars: Payment shall be made for each size and type as indicated in the bid form. Payment shall be made for each of concrete anchor block installed and accepted in place, as approved by the Engineer.

Payment will be made per the unit price in the Bid.

10. Item 10 - Abandon Existing Manholes in Place: This bid item includes all materials, equipment, and work required for abandonment of any diameter, depth, or material of manhole. This bid item does not include existing manholes excavated as a result of installation of new sewer in the same trench. Work shall include removal and disposal of frame and cover, and cone section of manhole, plugging existing pipes, and backfilling manhole and related voids with granular material as specified and approved by the Owner. Manholes which are to be abandoned will first have both influent and effluent lines plugged. The existing frame and cover shall be returned to the Owner.

Payment will be made for each manhole abandoned based on the unit price in the Bid.

11. Item 11 - Removal and Disposal of Existing Sewer Main: This bid item includes all materials, equipment, and work required for removal of existing sanitary sewer main of any diameter, depth, or material of main where noted on plan. This bid item does not include existing sewer main excavated as a result of installation of new sewer in the same trench. Work shall include excavation and disposal of main to be removed, plugging existing pipe to remain, and backfilling trench with native material.

Payment will be made for each linear foot of main removed based on the unit price in the bid.

12. Items 12 and 60 - Cast-in-Place Concrete Diversion Structures: Payment for the furnishing and construction of the diversion structures will be made for the Contract lump sum price for each diversion structure acceptably constructed. These items include all work including temporary bypass pumping, excavation, backfill, slope stabilization, cast-in-place reinforced concrete structure, floor grouting, pipe wall fittings, self-contained slide and weir gate assemblies with floor box nut operators, access hatches, ladders, stainless steel vents and mesh screen, concrete and gate testing, startup-services, operation and maintenance manuals, training, all other appurtenances, and all necessary materials and labor to complete the diversion structures in accordance with the project plans and specifications. Cost includes polymer lining of interior of structure to the extents shown on the drawing. Cost also includes coordination with the Owner and their representative and tie-in connection to the sanitary sewer system.

Cast-in-place concrete diversion structures will be measured and paid for per each complete structure installed and accepted by the Engineer.

13. Item 13 - Storm Drain Pipe Replacement: The quantity of any pipe material of the specified diameter measured will be paid for according to the actual number of linear feet of the specified diameter and material installed and accepted. The quantity measured as provided above will be

paid for at the contract unit price per linear foot for the specified pipe material of the given diameter. Payment shall be full compensation for all work required including, but not limited to, removal and disposal of all existing pipe, all materials, fittings, appurtenances, labor, and all incidentals necessary to install the pipe, construction of joints, and connection to other pipes, drainage structures, flared end sections, and/or endwalls.

Cast-in-place concrete flared end sections (FES) will be measured and paid for per each complete FES installed and accepted by the Engineer.

14. Item 14 - Permanent Piped Stream Crossings: This lump sum bid item includes all materials, equipment, and work required for installation of permanent piped stream crossings, accepted in place, as specified on the drawings. Work shall include furnishing and installing storm drain piping of the size and length required, furnishing and installing stone and rip rap backfill, and maintenance of the crossing during construction.

This item shall be eligible for a 50% payment at initial acceptance by the Engineer and the remaining 50% at project substantial completion.

15. Items 15 - Permanent At Grade Stream Crossings: This per each bid item includes all materials, equipment, and work required for installation of permanent “at grade” stream crossings, accepted in place, as specified on the drawings. Work shall include furnishing and installing flexible, interlocking matrices of cellular concrete blocks, geotextile, stone, and rip rap, and maintenance of the crossing during construction.

This item shall be eligible for a 50% payment at initial acceptance by the Engineer and the remaining 50% at project substantial completion.

16. Items 16 and 61 - Temporary Bridge mat Stream Crossings: Lump sum payment shall be made for each Temporary Bridge mat Stream Crossing accepted in place, as per the details and noted on the plans. Such payment shall be full compensation for furnishing required timber mats, construction, maintenance, and removal of temporary bridge mat.

17. Items 17 and 62 - Silt Fence: Silt Fence will be measured and paid for in linear feet, accepted in place, along the ground line of the fence. Such payment shall be full compensation for furnishing material, construction, maintenance, and removal of silt fence in locations shown on the plans or in locations that require surface drainage to be filtered. Silt excavation and disposal for silt fence will be considered incidental to the cost of silt fence. No separate measurement or payment will be made.

18. Items 18 and 63 - Silt Fence Stone Outlets: Payment shall be made for each Silt Fence Outlet as indicated on the bid form. Such payment shall be full compensation for furnishing material, construction, maintenance, and removal of silt fence outlet in locations shown on the plans or as directed by the Engineer.

19. Item 19 - Inlet Protection, Catch Basin: Payment shall be made for each Catch Basin Inlet Protection as indicated on the bid form. Such payment shall be full compensation for furnishing material, construction, maintenance, and removal of inlet protection in locations shown on the plans or as directed by the Engineer.

20. Items 20 and 64 - Temporary Construction Entrance: This lump sum pay item includes all work required to provide and install stone temporary construction entrances, any dimension, in

accordance with the Drawings. Work shall include crushed stone, required geotextile fabric, minor grading, temporary drainage piping, routine cleaning of the streets at the entrances to collect and dispose of soil deposited on streets, removal and disposal of construction entrance, and temporary seeding, as required. Work shall also include restoration of fencing, walls, and other infrastructure impacted by construction. Temporary construction entrances will be measured and paid for per each complete entrance installed and accepted by the Engineer.

Temporary access gates will be paid for under separate pay item.

21. Items 21 and 65 - Permanent Seeding and Mulching: A separate payment will be provided for the permanent seeding of the right-of-way or temporary construction easement after construction. Payment will be made according to the lump sum bid price stated in the bid. Lump sum payment shall include all costs associated with seeding & mulching, including all necessary reseeding efforts, to obtain the required grass cover.

22. Items 22 and 64 - Maintenance of Erosion and Sediment Control Devices:

The Contractor shall include in the Bid a total Lump Sum amount to cover maintenance and repair of all sediment and erosion control devices throughout the length of the project from the Notice to Proceed to the Final Acceptance. The lump sum shall be minimum twenty five percent of the combined bid totals for Bid Items 16 through 21. For Line Item 66, the lump sum shall be minimum twenty five percent of the combined bid totals from Bid Items 61-65.

Payment shall be based on the following:

- a. The Contractor shall maintain records of all maintenance activities, rainfall events, discharge of sediment, and repair measures as required by the contract documents and the NCDEQ Erosion and Sediment Control Permit;
  - b. Payment for Maintenance of Sediment and Erosion Control Devices shall be made monthly by dividing the Lump Sum Amount into equal monthly payments according to the project schedule.
  - c. Engineer shall inspect all installed Sediment and Erosion Control Devices and records immediately prior to each monthly Contractor's Application for Payment. If this inspection demonstrates that the Sediment and Erosion Control Devices and record keeping have been properly maintained for the preceding monthly period, the Engineer will recommend payment of the monthly amount determined in accordance with the preceding paragraph.
  - d. If during any monthly period, the Contractor fails to properly maintain Sediment and erosion control devices and records, or Owner receives a Notice of Violation form NCDEQ for Contractors failure to meet the record keeping provisions of the Sediment and Erosion Control Permit, monthly payment shall not be recommended by the Engineer.
  - e. Once any monthly payment has been forfeited, this amount will no longer be eligible to be earned by the Contractor. However, payment for subsequent months will be made if the requirements of this item are met.
23. Items 23a and 67a - Streambank Stabilization – Rip Rap: Riprap Stabilization used in the repair or stabilization of streambank associated with installation or removal of sanitary sewer pipe, where noted on the plans or where directed by the Engineer, as specified, complete in place. All payments will be made per square yard of rip rap, complete in place that has been incorporated into the project and accepted. Work shall include:

- a. Restoration of streambank to original contours
  - b. Supply and installation of rip rap stone;
  - c. Installation of temporary coffer dams;
  - d. Install sediment and erosion control measures in the stream including pump-around with silt sack;
  - e. Required geotextile fabric;
  - f. Removal and disposal of existing material;
24. Items 23b and 67b - Streambank Stabilization – Mat and Plantings: Vegetated Streambank stabilization with Matting shall be used in the repair or stabilization of streambank associated with installation or removal of sanitary sewer pipe, where noted on the plans or where directed by the Engineer, as specified, complete in place. All payments will be made per square yard of stabilized area, complete in place that has been incorporated into the project and accepted. Work shall include:
- a. Restoration of streambank to pre-construction grade;
  - b. Supply and installation of Coir Fiber Mat and mat anchors;
  - c. Geotextile fabric;
  - d. Herbaceous plantings and live stakes, installed at appropriate planting seasons;
  - e. Earthwork;
  - f. Installation of temporary coffer dams;
  - g. Install sediment and erosion control measures in the stream including pump-around with silt sack;
  - h. Removal and disposal of existing material;
25. Items 23c and 67c - Streambank Restoration - Boulder Toe: Boulder Toe Stabilization used in the repair or stabilization of streambank associated with installation or removal of sanitary sewer pipe, where noted on the plans or where directed by the Engineer, as specified, complete in place. All payments will be made per square foot of boulder toe face from bottom of footer boulder to top of final boulder course, complete in place that has been incorporated into the project and accepted. Work shall include:
- a. Backfill
  - b. Restoration of streambank to original contours;
  - c. Supply and installation of boulders and geogrid;
  - d. Installation of temporary coffer dams;
  - e. Install sediment and erosion control measures in the stream including pump-around with silt sack;
  - f. Required geotextile fabric;
  - g. Removal and disposal of existing material;
26. Item 23d and 67d – Streambank Restoration – Vegetated Geogrid: Vegetated Geogrid used in the repair or stabilization of streambank associated with installation or removal of sanitary sewer pipe, where noted on the plans or where directed by the Engineer, as specified, complete in place. All payments will be made per square foot of vegetated geogrid face from bottom of lowest soil lift to top of final soil lift/beginning of erosion control matting, complete in place that has been incorporated into the project and accepted. Work shall include:
- a. Backfill
  - b. Restoration of streambank to original contours;
  - c. Supply and installation of Coir Fiber Mat and mat anchors;

- d. Supply and installation live cuttings;
- e. Installation of temporary coffer dams;
- f. Install sediment and erosion control measures in the stream including pump-around with silt sack;
- g. Required geotextile fabric;
- h. Removal and disposal of existing material;

27. Items 24 and 68 - Wetland Restoration: This pay item includes the restoration of wetlands located in the permanent and temporary construction rights-of-way. All wetlands located in the permanent right-of-way shall be restored as herbaceous wetlands via seeding. Forested wetlands located in the temporary construction right-of-way shall be restored via herbaceous seeding and live stakes. Restoration of wetland areas shall be completed upon completion of all construction within delineated wetlands, where noted on the plans or where directed by the Engineer, as specified, complete in place. All payments will be made per square yard of reforested area, complete in place that has been incorporated into the project and accepted. Work shall include:

- a. Restoration of wetlands to pre-construction grade;
- b. Removal of all construction debris;
- c. Seeding as per project specifications in both herbaceous and forested wetland areas;
- d. Live stakes and native bare root trees installed at appropriate planting seasons in forested wetland areas outside the permanent right-of-way;
- e. Maintenance of restored areas for a one-year period.

All forested wetland areas with a survival rate of less than 300 plants per acre after one full growing season shall be replanted to achieve this final planting density.

This item shall not apply to any areas disturbed outside of the construction limits as shown on the plans. These areas shall be restored by the Contractor at no additional cost to the Owner, including any fines or financial penalties levied against the Contractor or Owner by local, State or Federal agency having jurisdiction over wetlands.

28. Items 25 and 69 - Subgrade Stabilization Stone: Use of this pay item due to unsuitable soils must be approved for use by the Engineer and Owner prior to performing the work. Stabilization stone shall be #5 or #57 stone and used to replace unstable soil, under or around pipe, under manholes, etc. The unit price bid for this item shall include removing the existing soil (i.e., undercut excavation) and disposing of it offsite and importing stabilization stone material.

Payment shall be limited to the maximum trench width specified in the plans. No additional payment will be made for trench widths greater than maximum allowed.

No additional payment will be allowed as a result of improper dewatering.

No additional payment will be made for required pipe embedment paid for under other bid items.

Payment shall be made for the number of cubic yards of stabilization stone used to stabilize the bottom of the trench prior to placing the new sewer pipe. Measurement shall be based on the volume of stabilization stone material compacted in place.

29. Items 26 and 70- Select Backfill Material: Payment shall be made for the number of cubic yards of select backfill used to backfill trenches in unpaved areas. Select backfill will only be required when the existing soil is not suitable for backfill. Use of select backfill must be approved by the Engineer and Owner prior to performing the work. The unit price bid for this item shall include removing the existing soil and disposing of it offsite and importing select backfill material. Measurement shall be based on volume of material compacted in place.

Payment shall be limited to the maximum trench width specified in the plans. No additional payment will be made for trench widths greater than maximum allowed.

No additional payment will be allowed as a result of improper dewatering.

30. Items 27 and 71 - Soil Stabilization Fabric: Contractor will be required to install Type 4 Soil Stabilization Fabric during construction to line the trench bottom prior to backfill. Fabric shall only be installed where directed by the Engineer during construction. Soil Stabilization fabric installation shall be in accordance with Section 270 of the North Carolina Department of Transportation Standard Specifications for Roads and Structures. This bid item does not include any soil stabilization fabric specified as part of any other bid item.

Soil stabilization fabric shall be measured and paid for by the square yard, accepted in place.

Payment shall be limited to the maximum trench width specified in the plans. No additional payment will be made for trench widths greater than maximum allowed.

No additional payment will be allowed as a result of improper dewatering.

31. Items 28 and 72 – Permanent Gravel Path: Crushed Stone permanent access roads will be measured and paid for in square yards, accepted in place, as noted on the plans or as directed by Engineer. Such payment shall be full compensation for furnishing aggregate, geotextile fabric, and construction in locations shown on the plans. Removal and disposal of existing access road will be considered incidental to the access road.

32. Items 29 and 73 - Concrete Curb and Gutter, Remove and Replace: Replacement of curb and gutter shall be in accordance with the Owner's standards. Work includes payment for saw-cutting of existing asphalt or concrete and disposing of material, excavation, removal, and off-site disposal of debris, providing all materials, placing all concrete, excavating and backfilling, forming, finishing, constructing and sealing joints, and all incidentals necessary to complete the work.

Concrete Curb and Gutter will be measured and paid for by the linear foot, accepted in place, along the surface of the top of the curb. Payment will be made on the basis of the unit price on the Bid.

33. Items 30 and 74 – Asphalt Surface Repair, Asphalt Surface Course: Asphalt pavement used in the repair or repaving of existing asphalt material associated with excavation or in the resurfacing of existing roadways or greenways, as specified, complete in place. Asphalt Pavement will be paid for as the actual number of tons of material, complete in place that has been incorporated into the project and accepted. The asphalt surface course material will be measured by being weighed in trucks on certified platform scales or other certified weighing

devices. The unit price bid for this item shall include removing the existing asphalt and disposing of it offsite.

34. Items 31 and 75 – Asphalt Surface Repair, ABC Course: Aggregate Base Course (ABC) stone will be paid for as the actual number of tons of material, complete in place that has been incorporated into the project and accepted. The ABC material will be measured by being weighed in trucks on certified platform scales or other certified weighing devices. The unit price bid for this item shall include removing the existing ABC and disposing of it offsite.
35. Items 32 and 76 - Asphalt Milling: Milled asphalt pavement to be paid for will be the actual number of square yards of pavement surface that has been milled in accordance with the requirements of the Specifications. In measuring this quantity, the length will be the actual length milled, measured along the pavement surface. The width will be the width required by the plans or directed, measured along the pavement surface. Payment shall include any additional equipment necessary to remove pavement in the area of manholes, water valves, curb and gutter, and other obstructions and disposal of milled asphalt material. Where the Engineer directs multiple cuts to achieve the final depth, measurement will be made for each cut. Where the Contractor elects to make multiple cuts to achieve the final depth, no additional measurement will be made. Compensation will be made at the contract unit price per square yard for “Milling Asphalt Pavement” to the specified depth.

Asphalt Milling shall be measured and paid for by the square yard, accepted in place. Such payment shall be full compensation for all work covered by this Section, including but limited to milling the pavement, cleaning the milled surfaces, loading, and hauling the milled material for disposal

36. Item 33 – Temporary Access Gate(s): Temporary access gates will be measured and paid for as be the actual number of easement gates that have been installed and accepted per the Owner’s Standards. Payment of the contract unit prices for the various items in the contract will be full compensation for all work required including restoration of existing fencing upon removal of gate. Payment will not be made if approved shop drawings have not been submitted. Easement gate (4’) shall be per project documents. Clear span shall accommodate construction vehicles.
37. Item 34 - Tree Protection: Tree Protection will be measured and paid for as per the actual number of Tree protection devices that have been installed and accepted per the Owner’s Standards. Such payment shall be full compensation for furnishing material, construction, maintenance, and removal in locations shown on the plans.
38. Item 35 - New Cut In Manhole: Payment shall be made for each size and type of ‘cut in’ manhole by depth ranges as indicated in the Bid Form. Price shall include all work necessary and incidental to the work such as bypass pumping, excavation, dewatering, bedding, backfill and compaction, supply and installation of new precast manhole and appurtenances, pipe cutting and removal, cast-in-place concrete work, reconnecting the existing sewer to the new manhole, step installation, frames and cover installation and testing. Manholes shall be considered for payment after all work is completed including vacuum testing.

Related work which is provided under other bid items shall include the following:

- a. Epoxy Polymer Lining of New Manholes.

39. Item 36 - Cleaning and CCTV Existing Sewers, as specified: This work shall include any required cleaning, any location, any length of sewer, complete in place, for various pipe diameters. This includes all work and equipment required to completely clean (remove debris, roots, grease, pipe tuberculation and other material) and televise existing sewer to further evaluate the condition of the sewers as specified. Costs shall include removal of all debris encountered in the work regardless of severity and disposing of all debris. Costs shall also include performing television inspections in NASSCO PACP format and submitting the digital inspections to the Engineer in a PACP export database format to be compatible with the Owner's Granite Net CCTV program. This pay item shall also include all costs associated with accessing the sewers and manholes to perform the work including removing and replacing moveable objects such as fences and mailboxes, negotiating with property owners, traffic control, complete restoration of areas disturbed by the work, etc.
- a. Sewer cleaning and television inspection will be measured and paid for on a linear foot basis to the nearest one-tenth of a foot. Measurement will be along the horizontal centerline of the pipe with no deductions for manholes and will be from center of manhole to center of manhole.
  - b. This item does not include televising sewers for final acceptance. Those costs shall be included in the unit prices bid for the various rehabilitation/construction methods – no separate payment shall be made.
  - c. Payment will be made based on the unit price bid in the Bid Form.

40. Items 37 – Cured-in-Place Pipe Lining (CIPP): This item includes all materials, equipment, and work required to install cured-in-place pipe lining (CIPP) in existing 30" sewers in any location. Costs shall include any thickness required for installation based on design calculations, but not less than the specified minimum installed thicknesses cited in the specifications. Work shall be as specified and in accordance with the Specifications.

The CIPP installation Bid Item includes payment for preparing the existing sewer and performing pre-construction inspections including accessing sewers and manholes for lining installation as specified, additional pre-cleaning and television inspection of the sewer as required prior to CIPP installation, supplying and installing the pipe lining, installing waterstop material (Hydrotite or equal) between the CIPP and host pipe as specified, coating the invert channel with grout to raise the channel to the liner pipe elevation, bypass pumping of existing wastewater flow during construction, providing a watertight seal at the manhole-pipe interface using non-shrink grout, performing post-rehabilitation television inspections, distributing project notices, traffic control, coordination with and location of existing utilities, erosion control, complete restoration of all areas disturbed by the work, and for all else incidental thereto for which separate payment is not provided under the 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.

Installation of CIPP will be measured in place on a linear foot basis to the nearest one-tenth of a foot. Measurement will be along the horizontal centerline of the pipe with no deductions for manholes and will be from center of manhole to center of manhole.

Payment will be made on the basis of the unit price bid in the Bid.

41. Item 38 – CIPP Spot Repairs: This item includes the installation of a CIPP repair patch of the specified diameter and length. For CIPP Spot Repairs, work shall include bypass pumping, prepare manholes as required to install liner, install CIPP patch, make repairs to manholes related to CIPP installation, perform all surface restorations, perform all post-rehab CCTV inspections and testing, and all other work required.
42. Item 39 – Performing CIPP Product Tests: This item 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 Engineer as specified, delivering the samples to the Engineer for signature, shipment to the independent testing laboratory for testing, correspondence and coordination with the testing laboratory, testing of the samples by the testing lab to determine flexural strength, flexural modulus, tensile strength and thickness, and submitting the results to the Engineer.

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. Payment will be made for each completed CIPP test at the unit price bid after the test results are submitted to the Engineer.

Payment will be made on the basis of the unit prices bid in Bid.

43. Item 40 – Installation of Epoxy Lining in Manholes: This item includes all materials, equipment, and work required to install epoxy lining on existing manhole walls (any diameter) and benches as specified and in accordance with the details. Bid items are included for installing any specified product. This item includes working in any location (unpaved areas or paved areas) as defined above.

This item includes payment for pre-construction inspection of manholes, manhole cleaning, root removal and grease removal, other work required to prepare the manhole for lining including, but not limited to, stopping active leaks and filling voids in the manhole wall or between brick layers, furnishing and installing epoxy lining on the manhole walls to the limits shown on the Details or as directed by the Engineer (any diameter of manhole required or specified by the Engineer to be coated) and on the benching to the top of the invert channel, sealing around the manhole wall/pipe interfaces, providing inspector training, performing specified product tests and vacuum tests, accessing manholes as specified, traffic control, compliance with required working hours, complete restoration of all areas disturbed by the work, and all else incidental thereto for which separate payment is not provided under other bid items.

Installation of epoxy lining in manholes will be measured in place on a vertical foot (VF) basis to the nearest one-tenth of a foot. Measurement will be from the point of intersection between the manhole benching and the manhole invert channel to the point of termination of the lining as specified by the Engineer and/or as shown in the details.

Payment will be made on the basis of the unit price in the Bid.

44. Item 41 – Installation of 1-inch-thick Cementitious Mortar in Manholes: This item includes all materials, equipment, and work required to install 1-inch-thick cementitious mortar on existing manhole walls (any diameter) and benches as specified and in accordance with the details. Bid items are included for installing any specified product. This item includes working in any location (unpaved areas or paved areas) as defined above.

This item includes payment for pre-construction inspection of manholes, manhole cleaning, root removal and grease removal, other work required to prepare the manhole for lining including, but not limited to, stopping active leaks and filling voids in the manhole wall or between brick layers, furnishing and installing cementitious mortar lining on the manhole walls to the limits shown on the Details or as directed by the Engineer (any height of manhole wall required or specified by the Engineer to be coated) and on the benching to the top of the invert channel, sealing around the manhole wall/pipe interfaces, providing inspector training, performing specified product tests and vacuum tests, accessing manholes as specified, traffic control, compliance with required working hours, complete restoration of all areas disturbed by the work, and all else incidental thereto for which separate payment is not provided under other bid items.

Installation of cementitious mortar lining in manholes will be measured in place on a vertical foot (VF) basis to the nearest one-tenth of a foot. Measurement will be from the point of intersection between the manhole benching and the manhole invert channel to the point of termination of the lining as specified by the Engineer and/or as shown in the details.

Payment will be made on the basis of the unit price in the Bid.

45. Item 42 – Furnish and Install Frame-Chimney Seal in Manhole: Installation of Manhole Frame-Chimney Seals will be measured on a per manhole basis as the number of existing manholes in paved areas having such rehabilitation work performed.

Payment for furnishing and installing manhole frame-chimney seals will be made for the respective quantity as determined above at the unit prices bid in the Bid Form. The prices and payment shall be full compensation for performing the work in paved or unpaved areas including all labor, materials, equipment and incidentals required for installation, including but not limited to pre-construction inspections of manholes, accessing the manholes, manhole wall and frame preparation, traffic control, compliance with required working hours, and for all else incidental thereto for which separate payment is not provided under other items in the Bid Form. The unit price bid will include payment for any size and shape of manhole frame-chimney seal that is required for installation as determined by the Contractor prior to and after bidding – no additional payment will be made for various shapes and sizes.

46. Item 43 – For Raising Existing Manhole Frames and Covers: Frames and covers shall be raised with bricks or concrete grade rings, height of adjustment as noted. Work shall include complete restoration of paved or unpaved areas, all materials, equipment, and work required to raise and reset existing frames and covers (and raising buried frames and covers) in unpaved areas and paved areas as specified and in accordance with the details. This item includes payment for saw cutting existing asphalt or concrete and disposing of material (in paved areas only), excavation, manhole wall and frame preparation, removal and off-site disposal of existing materials, backfilling (with imported ABC stone or pit gravel in paved areas) and compaction, accessing manholes as specified, traffic control, coordination with and location of existing utilities, erosion control, complete restoration of disturbed areas, and for all else incidental thereto for which separate payment is not provided under other bid items.

Payment will be made on the basis of the unit price in the Bid.

47. Items 44 - Manhole Invert Reconstruction: Rebuilding existing benches and inverts will be measured on a per manhole basis as the number of existing manholes having such rehabilitation work performed.

Payment for rebuilding existing benching and inverts will be made for the respective quantity as determined above at the unit prices bid in the Bid Form. The prices and payment shall be full compensation for performing the work in paved or unpaved areas including all labor, materials, equipment and incidentals required for installation, including but not limited to pre-construction inspections of manholes, accessing the manholes, manhole bench and invert preparation, removal and off-site disposal of existing materials, new concrete, traffic control, and for all else incidental thereto for which separate payment is not provided under other items in the Bid Form.

48. Item 45 – Sealing Manhole Pipe Connections: Sealing pipe connections will be measured on a per manhole basis as the number of existing manholes having such rehabilitation work performed. Payment for sealing pipe connections will be made for the respective quantity as determined above at the unit prices bid in the Bid Form. The prices and payment shall be full compensation for performing the work in paved or unpaved areas including all labor, materials, equipment and incidentals required for installation, including but not limited to pre-construction inspections of manholes, accessing the manholes, manhole bench and invert preparation, removal and off-site disposal of existing materials, new concrete, traffic control, compliance with required working hours, and for all else incidental thereto for which separate payment is not provided under other items in the Bid Form.

49. Item 46 – Remove and Replace Manhole Vent: Payment will be made for removing and replacing 3” cast iron manhole vents in conformance with the Details. Vent Pipe will be paid at the unit price bid. The unit price bid shall include furnishing all labor, materials, tools, equipment, jointing materials, and associated appurtenances including stainless steel mesh required for the installation of the Vent Pipe complete, tested, and placed into satisfactory service, in accordance with the Contract Documents and Plans; and all other costs not included in other bid items.

50. Item 47 – Remove and Replace Frame and Cover: This pay item is to provide compensation for providing and installing a new manhole frame and cover on an existing manhole. Work shall include delivery of old frame and cover to WSACC’s shop and all else specified in the Standard Details. This item includes payment for saw cutting existing asphalt or concrete and disposing of material (in paved areas only), excavation, manhole wall and frame preparation, new frame and cover, removal and off-site disposal of existing materials, backfilling (with imported ABC stone or pit gravel in paved areas) and compaction, accessing manholes as specified, traffic control, coordination with and location of existing utilities, erosion control, complete restoration of disturbed areas, and for all else incidental thereto for which separate payment is not provided under other bid items. Frames and covers shall conform to the specifications.

51. Item 56 - Guaranteed Trenchless Crossing: Lump sum payment shall be made for each Guaranteed Trenchless Crossing as indicated on the bid form. The Contractor may elect to complete the Trenchless Crossing utilizing jack & bore construction or tunneling construction. The bore/tunnel installation shall be “Guaranteed”. The term “Guaranteed” indicates an absolute commitment by the Contractor to install the indicated casing and carrier piping per the specified lines and grades and in accordance with the Contract Documents. The Contractor assumes all risk for the accurate and successful casing installation. Payment will only be made

for accurate casing installation. The Contractor will not receive payment for any direct or indirect costs related to failed attempts, abandoned installations or any other incorrect casing installation. The Contractor will remove or appropriately abandon incorrect casings as directed at no additional cost to the Owner. Lump sum price shall include furnishing all labor, materials, tools, equipment, fittings, jointing materials, casing pipe, and carrier pipes as detailed in the plans, specifications and details. The lump sum price shall include:

- c. Quality Control as Per NCDOT Standard Specifications for Roads and Structures Section 1550.5;
- d. Installation as per the approved NCDOT permit;
- e. Excavation, shoring and backfilling of the bore pits;
- f. Tunnel shoring installation; Smooth steel casing pipe (Jack & Bore) or tunnel liner plates based on Contractor preferred method;
- g. Grouting of the outside annular space;
- h. The installation of DIP carrier pipe from manhole to manhole, including all skids, blocking, spiders, steel straps and jointing materials as shown on the Drawings;
- i. Bulkhead construction;
- j. Rock excavation/blasting including rock excavation required for bore pit construction;
- k. Dewatering;
- l. Associated Appurtenances;
- m. Furnishing and maintaining any safety barriers and/or traffic control devices as may be required by state and/or local permit requirements;
- n. All other costs not included under other bid items.

No payment will be made for abandoning defective installations. Pipe shall be considered for final payment after CCTV inspection, compaction and acceptance testing have been performed, completed and accepted.

#### PART 4 MEASUREMENTS AND CALCULATIONS

- A. Measurements shall be made daily for all unit price items and agreed upon by the Engineer or Owner's representative. Quantities for items not verified by the Engineer or Owner will not be approved for payment. Measurements shall be made as follows:
  - 1. Linear distances for gravity sewers, including services, shall be measured horizontally from center of manhole to center of manhole to the nearest one-tenth of a foot based on the actual length installed.
  - 2. Depth of gravity sewers shall be measured vertically from the finished grade to the invert of the sewer carrier pipe.
  - 3. Depth of manholes shall be measured vertically from the top of the frame (rim) to the finished invert in the center of the manhole.
  - 4. Volume quantities shall be based on the volume of material measured in place and compacted or in place prior to removal.
  - 5. Area quantities shall be calculated using horizontal length and width measurements of pay item in place.

6. Weight quantities shall be calculated using length, width, and depth measurements times a density given in the appropriate specification section or by truck tickets obtained from certified scales.

## PART 5 SUMMARY

- A. Payment as noted above shall constitute full compensation for all work shown and required by the construction drawings and contract documents. The cost of auxiliary operations and materials required to complete the project shall be absorbed in the appropriate bid item.
- B. The quantities listed in the Bid Form are estimated quantities only, and payment will be based on actual quantities installed on each bid item. The Contractor shall not be due any adjustments in unit prices because of quantity over-runs or under-runs.

END OF SECTION 01 22 00

ROY COOPER  
Governor

ELIZABETH S. BISER  
Secretary

BRIAN WRENN  
Director



NORTH CAROLINA  
Environmental Quality

November 30, 2022

## LETTER OF APPROVAL WITH MODIFICATIONS

Water & Sewer Authority of Cabarrus  
Attention: Chad VonCannon, Engineering Director  
232 Davidson Highway  
Concord, North Carolina 28027

RE: Project Name: Lower Coddle Creek Parallel Interceptor Project  
Project ID: CABAR-2021-024  
Acres Approved:  
County: Cabarrus  
City: Harrisburg  
Location: Various locations  
River Basin: Yadkin-PeeDee  
Stream Classification: Other  
Submitted By: Gavel & Dorn Engineering, PLLC  
Date Received by LQS: November 18, 2022  
Plan Type: Revised

Dear Mr. VonCannon:

This office has reviewed the subject erosion and sedimentation control plan. We find the plan to be acceptable with modifications and hereby issue this letter of Approval with Modifications. The Modifications Required for Approval are listed on the attached page. This plan approval shall expire three (3) years following the date of approval, if no land-disturbing activity has been undertaken, as is required by Title 15A NCAC 4B .0129.

As of April 1, 2019, all new construction activities are required to complete and submit an electronic Notice of Intent (eNOI) form requesting a Certificate of Coverage (COC) under the NCG010000 Construction General Permit. After the form is reviewed and found to be complete, you will receive a link with payment instructions for the \$100 annual permit fee. After the fee is processed, you will receive the COC via email. As the Financially Responsible Party shown on the FRO form submitted for this project, you MUST obtain the COC prior to commencement of any land disturbing activity. The eNOI form may be accessed at [deq.nc.gov/NCG01](http://deq.nc.gov/NCG01). Direct questions about the eNOI form to the Stormwater Program staff in the Raleigh central office. If the owner/operator of this project changes in the future, the new responsible party must obtain a new COC.

Title 15A NCAC 4B .0118(a) and the NCG01 permit require that the following documentation be kept on file at the job site:



Letter of Approval with Modifications  
Water & Sewer Authority of Cabarrus  
November 30, 2022  
Page 2 of 3

1. The approved E&SC plan as well as any approved deviation.
2. The NCG01 permit and the COC, once it is received.
3. Records of inspections made during the previous 30 days.

Also, this letter gives the notice required by G.S. 113A-61.1(a) of our right of periodic inspection to ensure compliance with the approved plan.

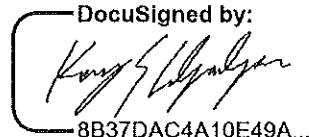
North Carolina's Sedimentation Pollution Control Act is performance-oriented, requiring protection of existing natural resources and adjoining properties. If, following the commencement of this project, it is determined that the erosion and sedimentation control plan is inadequate to meet the requirements of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statute 113A-51 through 66), this office may require revisions to the plan and implementation of the revisions to ensure compliance with the Act.

Acceptance and approval of this plan is conditioned upon your compliance with Federal and State water quality laws, regulations, and rules. In addition, local city or county ordinances or rules may also apply to this land-disturbing activity. This approval does not supersede any other permit or approval.

Note that this approval is based in part on the accuracy of the information provided in the Financial Responsibility Form, which you provided. You are requested to file an amended form if there is any change in the information included on the form. In addition, it would be helpful if you notify this office of the proposed starting date for this project. Your cooperation is appreciated.

Sincerely,

DocuSigned by:



8B37DAC4A10E49A...

Kenny S. Llywelyn  
Assistant Regional Engineer  
Land Quality Section

Enclosures: Certificate of Approval  
Modifications Required for Approval  
NCG01 Fact Sheet

c: Gavel & Dorn Engineering, PLLC  
Attention: Sean M. Mayo  
6730 Freedom Drive  
Charlotte, North Carolina 28214



Letter of Approval with Modifications  
Water & Sewer Authority of Cabarrus  
November 30, 2022  
Page 3 of 3

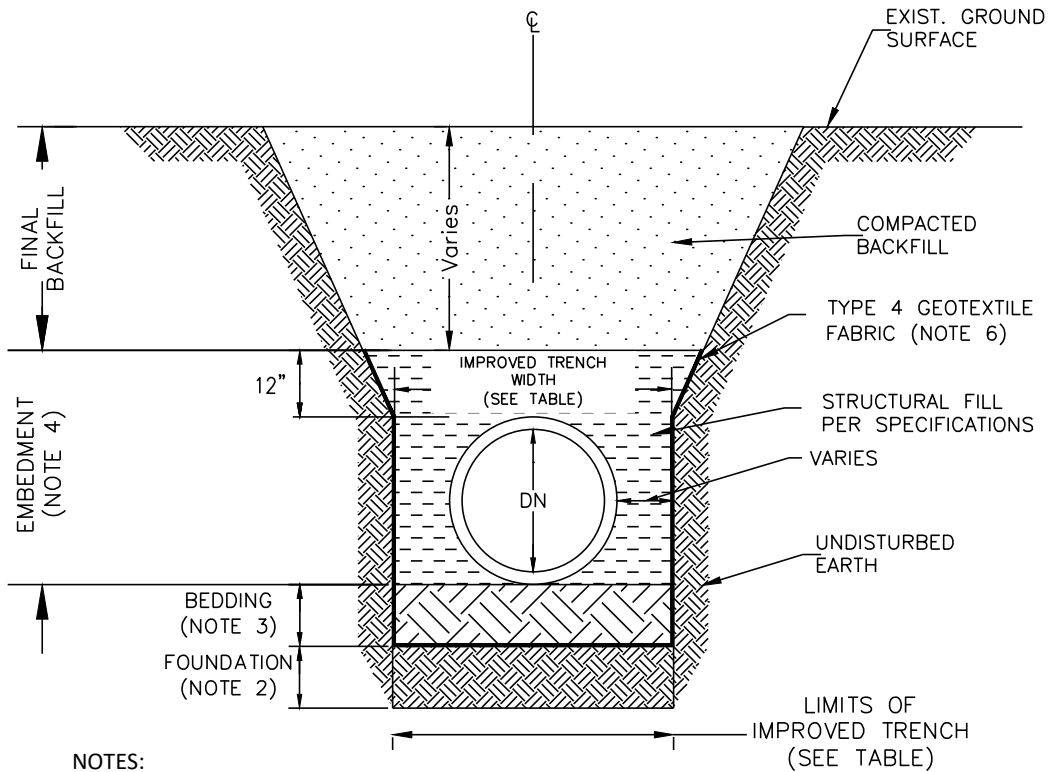
### **MODIFICATIONS REQUIRED FOR APPROVAL**

**Project Name:** Lower Coddle Creek Parallel Interceptor Project  
**Project ID:** CABAR-2021-024  
**County:** Cabarrus  
**Reviewed by:** Kenny S. Llywelyn

1. Additional measure may be needed along the buffer area to ensure sediment is not overwhelming a measure or bypassing a measure and getting into the river.




North Carolina Department of Environmental Quality | Division of Energy, Mineral and Resources  
Mooresville Regional Office | 610 East Center Avenue, Suite 301 | Mooresville, North Carolina 28115  
704.663.1699



**NOTES:**

1. 12" MINIMUM COVER OVER THE CROWN OF THE PIPE WITH SPECIFIED BACKFILL MATERIAL.
2. FOUNDATION STONE REQUIRED WHEN SOIL CONDITIONS ARE UNSTABLE AND ONLY AT THE DIRECTION OF THE ENGINEER. PAYMENT FOR FOUNDATION STONE SHALL BE LIMITED TO THE MAXIMUM TRENCH WIDTH.
3. MIN. 6" BEDDING IN EARTH. MIN. 9" BEDDING IN ROCK. BEDDING SHALL BE STRUCTURAL FILL AS PER SPECIFICATIONS.
4. INITIAL BACKFILL SHALL BE PLACED IN 6" LIFTS AND COMPACTED. INITIAL BACKFILL SHALL CONTAIN NO MATERIAL OVER 1 1/2" IN DIAMETER, FROZEN, ORGANIC, LUMPS, OR DEBRIS.
5. COMPACTED BACKFILL SHALL BE COMPACTED TO 85% STANDARD PROCTOR DENSITY WHERE IN PIPELINE EASEMENT AREAS NOT SUBJECT TO REGULAR VEHICLE LOADS.
6. WHEN UNSTABLE SOILS ARE ENCOUNTERED, TRENCH SECTION SHALL BE LINED WITH TYPE 4 GEOTEXTILE FABRIC AT THE DIRECTION OF THE ENGINEER.

Improved Trench Width	
Pipe Diameter (in)	Trench Width (ft)
30	8
48	10
54	12
60	14

SCALE: NTS	<p style="text-align: center;">WATER AND SEWER AUTHORITY OF CABARRUS COUNTY (WSACC)</p> <p style="text-align: center;">LOWER CODDLE CREEK PARALLEL INTERCETOR</p> <p style="text-align: center;">PVC &amp; FIBERGLASS PIPE EMBEDMENT IMPROVED TRENCH DETAIL 7-G</p>	 <p>Gavel &amp; Dorn Engineering, PLLC 6730 Freedom Drive Charlotte, NC 28214 704-919-1900 License No. P-0601</p>
DATE: 02/08/24		
CHKD / DRWN: MLH / SMM		
SHEET: 1 OF 1		