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TRANSMITTAL COVER SHEET

DATE: **March 7, 2025**

PAGE: **1 of 63 (INCLUDING THIS PAGE)**

TO: **ALL CONTRACTORS**

FROM: **WHEELER CROOK, PE**

PROJECT: **2022 CWSRF SANITARY SEWER REHABILITATION & REPLACEMENT FOR TOWN OF CAMP HILL**
SRF PROJECT NO. CS010915-01
GMC PROJECT NO. CMGM220156(3)

RE: **ADDENDUM #1**

PLEASE COMPLETE BELOW AND RETURN IMMEDIATELY.

Ashley Morris
Email: Ashley.Morris@gmcnetwork.com

I, the undersigned, hereby acknowledge receipt of this Addendum.

_____ _____
Authorized Representative of Contractor Date

_____ _____
Company Name Telephone

_____
Contractor's License Number (if applicable)

ADDENDUM NUMBER 1

2022 CWSRF SANITARY SEWER REHABILITATION & REPLACEMENT

FOR

THE TOWN OF CAMP HILL, ALABAMA

SRF PROJECT NO. CS010915-01

GMC PROJECT NO. CMGM220156(3)

1. Revisions to Project Manual

1.1 The following revisions are hereby added as Addendum No. 1 to the referenced Project Manual and Plans and shall be considered when preparing bids.

1.2 The attached revised proposal shall be used for bid submission.

1.3 Asphalt Pavement Patch, Concrete Patch, Railroad Permit Allowance were added to Specification 01 1500.00.

1.4 Specification 01 2100.00 has been updated to account for the Railroad Permit Allowance.

1.5 A five-year warranty and inspection for the CIPP lining has been removed and the removal of blockages were revised to fall under the Point Repair bid item. Specification 33 0130.72 has been updated.

1.6 The Owner has approved Sprayroq-Spraywall as an alternate manhole rehabilitation product for the aforementioned project. Surface preparation, underlayment (if required), application and thickness shall follow the manufacturers recommended procedures. Specification 33 0138.00 has been updated.

2. Clarifications

2.1 On sheet C-307, Pipe – 733A should be listed as "Pipe – 533A". MH Start on the same line should be listed as "SMH533A".

3. Revisions to Drawings

3.1 Drawing sheet G-002: Contractor shall be responsible for obtaining a railroad permit as needed

3.2 Drawing sheet G-003: Contractor shall be responsible for obtaining the NPDES Permit

3.3 Drawing sheet G-005 – G-013: Summary of Quantities tables have been updated

4. Contractor Questions

4.1 **Question: As discussed for the Camp Hill Sewer Rehab bid, please clarify by Addenda the intention that any Paving is incidental to various pay items as applicable. I would suggest relying on the wording "….and all other work…" that is in the Measurement and Payment for each bid item is vague and I could foresee a problem (which none of us would want). Please clarify by Addendum, with detail(s), if we are to merely Patch, or Patch and then wait a period for any settlement and then Mill & Overlay also. In my opinion, the best solution would be to add Pay Items for Patching - _____/SY, and Mill & Overlay - _____/SY.**

Answer: Please see revised bid proposal.

4.2 **Question: Confirming we only need to submit 1 original bid package. Or would you like 1 original and 1 copy?**
Answer: Only one original bid package is required for submittal.

4.3 **Question: Confirming the DBE requirement – is DBE mandatory in all circumstances or only if we are subbing? If the DBE is mandatory, what is the percentage goal?**
Answer: If you are not utilizing subcontractors, you do not need to complete DBE solicitation. However, you will need to state so on your letterhead to include in your bid and still complete the EPA 6100-2, 6100-3, and 6100-4 forms in the Supplemental General Conditions. You would put N/A where Subcontractor is listed but still sign the forms.

4.4 **Question: Confirming the ink requirement for completing bid docs – can the documents be typed and printed, or must they be handwritten in ink?**
Answer: Documents may be typed and printed or handwritten in ink.

4.5 **Question: Could you please confirm steam cure will be allowed for CIPP installation?**
Answer: Section 33 0130.72 – 1.5F (The Manufacturer's recommended cure method - for each diameter and thickness of CIPP liner to be installed. The PWS shall contain a detailed curing procedure detailing the curing medium and the method of application.)

4.6 **Question: Sag and Point Repairs: The Measurement and Payment section states that these repairs are to include PRE and POST CCTV included in the Repair per EACH price. It's my understanding that SIS has already done the PRE-TV so the first question "Is PRE-TV required?". Also please clarify by addendum if PRE and/or POST CCTV is to be included in the per EACH price for the repair. Please consider adding a Bid Item for PRE and/or POST CCTV, "CCTV for Repairs and New Sewer - _____/LF".**
Answer: Pre-Repair CCTV will be required for both sag and point repairs. As stated in the referenced section, Pre-Repair and Post-Repair CCTV shall be included per each price for both sag and point repairs. The request to make an additional bid item for CCTV of repairs and replacement is denied. The requirements for CCTV for both Pre- and Post-Repair shall remain as stated in the referenced section.

4.7 **Question: Is this item #28 also where the dig installation of new Gravity sewer also get paid for CCTV work? If not, please add a Pay Item for "POST CCTV of New Gravity - ___/LF".**
Answer: Post-Construction CCTV of gravity sewer main replacement is included under the bid item "Gravity Sewer Post-Construction CCTV Inspection".

4.8 **Question: GCU would like to submit the following products for approval regarding the 2022 CWSRF Sanitary Sewer Rehabilitation & Replacement project:**
- **CIPP Liner – We submit GCU/United Felts for CIPP liner.**
- **Manhole Liner – We submit Epoxytec for manhole liner.**

Answer: CIPP Liner shall comply with requirements set forth in Specification 33 0130.72. Manhole Liner shall comply with requirements set forth in Section 33 0138.00.

4.9 **Question: Will the Owner consider extending the bid date by at least one week? Open cut contractor interest hasn't been stellar (even with plan holders) and we'd appreciate the extra time to generate more interest.**
Answer: Bid date shall remain as advertised.

4.10 **Question: Will the Engineer/Owner confirm the available budget for this project?**
Answer: The estimated project cost is $4,000,000.00.

4.11 **Question: Will the Engineer/Owner confirm the anticipated NTP for this project?**
Answer: Notice to Proceed will be dependent upon Owner award and funding agency concurrence. It is anticipated for the project to begin late second quarter or third quarter of 2025.

4.12 **Question: Will the Engineer provide existing CCTV inspection videos & reports to Bidders for review?**
Answer: The existing sanitary sewer evaluation may be provided upon request to Contractor after contract execution.

4.13 **Question: Will the Engineer please provide Excel versions of the tables included in the drawings for Bidder use? The current PDF versions will not export correctly to Excel formatting.**
Answer: The Excel version of the Summary of Quantities will be provided upon the Contractor's request at the pre-construction meeting.

4.14 **Question: Including the payment of pre-rehab TV inspection and cleaning as part of the rehabilitation unit price makes payments to TV subcontractors difficult. Will the Engineer/Owner revise the bid schedule to include separate line items for pre-rehab TV & light cleaning to allow for earlier invoicing of that scope?**
Answer: The "Gravity Sewer Cured-In-Place-Pipe Installation" shall remain as written.

4.15 **Question: Will the Owner consider increasing the limitation of mobilization lump sum price to 5%?**
Answer: The mobilization lump sum shall not exceed 3% of total bid.

4.16 **Question: When properly installed, PVC sewer mains generally do not exhibit issues that would require using cured in place pipe. Will the Engineer please provide further details on the specific issues that led to the inclusion of these PVC mains in the CIPP scope?**
Answer: Only partial line replacement segments are included in the CIPP installation scope of work. Pipe segments that are replaced in entirety, from manhole to manhole, are not to be lined.

4.17 **Question: Due to the possibility of thermal stresses, curing smooth wall pipes like PVC can be problematic if proper precautions aren't utilized. If the Contractor determines after pre-TV that existing pipe conditions further exacerbate the rehab process of these mains, will the Engineer incorporate the Contractor's recommendation for alternative repair methods?**
Answer: Engineer will take Contractor's alternative repair recommendations into consideration; however, final determination will be made by Engineer.

4.18 **Question: Coordinating dye tests with homeowners can be problematic, requiring multiple follow ups where home entry still can't be confirmed. Will the Owner/Engineer add a line item for lateral TV inspection ($/EA) in lieu of dye testing?**
Answer: Lateral activity shall be confirmed per Specification 33 0130.11 - 3.01 A.

4.19 **Question: Will the Engineer/Owner confirm this project doesn't include any PVC truss pipe? Because of the smaller ID, PVC truss pipe can be impossible to line with 6" diameter CIPP, resulting in wrinkles that prohibit camera/cutter equipment.**
Answer: Truss pipe identified in the project has an inner diameter of 8".

4.20 **Question: Will the Engineer/Owner consider adding line items for lateral reconnections to mains that require point repair, sag repair, or open cut replacement?**
Answer: Lateral reconnections to sewer mains is considered a subsidiary obligation of point repairs, sag repairs, and open cut replacement.

4.21 **Question: Will the Engineer/Owner confirm any overhead & profit limitations for work completed under the Owner contingency line item?**

Answer: Specification 01 2100.00 – 1.7B (Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.)

4.22 **Question: The CIPP specification references final approval of liner installation will be based on a leak tight pipe. If pre-TV inspections reveal lateral connections that leak prior to CIPP installation, how will the Contractor be compensated for leak stoppage prior to mainline CIPP installation?**
Answer: Specification 33 0130.72 – 1.3 D (No extra payment shall be made to stop leakage at the manholes or at service connections. The cost to seal leaking connection points shall be included in the price to install the CIPP.), 3.4 D (If any of the service connections (laterals) leak water between the host pipe and the installed liner, the connection mainline interface shall be sealed to provide a water tight connection.), and 3.4 F (Compensation shall be at the actual length of cured-in-place pipe installed. The length shall be measured from center of manhole to center of manhole. The unit price per linear foot installed shall include all materials, labor, equipment and supplies necessary for the complete CIPP liner installation. Compensation for service connection sealing shall be included in the price bid for cured-in-place pipe.)

4.23 **Question: Section 1.10 Warranty of the CIPP specification references both a (1) year installation warranty in paragraph B and a 5-year repair warranty as part of the 5 year inspection process. A 5-year warranty is not typical to the CIPP industry. Will the Owner consider eliminating the reference to 5-year inspection/ repairs by the Contractor at no cost to the Owner and replace with a 1 year period instead?**
Answer: The 5 year warranty requirement and inspection has been removed.

4.24 **Question: Will the Owner/Engineer confirm how the alternates will factor into project award? For example, will award be based on Base Bid plus all (5) alternates? Will the Engineer/Owner confirm that alternates will be awarded in numerical order (starting with 1, then 2, etc.)?**
Answer: Should any alternates be awarded, they shall be awarded in numerical order.

4.25 **Question: Will the Contractor know which alternates will be utilized at the time of contract execution?**
Answer: The Owner/Engineer will notify the Contractor of awarded work upon notification of winning bid.

4.26 **Question: Will the Owner please confirm that sales and use tax should not be included in bid pricing?**
Answer: Sales tax is not included in the bid pricing but should be accounted for on ASPD Form 5-H.

4.27 **Question: Will the Owner/Engineer please provide additional details regarding when the Contractor will be responsible for cost of Owner/Engineer overtime cost? Please include rate and what conditions require payment (e.g. over 10 hours per shift, 40 hours per week, etc.)? How often is the Owner/Engineer rep expected to be onsite?**
Answer: Contractor is not required to pay for onsite Owner/Engineer representative.

4.28 **Question: Will the Owner confirm this project's liquidated damages?**
Answer: $500/day

5. Acknowledgement of Receipt

5.1 Receipt of Addendum shall be acknowledged in two ways:

5.1.1 Note on (EJCDC C-410) page 5 of Bid Form of the Project Manual – Bidder acknowledges receipt of "Addendum No. 1" and date of "March 7, 2025".

AND

5.1.2 EMAIL GMC office immediately at ashley.morris@gmcnetwork.com with the signed transmittal which confirms the addendum has been received and is legible.

6. Conclusion

6.1 This is the end of Addendum Number 1, dated Friday, March 7, 2025.

ADDENDUM NO. 1

BID PROPOSAL

PROJECT: **2022 CWSRF SANITARY SEWER REHABILITATION & REPLACEMENT FOR THE TOWN OF CAMP HILL**
GMC PROJECT NO. CMGM220156(3)

BIDDER: _____

Bidder agrees to perform all the work described in the specifications and shown on the plans for the following unit prices:

BASE BID:

ITEM	QTY.	UNIT	DESCRIPTION	UNIT PRICE	TOTAL PRICE
1	23	EA	Pre-Construction Manhole Inspection w/ Report (Including GIS Data Collection)	$	$
2	23	EA	Locate Existing Manhole		
3	4	EA	Excavate Existing Manhole		
4	8	VF	Manhole Height Adjustment (Including Ring & Cover Reset)		
5	31	EA	48" Diameter Manhole Ring & Cover		
6	383	VF	Manhole Rehabilitation		
7	8	EA	48" Diameter Manhole w/ Ring & Cover (4'-6')		
8	3	EA	48" Diameter Manhole w/ Ring & Cover (6'-8')		
9	2	EA	48" Diameter Manhole w/ Ring & Cover (8'-10')		
10	1	EA	48" Diameter Manhole w/ Ring & Cover (10'-12')		
11	1	EA	48" Diameter Manhole w/ Ring & Cover (12'-14')		
12	15	EA	Remove & Dispose of Existing Manhole		
13	4	EA	6" Sag Repair		
14	22	EA	6" Point Repair		
15	16	EA	8" Sag Repair		
16	45	EA	8" Point Repair		
17	2	EA	10" Point Repair		
18	6	EA	15" Point Repair		
19	17,563	LF	Various Diameter Heavy Cleaning		
20	3,977	LF	6" Gravity Sewer Cured-In-Place Pipe Installation		
21	12,095	LF	8" Gravity Sewer Cured-In-Place Pipe Installation		
22	137	LF	10" Gravity Sewer Cured-In-Place Pipe Installation		
23	1,355	LF	15" Gravity Sewer Cured-In-Place Pipe Installation		
24	2,237	LF	6" SDR26 PVC Gravity Sewer Main		
25	5,902	LF	8" SDR26 PVC Gravity Sewer Main		
26	442	LF	15" SDR26 PVC Gravity Sewer Main		
27	45	EA	Connect to Existing Manhole		
28	17,154	LF	Gravity Sewer Post-Construction CCTV Inspection		
29	2,400	SY	Asphalt Pavement Patch		
30	11	SY	Concrete Patch		
			BASE BID TOTAL		$

GENERAL ITEMS:

ITEM	QTY.	UNIT	DESCRIPTION	UNIT PRICE	TOTAL PRICE
31	1	LS	Mobilization & General Conditions (N.T.E 3% of Total Bid)	$ LS	$
32	1	LS	Bypass Pumping	LS	
33	3,000	LF	Clearing & Grubbing of Sanitary Sewer Easement (Standard Width of 20')		
34	1	LS	Sanitary Sewer Main Easement Access	LS	
35	1	LS	Cleanup, Seeding, Mulching, & Landscape Restoration	LS	
36	1	LS	Traffic Control Measures	LS	
37	1	LS	Erosion Control Measures	LS	
38	1	LS	Allowance - Railroad Permit	LS	25,000.00
39	1	LS	Allowance - Stormwater Permit	LS	10,000.00
40	1	LS	Allowance - Owner's Contingency	LS	100,000.00
			GENERAL ITEMS TOTAL		$
			TOTAL BASE BID (LINE ITEMS 1 - 40)		$

ADDITIVE ALTERNATE NO. 1:

ITEM	QTY.	UNIT	DESCRIPTION	UNIT PRICE	TOTAL PRICE
A1-1	1	EA	Pre-Construction Manhole Inspection w/ Report (Including GIS Data Collection)	$	$
A1-2	1	EA	Locate Existing Manhole		
A1-3	3	EA	Excavate Existing Manhole		
A1-4	6	VF	Manhole Height Adjustment (Including Ring & Cover Reset)		
A1-5	18	EA	48" Diameter Manhole Ring & Cover		
A1-6	151	VF	Manhole Rehabilitation		
A1-7	1	EA	48" Diameter Manhole w/ Ring & Cover (4'-6')		
A1-8	1	EA	Remove & Dispose of Existing Manhole		
A1-9	6	EA	6" Point Repair		
A1-10	3	EA	8" Sag Repair		
A1-11	9	EA	8" Point Repair		
A1-12	3,455	LF	Various Diameter Heavy Cleaning		
A1-13	1,226	LF	6" Gravity Sewer Cured-In-Place Pipe Installation		
A1-14	2,229	LF	8" Gravity Sewer Cured-In-Place Pipe Installation		
A1-15	50	LF	8" SDR26 PVC Gravity Sewer Main		
A1-16	1	EA	Connect to Existing Manhole		
A1-17	3,455	LF	Gravity Sewer Post-Construction CCTV Inspection		
A1-18	410	SY	Asphalt Pavement Patch		
A1-19	15	SY	Concrete Patch		
			ADDITIVE ALTERNATE NO. 1 TOTAL		$

ADDITIVE ALTERNATE NO. 2:

ITEM	QTY.	UNIT	DESCRIPTION	UNIT PRICE	TOTAL PRICE
A2-1	5	EA	Pre-Construction Manhole Inspection w/ Report (Including GIS Data Collection)	$	$
A2-2	5	EA	Connect to Existing Manhole		
A2-3	1	EA	Excavate Existing Manhole		
A2-4	2	VF	Manhole Height Adjustment (Including Ring & Cover Reset)		
A2-5	8	EA	48" Diameter Manhole Ring & Cover		
A2-6	113	VF	Manhole Rehabilitation		
A2-7	1	EA	48" Diameter Manhole w/ Ring & Cover (4'-6')		
A2-8	1	EA	Remove & Dispose of Existing Manhole		
A2-9	5	EA	6" Point Repair		
A2-10	1	EA	8" Sag Repair		
A2-11	9	EA	8" Point Repair		
A2-12	3,614	LF	Various Diameter Heavy Cleaning		
A2-13	1,089	LF	6" Gravity Sewer Cured-In-Place Pipe Installation		
A2-14	2,525	LF	8" Gravity Sewer Cured-In-Place Pipe Installation		
A2-15	460	LF	6" SDR26 PVC Gravity Sewer Main		
A2-16	664	LF	8" SDR26 PVC Gravity Sewer Main		
A2-17	9	EA	Connect to Existing Manhole		
A2-18	4,567	LF	Gravity Sewer Post-Construction CCTV Inspection		
A2-19	2,750	SY	Asphalt Pavement Patch		
			ADDITIVE ALTERNATE NO. 2 TOTAL		$

ADDITIVE ALTERNATE NO. 3:

ITEM	QTY.	UNIT	DESCRIPTION	UNIT PRICE	TOTAL PRICE
A3-1	4	EA	Pre-Construction Manhole Inspection w/ Report (Including GIS Data Collection)	$	$
A3-2	4	EA	Locate Existing Manhole		
A3-3	1	EA	48" Diameter Manhole Ring & Cover		
A3-4	47	VF	Manhole Rehabilitation		
A3-5	6	EA	8" Sag Repair		
A3-6	6	EA	8" Point Repair		
A3-7	1,529	LF	Various Diameter Heavy Cleaning		
A3-8	1,529	LF	8" Gravity Sewer Cured-In-Place Pipe Installation		
A3-9	365	LF	8" SDR26 PVC Gravity Sewer Main		
A3-10	4	EA	Connect to Existing Manhole		
A3-11	1,794	LF	Gravity Sewer Post-Construction CCTV Inspection		
A3-12	145	SY	Asphalt Pavement Patch		
			ADDITIVE ALTERNATE NO. 3 TOTAL		$

ADDITIVE ALTERNATE NO. 4:

ITEM	QTY.	UNIT	DESCRIPTION	UNIT PRICE	TOTAL PRICE
A4-1	3	EA	Pre-Construction Manhole Inspection w/ Report (Including GIS Data Collection)	$	$
A4-2	3	EA	Locate Existing Manhole		
A4-3	1	EA	Excavate Existing Manhole		
A4-4	2	VF	Manhole Height Adjustment (Including Ring & Cover Reset)		
A4-5	11	EA	48" Diameter Manhole Ring & Cover		
A4-6	97	VF	Manhole Rehabilitation		
A4-7	1	EA	48" Diameter Manhole w/ Ring & Cover (6'-8')		
A4-8	1	EA	Remove & Dispose of Existing Manhole		
A4-9	3	EA	8" Point Repair		
A4-10	723	LF	Various Diameter Heavy Cleaning		
A4-11	723	LF	8" Gravity Sewer Cured-In-Place Pipe Installation		
A4-12	723	LF	Gravity Sewer Post-Construction CCTV Inspection		
A4-13	205	SY	Asphalt Pavement Patch		

ADDITIVE ALTERNATE NO. 4 TOTAL $

ADDITIVE ALTERNATE NO. 5:

ITEM	QTY.	UNIT	DESCRIPTION	UNIT PRICE	TOTAL PRICE
A5-1	1	EA	Excavate Existing Manhole	$	$
A5-2	2	VF	Manhole Height Adjustment (Including Ring & Cover Reset)		
A5-3	15	EA	48" Diameter Manhole Ring & Cover		
A5-4	22	VF	Manhole Rehabilitation		
A5-5	4	EA	8" Sag Repair		
A5-6	4	EA	8" Point Repair		
A5-7	1,553	LF	Various Diameter Heavy Cleaning		
A5-8	1,553	LF	8" Gravity Sewer Cured-In-Place Pipe Installation		
A5-9	65	LF	8" SDR26 PVC Gravity Sewer Main		
A5-10	1,553	LF	Gravity Sewer Post-Construction CCTV Inspection		
A5-11	535	SY	Asphalt Pavement Patch		

ADDITIVE ALTERNATE NO. 5 TOTAL $

TOTAL BASE BID + ADDITIVE ALTERNATE NO. 1 $

TOTAL BASE BID + ADDITIVE ALTERNATE NO. 1 + ADDITIVE ALTERNATE NO. 2 $

TOTAL BASE BID + ADDITIVE ALTERNATE NO. 1 + ADDITIVE ALTERNATE NO. 2 + ADDITIVE ALTERNATE NO. 3 $

TOTAL BASE BID + ADDITIVE ALTERNATE NO. 1 + ADDITIVE ALTERNATE NO. 2 + ADDITIVE ALTERNATE NO. 3 + ADDITIVE ALTERNATE NO. 4 $

TOTAL BASE BID + ADDITIVE ALTERNATE NO. 1 + ADDITIVE ALTERNATE NO. 2 + ADDITIVE ALTERNATE NO. 3 + ADDITIVE ALTERNATE NO. 4 + ADDITIVE ALTERNATE NO. 5 $

SECTION 01 1500 – MEASUREMENT AND PAYMENT - ADDENDUM NO. 1

PART 1 - GENERAL

1.1 GENERAL:

A. For the information and guidance of bidders, the following explanation of the bid form items is made. The omission or reference to any item in this description shall not, however, alter the intent of the bid form or relieve the Contractor of the necessity of furnishing such as a part of the Contract. The quantities set forth in the bid form are approximate and are given to establish a uniform basis for the comparison of bids. The Owner reserves the right to increase or decrease the quantity of any class or portion of the work during the progress of construction in accordance with the terms of the Contract. Unit prices are used as a means of computing the final figures for bid and contract purposes, for periodic payments for work performed, for determining value of additions or deletions and wherever else reasonable.

B. Payment shall be made on the basis of work actually performed toward the completion of each item in the Contract proposal and construction cost breakdown, such work including, but not limited to, the furnishing of all necessary labor, materials, equipment, transportation, cleanup, and all other appurtenances to complete the construction and installation of the work to the configuration and extent as shown on the Drawings and described in the Specifications.

C. The Contractor shall assume responsibility for all materials and equipment stored, protection of his product and compliance with all federal, state and local safety regulations.

D. **The Contractor will be paid only for satisfactorily installed and tested quantities. All material order quantities shall be taken from field measurements after approval from the Engineer. The Owner will not pay for excess leftover materials. All quantities derived or measurements taken from project plan sheets shall be considered estimates only.**

E. **All excavation shall be bid on an "unclassified" basis. All costs for this type of work must be included in the amounts bid in the Proposal. No extra payment will be made for rock excavation or for muck excavation or the removal of any wet, unstable, or unsuitable soil. Should any unsuitable soil be encountered, the Contractor is responsible for procuring suitable material for backfill in those areas and all costs for this work must be included in the amounts bid in the proposal. The Contractor is required to inspect the area to his satisfaction prior to turning in a Bid Proposal.**

1.2 BID ITEMS:

A. Pre-Construction Manhole Inspection w/ Report (Including GIS Data Collection)

1. Payment under this item shall consist of thorough inspection and reporting at locations identified on the plans. The contractor shall document with photos and confirm MH material, MH condition, MH deficiencies, invert elevations, rim elevation, influent / effluent pipe size and material, along with lateral locations and size if stubbed into the manhole.
2. Payment shall be at the per Each (EA) of various size and depth at the contract price as stated in the Bid Documents. Engineer review of reports is required before payment approval.

B. Locate Existing Manhole

1. Work performed under this item shall include furnishing all labor, materials, equipment, and incidentals necessary to locate existing manholes.
2. Payment shall be at the Each (EA) contract price as stated in the contract documents.

C. Excavate Existing Manhole

1. Work performed under this item shall include furnishing all labor, materials, equipment, and incidentals necessary to excavate and remove the existing ring and cover.
2. Payment shall be at the Each (EA) contract price as stated in the contract documents.

D. Manhole Height Adjustment (Including Ring & Cover Reset)

1. Work performed under this item shall include furnishing all labor, materials, and equipment necessary to adjust manhole height and reset ring and covers at locations and depths determined by Engineer and in accordance with the contract documents, including but not limited to: site preparation, excavation, dewatering, backfill, risers, final grading, vacuum testing, and other incidentals as applicable.
2. Manhole height adjustments shall be performed utilizing 48" diameter manhole risers or concrete manhole grade rings. Concrete manhole grade rings shall be in 3" or 6" increments. No more than 1' of concrete manhole grade rings shall be installed. Should manhole height adjustment require more, 48" diameter precast concrete manhole risers shall be installed.
3. Manholes in unimproved areas shall be raised 2' above natural ground. Manholes in improved areas shall be raised flush with existing grade.
4. Payment shall be at the unit price per vertical foot (VF) installed, tested, and accepted as stated in the drawings and contract documents.

E. 48" Diameter Manhole Ring & Cover

1. Work performed under this item shall include furnishing all labor, materials, and equipment necessary to furnish and install 48" diameter manhole ring and covers at locations determined by Engineer and in accordance with the contract documents, including but not limited to: site preparation, excavation, dewatering, backfill, ring and cover, final grading, vacuum testing, and other incidentals as applicable.
2. Payment shall be at the unit price per each (EA) 48" diameter manhole ring and cover furnished, installed, tested, and accepted as stated in the drawings and contract documents.

F. Manhole Rehabilitation

1. Payment under this item shall consist of rehabilitation of existing manholes as specified in the Bid Documents. This includes, but is not limited to: site access, site restoration, erosion controls, materials, excavation, hauling and disposal of excess material, bypass pumping, and all other work required to rehabilitate existing manholes.
2. Payment shall be at the per each (EA) contract price as stated in the Bid Documents.

G. 48" Diameter Manhole w/ Ring & Cover (Various Depths)

1. Work performed under this item shall include furnishing all labor, materials, and equipment necessary to furnish and install 48" diameter precast concrete manholes at locations and

depths determined by Engineer and in accordance with the contract documents, including but not limited to: site preparation, excavation, dewatering, backfill, steps, pipe connectors, inverts and benching, base section, risers, top cone, ring and cover, final grading, vacuum testing, and other incidentals as applicable.

2. Manhole depth shall be measured from the invert of the lowest pipe to the rim elevation as shown on the drawings and verified by the Engineer.

3. Payment shall be at the unit price per each (EA) 48" diameter concrete manhole furnished, installed, tested, and accepted as stated in the drawings and contract documents.

H. Remove & Dispose of Existing Manhole

1. Work performed under this item shall include furnishing all labor, materials, equipment, and incidentals necessary to remove and dispose of existing manholes in locations as determined by the Owner and Engineer, included but not limited to: site preparation, dewatering, excavation, demolition and disposal of existing concrete/brick manhole; backfill, final grading, and other incidentals in accordance with the contract documents.

2. Payment shall be at the unit price per each (EA) removed and disposed as stated in the contract documents.

I. Sag Repair (Various Diameters)

1. Payment under this item shall consist of the repair of the existing gravity sewers up to 40 LF in length of varying sizes at various depths, as specified in the Bid Documents. This includes, but is not limited to: materials (Pipe (material to match existing), Couplings, Crushed Aggregate Bedding, Etc.), excavation, backfilling, hauling and disposal of excess material, and all other work required to perform the sag repair. Price should include all stone backfill required to complete the installation in accordance with the specifications.

2. Work under this item includes CCTV of pre and post point repair pipe conditions. No payment will be made without Engineer approval of pre and post repair video.

3. Payment shall be at the per Each (EA) contract price as stated in the Bid Documents.

J. Point Repair (Various Diameters)

1. Payment under this item shall consist of the repair of the existing gravity sewers up to 20 LF in length of varying sizes at various depths, as specified in the Bid Documents. This includes, but is not limited to: materials (Pipe (material to match existing), Couplings, Crushed Aggregate Bedding, Etc.), excavation, backfilling, hauling and disposal of excess material, and all other work required to perform the point repairs. Price should include all stone backfill required to complete the installation in accordance with the specifications.

2. Work under this item includes CCTV of pre and post point repair pipe conditions. No payment will be made without Engineer approval of pre and post repair video.

3. Payment shall be at the per Each (EA) contract price as stated in the Bid Documents.

K. Gravity Sewer Heavy Cleaning (Various Diameters)

1. Payment under this item shall consist of thorough cleaning, including the removal of debris beyond 25% of the pipe diameter, root removal requiring root saws or chain cutters, and other intrusions, CCTV inspections and reports in accordance with the specifications at locations identified on the plans. Where the contractor determines that heavy cleaning is necessary, they shall notify the engineer and owner and document before and after condition of the pipe

and/or blockage. Payment will only be made once per pipe segment regardless of the number of passes needed to confirm the condition.

2. Payment shall be at the per linear foot (LF) of varying diameter at the contract price as stated in the Bid Documents. Engineer review of CCTV is required before payment approval.

L. Gravity Sewer Cured-In-Place-Pipe Installation (Various Diameters)

1. Payment under this item shall consist of installation of cured-in-place pipe (CIPP), as specified in the Bid Documents. This includes, but is not limited to: site access, site restoration, erosion controls, materials, excavation, hauling and disposal of excess material, bypass pumping, reestablishing service connections, material testing, and all other work required to install CIPP. CIPP installations shall include waterstop end seals at all manhole connections.
2. Payment shall be at the per linear foot (LF) contract price as stated in the Bid Documents.

M. SDR26 PVC Gravity Sewer Main (Various Diameters)

1. Work performed under this item shall include furnishing all labor, materials and equipment necessary to install the SDR26 PVC gravity sewer main in varying diameters to the alignment and grades as shown on the drawings, including but not limited to: site preparation, excavation, pipe laying and joining, backfill, dewatering, cleaning, testing, and final grading in accordance with the drawings and contract documents.
2. Linear footage of gravity sewer pipe shall be measured horizontally between manholes.
3. Depth of pipe shall be measured vertically from the pre-construction ground surface above center of the pipe to the pipe invert.
4. Payment shall be at unit price per linear foot (LF) of SDR26 gravity sewer pipe in varying diameters, installed and accepted as stated in the contract documents.

N. Connect to Existing Manhole

1. Work performed under this item shall include furnishing all labor, materials, and equipment necessary to perform the connection to the existing manhole at the location shown on the drawings and in accordance with the contract documents. This item shall also cover all said items as detailed on Plan Sheet C-901 “Sewer Details.”
2. Payment shall be at the unit price for each (EA) connection to existing manhole as stated in the drawings and contract documents.

O. Gravity Sewer Post-Construction CCTV Inspection

1. Work performed under this item shall include all labor, materials, and equipment necessary to perform Post CCTV inspection in accordance with ASTM standards, in the presence of the Owner and Engineer after the installation of the CIPP liner and any reconnections that may be required. Radial view (pan and tilt) TV camera shall be used. The finished liner shall be continuous over the entire length of the installation and shall be free of significant visual defects, damage, deflection, holes, leaks and other defects. Unedited digital documentation of the inspection shall be provided to the Owner within ten (10) working days of the liner installation. The data shall note the inspection date, location of all reconnected side sewers, debris, as well as any other defects in the liner, including, but not limited to, gouges, cracks, bumps, or bulges. If post-installation inspection documentation is not submitted within Ten

(10) working days of the liner installation, the Owner may at its discretion suspend any further installation of CIPP until the post-installation documentation is submitted. As a result of this suspension, no additional working days will be added to the contract, nor will any adjustment be made for increase in cost. Immediately prior to conducting the closed-circuit television inspection, the Contractor shall thoroughly clean the newly installed liner removing all debris and build-up that may have accumulated.

2. Payment shall be at the per linear foot (LF) contract price as stated in the Bid Documents.

P. Asphalt Pavement Patch

1. Work performed under this item shall include furnishing all labor, materials, and equipment necessary to open cut and patch the asphalt pavement in locations shown on the drawings, including but not limited to: site preparation, saw cutting the existing asphalt, excavation and removal of existing asphalt, installation and compaction of new gravel base, cleaning, and final grading in accordance with the drawings and contract documents.
2. Measurement for yardage of asphalt pavement patch for sewer main shall be above-ground, horizontally along the centerline of the pipe.
3. Payment shall be at the unit price per square yard (SY) of asphalt paving that is open cut and patched as stated in the contract documents.

Q. Concrete Patch

1. Work performed under this item shall include furnishing all labor, materials, and equipment necessary to open cut and patch the concrete pavement in locations shown on the drawings, including but not limited to: site preparation, saw cutting the existing concrete, excavation and removal of existing concrete, installation and compaction of new gravel base, cleaning, and final grading in accordance with the drawings and contract documents.
2. Measurement for yardage of concrete patch for sewer main shall be above-ground, horizontally along the centerline of the pipe.
3. Payment shall be at the unit price per square yard (SY) of concrete paving that is open cut and patched as stated in the contract documents.

R. Mobilization and General Conditions

1. Work performed under this item shall consist of preparatory work and operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; and for other work, operations or costs which are of necessary incurred prior to the beginning of construction. Bond costs, license fees, permits, lump sum insurance premiums, and other such items of expense may be included but any item that will be subsequently paid for as project work or material on hand shall be excluded.
2. Payment shall be at the Lump Sum (LS) contract price as stated in the Bid Documents. The cost of mobilization shall not exceed three percent (3%) of the total amount bid. Should an amount exceeding three percent be submitted in the bid, the amount will be revised to three percent.

S. Clearing & Grubbing of Sanitary Sewer Easement (Standard Width of 20’)

1. Work performed under this item shall include furnishing all labor, materials, and equipment necessary to perform all clearing and grubbing operations necessary for the access and construction of this project including but not limited to: removal of trees, vegetation, stumps,

and grubbing to a maximum depth of 12 inches and width of 20 feet, and proper disposal of the debris in accordance with the drawings and contract documents.

2. No debris shall be pushed off the right-of-way/easement or onto adjacent property. No burning will be allowed by the Owner unless permitted by the local and state authorities. No stumps, logs, or grubbing are to be buried on the cleared right-of-way.
3. Land exposure shall be minimized in terms of area and time. The Contractor shall be responsible for complying with all BMP's for erosion/sedimentation control during clearing and grubbing operations.
4. Payment shall be at the per linear foot (LF) per a standard of 20 linear foot width contract price as stated in the contract documents.

T. Gravity Sewer Main Easement Access

1. Work performed under this item shall include all cost associated with the installation of temp. roadways, clearing and grubbing, crushed aggregate access entrances, construction mats, temp. stream crossing pipes, etc. and the removal of, as required to access all gravity sewer mains as shown in the plan set.
2. Payment shall be at the Lump Sum (LS) contract price as stated in the contract documents.

U. Bypass Pumping

1. Work performed under this item shall include furnishing all labor, materials, equipment, and incidentals necessary to perform all bypass pumping operations necessary to construct the proposed improvements in accordance with the drawings and contract documents.
2. Payment shall be at the Lump Sum (LS) contract price as stated in the contract documents.

V. Cleanup, Seeding, Mulching, & Landscape Restoration

1. Work performed under this item shall include furnishing all labor, materials, and equipment necessary to complete all cleanup, seeding, mulching, and landscape restoration, including but not limited to: cleanup of vegetation and construction debris, final topsoil, fertilizer, seeding, mulching, watering, maintenance, mowing, landscape restoration, and final grading in accordance with the drawings and contract documents.
2. All disturbed grassed areas along the route must be re-established to their original or better condition by seeding. Any new seed must match the pre-disturbed grass species and shall be to the satisfaction of the Owner and Engineer.
3. All costs associated with restoring structures and facilities (roadway signs, mailboxes, ornamental shrubbery, landscaping plants, fences, etc.) to pre-construction conditions shall be included in this bid item.
4. Payment shall be at the Lump Sum (LS) contract price as stated in the contract documents.
    a. The Owner and Engineer shall be the final determination as to whether lawns are acceptable.
    b. Acceptable seeded areas shall be deemed areas with a vigorous and uniform stand of grass with bare areas less than 5 square feet in size. All areas which fail to provide a uniform stand of turf shall be treated or replanted repeatedly until a uniform stand of grass of at least 70% coverage is attained with no bare areas greater than 5 square feet.

W. Traffic Control Measures

1. Work performed under this item shall include furnishing all labor, materials and equipment necessary to furnish and install all necessary traffic control measures needed in order to complete construction activities in accordance with the contract documents, including but not limited to: site preparation, trench excavation, casing laying and joining, backfill, dewatering, final grading, and other miscellaneous items required to complete the work.
2. Payment shall be at the Lump Sum (LS) contract price as stated in the contract documents.

X. Erosion Control Measures

1. Work performed under this item shall include furnishing all labor, materials, and equipment necessary to furnish, install, maintain, and remove all erosion and sedimentation controls (silt fence, wattles, hay bales, rip-rap, etc.) in accordance with the drawings and contract documents, as well as any additional measures needed to ensure proper erosion and sedimentation control and regulatory compliance.
2. Payment shall be at the Lump Sum (LS) contract price as stated in the contract documents. The Contractor will be responsible for paying any fines from ADEM or any other regulatory body because of inadequate erosion control measures.

Y. Allowance – Railroad Permit

1. The Railroad Permit Allowance shall cover all fees that arise during construction of the proposed improvements in railroad right-of-way.
2. The Contractor shall submit invoices of these fees with the monthly pay applications.
3. Payment shall be at the Lump Sum (LS) contract price as stated in the contract documents.
4. At closeout of Contract, funds remaining in this allowance will be credited to Owner by Final Summary Change Order.

Z. Allowance – Stormwater Permit

1. The Storm Water Permit Allowance shall include costs for the required ADEM NPDES permit acquisition, inspections, permit termination, and development of a CBMPP as stated in Section 01 0300 – Special Project Provisions. The Contractor shall provide a copy of any invoices for this work with the monthly request for payment.
2. Payment shall be at the Lump Sum (LS) contract price as stated in the contract documents.
3. At closeout of Contract, funds remaining in this allowance will be credited to Owner by Final Summary Change Order.

AA. Allowance – Owner's Contingency

1. The Owner's Contingency Allowance, in the amount of $100,000.00, shall be a cash allowance for the Owner's use. In the event there are additions and/or changes to the work in the contract, the Owner will have the ability to use Contingency Allowance funds to pay the Contractor for these items of work. Items included under the Contingency Allowance shall first be approved by the Owner and Engineer prior to completing the work. Any work completed without approval from the Owner/Engineer is at risk of non-payment.
2. Payment shall be made at the Lump Sum (LS) contract price as stated in the Bid Documents.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 1500

SECTION 01 2100 – ALLOWANCES – ADDENDUM No. 1

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements governing allowances.

1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.

B. Types of allowances include the following:

1. Lump-sum allowances.
2. Unit-cost allowances.
3. Quantity allowances.
4. Contingency allowances.
5. Testing and inspecting allowances.

1.2 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Related work specified elsewhere includes:

1. Divisions 2 through 33

1.3 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Engineer of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. At Engineer's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Engineer from the designated supplier.

1.4 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified by Engineer.

B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.6 LUMP SUM, UNIT-COST, AND QUANTITY ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner under allowance and shall include taxes, freight, and delivery to Project site.

B. Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner under allowance shall be included as part of the Contract Sum and not part of the allowance.

C. At Project closeout, credit unused amounts remaining in these allowances to Owner by Change Order.

1.7 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Engineer for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs; and overhead and profit margins in accordance with General Conditions of this Project.

D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.8 TESTING AND INSPECTING ALLOWANCES

A. Testing and inspecting allowances include the cost of engaging testing agencies, actual tests and inspections, and reporting results.

B. The allowance does not include incidental labor required to assist the testing agency or costs for retesting if previous tests and inspections result in failure. The cost for incidental labor to assist the testing agency shall be included in the Contract Sum.

C. Costs of services not required by the Contract Documents are not included in the allowance.

D. At Project closeout, credit unused amounts remaining in the testing and inspecting allowance to Owner by Change Order.

1.9 UNUSED MATERIALS

A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

1. If requested by Engineer, prepare unused material for storage by when it is not economically practical to return the material for credit. If directed by Engineer, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. The following allowances shall be included in Contract Sum in accordance with the allowance type described above. Should the below allowances not be shown on the project proposal, the Contractor shall include them in the total bid cost.

Allowance No.	Description	Allowance Type	Amount
38	Railroad Permit	Lump Sum	$25,000.00
39	Stormwater Permit	Lump Sum	$10,000.00
40	Owner's Contingency	Lump Sum	$100,000.00

END OF SECTION 01 2100

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SECTION 33 0130.72 – CURED-IN-PLACE PIPE LINING – ADDENDUM NO. 1

PART 1 - GENERAL

1.1 SUMMARY:

A. These Specifications include the minimum requirements for the rehabilitation of sanitary sewer pipelines by the installation of Cured-In-Place Pipe (CIPP) within the existing, deteriorated pipe as shown on the plans included as part of these contract documents.

B. The rehabilitation of pipelines shall be done by the installation of a resin-impregnated flexible tube which, when cured, shall be continuous and tight-fitting throughout the entire length of the original pipe. The CIPP shall extend the full length of the original pipe and provide a structurally sound, jointless and water-tight new pipe within a pipe. The Contractor is responsible for proper, accurate and complete installation of the CIPP using the system selected by the Contractor.

C. Neither the CIPP system, nor its installation, shall cause adverse effects to any of the Owner's processes or facilities. The use of the product shall not result in the formation or production of any detrimental compounds or by-products at the wastewater treatment plant. The Contractor shall notify the Owner and identify any by-products produced as a result of the installation operations, test and monitor the levels, and comply with any and all local waste discharge requirements. The Contractor shall cleanup, restore existing surface conditions and structures, and repair any of the CIPP system determined to be defective. The Contractor shall conduct installation operations and schedule cleanup in a manner to cause the least possible obstruction and inconvenience to traffic, pedestrians, businesses, and property owners or tenants.

D. The prices submitted by the Contractor, shall include all costs of permits, labor, equipment and materials for the various bid items necessary for furnishing and installing, complete in place, CIPP in accordance with these specifications. All items of work not specifically mentioned herein which are required to make the product perform as intended and deliver the final product as specified herein shall be included in the respective lump sum and unit prices bid.

1.2 REFERENCE STANDARDS:

A. The following documents form a part of this specification to the extent stated herein and shall be the latest editions thereof. Where differences exist between codes and standards, the requirements of these specifications shall apply.

1. ASTM - F1216 Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube 5
2. ASTM - F1743 Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pull in and inflate and Curing of a Resin-Impregnated Tube
3. ASTM - D543 Standard and Practice for Evaluating the Resistance of Plastics to Chemical Reagents
4. ASTM - D638 Standard Test Method for Tensile Properties of Plastics

5. ASTM - D790 Standard Test Methods for Flexural Properties of Un-reinforced and Reinforced Plastics and Electrical Insulating Materials
6. ASTM - D792 Standard Test Methods for Density and Specific Gravity of Plastics by displacement.
7. ASTM - F2019-03 Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP)
8. ASTM - D2122-98(2004) Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings
9. ASTM - D2990 Standard Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics
10. ASTM - D3567-97(2002) Standard Practice for Determining Dimensions of Fiberglass (Glass-Fiber-Reinforced Thermosetting Resin) Pipe and Fittings
11. ASTM - D3681 Standard Test Method for Chemical Resistance of "Fiberglass (Glass Fiber Reinforced Thermosetting Resin) Pipe in a Deflected Condition
12. ASTM - D5813 Standard Specification for Cured-in Place Thermosetting Resin Sewer Pipe

1.3 DESCRIPTION OF WORK AND PRODUCT DELIVERY:

A. These Specifications cover all work necessary to furnish and install, the (CIPP). The Contractor shall provide all materials, labor, equipment, and services necessary for traffic control, bypass pumping and/or diversion of sewage flows, cleaning and television inspection of sewers to be lined, liner installation, reconnection of service connections, all quality controls, provide samples for performance of required material tests, final television inspection, testing of lined pipe system and warranty work, all as specified herein. Price bid for CIPP shall include all items not covered by a separate pay item.

B. The product furnished shall be a complete CIPP system including all materials, applicable equipment and installation procedures. All CIPP systems or multi-component products will be required to meet the submittal requirements as contained herein.

C. The CIPP shall be continuous and jointless from manhole to manhole or access point to access point and shall be free of all defects that will affect the long-term life and operation of the pipe.

D. The CIPP shall fit sufficiently tight within the existing pipe so as to not leak at the manholes, at the service connections or through the wall of the installed pipe. If leakage occurs at the manholes or the service connections the Contractor shall seal these areas to stop all leakage using a material compatible with the CIPP. If leakage occurs through the wall of the pipe the liner shall be repaired or removed as recommended by the CIPP manufacturer. Final approval of the liner installation will be based on a leak tight pipe. No extra payment shall be made to stop leakage at the manholes or at service connections. The cost to seal leaking connection points shall be included in the price to install the CIPP.

E. The CIPP shall be designed for a life of 50 years or greater.

F. The CIPP must be designed as a liner to rehabilitate the existing pipe or as a fully structural stand-alone pipe-within-a-pipe. Where specified in the contract documents the installed CIPP shall be a structurally designed pipe within a pipe, meet or exceed all contract specified physical properties, fitting tightly within the existing pipe all within the tolerances specified. The installed CIPP shall withstand all applicable surcharge loads (soil overburden, live loads, etc.) and external hydrostatic (groundwater) pressure, if present, for each specific installation location.

G. The installed CIPP shall have a long term (50 year) corrosion resistance to the typical chemicals found in domestic sewage.

H. All existing and confirmed active service connections and any other service laterals to be reinstated as directed by the Owner shall be re-opened robotically or by hand in the case of man-entry size piping, to their original shape and to not less than 95% of their original capacity. All over-cut service connections will be properly repaired to meet the requirements of these specifications. All costs associated with this shall be included in the price bid for CIPP.

I. All materials furnished, as part of this contract shall be marked with detailed product information, stored in a manner specified by the manufacturer and tested to the requirement of this contract.

1.4 PERFORMANCE WORK STATEMENT (PWS) SUBMITTAL:

A. The Contractor shall submit, to the Owner, a Performance Work Statement (PWS) at the pre-construction meeting, which clearly defines the CIPP product delivery in conformance with the requirements of these contract documents. Unless otherwise directed by the Owner, the PWS shall at a minimum contain the following:

1. Clearly indicate that the CIPP will conform to the project requirements as outlined in the Description of Work and as delineated in these specifications.

2. Where the scope of work is specifically delineated in the contract documents, a detailed installation plan describing all preparation work, cleaning operations, pre-CCTV inspections, by-pass pumping, traffic control, installation procedure, method of curing, service reconnection, quality control, testing to be performed, final CCTV inspection, warranties furnished and all else necessary and appropriate for a complete CIPP liner installation. A detailed installation schedule shall be prepared, submitted and conform to the requirements of this contract.

3. Contractor's description of the proposed CIPP lining technology, including a detailed plan for identifying all active service connections maintaining service, during mainline installation, to each home connected to the section of pipe being lined, including temporary service if required by the contract.

4. A description of the CIPP materials to be furnished for the project. Materials shall be fully detailed in the submittals and conform to these specifications and/or shall conform to the pre-approved product submission.

5. A statement of the Contractors experience. The Contractor shall have a minimum of three (3) years of continuous experience installing CIPP liners in pipe of a similar size, length and configuration as contained in this contract. A minimum of 250,000 linear feet of shop wet-out liner installation is required and minimum of 25 onsite wet-out installations are required as applicable to this contract. The lead personnel including the superintendent,

the foreman and the lead crew personnel for the CCTV inspection, resin wet-out, the CIPP liner installation, liner curing and the robotic service reconnections must have a minimum of three (3) years of experience with the CIPP technology proposed for this contract and must have demonstrated competency and experience to perform the scope of work contained in this contract. The name and experience of each lead individual performing work on this contract shall be submitted with the PWS.

6. Engineering design calculations, in accordance with the Appendix of ASTM F-1216, for each length of liner to be installed shall be submitted including the thickness of each proposed CIPP. It will be acceptable for the Contractor to submit a design for the most severe line condition and apply that design to all of the line sections. These calculations shall be performed and certified by a qualified, Professional Engineer. All calculations shall include data that conforms to the requirements of these specifications or has been pre-approved by the Owner.
7. Proposed manufacturers technology data shall be submitted for all CIPP products and all associated technologies to be furnished.
8. Submittals shall include information on the cured-in-place pipe intended for installation and all tools and equipment required for a complete installation. The PWS shall identify which tools and equipment will be redundant on the job site in the event of equipment breakdown. All equipment, to be furnished for the project, including proposed back-up equipment, shall be clearly described. The Contractor shall outline the mitigation procedure to be implemented in the event of key equipment failure during the installation process.
9. A detailed description of the Contractor's proposed procedures for removal of any existing blockages in the pipeline that may be encountered during the cleaning process.
10. A detailed public notification plan shall be prepared and submitted including detailed staged notification to residences affected by the CIPP installation.
11. Compensation for all work required for the submittal of the PWS shall be included in the various pipelining items contained in the Proposal.

1.5 PRODUCT SUBMITTALS:

A. Fabric Tube – including the manufacturer and description of product components.

B. Flexible membrane (coating) material – including recommended repair (patching) procedure if applicable.

C. Raw Resin Data - including the manufacturer and description of product components.

D. Manufacturers' shipping, storage and handling recommendations for all components of the CIPP System.

E. All MSDS sheets for all materials to be furnished for the project.

F. Tube wet-out & cure method including:

1. A complete description of the proposed wet-out procedure for the proposed technology.

2. The Manufacturer's recommended cure method - for each diameter and thickness of CIPP liner to be installed. The PWS shall contain a detailed curing procedure detailing the curing medium and the method of application.

3. Compensation for all work required for the submittal of product data shall be included in the Lump Sum price contained in the Proposal for Mobilization.

1.6 SAFETY:

A. The Contractor shall conform to all work safety requirements of pertinent regulatory agencies, and shall secure the site for the working conditions in compliance with the same.

B. The Contractor shall perform all of the Work in accordance with applicable OSHA standards. Emphasis shall be placed upon the requirements for entering confined spaces and with the equipment being utilized for pipe renewal.

C. The Contractor shall be solely responsible for the safety on the job-site.

D. Compensation for all work required to adhere to industry and government agency safety requirements shall be included in the price bid.

1.7 QUALITY CONTROL PLAN (QCP):

A. A detailed quality control plan (QCP) shall be submitted to the Owner that fully represents and conforms to the requirements of these specifications. At a minimum the QCP shall include the following:

1. A detailed discussion of the proposed quality controls to be performed by the Contractor.

2. Defined responsibilities, of the Contractor's personnel, for assuring that all quality requirements, for this contract, are met. These shall be assigned, by the Contractor, to specific personnel.

3. Proposed procedures for quality control, product sampling and testing shall be defined and submitted as part of the plan.

4. Proposed methods for product performance controls, including method of and frequency of product sampling and testing both in raw material form and cured product form.

5. A scheduled performance and product test result reviews between the Contractor and the Owner at a regularly scheduled job meeting.

6. Inspection forms and guidelines for quality control inspections shall be prepared in accordance with the standards specified in this contract and submitted with the QCP.

7. Compensation for all work required for the submittal of the QCP shall be included in the various pipelining items contained in the Proposal. Compensation for inspector training shall be included in the price bid therefore in the Proposal.

1.8 CIPP REPAIR/REPLACEMENT:

A. Occasionally installation of the liner will result in the need to repair or replace a defective CIPP. The Contractor shall outline specific repair or replacement procedures for potential

defects that may occur in the installed CIPP. Repair/replacement procedures shall be as recommended by the CIPP system manufacturer and shall be submitted as part of the PWS.

B. Defects in the installed CIPP that will not affect the operation and long-term life of the product shall be identified and defined.

C. Repairable defects that may occur in the installed CIPP shall be specifically defined by the Contractor based on manufacturer's recommendations, including a detailed step-by step repair procedure, resulting in a finished product meeting the requirements of these contract specifications.

D. Un-repairable defects that may occur to the CIPP shall be clearly defined by the Contractor based on the manufacturer's recommendations, including a recommended procedure for the removal and replacement of the CIPP.

E. All repairs due to defects or installation shall be repaired at no cost to the Owner.

1.9 AS-BUILT DRAWINGS:

A. As-Built drawings, pre & post inspection data along with formatted documents compatible with the owner's GIS system shall be submitted to the Owner, by the Contractor within 2 weeks of final acceptance of said work or as specified by the Owner. As-Built drawings will include the identification of the work completed by the Contractor and shall be prepared on one set of Contract Drawings provided to the Contractor at the onset of the project.

B. As-Built drawings shall be kept on the project site at all times, shall include all necessary information as outlined in the PWS or as agreed to by the Owner and the Contractor at the start of the Contract and shall be updated as the work is being completed, and shall be clearly legible.

C. Compensation for all work required for the submittal and approval of As-Built Drawings shall be included in the various pipelining items contained in the Proposal.

1.10 WARRANTY:

A. The materials used for the project shall be certified by the manufacturer for the specified purpose. The Contractor shall warrant the liner installation for a period of one (1) year. During the Contractor warranty period any defect, which may materially affect the integrity, strength, function and/or operation of the pipe, shall be repaired at the Contractor's expense in accordance with procedures included in Section 1.8 CIPP Repair/Replacement.

PART 2 - PRODUCTS

2.1 MATERIALS:

A. The CIPP System must meet the chemical resistance requirements of these contract documents.

B. All materials, shipped to the project site, shall be accompanied by test reports certifying that the material conforms to the ASTM standards listed herein. Materials shall be shipped, stored, and handled in a manner consistent with written recommendations of the CIPP system manufacturer

to avoid damage. Damage includes, but is not limited to, gouging, abrasion, flattening, cutting, puncturing, or ultra-violet (UV) degradation. On site storage locations, shall be approved by the Owner. All damaged materials shall be promptly removed from the project site at the Contractor's expense and disposed of in accordance with all current applicable agency regulations.

2.2 FABRIC TUBE:

A. The fabric tube shall consist of one or more layers of absorbent non-woven felt fabric, felt/fiberglass or fiberglass and meet the requirements of ASTM F 1216, ASTM F 1743, ASTM D 5813 & ASTM F2019. The fabric tube shall be capable of absorbing and carrying resins, constructed to withstand installation pressures and curing temperatures and have sufficient strength to bridge missing pipe segments, and stretch to fit irregular pipe sections. The contractor shall submit certified information from the felt manufacturer on the nominal void volume in the felt fabric that will be filled with resin.

B. The wet-out fabric tube shall have a uniform thickness and excess resin distribution that when compressed at installation pressures will meet or exceed the design thickness after cure.

C. The fabric tube shall be manufactured to a size and length that when installed will tightly fit the internal circumference, meeting applicable ASTM standards or better, of the original pipe. Allowance shall be made for circumferential stretching during installation. The tube shall be properly sized to the diameter of the existing pipe and the length to be rehabilitated and be able to stretch to fit irregular pipe sections and negotiate bends. The Contractor shall determine the minimum tube length necessary to effectively span the designated run between manholes. The Contractor shall verify the lengths in the field prior to ordering and prior to impregnation of the tube with resin, to ensure that the tube will have sufficient length to extend the entire length of the run. The Contractor shall also measure the inside diameter of the existing pipelines in the field prior to ordering liner so that the liner can be installed in a tight-fitted condition.

D. The outside and/or inside layer of the fabric tube (before inversion/pull-in, as applicable) shall be coated with an impermeable, flexible membrane that will contain the resin and facilitate, if applicable, vacuum impregnation and monitoring of the resin saturation during the resin impregnation (wetout) procedure.

E. No material shall be included in the fabric tube that may cause de-lamination in the cured CIPP. No dry or unsaturated layers shall be acceptable upon visual inspection as evident by color contrast between the felt fabric and the activated resin containing a colorant.

F. The wall color of the interior pipe surface of CIPP after installation shall be a light reflective color so that a clear detailed examination with closed circuit television inspection equipment may be made. The hue of the color shall be dark enough to distinguish a contrast between the fully resin saturated felt fabric and dry or resin lean areas.

G. Seams in the fabric tube, if applicable, shall meet the requirements of ASTM D5813.

H. The outside of the fabric tube shall be marked every 5 feet with the name of the manufacturer or CIPP system, manufacturing lot and production footage.

I. The minimum length of the fabric tube shall be that deemed necessary by the installer to effectively span the distance from the starting manhole to the terminating manhole or access point, plus that amount required to run-in and run-out for the installation process.

J. The nominal fabric tube wall thickness shall be constructed, as a minimum, to the nearest 0.5 mm increment, rounded up from the design thickness for that section of installed CIPP. Wall thickness transitions, in 0.5 mm increments or greater as appropriate, may be fabricated into the fabric tube between installation entrance and exit access points. The quantity of resin used in the impregnation shall be sufficient to fill all of the felt voids for the nominal felt thickness.

2.3 RESIN:

A. The resin shall be a corrosion resistant polyester or vinyl ester resin and catalyst system that when properly cured within the tube composite meets the requirements of ASTM F1216, ASTM F1743 or F2019, the physical properties herein, and those, which are to be utilized in the design of the CIPP for this project. The resin shall produce CIPP which will comply with or exceed the structural and chemical resistance requirements of this specification.

2.4 STRUCTURAL REQUIREMENTS:

A. The physical properties and characteristics of the finished liner will vary considerably, depending on the types and mixing proportions of the materials used, and the degree of cure executed. It shall be the responsibility of the Contractor to control these variables and to provide a CIPP system which meets or exceeds the minimum properties specified herein:

1. The CIPP shall be designed as per ASTM standards. The CIPP design shall assume no bonding to the original pipe wall.
2. The design engineer shall set the long term (50 year extrapolated) Creep Retention Factor at 50% of the initial design flexural modulus as determined by ASTM D-790 test method. This value shall be used unless the Contractor submits long term test data (ASTM D2990) to substantiate a higher retention factor.
3. The cured pipe material (CIPP) shall, at a minimum, meet or exceed the structural properties, as listed below.

2.5 MINIMUM PHYSICAL PROPERTIES:

Property	Test Method	Cured Composite Per ASTM F1216	Cured Composite Per Design
Flexural Modulus of Elasticity (Short Term)	ASTM D-790	250,000 psi	Contractor Value
Flexural Strength (Short Term)	ASTM D-790	4,500 psi	Contractor Value

A. The required structural CIPP wall thickness shall be based, as a minimum, on the physical properties of the cured composite and per the design of the Professional Engineer and in

accordance with the Design Equations contained in the appendix of the ASTM standards, and the following design parameters:

Design Safety Factor	2.0 (1.5 for pipes 36" or larger)
Creep Retention Factor	50%
Ovality	2% or as measured by field inspection
Constrained Soil Modulus	Per AASHTO LRFD Section 12 and AWWA Manual M45
Live Load	Highway, railroad or airport as applicable
Soil Load (assumed)	120 lb/cu. Ft.
Minimum service life	50 years

B. The Contractor shall submit, prior to installation of the lining materials, certification of compliance with these specifications. Certified material test results shall be included that confirm that all materials conform to this specification and/or the pre-approved system. Materials not complying with these requirements will be rejected.

PART 3 - EXECUTION

3.1 CONSTRUCTION REQUIREMENTS:

A. Preparation, cleaning, inspection, sewage by-passing and public notification. The Contractor shall clean the interior of the existing host pipe prior to installation of the CIPP liner. All debris and obstructions, that will affect the installation and the final CIPP product delivery to the Owner, shall be removed and disposed of.

B. The CIPP liner shall be constructed of materials and methods, that when installed, shall provide a jointless and continuous structurally sound liner able to withstand all imposed static, and dynamic loads on a long-term basis.

C. The Contractor may, under the direction of the Owner, utilize any of the existing manholes in the project area as installation access points. If a street must be closed to traffic because of the location of the sewer, the Contractor shall furnish a detailed traffic control plan and all labor and equipment necessary. The plan shall be in conformance with the requirements of the local agency having jurisdiction over traffic control.

D. Cleaning of Pipe Lines - The Contractor shall remove all internal debris from the pipe line that will interfere with the installation and the final product delivery of the CIPP as required in these specifications. Solid debris and deposits shall be removed from the system and disposed of properly by the Contractor. Moving material from manhole section to manhole section shall not be allowed. As applicable the contractor shall either plug or install a flow bypass pumping system to properly clean the pipe lines. Precaution shall be taken, by the Contractor in the use of cleaning equipment to avoid damage to the existing pipe. The repair of any damage, caused by the cleaning equipment, shall be the responsibility of the Contractor. The Contractor shall dispose of all debris at no charge.

E. By-passing Existing Sewage Flows - The Contractor shall provide for the flow of existing mainline and service connection effluent around the section or sections of pipe designated for CIPP installation. Service connection effluent may be plugged only after proper notification to the affected residence and may not remain plugged overnight. Installation of the liner shall not begin until the Contractor has installed a sewage by-pass system and all pumping facilities have been installed and tested under full operating conditions including the bypass of mainline and side sewer flows. Once the lining process has begun, existing sewage flows shall be maintained, until the resin/felt tube composite is fully cured, cooled down, fully televised and the CIPP ends finished. The Contractor shall coordinate sewer bypass and flow interruptions with the Owner at least 14 days in advance and with the property owners and businesses at least 3 business days in advance. The pump and bypass lines shall be of adequate capacity and size to handle peak flows. The Contractor shall submit a detail of the bypass plan and design to the Owner before proceeding with any CIPP installation. Compensation for by-pass pumping and all associated plans and approvals shall be included in the bid item "Bypass Pumping."

F. Contractor shall perform post-cleaning video inspections of the pipelines. Only PACP certified personnel trained in locating breaks, obstacles and service connections by closed circuit television shall perform the inspection. The Contractor shall provide the Owner a copy of the post-cleaning video and suitable log, in digital format for review prior to installation of the CIPP and for later reference by the Owner.

G. Line Obstructions - It shall be the responsibility of the Contractor to clear the line of obstructions that will interfere with the installation and long-term performance of the CIPP. If pre-installation inspection reveals an obstruction, misalignment, broken or collapsed section or sag that was not identified as part of the original scope of work and will prohibit proper installation of the CIPP, the Contractor may be directed by the Owner to correct the problem(s) prior to lining by utilizing open cut repair methods. The Contractor shall be compensated for this work under the pay item designated for open cut point repairs.

H. The Contractor shall be responsible for confirming the locations of all service connections (laterals) prior to installing and curing the CIPP. All service connections deemed "active" shall be reopened by the Contractor.

I. The Contractor shall be allowed use water from an owner-approved fire hydrant in the project vicinity. Use of an approved double check backflow assembly shall be required. Owner will provide assembly. Contractor shall set up an account with the Owner so water use can be documented. However, Contractor shall not be required to pay for water used.

3.2 INSTALLATION OF LINER:

A. The CIPP Liner shall be installed and cured in the host pipe per the manufacturer's specifications as described and submitted in the PWS.

B. CIPP installation shall be in accordance with the applicable ASTM standards with the following modification:

1. The wet-out tube shall be positioned in the pipeline using the method specified by the manufacturer. Care should be exercised not to damage the tube as a result of installation. The tube should be pulled-in or inverted through an existing manhole or approved access point and fully extend to the next designated manhole or termination point.

2. Prior to installation and as recommended by the manufacturer remote temperature gauges or sensors shall be placed inside the host pipe to monitor the temperatures during the cure cycle. Liner and/or host pipe interface temperature shall be monitored and logged during curing of the liner.

3. Curing shall be accomplished by utilizing the appropriate medium in accordance with the manufacturer's recommended cure schedule. The curing source or in and output temperatures shall be monitored and logged during the cure cycles. The manufacturer's recommended cure schedule shall be used for each line segment installed, and the liner wall thickness and the existing ground conditions with regard to temperature, moisture level, and thermal conductivity of soil, per ASTM as applicable, shall be taken into account by the Contractor.

3.3 COOL DOWN:

A. The Contractor shall cool the CIPP in accordance with the approved CIPP manufacturer's recommendations as described and outlined in the PWS.

B. Temperatures and curing data shall be monitored and recorded, by the Contractor, throughout the installation process to ensure that each phase of the process is achieved as approved in accordance with the CIPP System manufacturer's recommendations.

3.4 FINISH:

A. The installed CIPP shall be continuous over the entire length of a sewer line section and be free from visual defects such as foreign inclusions, dry spots, pinholes, major wrinkles and de-lamination. The lining shall be impervious and free of any leakage from the pipe to the surrounding ground or from the ground to inside the lined pipe.

B. Any defect, which will or could affect the structural integrity or strength of the linings, shall be repaired at the Contractor's expense, in accordance with the procedures submitted under Section 1.8 CIPP Repair/Replacement.

C. The beginning and end of the CIPP shall be sealed to the existing host pipe. The sealing material shall be compatible with the pipe end and shall provide a watertight seal.

D. If any of the service connections (laterals) leak water between the host pipe and the installed liner, the connection mainline interface shall be sealed to provide a water tight connection.

E. If the wall of the CIPP leaks, it shall be repaired or removed and replaced with a watertight pipe as recommended by the manufacture of the CIPP system.

F. Compensation shall be at the actual length of cured-in-place pipe installed. The length shall be measured from center of manhole to center of manhole. The unit price per linear foot installed shall include all materials, labor, equipment and supplies necessary for the complete CIPP liner installation. Compensation for service connection sealing shall be included in the price bid for cured-in-place pipe.

3.5 MANHOLE CONNECTIONS AND RECONNECTIONS OF EXISTING SERVICES:

A. A seal, consisting of a resin mixture or hydrophilic seal compatible with the installed CIPP shall be applied at manhole walls in accordance with the CIPP System manufacturer's recommendations.

B. Existing services shall be internally or externally reconnected unless indicated otherwise in the contract documents.

C. Reconnections of existing services shall be made after the CIPP has been installed, fully cured, and cooled down. It is the CONTRACTOR'S responsibility to make sure that all active service connections are reconnected.

D. External reconnections are to be made with a tee fitting in accordance with CIPP System manufacturer's recommendations. Saddle connections shall be seated and sealed to the new CIPP using grout or resin compatible with the CIPP.

E. A CCTV camera and remote cutting tool shall be used for internal reconnections. The machined opening shall be at least 95 percent of the service connection opening and the bottom of both openings must match. The opening shall not be more than 100 percent of the service connection opening. The edges of the opening shall not have pipe fragments or liner fragments, which may obstruct flow or snag debris.

F. In the event that service reinstatements result in openings that are greater than 100 percent of the service connection opening, the Contractor shall install a CIPP type repair, sufficiently in size to completely cover the over-cut service connection. No additional compensation will be paid for the repair of over-cut service connections.

G. Coupons of pipe material resulting from service tap cutting shall be collected at the next manhole downstream of the pipe rehabilitation operation prior to leaving the site. Coupons may not be allowed to pass through the system.

H. The contractor shall include all costs associated with manhole connections and service reconnections in the price bid for cured in place pipe.

3.6 VARIOUS DIAMETER POINT REPAIR / SAG REPAIR / BLOCKAGE REMOVAL

A. The pay item "Sag Removal" will include all costs to remove sagging areas in the existing pipeline. If Pre-Installation video (TV) inspection reveals a sag in the existing sewer that is greater than one-half the diameter of the existing pipe, it shall be the Contractor's responsibility to install the replacement pipe to result in an acceptable grade without the sag. The Contractor shall take the necessary measures to eliminate these sags by the method of: pipe replacement, digging a sag elimination pit and bringing the bottom of the pipe trench to a uniform grade in line with the existing pipe invert or by other measures. The contractor shall note that this pay item is to be paid per EACH occurrence, rather than by the linear foot. If this work is done in a roadway, it shall include the cost of sub-base, base and asphalt patching. Multiple obstructions located within 20' shall be considered as one obstruction. The maximum length of pipe to be repaired within each occurrence of "Sag Removal" shall be up to 40 linear feet in length.

B. A bid item is provided in the proposal for "Point Repair". Point repairs may be required, as determined by the engineer, upon review of the CCTV inspection. If this work is done in a

roadway, it shall include the cost of sub-base, base and asphalt patching. Multiple obstructions located within 20' shall be considered as one obstruction. Payment for point repairs shall be made based on the unit price bid for each point repair made, twenty (20) feet in length. The unit prices bid by the Contractor on these items shall cover all costs for materials, fittings, labor, hauling off material and equipment necessary to successfully complete the point repair.

C. If the Contractor encounters a blockage in the line which cannot be removed by conventional sewer cleaning equipment, i.e., the Contractor must dig up the line to remove the blockage, he must first obtain approval from the Engineer's representative. This work will be paid for under the pay item "Point Repair." All costs associated with this operation shall be included in this pay item, to include, but not limited to, digging down to the pipe, removing a section of the pipe, removing the blockage, replacing the section of pipe, backfilling and compaction of the hole, and restoration of the surface to original or better condition. If this work is done in a roadway, it shall include the cost of sub-base, base and asphalt patching. Multiple obstructions located within 20' shall be considered as one obstruction. Should obstructions continue for a length greater than 20', each 20' segment shall be counted as a separate obstruction.

D. The Contractor shall furnish, install, and operate pumps, plugs, conduits, and other equipment, if required, to divert the flow of sewage around the work area while the sewer lines are being rehabilitated. The pumping system shall be of sufficient capacity to handle existing flow plus additional flow that may occur during a rainstorm. If pumping is required on a 24-hour basis, engines shall be equipped in a manner to keep noise to a minimum. Bypass Pumping shall be paid as a Lump Sum for all required pumping on this project. Testing and warranty inspections shall be executed by the Owner. Any defects found shall be repaired or replaced by the Contractor.

3.7 TESTING OF INSTALLED CIPP:

A. The physical properties of the installed CIPP shall be verified through field sampling and laboratory testing. All materials for testing shall be furnished by the Contractor to the approved testing lab. All materials testing shall be performed at the Contractor's expense, by an independent third-party laboratory approved by the Owner as recommended by the CIPP manufacturer. All tests shall be in accordance with applicable ASTM test methods to confirm compliance with the requirements specified in these contract documents. All costs associated with the testing shall be included in the price bid.

B. The Contractor shall provide samples for testing to the approved laboratory from the actual installed CIPP liner. Samples shall be provided, at a minimum from one location per 1000 linear feet of CIPP installed or as required by the Owner. The sample shall be cut from a section of cured CIPP that has been inverted or pulled through a like diameter pipe which has been held in place by a suitable heat sink, such as sandbags. All curing, cutting and identification of samples will be witnessed by the Owner and transmitted to the testing laboratory.

C. On pipelines greater in diameter than is practical to produce restrained samples, the Owner may at its discretion, require plate samples cured with the CIPP or designate a location in the newly installed CIPP where the Contractor shall take a sample. The Opening produced from the sample shall be repaired in accordance with manufacturers recommended procedures.

D. The laboratory results shall identify the test sample location as referenced to the nearest manhole and station. Final payment for the project shall be withheld pending receipt and

approval of the test results. If properties tested do not meet minimum requirements, the CIPP shall be repaired or replaced by the Contractor, at no additional cost to the Owner.

E. Chemical resistance - The CIPP system installed shall meet the chemical resistance requirements of ASTM standards. CIPP samples tested shall be of fabric tube and the specific resin proposed for actual construction. It is required that CIPP samples without plastic coating meet these chemical testing requirements.

F. Hydraulic Capacity - The installed CIPP shall at a minimum be equal to the full flow capacity of the original pipe before rehabilitation. In those cases where full capacity cannot be achieved after liner installation, the Contractor shall submit a request to waive this requirement, together with the reasons for the waiver request. Calculated capacities may be derived using a commonly accepted roughness coefficient for the existing pipe material taking into consideration its age and condition.

G. The installed CIPP thickness shall be measured for each line section installed. If the CIPP thickness does not meet that specified in the contract and submitted as the approved design by the Contractor then the liner shall be repaired or removed. The liner thickness shall have tolerance of minus 5% plus 10%. In man-entry size piping the Contractor shall remove a minimum of one sample or one sample every line section of installed CIPP, not meeting the specified design thickness, to be used to check the liner thickness. The samples shall be taken by core drilling 2-inch diameter test plugs at random locations selected by the Owner. As an alternative the Contractor may use industry proven, non-destructive methods for confirming the thickness of the installed CIPP.

H. All costs associated with providing CIPP samples for testing shall be included in the price bid for cured in place pipe. Payment for all testing by a laboratory will be the responsibility of the Contractor.

3.8 FINAL ACCEPTANCE:

A. All CIPP sample testing and repairs to the installed CIPP as applicable, shall be completed, before final acceptance, meeting the requirements of these specifications and documented in written form.

B. The Contractor shall perform a detailed closed-circuit television inspection in accordance with ASTM standards, in the presence of the Owner after installation of the CIPP liner and

C. reconnection of the side sewers. A radial view (pan and tilt) TV camera shall be used. The finished liner shall be continuous over the entire length of the installation and shall be free of significant visual defects, damage, deflection, holes, leaks and other defects. Unedited digital documentation of the inspection shall be provided to the Owner within ten (10) working days of the liner installation. The data shall note the inspection date, location of all reconnected side sewers, debris, as well as any other defects in the liner, including, but not limited to, gouges, cracks, bumps, or bulges. If post installation inspection documentation is not submitted within Ten (10) working days of the liner installation, the Owner may at its discretion suspend any further installation of CIPP until the post-installation documentation is submitted. As a result of this suspension, no additional working days will be added to the contract, nor will any adjustment be made for increase in cost. Immediately prior to conducting the closed-circuit television inspection, the Contractor shall thoroughly clean the newly installed liner removing all debris and build-up that may have accumulated.

D. Bypass pumping or plugging from the upstream manhole shall be utilized to minimize sewage from entering the line during the inspection. In the case of bellies in the line, the pipe shall be cleared of any standing water to provide continuous visibility during the inspection.

E. Where leakage is observed through the wall of the pipe, the contractor shall institute additional testing including but not limited to air testing, localized testing and any other testing that will verify the leak-proof integrity of the installed CIPP to the satisfaction of the Owner.

END OF SECTION 33 0130.72

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SECTION 33 0138 – ULTRA HIGH BUILD STRUCTURAL EPOXY LINING FOR CONCRETE WASTEWATER STRUCTURES – ADDENDUM NO. 1

PART 1 - GENERAL

1.1 DESCRIPTION:

A. A manufacturer certified Applicator shall provide all labor, materials, equipment, incidentals, and quality requirements for concrete for surface preparation, repair or resurfacing, and ultra-high build, structural epoxy lining work to the entire interior surfaces of the structures as shown on drawings and specified herein.

B. This Section's intent is to provide minimum requirements of an installation of an ultra-high build, high strength, structural epoxy system; and the coating/lining of newly installed, existing, and/or defective specified concrete/masonry structures and surfaces exposed to domestic wastewater and/or municipal sanitary sewage by an applied and bonded application of high performance, 100% solids, ultra-high build, structural grade, applied fiber-reinforced-polymer (FRP) epoxy coating/lining system (Structural Epoxy).

C. This Section's intent is for concrete and/or other masonry structures which are exposed to or in contact with domestic wastewater service; constituting domestic municipal wastewater and plant treatment and municipal sanitary sewage from collection systems (sanitary sewer and/or stormwater), where sewage contact and exposure to hydrogen sulfide are present. Not intended for non-sewage applications or industrial waste.

D. Structural Epoxy minimum film thickness specified herein is designed and intended for applied and bonded coating/lining, delivering barrier protection with high mechanical strength with a reinforced film to bridge and seal against low pressure forces of effective lateral earth pressure, moisture vapor transmission (MVT), hydrostatic head pressure, and inflow and infiltration (I&I) once cured; while protecting from effluent and H2S. Design thickness herein also accounts for long term performance; as unintentionally there may be circumstances that may prevent bonding in certain areas that an engineered Structural Epoxy is designed to bridge (with limitations), whereas non-structural coatings may not. Not intended: excessive or high-pressure forces and loading, or other force considerations for full structural reinstatement without a qualified assessment with calculated, verified and adjusted structural thickness calculations performed by a Professional Engineer (film or system thicknesses may change depending on types of forces, force values and other variables, engineering assessments and calculations).

E. Types of Structural Epoxy lining for concrete Work required include but are not necessarily limited to the following:
   1. Hydraulic water plug
   2. Rapid-setting cementitious repair mortar
   3. Epoxy-modified cementitious resurfacer
   4. Corrosion-resistant, ultra-high build, structural epoxy lining
   5. Miscellaneous materials

1.2 COORDINATION:

A. Coordinate surface preparation of substrates to avoid later difficulty or delay in performing the Work of this Section.

B. Review installation procedures under other Sections and coordinate the installation of items that must be installed prior to application of the Structural Epoxy lining.

C. The Contractor shall coordinate with Engineer regarding the availability of work areas, completion times, safety, access, and other factors which can impact plant operations.

1.3 RELATED SECTIONS:

A. Section 01 3300 – Submittal Procedures

B. Section 03 3000 – Cast-in-Place Concrete

1.4 REFERENCES:

A. This Section contains references to the governing standards and documents listed below. They are a part of this Section as specified and modified; the current version shall apply unless otherwise noted. In case of conflict between the requirements of this section and those of the listed documents, the more stringent of the requirements shall prevail.

1. American Concrete Institute, (ACI)

   a. ACI 224.1R – Causes, Evaluation and Repair of Cracks in Concrete Structures
   b. ACI 301 – Specifications for Structural Concrete
   c. ACI 308R – Guide to Curing Concrete
   d. ACI 350 – Code Requirements for Environmental Engineering Concrete Structures and Commentary
   e. ACI 546.R – Concrete Repair Guide
   f. ACI 546.3R – Guide for the Selection of Materials for the Repair of Concrete

2. ASTM International, (ASTM)

   a. ASTM C 868 – Standard Test Method for Chemical Resistance of Protective Linings
   b. ASTM C 1583/1583M – Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method)
   c. ASTM D 4060 – Standard Test Method for Abrasion Resistance of Organic Linings by the Taber Abrader
   d. ASTM D 4285 – Standard Test Method for Indicating Water or Oil in Compressed Air
   e. ASTM D 4414 – Standard Practice for Measurement of Wet Film Thickness by Notch Gages
   f. ASTM D 7682 – Standard Test Method for Replication and Measurement of Concrete Surface Profiles Using Replica Putty

g. ASTM F 2414 – Standard Practice for Sealing Sewer Manholes Using Chemical Grouting

3. International Concrete Repair Institute, (ICRI)

a. Guideline No. 310.1R – Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion
b. Guideline No. 310.2 – Selecting and Specifying Concrete Surface Preparation for Sealer, Linings, and Polymer Overlays

4. NACE International, (NACE)

a. NACE Publication 6D-173 – A Manual for Painter Safety
b. NACE SP0188 – Standard Practice for Discontinuity (Holiday) Testing of Protective Linings
c. NACE No. 6/SSPC-SP13 – Surface Preparation of Concrete

5. Occupational Safety and health Administration, (OSHA)

a. Safety and health Standards (29 CFR 1910/1926)

6. SSPC: The Society for Protective Coatings, (SSPC)

a. SSPC-SP13/NACE No. 6 – Surface Preparation of Concrete
b. SSPC-Guide 12 – Guide for Illumination of Industrial Painting Projects

B. Unless otherwise specified, references to documents shall mean the documents in effect at the time of receipt of Bids. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents, the last version of the document before it was discontinued.

1.5 SUBMITTALS:

A. In accordance with the procedures and requirements set forth in the General Conditions and Section 01 3000, the Contractor shall submit all required information as specified herein.

B. Shop Drawings: Submit for approval prior to commencing any Work:

1. Manufacturer's project reference lists with coating systems specified herein, stating project location, Owner contact information, Engineer contact information, Installer contact information, containing a minimum of 10 projects of similar capacity with a minimum of 5 years of satisfactory service.
2. Product Data Sheets: Copies of current technical data for each component specified and applied as outlined in this Section.
3. Safety Data Sheets: Copies of current SDS for any materials brought on-site including all clean-up solvents, repair or resurfacing mortars and lining materials.
4. Qualification Data: Approved Installer Certification from manufacturer.
5. Performance Testing Reports: Copies of test data for the entire physical, chemical, and permeation properties listed herein and as outlined within this Section.

6. Installation Instructions: Manufacturer's written installation instructions for the materials specified in this Section.

C. Product Substitution: The specified corrosion protection system is the minimum standard of quality for this project. Equivalent materials of other manufacturers may be substituted only by approval of Engineer. Requests for material substitutions shall be in accordance with requirements of the project specification.

1. All Contractors must provide pricing based on the compliant system of Epoxytec Company in the Base Bid. Other approved coating manufacturer system, if provided, will be shown in the Bid Schedule as Additive Bid Item as an ADD or DEDUCT to overall Base Bid.
2. Manufacturers of "or equal" products shall provide direct property comparison with the materials specified in addition to complying with all other requirements of these Specifications. "Or equal" products shall employ the same generic materials and system components as the Structural Epoxy lining specified. "Or equal" products shall provide same intent by description and equivalent performance as the specified Structural Epoxy lining to protect against H2S and seal from I&I.
3. "Or equal" products' manufacturer must provide documentation supporting product's success and history in severe wastewater environments for at least ten (10) years; must also provide samples of cured material covering at least one (1) square foot of surface, at the specified thickness; and must provide written repair instruction and a list of materials should a repair be needed in the future.
4. Bidders desiring to use ultra-high build, structural lining other than those specified shall submit proposed system with their proposal at the time of bid, together with the information required herein, and indicate the sum which will be deducted from the base bid should alternate materials be accepted.

D. Jobsite Reports: Submit at the completion of Work

1. Daily Reports: Include surface preparation, substrate conditions, ambient conditions application procedures, lining materials applied, material quantities, material batch number(s), description of work completed and location thereof.
2. Quality Control Reports: Include all quality control testing and physical specimens.
3. Contractor shall maintain a copy of records until the expiration of the specified warranty period.

1.6 QUALITY ASSURANCE:

A. Applicator Qualifications:

1. Contractor shall be a certified Applicator by the Structural Epoxy manufacturer prior to bid date. Submit proof of Applicator certification by manufacturer to Engineer.
2. Installation equipment shall be acceptable to the Structural Epoxy manufacturer. If spraying Structural Epoxy, Applicator must utilize equipment approved by Structural Epoxy manufacturer.
3. Applicator shall establish quality control procedures and practices to monitor phases of surface preparation, storage, mixing, application, and inspection throughout the duration of the project. Contractor to provide a fulltime, on-site person whose dedicated

responsibilities will include quality control of the Structural Epoxy linings and completed manufacturing certification training.

4. Applicator's quality control procedures and practices must include the following items:
   a. Training of personnel in the proper surface preparation requirements.
   b. Training of personnel in the proper storing, mixing, and application and quality control testing of the Structural Epoxy linings.
   c. If spraying, training of personnel with the spray equipment to ensure proper film build, film quality, and ratio control.

B. Pre-Installation Conference:

1. Contractor, installer and technical representative of the corrosion protection lining manufacturer shall meet on-site with Engineer to discuss approved products and workmanship to ensure proper application of the corrosion protection lining components and substrate preparation requirements.
2. Review foreseeable methods and procedures related to the Structural Epoxy lining of coating Work including but not necessarily limited to the following:
   a. Review Project requirements and the Contract Documents.
   b. Review required submittals, both completed and yet to be completed.
   c. Review status of substrate Work, including approval of surface preparations and similar considerations.
   d. Review requirements of on-Site quality control testing and requirements for preparing Site Quality Control Report as specified herein.
   e. Review availability of materials, tradesmen, equipment and facilities needed to make progress and avoid delays.
   f. Review required inspection and testing.
   g. Review environmental conditions, other Project conditions, and procedures for coping with unfavorable conditions.
   h. Review regulations concerning code compliance, environmental protection, health, safety, fire and similar considerations.
   i. Review procedures required for the protection of the Structural Epoxy lining during the remainder of the construction period.

3. Record the discussions of the Pre-Installation Conference and the decisions and agreements or disagreements reached, and furnish a copy of the minutes to each party attending. Record any revision or changes agreed upon, reasons therefore, and parties agreeing or disagreeing with them.
4. Reconvene the conference at the earliest opportunity if additional information must be developed in order to conclude the subjects under consideration.

C. Performance Criteria: The surfaces to receive the Structural Epoxy lining shall be capable of withstanding under constant exposure to raw wastewater, permeation from hydrogen sulfide and other sewer gases, and attack from organic acids generated by microbial sources with no adverse effects. Products must have sufficient field history and accelerated laboratory testing to substantiate product viability for these exposures.

D. Source Quality Control: Provide each component of Structural Epoxy lining produced by a single manufacturer, including recommended repair mortar, repair overlay (resurfacer), base coat and topcoat materials.

E. Reference Standards: Comply with applicable provisions and recommendations of all standards listed in Section 1.4 except as otherwise shown or specified.

1.7 PRODUCT DELIVERY, STORAGE & HANDLING:

A. Delivery of Materials:
1. Deliver material in manufacturer's original, unopened and undamaged packages.
2. Clearly identify manufacturer's, brand name, contents, color, batch number, and any personal safety hazards associated with the use of or exposure to the materials on each package.
3. Packages showing indications of damage that may affect condition of contents are not acceptable.

B. Storage of Materials:
1. Materials shall be stored in accordance with manufacturer's recommendations in enclosed structures and shall be protected from weather and adverse temperature conditions. Flammable materials shall be stored in accordance with state and local codes. Materials exceeding storage life as defined by the manufacturer shall be removed promptly from the site. Store all materials only in area or areas designated by the Engineer solely for this purpose.
2. Store in original packaging under protective cover and protect from damage.
3. Stack containers in accordance with manufacturer's recommendations.

C. Handling of Materials: Handle materials in such a manner as to prevent damage to products or finishes.

1.8 JOB CONDITIONS:

A. Environmental Requirements:
1. Proceed with Work only when temperature and moisture conditions of substrates, air temperature, relative humidity, dew point and other conditions comply with the Structural Epoxy lining manufacturer's written recommendations and when no damaging environmental conditions are forecasted for the time when the material will be vulnerable to such environmental damage. Record all such conditions and include in final Site Quality Control Report.
2. Maintain substrate temperature and ambient temperature before, during and after installation above 45°F (8°C) and rising in accordance with Structural Epoxy lining material manufacturer's instructions.
3. Provide adequate ventilation during instillation and full curing periods of the Structural Epoxy lining.
4. Structural Epoxy lining shall not be applied when ambient air temperature is within 5°F (3°C) of the dew point.
5. Structural Epoxy lining shall not be applied when relative humidity is outside of material manufacturer's recommendations. Do not prepare surfaces or apply materials in rain, snow, fog, mist, or otherwise inclement weather as per material manufacturer's instructions.

B. Dust and Contaminants: Protect work and adjacent areas from excessive dust and airborne contaminates during Structural Epoxy lining application and curing. Schedule Work to avoid excessive dust and airborne contaminants.

1.9 WARRANTY:

A. Structural Epoxy lining Manufacturer shall warranty its products as free from material defects for a minimum period of ten (10) years. Provide associated Warranty Certificate.

B. Contractor shall warranty the installed Structural Epoxy lining system as free from workmanship defects for a minimum period of ten (10) years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Epoxytec, LLC.
2. Vortex (Structure Guard)
3. Raven Lining System
4. SprayRoq
5. Or Approved Equivalent

2.2 MATERIALS:

A. Contractor shall provide all accessory components, as specified or recommended by the manufacturer for optimal application of the Structural Epoxy lining system's adhesion to substrate and long-term service performance.

B. Hydraulic Water Plug:
1. Active leak control materials are to be utilized for I&I abatement, to stop leaks, running water, infiltration, and other water stop needs. Material must be a quick setting, hydraulic cement compound designed for minor patching, and as a leak stopper and water plug which stops running water and/or seepage through concrete. Materials must be designed to set rapidly, in dry powder form, with no prior mixing of water needed, directly to active leaks under hydrostatic pressure in manholes or related structures, in accordance with the manufacturer's recommendations.

C. Cementitious Repair Mortar:
1. Rapid-setting, cementitious repair mortar when concrete is deteriorated greater than a depth of 1/4-inch (6.35 mm) and when recommended by the Manufacturer to rehabilitate and restore concrete and provide level substrate for application of the protective lining. Cementitious repair mortar shall be a rapid-setting, non-shrinking resurfacing material capable of spray-transfer. Material shall have similar CLTE properties as concrete.

D. Epoxy Cementitious Resurfacer:
   1. Epoxy cementitious resurfacer shall be an epoxy-modified, aggregate reinforced material with for surfacing, patching and filling voids and bugholes in concrete. The material shall be suitable for the application down to 1/16-inch (1.6 mm) thickness and be capable of spray-transfer.
   2. Epoxy cementitious resurfacer shall exhibiting high bond strength and high mechanical strengths. Initial set time occurs early (4 hours @ 77F) to allow for Structural Epoxy coating. The Epoxy cementitious resurfacer shall not require for any further preparation or conditioning within 36 hours (at 77F) to accept epoxy topcoats.

E. Structural Epoxy Lining:
   1. Structural Epoxy shall be available in both trowel-version and spray-version to assist with various application needs or applications in limited access areas or perform any touch-ups.
   2. Structural Epoxy shall be 100% solids, highly thixotropic microfiber-reinforced, applied epoxy polycyclic polymer protective barrier material specifically designed to protect concrete and masonry surfaces in severe wastewater environments, including H2S attack, while sealing I&I.
   3. Structural Epoxy is to provide protection from H2S and seal from I&I with applied and bonded high build Structural Epoxy; Structural Epoxy film thickness specified herein is designed and intended for applied and bonded coating, delivering barrier protection lining with high mechanical strength and a reinforced film to bridge and seal against moisture vapor transmission (MVT), hydrostatic head pressure, fine root intrusion, and seal against inflow and infiltration (I&I); while protecting from effluent and H2S.
   4. Structural Epoxytec must be a verified technology of US Environmental Protection Agency's, Environmental Technology Verification Program for Infrastructure Rehabilitation Technologies (EPA ETV).
   5. Structural Epoxy shall be capable of achieving up to 375 mil. (3/8 inch) sag resistance, vertical and overhead.
   6. Structural Epoxy must have a long open recoat window without the need for abrasive or mechanical preparation for simple repair requirements.
   7. Structural Epoxy must be self-priming, able to be applied direct-to-concrete (DTC), requiring no primer.
   8. Structural Epoxy must be able to bond to saturated-surface-dry (SSD) concrete, with moisture and relative humidity tolerances up 85% and capable to fully cure underwater.

PART 3 - EXECUTION

3.1 GENERAL:

A. All work shall be in strict accordance with the specifications and recommendations including mixing, handling, storage, and application of all products as required and in accordance with manufacturer's published technical instructions, safety data sheets, including manufacturer's published PDS, design guidelines, and/or other written specifications.

B. Contractor shall provide, erect, and maintain all required hoists, scaffolding, staging and planking, and perform all access related hoisting work required to complete the Work of this Section as specified.

C. Contractor shall cover or otherwise protect finish work or other surfaces not being coated within the scope of this Section. Contractor shall erect and maintain protective tarps, enclosures and/or masking to contain debris, including dust or other airborne particles from surface preparation or application activities. This may include the use of dust or debris collection apparatus as required at no additional cost to Owner.

3.2 EXAMINATION:

A. Contractor shall examine the areas and conditions under which the Structural Epoxy coating Work is to be performed in accordance with SSPC-SP13/NACE No. 6, and notify ENGINEER in writing of conditions detrimental to the proper and timely completion of the Work.

B. Commencement of the Work of this Section shall indicate that the substrate and other conditions of installation are acceptable to the Contractor and his Applicator, and will produce a finished product meeting the requirements of the Specifications. All defects resulting from accepted conditions shall be corrected by Contractor at his own expense.

C. Stopping Active Leaks: After surface cleaning, any visible leaks or other water ingress shall be reported to the Engineer. Any water infiltration through minor leaks must be stopped using specified hydraulic water stop; should flows be aggressive, a polyurethane grout manufactured by Avanti International, Webster, TX (281-486-5600), or approved equal, or other approved method in accordance with ACI 221.1R. Surface and grouting material may require additional surface preparation prior to application of Structural Epoxy coating.

D. Prior to and during application, care should be taken to avoid exposure of direct sunlight or other intense heat source to the structure being coated. Where varying surface temperatures do exist, coating installation should be scheduled when the temperatures are falling versus rising.

3.3 PREPARATION:

A. Concrete surfaces to receive Structural Epoxy coating shall be cast with a Smooth Form Finish in accordance with ACI 301. Surfaces shall not be rubbed, sacked, troweled or otherwise finished in any manner that will obscure or cover the parent concrete surface with materials other than materials as specified in this Section.

B. Allow cast-in-place concrete to cure for a minimum of 28 days at 75°F (24°C) and with adequate air movement before installing the corrosion protection lining system.

C. All surface washing, abrasive blasting, water jetting, grinding, patching, filling and preparation shall be completed by the Applicator in accordance with the Structural Epoxy Coating Manufacturer's recommendations.

D. Substrate: Concrete surfaces to be coated shall be free of curing compounds and form release agents, laitance and foreign particles that may inhibit bonding. Prior to start of Structural Epoxy coating systems application, pre-clean as required, and inspect the substrate in accordance with SSPC-SP13/NACE No. 6, Severe Service. Surface preparation procedures shall be in accordance with NACE No. 6/SSPC-SP13 and ICRI Guideline No. 310.2. Surface preparation shall expose aggregate and obtain a uniform surface texture resembling the minimum recommended concrete surface ICRI-CSP 5 profile.

E. Level or grind concrete substrates to produce a uniform and smooth surface, including removal of all sharp edges, ridges, form fins, and other concrete protrusions.

F. Surface preparation of the substrate must be achieved immediately prior to utilizing any repair material and/or coating/lining material that will require bond to the substrate, re-inspection and/or subsequent surface preparation may need to be repeated should conditions change after initial preparation.

G. Surface preparation will be required on existing and new concrete.

H. The objective of surface preparation is to produce a surface that is suitable for application and adhesion of the specified repair materials and coating/lining material. Surfaces therefore are to be free of contaminants and loosely adhering or unsound concrete, and should provide a dry, sound, uniform substrate suitable for the application of repair and coating/lining material.

I. Structures to receive Structural Epoxy coating system must be capable of withstanding imposed loads. All oil, grease, waste and chemical contaminants must be removed from the surface of the concrete prior to preparation in accordance with NACE No. 6/SSPC-SP13. Concrete surfaces must be sound and capable of supporting the Structural Epoxy Lining system as determined by the engineer. Surface preparation requirement is to expose a sound, uniform surface texture confirming to the minimum recommended ICRI-CSP amplitude. The appropriate cementitious repair mortar or epoxy cementitious resurfacer material shall be applied to the entire, prepared surface to level surface suitable for coating.

J. Metal Application: Remove all visible contaminants per SSPC-SP1. Prepare the surfaces in accordance with SSPC/NACE surface preparation standards per the Manufacturer's instructions.

3.4 APPLICATION

A. Structural Epoxy coating systems shall be installed when ambient air and surface temperature is above 45°F. The substrate temperature shall be at least 5°F (3°C) above the dew point. Condition the material between 70-80°F (21-27°C) for 24 hours prior to use. Application when temperatures outside of this range will require written instruction from the Manufacturer and approval of the Engineer.

B. Application in direct sunlight and/or with rising surface temperatures is not advised, as this may result in blistering of the materials due to expansion of entrapped air or moisture in the concrete (induced outgassing). In such cases, it will be necessary to postpone the application until later in the day when the temperature of the substrate is falling or take precautionary steps as recommended by the Manufacturer. Concrete surfaces that have been in direct sunlight should be shaded for at least 24 hours prior to application. Consult the Manufacturer for application schedule guidelines specific to temperature conditions and possible sealer application recommendations to reduce outgassing.

C. Hydraulic Cement: Epoxytec Mortartec Hydrxx cementitious repair mortar shall be used for low pressure active leak stopping.
   1. Cure – Press firmly pre-mixed paste or dry material into place, maintaining pressure until the material begins to harden and the leak is stopped. Continue until all active leaks cease.

D. Cementitious Repair Mortar: Epoxytec Mortartec Silicate cementitious repair mortar shall be used for structural repairs or surface repairs exceeding a depth 1/4 inch (7 mm) in accordance with Manufacturer's written instructions as outlined in the product data sheet and application guide.
   1. Thickness – Minimum 1/4 inch as required to re-establish original plane.
   2. Cure – Ensure that the mortar while curing will remain moist, covered from direct sunlight, and if needed, covered by damp coverings to avoid mortar dry-out and to optimize curing.
   3. Re-blast – Mechanically abrade the surface to remove the laitance layer and to uniformly profile the surface to produce a minimum ICRI CSP 5 surface profile amplitude.

E. Epoxy Cementitious Resurfacer: Epoxytec Mortartec Ceramico epoxy cementitious resurfacer shall be used for filling voids, bugholes, static cracks and joints, and for general concrete patching, and to provide a uniform, void free surface for Epoxy Lining application.
   1. Thickness – Epoxy lining shall be applied to a minimum thickness of 1/16 inch (1.6 mm) to the entire surface.
   2. Cure - Ensure that the mortar while curing will remain moist, covered from direct sunlight, and if needed, covered by damp coverings to avoid mortar dry-out and to optimize curing.

F. Structural Epoxy Lining: Epoxytec CPP Sprayliner or Epoxytec CPP Trowel-Liner epoxy lining, Structural Epoxy coating shall be applied and in accordance with Manufacturer's written instructions as outlined in the product data sheet and application guide.
   1. Approved material shall exhibit the following physical properties:

a.	type, hybrid	Generic Type: FRP-Polymer Epoxy
b.	Solids by Volume ASTM D2697	100%
c.	Solvent (VOC) ASTM D3960	none
d.	Adhesion Strength (concrete, dry) CIGMAT CT-2/3	substrate failure
e.	Adhesion Strength (brick, wet) CIGMAT CT-2/3	substrate failure
f.	Adhesion Strength (steel) ASTM D4541	1,500+ psi
g.	Water Absorption ASTM D1653	< 0.1 g/sq.m.
h.	Acid Exposure (pH 1, H2SO4) CIGMAT CT-1	passed
i.	Tensile Strength ASTM D638	5,500+ psi
j.	Flexural Modulus ASTM D790	500,000+ psi
k.	Flexural Strength ASTM D790	4,000+ psi
l.	Compressive Strength ASTM D695	16,000+ psi
m.	Elongation ASTM D2370	4-6%
n.	Complete Cure	18 hours (77F)

   2. Lining Schedule:

Condition	Description	Tnemec Company, Inc.	
New	New structure or structure that has not been exposed to sanitary sewage. No evidence of infiltration	Mortartec Ceramico	NA
		CPP Sprayliner MH	125
A	Minimal damage. Minimal evidence of exposure to sanitary sewer gases. No evidence of infiltration	Mortartec Ceramico	NA

		CPP Sprayliner MH	125-150
B	Moderate damage such as missing mortar between bricks in brick manholes, with some exposed aggregate. Evidence of exposure to moderate amount of hydrogen sulfide. Minimal infiltration	As needed, Series 217	Repairs up to 4" deep
		Mortartec Ceramico	AS Needed
		CPP Sprayliner MH	125 - 200
C	Severe damage, such as missing bricks in brick manholes, exposed reinforcing steel. Exposure to severe amounts of hydrogen sulfide. Evidence of moderate infiltration.	As needed, Series 217	Repairs up to 4" deep
		Mortartec Ceramico	AS Needed
		CPP Sprayliner MH	125 - 250

3.5 MANHOLE CHIMNEY SEALS:

A. General
1. Manhole frame sealing includes the sealing of the frame joint area and the chimney above the cone of the manhole with either an applied internal flexible seal.
2. The contractor shall have a manufacturer's recommended expansion tool, removal tool if necessary and all other equipment/tools required to install the specified frame seals.
3. Frame sealing will be executed after the lining section is complete and coating is fully cured.

B. Materials
1. Polymer manhole chimney seals are designed to prevent leakage of water into the manhole through the frame joint area and the area above the manhole cone including all extensions to the chimney area. This typically occurs as the manhole ages, and in time undergoes vibration, impact, and movement. Therefore, polymer seals with the correct properties are often sought as a preventive measure to bridge this concern should the frame start moving beyond its original design capabilities.
2. Primer
   a. Primer is encouraged on section of metal to increase the surface bond prior to applying the elastomer.
   b. The material must be epoxy based, designed to set quickly within 15 minutes, and formulated for polyurethane bonding.
   c. Specified material(s) are listed below, or prior approved equal: Epoxytec 45 Primecoat

3. Polymer elastomer
   a. The polymer elastomer chimney seal material shall be corrosion resistant and applied to the inside wall of the entire chimney area as specified in the contract documents.
   b. The material must be a 2-component, hand-applied high build polyurethane.
   c. Approved material shall exhibit the following physical properties:
      1. Shore Hardness ASTM C92
      2. Freeze / Thaw ASTM C666
      3. Bond Durability ASTM C920-87

4. Tear Resistance ASTM D624-86
5. Ultimate Elongation ASTM D412

d. Specified material(s) are listed below, or prior approved equal: Epoxytec Uroseal 45V

3.6 FIELD QUALITY CONTROL, INSPECTION & TESTING

A. Contractor to perform the quality control procedures listed below in conjunction with the requirements of this Section.

B. Inspect all materials upon receipt to ensure that all are supplied by the approved Manufacturer.

C. Surface pH Testing: The pH of cement particles collected from the concrete substrate will be measured using pH indicating paper or pH meter. The pH testing is to be performed once every 50 square feet (5 square meters) for the first 500 square feet (46 square meters) and once every 500 square feet (46 square meters) thereafter. Acceptable pH values shall be a minimum 9.0 as measured using color indicating pH paper with readable color calibrations and a scale at whole numbers or pH meter.
   1. Collect 0.5 grams of cement paste from the surface and mix 1.0 mL of distilled or purified water into a vile; close lid and shake for 30 seconds and let mixture strand for 2 minutes.
   2. Insert the pH paper into mixture and determine pH by comparing to the scale and record or insert the pH meter into the mixture and record the stabilized pH.

D. Surface Profile: Inspect and record substrate profile (anchor pattern) at least once every 50 square feet (5 square meters). Surfaces shall be profiled equal to the CSP 5 amplitude as recommended by the coating manufacturer in accordance with ICRI Guideline 310.2 and SSPC-SP13/NACE No. 6.
   1. Replication of the concrete surface profile can also be performed at least once every 500 square feet (46 square meters) using replica putty in accordance with ASTM D7682.

E. Measure and record ambient air temperature once every two hours of each work shift using a thermometer and measure and record substrate temperature once every two hours using an infrared or other surface thermometer.

F. Measure and record relative humidity and dew point temperature every two hours of each work shift using a sling psychrometer in accordance with ASTM E 337.

G. Provide verification of correct mixing of coating materials in accordance with the Manufacturer’s instructions.

H. Inspect and record that the "pot life" of coating materials is not exceeded during installation.

I. Verify curing of the coating materials in accordance with the Manufacturer's instructions.

J. Dry-Film Thickness:
   1. Wet-Film Thickness shall be taken every 100 square feet (9 square meters) in accordance with ASTM D 4414 and recorded.
   2. The Dry-Film Thickness can be determined using a surface area calculation for material consumption.

K. High-Voltage Holiday (Spark) Testing: Upon full cure, the installed lining system shall be checked by high voltage spark detection in accordance with NACE SP0188 and the Manufacturer's printed application guide to verify a pinhole-free surface. Areas which do not pass the spark detection test shall be corrected at no cost to the Owner.

L. Contractor is responsible for keeping the Engineer informed of all progress so that Engineer may provide additional quality control at his discretion.

M. Inspection by the Engineer or others does not absolve the Contractor from his responsibilities for quality control inspection and testing as specified herein or as required by the Manufacturer's instructions.

3.7 ACCEPTANCE CRITERIA

A. All surfaces shall be prepared, applied, and tested in accordance with the specification and referenced standards herein.

3.8 ADJUSTMENTS AND CLEANING

A. At the completion of the Work, Contractor shall remove all materials and debris associated with the Work of this Section.

B. Clean all surfaces not designated to receive Structural Epoxy coating. Restore all other work in a manner acceptable to Engineer.

C. All finished Structural Epoxy coating shall be protected from damage until Final Acceptance of the Work. Structural Epoxy coating damaged in any manner shall be repaired or replaced at the discretion of Engineer, at no additional cost to Owner.

END OF SECTION 33 0138

UTILITY CONTACTS

GOODWYN MILLS CAWOOD, LLC.
WHEELER CROOK, PE - PROJECT MANAGER
TIM MITCHELL - CONSTRUCTION MANAGER
CARTER LEWIS - FIELD REPRESENTATIVE
PHONE: (334) 271-3200

TOWN OF CAMP HILL
MESSIAH WILLIAMS-COLE - MAYOR
PHONE: (256) 896-4148

NOTE: THIS LIST IS NOT ALL INCLUSIVE. CONTRACTOR IS RESPONSIBLE FOR CONTACTING APPROPRIATE UTILITIES FOR LINE LOCATIONS/INFORMATION.

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
CCTV	CLOSED-CIRCUIT TELEVISION
CIPP	CURED-IN-PLACE-PIPE
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CPP	CORRUGATED PLASTIC PIPE
DIA	DIAMETER
DI	DUCTILE IRON
DIST	DISTANCE
EL	ELEVATION
EX.	EXISTING
GIS	GEOGRAPHIC INFORMATION SYSTEM
GV	GATE VALVE
IE	INVERT ELEVATION
INV	INVERT
LAT	LATERAL
LF	LINEAR FEET
LR	LATERAL REPAIR
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
PR	POINT REPAIR
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINVYLCHLORIDE
RCP	REINFORCED CONCRETE PIPE
REQ'D	REQUIRED
RJDI	RESTRAINED JOINT DUCTILE IRON
SS	SANITARY SEWER
STD	STANDARD
TC	TERRA COTTA
TYP	TYPICAL
VCP	VITRIFIED CLAY PIPE
WM	WATER METER
WV	WATER VALVE

PROJECT NOTES

1. **GENERAL PROJECT INFORMATION:**
   - THE SEWERS, MANHOLES AND OTHER FEATURES SHOWN ON THE DRAWINGS ARE TO BE CONSIDERED APPROXIMATE LOCATIONS AND ARE FOR GENERAL INFORMATION ONLY. THE DRAWINGS DO NOT SHOW ALL OF THE HOMES AND BUSINESSES IN THE AREA OR OTHER EXISTING UTILITIES. IN ADDITION, ALL CURRENT ROADS AND CONNECTING SEWERS MAY NOT BE SHOWN. THE CONTRACTOR SHALL MAKE NECESSARY SITE INVESTIGATIONS TO DETERMINE ACTUAL LOCATIONS PRIOR TO BIDDING. THE DRAWINGS ARE BASED ON THE OWNER'S GEOGRAPHIC INFORMATION SYSTEM (GIS), SURVEY, AND PHYSICAL INFORMATION PROVIDED BY THE OWNER.
   - THE CONTRACTOR SHOULD EXPECT DISCREPANCIES BETWEEN THE DRAWINGS AND THE ACTUAL SEWER CONFIGURATIONS AND LOCATIONS. THESE DISCREPANCIES WILL BE FOUND THROUGHOUT THE WORK AND SHALL BE COORDINATED/ADDRESSED IN THE FIELD WITH THE ENGINEER/OWNER AND SHALL BE DOCUMENTED ON THE RECORD DRAWINGS.
   - THE WORK UNDER THIS CONTRACT INCLUDES CLEARING/MULCHINGS, INSTALLING CURED-IN-PLACE PIPING (CIPP), REHABILITATING AND REPLACING MANHOLES AND SEWER LINES.
   - IN SOME INSTANCES, INFORMATION ON EXISTING SEWERS IS NOT AVAILABLE AND INDICATED WITH A BLANK ON THE TABLES. THE CONTRACTOR SHALL MAKE FIELD INVESTIGATIONS AND/OR ASSUMPTIONS FOR THE UNAVAILABLE INFORMATION AS DEEMED NECESSARY WHEN DEVELOPING THEIR BID.
   - THE SEWER SEGMENTS ARE DEFINED ON THE TABLES BY A MANHOLE ID. THE DISTANCES LISTED IN THE TABLES ARE FROM THE CENTER OF THE START MANHOLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING LOCATIONS AND POSITIONS OF SERVICE LATERALS. THE CONTRACTOR IS ADVISED THAT SOME HOUSES MAY BE COMBINED INTO A SINGLE LATERAL. ALL HOUSES MUST BE ACCOUNTED FOR. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR DETERMINING ACCURATE SEWER DIAMETERS.
   - ALL WORK SHALL MEET OR EXCEED ALDOT, TALLAPPOSA COUNTY, AND THE TOWN OF CAMP HILL'S SPECIFICATIONS. THE MOST STRINGENT REQUIREMENTS SHALL TAKE PRECENDENCE.
   - THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY/ALL LICENSES AND/OR PERMITS FROM THE TOWN OF CAMP HILL.
   - WATER FROM FLUSHING, PRESSURE TESTING AND DISINFECTION WILL BE SUPPLIED BY THE OWNER AT NO COST TO THE CONTRACTOR.
   - ALL FLUSHING, PRESSURE TESTING AND DISINFECTION SHALL BE IN ACCORDANCE WITH THE TOWN OF CAMP HILL, ALDOT, AND OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) SPECIFICATIONS AND LATEST ADEM REGULATIONS. A CHART RECORDING WILL BE REQUIRED FOR PRESSURE TESTING. A COPY OF THE CHART RECORDING(S) AND DISINFECTIONS TESTING RESULTS SHALL BE PROVIDED TO THE ONSITE REPRESENTATIVE FOR DELIVERY TO THE ENGINEER.
   - THE CONTRACTOR IS ADVISED THAT ADDITIONAL SEWERS AND MANHOLES MAY BE ADDED TO THIS CONTRACT FOR REHABILITATION TO USE THE QUANTITIES IN THE BID, TO SPEND THE OWNER'S AVAILABLE BUDGET/FUNDING, AND/OR TO ADDRESS ADDITIONAL SEWER OR MANHOLE PROBLEMS THAT ARE IDENTIFIED. THE ADDED SEWERS AND MANHOLES MAY BE LOCATED ANYWHERE WITHIN THE OWNER'S SERVICE AREA. THE UNIT PRICES BID SHALL INCLUDE REHABILITATING ANY ADDED SEWERS AND MANHOLES REGARDLESS OF LOCATION, QUANTITY OR LAYOUT.
   - THIS PROJECT IS BASED ON A UNIT PRICE CONTRACT. ALL WORK DESCRIBED, SHOWN, REFERENCED, OR OTHERWISE INDICATED IN OR ON THE DRAWINGS, PROPOSAL, ADVERTISEMENT, AND SPECIFICATIONS ARE TO BE COMPLETED IN-PLACE AND SERVICEABLE ACCORDING TO THE PLANS, INSTRUCTIONS, SPECIFICATIONS, LINES, AND GRADES INDICATED ON THE PLANS AND ALL APPLICABLE STATE, FEDERAL, AND MUNICIPAL CODES AND STANDARDS. INDIVIDUAL ITEMS OF WORK THAT ARE NECESSARY TO COMPLETE THE PROJECT TO THE LINES AND GRADES, WHETHER SHOWN OR DESCRIBED IN THE PLANS AND SPECIFICATIONS, ARE TO BE CONSIDERED INCIDENTAL AND ARE THE RESPONSIBILITY OF THE CONTRACTOR.
   - THE CONTRACTOR IS EXPECTED TO CAREFULLY EXAMINE THE PLANS, PROPOSAL, AND SITE OF THE WORK. THEREFORE, IT WILL BE ASSUMED THAT THE BIDDER HAS SATISFIED HIMSELF AS TO THE CONDITIONS TO BE ENCOUNTERED IN REGARDS TO THE CHARACTER, QUALITY, AND QUANTITIES OF WORK TO BE PERFORMED AND MATERIALS TO BE FURNISHED, AND AS TO THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, AND CONTRACT. THE SUBMISSION OF A PROPOSAL BY A BIDDER WILL BE CONSIDERED PRIMA FACIE EVIDENCE THAT THE BIDDER HAS MADE SUCH AN EXAMINATION.
   - THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER OF ANY PERCEIVED CONFLICTS, AMBIGUOUS ITEMS OR DEFICIENCIES IN THE PLANS, SPECIFICATIONS, GENERAL NOTES, OR RELATED CONTRACT DOCUMENTS.
   - THE TOWN OF CAMP HILL SHALL REQUIRE A 7 WORKING DAY NOTIFICATION PRIOR TO BEGINNING WORK.
   - AS REQUIRED BY ALABAMA ACT 94-487; CALL ALABAMA LINE LOCATION CENTER, INC. (800-292-8525) TWO WORKING DAYS PRIOR TO EXCAVATING ON OR OFF R.O.W.
   - ALL EXISTING UTILITIES SHOWN ABOVE AND BELOW GROUND ARE APPROXIMATE AND ARE NOT NECESSARILY ALL THAT EXIST. THE DETERMINATION OF THE EXISTENCE AND THE LOCATION OF ALL UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGES WHICH MIGHT OCCUR FROM THE FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES. CONTRACTOR SHOULD USE EXTREME CAUTION WHEN WORKING NEAR UTILITIES.
   - THE CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING AND BRACING THE EXISTING UTILITIES AS REQUIRED TO CONSTRUCT THE IMPROVEMENTS AND KEEP THE EXISTING LINES IN SERVICE.
   - ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR ONE YEAR AFTER ACCEPTANCE BY THE TOWN OF CAMP HILL.
   - THE CONTRACTOR IS RESPONSIBLE FOR REPAIR TO PUBLIC ROADS CAUSED BY HIS ACTIVITIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MEET WITH STATE, CITY, AND COUNTY OFFICIALS TO AGREE UPON AND RECORD THE CONDITIONS OF THE ROAD BEFORE CONSTRUCTION COMMENCES.
   - PROPERTY OBSTRUCTIONS ARE TO REMAIN IN PLACE, SUCH AS HISTORICAL STRUCTURES, TREES, DRAINS, WATER OR GAS PIPES, POLES, WALLS, ETC. ARE NOT TO BE DISTURBED UNLESS NOTED AND APPROVED BY STATE HISTORIC PRESERVATION OFFICE (SHPO), ALABAMA DEPARTMENT OF TRANSPORTATION (ALDOT), ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (ADEM), ENVIRONMENTAL PROTECTION AGENCY (EPA), ETC.
   - IF ARCHAEOLOGICAL MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, THE PROCEDURES CODIFIED AT 36 CFR 800.13(B) WILL APPLY, AND THE ECONOMIC DEVELOPMENT ADMINISTRATION (EDA) AND ALABAMA HISTORICAL COMMISSION WILL BE CONTACTED IMMEDIATELY. ARCHEOLOGICAL MATERIALS CONSIST OF ANY ITEMS, FIFTY YEARS OR OLDER, WHICH WERE MADE OR USED BY MAN. THESE ITEMS INCLUDE BUT ARE NOT LIMITED TO, STONE PROJECTILE POINTS (ARROWHEADS), CERAMIC SHARDS, BRICKS, WORKED WOOD, BONE, AND STONE, METAL, AND GLASS OBJECTS.
   - THE ONSITE REPRESENTATIVE WILL HAVE ON HAND AT ALL TIMES: APPROVED PLANS AND PROJECT MANUAL STAMPED BY THE ENGINEER, TRAFFIC CONTROL PLANS, EROSION CONTROL PLANS, AND CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN (CBMPP).
   - SITE SECURITY WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
   - IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE AND REPLACE FENCING, SIGNS, MAILBOXES, ETC TO ORIGINAL CONDITION OR BETTER WHERE REQUIRED. ALL COST FOR THIS WORK SHALL BE A SUBSIDIARY OBLIGATION OF THE WORK AND INCLUDED IN THE TOTAL PRICE BID.
   - THE CONTRACTOR IS REQUIRED TO DEVELOP AN AS-BUILT SET OF DRAWINGS AFTER PROJECT CONSTRUCTION. THE COMPLETE AS-BUILT MAP WILL CONTAIN ALL INSTALLED LINES, WITH INVERTS, CLEANOUTS, NORTHING AND EASTING COORDINATES OF ALL INSTALLED MANHOLES AND AIR RELEASE VALVES IN ALABAMA STATE PLANE COORDINATE SYSTEM, MANHOLE RIM ELEVATIONS AND PIPE IN/OUT INVERT ELEVATIONS TIED TO NGS DATUM, SIZE AND SLOPE OF SEWER PIPE BETWEEN MANHOLES, PAVEMENT PATCHES, ASPHALT OVERLAY, CONCRETE FLUME, INLETS, ETC., AND CONNECTIONS WITH REFERENCE DISTANCES TO PERMANENT ABOVE GROUND STRUCTURES. THE COMPLETE AS-BUILT MAP SHALL CONTAIN ALL INFORMATION IN THE TABLES ON THE PLAN DRAWINGS AND ANY MANHOLES OR SEWER LINES THAT MAY BE FOUND OR ADDED DURING CONSTRUCTION. THE TABLES SHALL BE COMPLETELY AND ACCURATELY FILLED IN ON THE AS-BUILT DRAWING.

2. **SEWER CLEANING AND CCTV INSPECTION:**
   - CONTRACTOR SHALL USE EXTREME CAUTION WHEN CLEANING SEWERS TO PREVENT STRUCTURALLY DAMAGED SEWERS AND THE OLDER SEWERS FROM COLLAPSING. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY CLEANING OR TELEVISION INSPECTION EQUIPMENT TRAPPED BY COLLAPSED SEWERS. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EXISTING HOMES CAUSED BY CLEANING OPERATIONS. ANY SPILLS SHALL BE CLEANED UP IMMEDIATELY. ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONCERNS PRIOR TO CLEANING SEWERS. THE CONTRACTOR'S UNIT PRICE FOR CLEANING AND TELEVISING THE EXISTING SEWERS SHALL INCLUDE COSTS FOR COMPLETE CLEANING, ROOT AND GREASE REMOVAL, SILT/SAND REMOVAL AND TUBERCULATION REMOVAL, REGARDLESS OF THE SEVERITY.
   - THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING VIDEO INSPECTIONS AND TAKING PHOTOGRAPHS OF THE ENTIRE PROJECT AREA (INCLUDING SURFACE SITE CONDITIONS AND CCTV DOCUMENTATION) PRIOR TO PERFORMING ANY WORK AS THE CONTRACTOR DEEMS NECESSARY. THE INSPECTIONS SHALL BE NARRATED TO DOCUMENT LOCATIONS AND DATES OF THE VIDEO INSPECTIONS. THE PHOTOGRAPHS SHALL BE DATE STAMPED.
   - THE PURPOSE OF THE INSPECTIONS AND PHOTOGRAPHS SHALL BE TO DOCUMENT THE PRE-CONSTRUCTION CONDITIONS FOR COMPARISON WITH THE FINAL RESTORATION WORK AND WITH ANY IMPACTS TO PROPERTY/ROADS THAT OCCUR DURING THE CONSTRUCTION. IF THE CONTRACTOR FAILS TO PERFORM THOROUGH AND COMPLETE INSPECTIONS AND PHOTOGRAPHS, AND THE OWNER OR ENGINEER RECEIVES COMPLAINTS ON THE FINAL RESTORATION OR IMPACTS TO ROADS OR PROPERTY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL ADDITIONAL RESTORATION AND REPAIRS AS NECESSARY TO COMPLETELY RESOLVE THE COMPLAINT/ISSUE AT NO ADDITIONAL COST TO THE OWNER.

3. **CIPP INSTALLATION:**
   - ALL SEWERS SHOWN ON THE PLANS AND LISTED IN THE TABLES SHALL BE LINED WITH CIPP AS SPECIFIED UNLESS DIRECTED OTHERWISE BY THE ENGINEER. THE CIPP SHALL BE ONE OF THE APPROVED PRODUCTS SPECIFIED. CCTV INSPECTION SHALL BE USED TO CONFIRM THE SEWERS CAN BE LINED. THE CONTRACTOR SHALL IDENTIFY ANY REQUIRED POINT REPAIRS NEEDED PRIOR TO CIPP INSTALLATION DURING THE PRE-REHABILITATION CCTV INSPECTION AND SUBMIT RECOMMENDATIONS TO THE ENGINEER FOR REVIEW AS SPECIFIED.
   - CONTRACTOR SHOULD USE EXTREME CARE WHEN INSTALLING LINERS THROUGH OLD MANHOLES. ANY DAMAGE CAUSED SHALL BE PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. IF THE CONTRACTOR HAS TO REMOVE THE FRAME AND COVER IN ORDER TO INSTALL THE LINER, THE FRAME SHALL BE RESET IN ACCORDANCE WITH THE OWNER'S STANDARD DETAILS AND REQUIREMENTS AT NO ADDITIONAL COST TO OWNER.
   - LINER PIPES SHALL BE TERMINATED IN THE MANHOLES. THE INVERT OF EACH MANHOLE SHALL BE COATED WITH AN APPROVED GROUT TO RAISE THE INVERT ELEVATION TO MATCH THE LINED PIPES AND TO PROVIDE A SMOOTH UNIFORM FLOW CHANNEL THROUGH THE MANHOLE. A CONSTANT SLOPE SHALL BE PROVIDED FROM THE INLET TO OUTLET SEWERS. THE CIPP MANHOLE CONNECTION SHALL ALSO BE SEALED WITH A WATER-STOP AND NON-SHRINK GROUT AS SPECIFIED. THE ENTIRE AREA AND VOIDS BETWEEN AND AROUND THE CIPP MANHOLE CONNECTION SHALL BE COMPLETELY FILLED AND COATED WITH A NON-SHRINK GROUT TO PROVIDE A LEAK-TIGHT CONNECTION. IN SOME SITUATIONS, INJECTION GROUTING MAY BE REQUIRED TO COMPLETELY SEAL THE CONNECTION. THE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE FOR CIPP.
   - IN SOME SITUATIONS, WHERE SPECIFICALLY APPROVED BY THE ENGINEER/OWNER, WHEN THE CONTRACTOR LINES MULTIPLE SEGMENTS AT ONE TIME, THE CONTRACTOR SHALL LEAVE THE LINER THROUGH THE INTERMEDIATE MANHOLES TO SERVE AS THE INVERT CHANNEL. IN THESE INSTANCES, THE TOP ONE-HALF OF THE LINER SHALL BE NEATLY REMOVED, AND THE VOID BEHIND THE LINER PIPE SHALL BE INJECTED WITH AN APPROVED PUMPABLE GROUT AND THEN FURTHER FILLED AND CAPPED WITH NON-SHRINK GROUT. THE NON-SHRINK GROUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK. THE ENGINEER/OWNER MUST APPROVE EVERY LOCATION THAT THE CIPP WILL REMAIN IN THE MANHOLES. THE ENGINEER/OWNER MAY ALSO REQUIRE THAT CIPP BE LEFT IN CERTAIN MANHOLES EVEN THOUGH NOT PLANNED BY THE CONTRACTOR. THE MAJORITY OF THESE SITUATIONS WILL LIKELY OCCUR ON THE LARGER DIAMETER PIPES.
   - ALL ACTIVE SERVICE LATERALS SHALL BE RECONNECTED TO THE CIPP VIA AN INTERNAL REMOTE CUTTER AFTER LINER INSTALLATION. OPENINGS FOR SERVICES SHALL BE 100% OF THE EXISTING LATERAL PIPE DIAMETER. THE ENTIRE SERVICE LATERAL OPENING SHALL BE SMOOTH AND FREE OF BURRS. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE WHICH SERVICES ARE ACTIVE. THE CONTRACTOR SHALL PERFORM DYE TESTS AND/OR FLUSH TESTS WHILE THE TELEVISION INSPECTION IS BEING PERFORMED TO VIEW EACH LATERAL CONNECTION DURING THE TESTS. ALL COSTS ASSOCIATED WITH THE DYE AND FLUSH TESTS SHALL BE INCLUDED IN THE UNIT PRICES FOR CLEANING AND TELEVISING EXISTING SEWERS. THE CONTRACTOR SHALL SCHEDULE THE WORK WHEN PROPERTY OWNERS ARE HOME SO THAT THE DYE TEST CAN BE PERFORMED.
   - THERE MAY BE MANHOLES THAT ARE NOT CALLED OUT IN THE TABLES THAT ARE DROP MANHOLES. EXISTING DROPS SHALL NOT BE LINED BUT SHALL BE FULLY OPENED AND BRUSHED SMOOTHLY AFTER LINER INSTALLATION. THE COST OF THE OPENING DROP CONNECTIONS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CIPP.

4. **MANHOLE REHABILITATION:**
   - ALL MANHOLES SHOWN ON THE PLANS AND LISTED IN THE TABLES SHALL BE SPRAYED WITH A MATERIAL AS SPECIFIED UNLESS DIRECTED OTHERWISE BY THE ENGINEER. THE MANHOLE REHABILITATION MATERIALS AND METHODS SHALL BE AS SPECIFIED. IF ADDITIONAL HYDROGEN SULFIDE CORROSION PROTECTION IS DEEMED NECESSARY, THE ENGINEER WILL DIRECT THE CONTRACTOR TO INSTALL EPOXY COATING.
   - THE CONTRACTOR SHALL CLEAN EACH MANHOLE TO BE COATED AND SHALL DISPOSE OF ANY RESULTING MATERIAL. THE CLEANING SHALL BE PERFORMED USING A HIGH POWER JET WASH AT A MINIMUM OF 3,500 PSI. THE NOZZLE OF THE POWER WASHER SHALL BE A MAXIMUM OF 4 INCHES FROM THE WALL DURING CLEANING. ALL DUST, BIOLOGICAL GROWTHS, GREASE, OIL, PAINT OR ANY OTHER SURFACE CONTAMINANTS SHALL BE REMOVED. ROOTS SHALL BE REMOVED MANUALLY BY CUTTING THE ROOTS FROM INSIDE THE MANHOLE.
   - THE CONTRACTOR SHALL CONDUCT A VISUAL INSPECTION OF EACH MANHOLE AFTER IT IS CLEANED. ALL ACTIVE HYDROSTATIC LEAKS SHALL BE PLUGGED OR SEALED WITH AN APPROVED GROUT COMPATIBLE WITH EPOXY LINING. INJECTION GROUTING MAY BE REQUIRED TO SEAL ACTIVE LEAKS. CONTRACTOR SHALL SMOOTH OUT ANY ROUGH UNEVEN AREAS ON WALLS, BENCHES OR INVERTS WHERE NEEDED PRIOR TO SPRAY APPLICATION.
   - THE CONTRACTOR SHALL NOTIFY ALL HOMEOWNERS THAT DISCHARGE DIRECTLY TO THE MANHOLE BEING REHABILITATED A MINIMUM OF 72 HOURS IN ADVANCE, GIVING THE DATE, START TIME, AND ESTIMATED COMPLETION TIME.
   - THE CONTRACTOR SHALL BYPASS SEWAGE FLOWS DURING THE WORK AS SPECIFIED. THE CONTRACTOR SHALL FURNISH AND PLACE STRUCTURAL EPOXY LINING IN EACH MANHOLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING ALL ADDITIONAL REQUIREMENTS.

5. **EMERGENCY WORK:**
   - THE OWNER MAY HAVE EMERGENCY SITUATIONS (SUCH AS SEWER OVERFLOWS OR BACKUPS) THAT ARISE DURING THIS CONTRACT WHICH MAY REQUIRE IMMEDIATE SEWER REHABILITATION AND MAY BE ADDED TO THIS CONTRACT. THE CONTRACTOR WILL BE EXPECTED TO PROVIDE SERVICES TO REPAIR THESE EMERGENCY SITUATIONS. THE EMERGENCY WORK MAY BE LOCATED ANYWHERE IN THE OWNER'S SERVICE AREA.
   - THE ENGINEER WILL NOTIFY THE CONTRACTOR OF THE EMERGENCY SITUATIONS. THE CONTRACTOR SHALL IMMEDIATELY TERMINATE WORK ON THE CURRENT WORK AND PROCEED TO THE EMERGENCY WORK. THE CONTRACTOR SHALL NOT BE DUE ANY ADDITIONAL MONEY FOR MOBILIZING TO PERFORM THE EMERGENCY WORK BUT MAY BE GRANTED ADDITIONAL CONTRACT TIME IF REQUESTED BY THE CONTRACTOR IN WRITING AND APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL BE PAID FOR THE EMERGENCY WORK AT THE UNIT PRICES BID. THE CONTRACTOR SHALL BEGIN WORK ON THE EMERGENCY SITUATION WITHIN TWO WORKING DAYS FROM RECEIVING THE WORK, AND REHABILITATION SHALL BEGIN WITHIN FOUR WORKING DAYS FROM RECEIVING THE WORK.

6. **ACCESS TO THE PROJECT SITES:**
   - THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ACCESSING THE SEWERS AND MANHOLES TO PERFORM THE WORK, INCLUDING DETERMINING ACCESS REQUIREMENTS AND DEVELOPING ALTERNATE ACCESS POINTS AS REQUIRED, REMOVING AND REPLACING MOVEABLE OBSTACLES (SUCH AS FENCES) TO EQUAL CONDITIONS, NEGOTIATING WITH PROPERTY OWNERS, AND RESTORING ALL AREAS DISTURBED BY THE WORK TO EQUAL OR EXCEED PRE-CONSTRUCTION CONDITIONS. CONCRETE SURVEY MARKERS AND ALL OTHER SURVEY MARKERS LOCATED ON R.O.W. ARE NOT TO BE DISTURBED. ANY PROPERTY CORNERS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY A LICENSED SURVEYOR AT CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL SUBMIT THEIR PROPOSED PLAN FOR ACCESSING THE SEWERS AND MANHOLES AS REQUESTED BY THE ENGINEER. THE PROPOSED PLAN SHALL BE DETAILED AND SHALL DEFINE EACH ACCESS POINT. THE CONTRACTOR SHALL MODIFY THE PLAN AS REQUIRED BY THE ENGINEER. THE COSTS FOR ACCESSING THE SEWER SHALL BE INCLUDED IN THE VARIOUS UNIT PRICES BID. THE UNIT COSTS SHALL INCLUDE ANY AND ALL ACCESS TO THE SEWER.
   - ACCESS SHALL BE ALONG THE EXISTING SEWER EASEMENTS OR WITHIN THE EXISTING ROAD RIGHT-OF-WAYS AND WORK SHALL BE MAINTAINED WITHIN THE EASEMENTS AND RIGHT-OF-WAYS UNLESS OTHERWISE APPROVED BY THE INDIVIDUAL PROPERTY OWNERS AND/OR THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NEGOTIATING WITH PROPERTY OWNERS FOR SUCH ALTERNATE ACCESS AND SHALL PAY ANY AND ALL COSTS ASSOCIATED WITH SUCH ALTERNATE ACCESS AS SPECIFIED ABOVE. ALL SUCH NEGOTIATIONS WITH PROPERTY OWNERS SHALL BE IN WRITING, AND COPIES OF THE AGREEMENTS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO USING THE ACCESS. ANY PROPERTY INFORMATION SHOWN IS FOR GENERAL INFORMATION AND MAY NOT BE THE MOST RECENT OWNERSHIP ON RECORD.
   - THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING THE NECESSARY RAILROAD PERMIT FROM NORFOLK SOUTHERN TO ACCESS THEIR RAIL SERVICE RIGHT-OF-WAY, IF SUCH ACCESS IS REQUIRED TO REACH SEWERS OR MANHOLES IN ORDER TO COMPLETE THE WORK OUTLINED IN THIS PROJECT.

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ISSUE	DATE
BID SET	02.12.2025
ADDENDUM NO. 1	03.06.2025

DRAWN BY: KMM
DESIGNED BY: KMM
CHECKED BY: JWC

2022 CWSRF SANITARY SEWER REHAB. & REPLAC.
TOWN OF CAMP HILL, ALABAMA

CWSRF # CS010915-01
GMC # CMGM220156(3)

PROJECT NOTES & SYMBOL LEGEND

G-002

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PROJECT NOTES

7. MAINTENANCE OF FLOW IN EXISTING SEWER:

- THE CONTRACTOR IS RESPONSIBLE FOR HANDLING AND ACCOMMODATING ALL EXISTING WASTEWATER FLOWS DURING THE WORK. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT, FOR APPROVAL BY THE ENGINEER, A DETAILED PLAN OF THE METHOD THE CONTRACTOR PROPOSES TO MAINTAIN THE EXISTING FLOW DURING CONSTRUCTION. THE PLAN MUST INCLUDE A PROVISION FOR HANDLING THE EXISTING PEAK FLOW BY PUMPING. THE PEAK FLOW SHALL BE CONSIDERED THE EXISTING PIPE FLOWING FULL, WHICH IS HIGHLY POSSIBLE DURING RAIN EVENTS. WHEN PUMPING IS USED, AN IDENTICAL STANDBY PUMP(S) SHALL BE ON SITE IN THE EVENT OF FAILURE OF THE PRIMARY PUMP(S). PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE INDIVIDUAL UNIT PRICES BID.
- IF, AT ANY TIME DURING CONSTRUCTION, EFFLUENT FROM THE EXISTING SEWER IS NOT FULLY CONTAINED BY THE BYPASS SYSTEM, GRAVITY SERVICE WILL BE RESTORED AND WORK SHALL BE SUSPENDED UNTIL THE PROBLEM IS RESOLVED TO THE SATISFACTION OF THE ENGINEER. THIS INCLUDES WASTEWATER FLOWING INTO TRENCHES DURING EXCAVATION WORK. SEWER SYSTEM OVERFLOWS WILL NOT BE TOLERATED. ALL FINES IMPOSED ON THE OWNER AND ASSOCIATED WITH OVERFLOWS CAUSED BY THE CONTRACTOR'S WORK SHALL BE PAID BY THE CONTRACTOR.

8. TRAFFIC CONTROL:

- TRAFFIC CONTROL PLAN SHALL BE IN ACCORDANCE WITH PART 6 OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) LATEST EDITION. ACCESS SHALL BE MAINTAINED TO HOMES, RESIDENCES AND BUSINESSES IN THE AREA AT ALL TIMES.
- SAFETY PRECAUTIONS INSTITUTED ALONG ALDOT, TOWN OF CAMP HILL, AND TALLAPOOSA COUNTY RIGHT-OF-WAYS SHALL CONFORM TO THE REQUIREMENTS OF THE GOVERNING DOT AT ALL TIMES.
- ALL COSTS FOR TRAFFIC CONTROL SHALL BE INCLUDED IN THE TOTAL PRICE BID. IF SEWERS IN MAJOR THOROUGHFARES ARE ADDED TO THE CONTRACT THAT REQUIRE SUBSTANTIAL TRAFFIC CONTROL, ROAD CLOSURES AND DETOURS, SUCH TRAFFIC CONTROL WILL BE CONSIDERED AN ADD-ON COST TO THE CONTRACT AS AGREED TO BY THE ENGINEER/OWNER.

9. EROSION CONTROL:

- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO ANY EXISTING LANDSCAPING AND TREES, UNLESS APPROVED BY THE ENGINEER. ANY LANDSCAPING (SHRUBS, FLOWERS, ORNAMENTAL GRASS, ETC.) DISTURBED DURING PROJECT CONSTRUCTION ACTIVITIES SHALL BE REPLACED, RE-SODDED, AND/OR TRANSPLANTED TO THE SATISFACTION OF THE OWNER. ALL RELATED COSTS FOR SUCH WORK SHALL BE INCLUDED IN THE BID PRICE. NO TREES SHALL BE CUT/REMOVED WITHOUT WRITTEN PERMISSION FROM THE PROPERTY OWNER. ALL RESIDENTIAL YARDS THAT ARE DISTURBED SHALL BE RESODDED TO MATCH EXISTING SPECIES OF GRASS IN EACH YARD.
- A CBMPP SHALL AT MINIMUM RESTORE ALL EXPOSED AREAS TO ORIGINAL OR BETTER CONDITION WITH A GOOD STAND OF GRASS AND/OR SOD. SILT FENCE, WATTLES, EROSION EELS, AND ANY OTHER EROSION CONTROL ITEMS NEEDED SHALL BE USED TO PREVENT EROSION.
- THE CONTRACTOR SHALL APPLY SEED AND MULCH PRIOR TO RAIN EVENTS IN DISTURBED AREAS IN ORDER TO MINIMIZE EROSION. DISTURBED AREAS THAT ARE INACTIVE FOR 14 DAYS OR MORE SHALL BE SEEDED AND MULCHED WITH NATIVE GRASSES AND MUST BE ACCORDING TO ALDOT SPECIFICATIONS.
- A 4" LAYER OF TOPSOIL SHALL BE PLACED ON ALL DISTURBED AREAS TO BE VEGETATED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SOLID WASTE (I.E., WOOD, STUMPS, ETC.) TO BE DISPOSED OF AND MUST BE IN ACCORDANCE WITH THE APPLICABLE REGULATIONS OF ADEM.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY TEMPORARY DIVERSION OF RUNOFF WATER, AS REQUIRED TO FACILITATE CONSTRUCTION OR AS DIRECTED BY ALDOT OR THE ENGINEER. THIS TEMPORARY DIVERSION OF WATER IS CONSIDERED INCIDENTAL TO THE BID.
- COMBINATIONS OF SILT FENCING, WATTLES AND EROSION SHALL BE USED AS PROJECT CONDITIONS WARRANT TO PREVENT SEDIMENT RUNOFF FROM REACHING CREEKS, STREAMS, AND OTHER SURFACE WATER ADJACENT TO AND WITHIN THE PROJECT AREA IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.
- ALL STORM DRAINAGE INLETS, JUNCTION BOXES AND PIPES SHALL BE PROTECTED FROM SEDIMENT AT ALL TIMES.
- THE AMOUNT OF AREA TO BE DISTURBED DURING CONSTRUCTION OF THIS PROJECT IS APPROXIMATELY 8 ACRES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A NPDES PERMIT. THE OWNER HAS ELECTED TO UTILIZE GOODWYN MILLS CAWOOD, LLC FOR THE PREPARATION OF THIS PERMIT. CONTACT BRADLEY BALDWIN OR ELIZABETH MCDANIEL (205) 879-4462 TO SCHEDULE AND COORDINATE THIS WORK. THERE IS AN ALLOWANCE IN THE CONTRACT TO COVER ALL COSTS ASSOCIATED WITH ACQUISITION OF THE PERMIT. DEVELOPMENT OF THE CONSTRUCTION BEST MANAGEMENT PRACTICES (CMBP) PLAN, REQUIRED INSPECTIONS, AND TERMINATION OF THE PERMIT. IF THE CONTRACTOR DOES NOT COMPLETE THE PROJECT BY THE WRITTEN COMPLETION DATE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INSPECTION COST BEYOND THE WRITTEN COMPLETION DATE.

10. CLEANUP WORK:

- THE CONTRACTOR SHALL COMPLETELY CLEAN UP THE WORK SITE AT THE END OF EACH DAY. CONTRACTOR IS TO CLEAN UP STREETS IMMEDIATELY AFTER CONCRETE OR OTHER DELIVERY TRUCKS LEAVE THE SITE. MUD AND DEBRIS ARE TO BE KEPT OFF ALL PUBLIC ROADS, INLETS, DITCHES, ETC.
- ALL EQUIPMENT LEFT OVERNIGHT SHALL BE KEPT AT A DESIGNATED STAGING/LAYDOWN YARD. THE CONTRACTOR IS RESPONSIBLE FOR PRODUCING THE NECESSARY STAGING/LAYDOWN YARD(S). ALL EQUIPMENT LEFT OVERNIGHT SHALL BE NO CLOSER THAN 30FT FROM EDGE OF PAVEMENT.
- FUEL TANKS SHALL NOT BE STORED ON THE RIGHT-OF-WAY OVERNIGHT. VEHICLES TRANSPORTING FUEL, CHEMICAL, FERTILIZERS, ETC. ONTO THE RIGHT-OF-WAY SHALL NOT BE LEFT UNATTENDED.
- ALL TRENCHES SHALL BE BACKFILLED, SEEDED, AND MULCHED AT THE END OF EACH DAYS WORK. ABSOLUTELY NO PITS OR TRENCHES SHALL BE LEFT UNFILLED AND/OR UNCOVERED OVERNIGHT.
- ALL FILL MATERIAL OR ONSITE DEBRIS DEPOSITED IN THE RIGHT-OF-WAY SHALL BE REMOVED PRIOR TO ISSUANCE OF CERTIFICATE OF SUBSTANTIAL COMPLETION.

EXISTING UTILITY LEGEND

EXISTING BENDS	
EXISTING COMMUNICATION BOX	C
EXISTING CONCRETE MONUMENT	
EXISTING FIBER OPTIC MARKER	F
EXISTING FIRE HYDRANT ASSEMBLY	
EXISTING GAS LINE MARKER	
EXISTING GUY WIRE	
EXISTING IRON PIN	
EXISTING LIGHT POLE	
EXISTING MAILBOX	
EXISTING NAIL SET	
EXISTING POWER POLE	
EXISTING RAILROAD SPIKE	
EXISTING REBAR	
EXISTING SANITARY CLEANOUT	CO
EXISTING SEWER MANHOLE	S
EXISTING SIGN	
EXISTING TELEPHONE PEDESTAL	T
EXISTING WATER MARKER	W
EXISTING WATER VALVE	W
EXISTING CULVERT	
EXISTING EASEMENT	
EXISTING ELECTRICAL: OVERHEAD	OHE
EXISTING ELECTRICAL: UNDERGROUND	UGE
EXISTING FENCE: CHAIN LINK	
EXISTING FENCE: WOOD	
EXISTING GAS MAIN	GAS
EXISTING GUARDRAIL	
EXISTING R.O.W.	
EXISTING SEWER FORCE MAIN	FM
EXISTING SEWER GRAVITY MAIN	SS
EXISTING WATER MAIN	W
EXISTING ASPHALT	
EXISTING CONCRETE PAVEMENT/SIDEWALK	
EXISTING DIRT	
EXISTING GRAVEL	

REQUIRED UTILITY LEGEND

REQUIRED BENDS/FITTINGS	
REQUIRED EROSION EEL	
REQUIRED INLET PROTECTION	
REQUIRED SANITARY CLEANOUT	
REQUIRED SANITARY MANHOLE	
REQUIRED GRAVITY SEWER MAIN	SS
REQUIRED SILT FENCE	
REQUIRED SEWER FORCE MAIN	

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DRAWN BY:	KMM
DESIGNED BY:	KMM
CHECKED BY:	JWC

2022 CWSRF SANITARY
SEWER REHAB. & REPLAC.
TOWN OF CAMP HILL, ALABAMA

CWSRF # CS010915-01
GMC # CMGM220156(3)

PROJECT NOTES & SYMBOL LEGEND

G-003

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BASE BID - MANHOLES

Existing		Work to be Performed												
Manhole Number	Depth (ft)	Locate Existing Manhole (EA)	Pre-Con Manhole Inspection w/ Report (Incl. GIS Collection)	Excavate Existing Manhole (EA)	Manhole Height Adjustment (Incl. Ring & Cover Reset) (VF)	48" Manhole Ring & Cover (EA)	Manhole Rehabilitation (VF)	48" Diameter Manhole w/ Ring & Cover (4'-6') (EA)	48" Diameter Manhole w/ Ring & Cover (6'-8') (EA)	48" Diameter Manhole w/ Ring & Cover (8'-10') (EA)	48" Diameter Manhole w/ Ring & Cover (10'-12') (EA)	48" Diameter Manhole w/ Ring & Cover (12'-14') (EA)	Remove & Dispose of Existing Manhole (EA)
1000		1	1										
1001		1	1										
1002		1	1										
1003		1	1										
1004		1	1										
1005		1	1										
101	7.7					1							
101A		1	1										
102	8.3					1	8.3						
102A	9.4			1	1								
102B	10.3												
102C	7.1												
102D	9.4												
103	8					1	8						
104	9.3					1	9.3						
104A	9.1												
104B	7.9									1			1
104C	4.5												
105	19.6					1							
106	9.7					1	9.7						
107	6.9					1							
108	9.8					1							
109	7.8												
509	6.1								1				1
509A	4.9							1					1
510	3.3							1					1
510A	5.6							1					1
510B	12.9											1	1
511	3.5							1					1
512	6.1					1	6.1						
513	6.7						6.7						
514	5.1						5.1						
514A		1	1										
514B		1	1										
515	8.6					1	8.6						
515A	3.9			1	2.1		3.9						
515B		1	1										
515C		1	1										
515D	5.3							1					1
515E		1	1										
515F							6						
516	5.1						5.1						
517	8.7									1			1
518							10						
519	22.4						22.4						
520	19.7												
520A											1		1
520B		1	1										
521	7.2					1	7.2						
522	6.4					1							
523	6.7								1				1
524	3.7			1	0.3		3.7						
57	6.4								1				1
57A		1	1										
57B	5.4							1					1
58	9.3						9.3						
58A	5.6							1					1
58B	8						8						
59							2						
59A							3						
60	4.2						4.2						
601							5						
602	3.8						3.8						
603	8.8					1							
604	6												
605	6.6												
605A		1	1										

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1" 0" 1"

ISSUE	DATE
BID SET	02.12.2025
ADDENDUM NO. 1	03.06.2025

DRAWN BY: KMM
DESIGNED BY: KMM
CHECKED BY: JWC

2022 CWSRF SANITARY SEWER REHAB. & REPLAC.
TOWN OF CAMP HILL, ALABAMA

CWSRF # CS010915-01
GMC # CMGM220156(3)

SUMMARY OF QUANTITIES
BASE BID - MANHOLES

G-005

DRAWING FILE: T:\Montgomery\CMGM Dwg\Wilcox County Water Authority\180060 - CS24 Waterline Relocation\vPlans\C2(0) - NOTES & LEGEND.dwg

BASE BID - MANHOLES

Existing		Work to be Peformed											
Manhole Number	Depth (ft)	Locate Existing Manhole (EA)	Pre-Con Manhole Inspection w/ Report (Incl. GIS Collection)	Excavate Existing Manhole (EA)	Manhole Height Adjustment (Incl. Ring & Cover Reset) (VF)	48" Manhole Ring & Cover (EA)	Manhole Rehabilitation (VF)	48" Diameter Manhole w/ Ring & Cover (4'-6') (EA)	48" Diameter Manhole w/ Ring & Cover (6'-8') (EA)	48" Diameter Manhole w/ Ring & Cover (8'-10') (EA)	48" Diameter Manhole w/ Ring & Cover (10'-12') (EA)	48" Diameter Manhole w/ Ring & Cover (12'-14') (EA)	Remove & Dispose of Existing Manhole (EA)
606	10.8												
606A		1	1										
607	5.4												
607A		1	1										
607B		1	1										
608	5.5												
609		1	1										
61	3						3						
610	6.4												
611	6.5												
611A		1	1										
612	13												
613	8.8					1							
614	5.5						5.5						
615	6.8						6.8						
62	5.5												
63	4.9												
64	5.4												
65						1	5						
67	5.1					1							
68						1	5						
69	7						7						
70	7												
700	6.7					1	6.7						
701	3.7						3.7						
702	3.1						3.1						
703							5						
704	3.9												
705	5						5						
706	6.1						6.1						
707	3.6						3.6						
71							5						
710							15						
710A	4.1							1					1
710B		1	1										
711							5						
712	4.7						4.7						
713	6.1						6.1						
715							5						
716	6						6						
717	8.5					1	8.5						
719	7.2					1							
72	4.4					1	4.4						
720	8						8						
722	3.2					1	3.2						
722A						1	4						
725	7					1	7						
725A	7.2					1	7.2						
726	4.4						4.4						
73	4.5					1	4.5						
730	4.2					1	4.2						
730A		1	1										
74	4.3						4.3						
75	8.2					1							
75A	6.8			1	2.5								
76	10.2					1	10.2						
76A	4.9												
76B	8.8					1							
76C	4.2					1	4.2						
76D		1	1										
77	6.5						6.5						
78	6.1						6.1						
79	5.6						5.6						
80							10						
81	5.2												
82	12.2						12.2						

GMC
2660 East Chase Lane, Suite 200
Montgomery, AL 36117
T 334.271.3200

1" 0" 1"

ISSUE	DATE
BID SET	02.12.2025
ADDENDUM NO.1	03.06.2025

DRAWN BY: KMM
DESIGNED BY: KMM
CHECKED BY: JWC

2022 CWSRF SANITARY SEWER REHAB. & REPLAC.
TOWN OF CAMP HILL, ALABAMA

CWSRF # CS010915-01
GMC # CMGM220156(3)

SUMMARY OF QUANTITIES
BASE BID - MANHOLES

G-006

BASE BID - SEWER LINES

Existing				Work to be Peformed														
Sewer Line Number	Length (ft)	Diameter (in)	Material	6" Sag Repair (EA)	6" Point Repair (EA)	8" Sag Repair (EA)	8" Point Repair (EA)	10" Point Repair (EA)	15" Point Repair (EA)	Various Diameter Heavy Cleaning (LF)	6" CIPP (LF)	8" CIPP (LF)	10" CIPP (LF)	15" CIPP (LF)	Replacement - 6" SDR26 PVC Gravity Sewer Main (LF)	Replacement - 8" SDR26 PVC Gravity Sewer Main (LF)	Replacement - 15" SDR26 PVC Gravity Sewer Main (LF)	Connect to Existing Manhole (EA)	Post-Con CCTV Inspection (LF)
1000	400						2			400		400				100		1	400
1001	400						2			400		400				100		1	400
1002	400						2			400		400							400
1003	400					1	2			400		400							400
1004	400					1	2			400		400							400
1005	400					1	2			400		400							400
101	109.2	8	PVC																
101A	293.1	8	PVC							293.1		293.1							293.1
102	72.9	8	PVC				1			72.9		72.9							72.9
102A	326.1	8	PVC				3			326.1		326.1							326.1
102B	167.1	8	PVC																
102C	177.7	8	PVC																
102D	160.1	8	PVC																
103	77.5	8	PVC																
104	290.8	8	PVC				1			290.8		290.8							290.8
104A	284.2	8	PVC				1			284.2		284.2							284.2
104B	339.2	8	PVC																
104C	184.8	8	PVC																
105	208.2	8	PVC / VCP							208.2		208.2							208.2
106	388.8	8	PVC / VCP																
107	214.7	8	PVC																
108	360.5	8	PVC			1				360.5		360.5							360.5
109	268.8	8	PVC				1			268.8		268.8							268.8
509	470	8	VCP													470			470
509A	342.9	8	VCP							342.9		342.9				245			342.9
510	111.2	8	VCP													111.2			111.2
510A	366.8	8	VCP													366.8			366.8
510B	466.9	8	VCP													466.9			466.9
511	101.9	8	PVC / VCP			1				101.9		101.9							101.9
512	342.7	8	PVC				1			342.7		342.7							342.7
513	156.6	8	PVC				1			156.6		156.6							156.6
514	139.7	8	PVC				1			139.7		139.7							139.7
514A	51.4	8	VCP				1			51.4		51.4							51.4
514B	241.1	8	VCP													241.1		2	241.1
515	179.7	8	VCP																
515A	44.6	8	DI / VCP																
515B	72.5	8	VCP																
515C	183	8	VCP																
515D	164.1	8	PVC				1			164.1		164.1							164.1
515E	116.7	8	PVC / DI							116.7		116.7							116.7
515F	277.2	8	PVC				1			277.2		277.2							277.2
516	306	8	PVC																
517	208.6	8	PVC																
518	216.4	8	PVC				1			216.4		216.4							216.4
519	275.1					1	2			275.1		275.1							275.1
520	195.9	8	VCP			2				195.9		195.9							195.9
520A	247.2	8	PVC / VCP			1	1			247.2		247.2							247.2
520B	55.5	8	VCP													55.5			55.5
521	321	8	PVC																
522	7.1	8	VCP																
523	725.4	8	VCP / PVC													725.4		1	725.4
524	376.2	6	VCP												376.2			1	376.2
57	419.2	6	VCP												419.2			1	419.2
57A	205.9	8	VCP			1				205.9		205.9							205.9
57B	86.5	8	VCP				2			86.5		86.5							86.5
58	37.3	8	VCP													37.3		1	37.3
58A	71.6	8	PVC													71.7		1	71.7
58B	329.6	8	PVC				1			329.6		329.6				93		1	329.6
59	292.9	6	VCP		1					292.9	292.9				80				292.9
59A	317.9	6	VCP												317.9			2	317.9
60	202.9	6	VCP							202.9	202.9				130			1	202.9
601	306.3								2	306.3				306.3			100	1	306.3
602	125.5	12	VCP						2	125.5				125.5			50	1	125.5
603	304.7	15	VCP							304.7				304.7			60		304.7
604	256.1	15	VCP							256.1				256.1			115	1	256.1
605	99.7	15	VCP							99.7				99.7					99.7
605A	116.5	15	VCP														116.5	2	116.5

GMC
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1" 0" 1"

ISSUE	DATE
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ADDENDUM NO. 1	03.06.2025

DRAWN BY: KMM
DESIGNED BY: KMM
CHECKED BY: JWC

2022 CWSRF SANITARY
SEWER REHAB. & REPLAC.
TOWN OF CAMP HILL, ALABAMA

CWSRF # CS010915-01
GMC # CMGM220156(3)

SUMMARY OF QUANTITIES
BASE BID - SEWER LINES

G-007

DRAWING FILE: T:\Montgomery\CMGM Dwg\Wilcox County Water Authority\180060 - CR24 Waterline Relocation\+Plans\C120 - NOTES & LEGEND.dwg

BASE BID - SEWER LINES

Existing				Work to be Peformed														
Sewer Line Number	Length (ft)	Diameter (in)	Material	6" Sag Repair (EA)	6" Point Repair (EA)	8" Sag Repair (EA)	8" Point Repair (EA)	10" Point Repair (EA)	15" Point Repair (EA)	Various Diameter Heavy Cleaning (LF)	6" CIPP (LF)	8" CIPP (LF)	10" CIPP (LF)	15" CIPP (LF)	Replacement - 6" SDR26 PVC Gravity Sewer Main (LF)	Replacement - 8" SDR26 PVC Gravity Sewer Main (LF)	Replacement - 15" SDR26 PVC Gravity Sewer Main (LF)	Connect to Existing Manhole (EA)	Post-Con CCTV Inspection (LF)
606	262.2	15	VCP						2	262.2				262.2					262.2
606A	136.2	10	VCP / DI / PVC					2		136.2			136.2						136.2
607	215.5	8	PVC			1				215.5		215.5							215.5
607A	187.8	8	PVC													60		1	60
607B	143.2	8	PVC				1			143.2		143.2							143.2
608	197.2	8	PVC																
609	219.8	8	PVC			1				219.8		219.8							219.8
61	144.9	6	VCP		1					144.9	144.9								144.9
610	215.3	8	PVC																
611	144.5	8	PVC																
611A	169.6	8	PVC				1			169.6		169.6							169.6
612	144.9	8	PVC							144.9		144.9							144.9
613	225.2	8	PVC				1			225.2		225.2							225.2
614	291.5	8	PVC																
615	165	8	PVC																
62	146	8	VCP													146		2	146
63	75.9	8	VCP				1			75.9		75.9							75.9
64	359.7	8	VCP			2				359.7		359.7							359.7
65	433.9	8	VCP				1			433.9		433.9				90			433.9
67	526.7	8	VCP													526.7		2	526.7
68	547.6	8	VCP													547.6		2	547.6
69	4.8	8 / 10	VCP																
70	218.4	8	VCP													218.4		2	218.4
700	168.8	6	PVC		1					168.8	168.8								168.8
701	276.8	6	PVC		1					276.8		276.8			80			1	276.8
702	86.7	8	PVC				1			86.7		86.7							86.7
703	176.4	8	PVC							176.4		176.4							176.4
704	20.4	8	PVC																
705	120.2	8	PVC																
706	147 (to SMH705)	8	PVC																
	182.8 (to SMH710)	6	VCP	1	1					182.8	182.8								182.8
707	106.2	6	VCP																
71	425.4	8	VCP													425.4		2	425.4
710	187.4	6	VCP	1	1					187.4	187.4								187.4
710A	405.5	6	VCP		3					405.5	405.5								405.5
710B	82.5	6	VCP		1					82.5	82.5								82.5
711	44.9	6	VCP																
712	122.7	6	VCP												122.7			2	122.7
713	96.3	6	VCP												96.3			2	96.3
715	272.3	6	VCP / PVC		2					272.3	272.3								272.3
716	332.9	6	VCP	1	2					332.9	332.9								332.9
717	409.1	6	VCP		1					409.1	409.1								409.1
719	334.1	8	PVC				1			334.1		334.1							334.1
72	153.9	8	VCP													153.9		2	153.9
720	59.8	8	PVC																
722	200.9	6	VCP		2					200.9	200.9								200.9
722A	190.6	6	VCP		1					190.6	190.6								190.6
725	342.1	6	VCP		2					342.1	342.1								342.1
725A	371.6	6	VCP		2					371.6	371.6								371.6
726	228.4	6	VCP												228.4			2	228.4
73	273.1	8	VCP													273.1		2	273.1
730	386.2	6	VCP												386.2			2	386.2
730A	189.5	6	VCP	1						189.6	189.6								189.6
74	221.1	8	VCP													221.1		2	221.1
75	65.6	8	VCP																
75A	198.7	8	VCP				1			198.7		198.7							198.7
76	11.1	8	VCP																
76A	217	8	VCP / PVC				1			217		217				155		1	217
76B	66.4	8	VCP / DI				1			66.4		66.4							66.4
76C	97.7	8	PVC			1				97.7		97.7							97.7
76D	313.1	8	PVC				1			313.1		313.1							313.1
77	229.4	8	PVC																
78	261.9	8	PVC																
79	297.1	8	PVC				1			297.1		297.1							297.1
80	288.8	8	PVC			1	1			288.8		288.8							288.8
81	282.3	8	PVC																
82	264.1	8	PVC																

GMC
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1" 5" 0" 1"

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ADDENDUM NO. 1 03.06.2025

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2022 CWSRF SANITARY SEWER REHAB. & REPLAC.
TOWN OF CAMP HILL, ALABAMA

CWSRF # CS010915-01
GMC # CMGM220156(3)

SUMMARY OF QUANTITIES
BASE BID - SEWER LINES

G-008

DRAWING FILE: T:\Montgomery\CMGM Dwg\Wilcox County Water Authority\180060 - CIP24 Waterline Relocation\vPlans\C2.01 - NOTES & LEGEND.dwg

ADDITIVE ALTERNATE NO. 1 - MANHOLES

Existing		Work to be Peformed											
Manhole Number	Depth (ft)	Locate Existing Manhole (EA)	Pre-Con Manhole Inspection w/ Report (Incl. GIS Collection)	Excavate Existing Manhole (EA)	Manhole Height Adjustment (Incl. Ring & Cover Reset) (VF)	48" Manhole Ring & Cover (EA)	Manhole Rehabilitation (VF)	48" Diameter Manhole w/ Ring & Cover (4'-6') (EA)	48" Diameter Manhole w/ Ring & Cover (6'-8') (EA)	48" Diameter Manhole w/ Ring & Cover (8'-10') (EA)	48" Diameter Manhole w/ Ring & Cover (10'-12') (EA)	48" Diameter Manhole w/ Ring & Cover (12'-14') (EA)	Remove & Dispose of Existing Manhole (EA)
23	6						6						
24	5.1												
25	7.1					1	7.1						
26	2.1					1							
27	6.4					1							
28	11.3					1							
29	7.9					1							
30	8.3					1							
31	7.3					1	7.3						
32	7.6												
33	12					1	12						
34	11.5					1	11.5						
35	11.6					1							
35A	9.1					1							
35B	6.4			1	3		6.4						
35C	11.3			1	3		11.3						
36	6.5					1							
37	7.7					1							
37A	8.3					1	8.3						
38	6					1							
47	5.6					1	5.6						
48	5.4												
49	5					1							
50	3.7							1					1
51							5						
52	6.6						6.6						
53	6												
54	5.6						5.6						
55	8.1						8.1						
56							8						
732	5.1						5.1						
733	5.6						5.6						
734	6.3						6.3						
736	7.4					1	7.4						
737	7.9						7.9						
737A		1	1										
738	5.9			1	2.7		5.9						
739	3.4						3.4						

ADDITIVE ALTERNATE NO. 1 - SEWER LINES

Existing				Work to be Peformed															
Sewer Line Number	Length (ft)	Diameter (in)	Material	6" Sag Repair (EA)	6" Point Repair (EA)	8" Sag Repair (EA)	8" Point Repair (EA)	10" Point Repair (EA)	15" Point Repair (EA)	Various Diameter Heavy Cleaning (LF)	6" CIPP (LF)	8" CIPP (LF)	10" CIPP (LF)	15" CIPP (LF)	Replacement - 6" SDR26 PVC Gravity Sewer Main (LF)	Replacement - 8" SDR26 PVC Gravity Sewer Main (LF)	Replacement - 15" SDR26 PVC Gravity Sewer Main (LF)	Connect to Existing Manhole (EA)	Post-Con CCTV Inspection (LF)
23	299.3	8	PVC																
24	60.0	8	PVC				1			60.0		60.0							60.0
25	241.6	8	PVC				1			241.6		241.6							241.6
26	323.2	8	PVC							323.2		323.2							323.2
27	220.5	8	PVC																
28	171	8	PVC																
29	341.3	8	PVC																
30	308.3	8	PVC																
31	317.9	8	PVC																
32	376.4	8	PVC																
33	101.2	8	PVC																
34	43.0	8	PVC				1			43.0		43.0							43.0
35	295.6	8	PVC																
35A	42.9	8	PVC				1			42.9		42.9							42.9
35B	49.9	8	PVC				1			49.9		49.9							49.9
35C	65.8	8	PVC				1			65.8		65.8							65.8
36	200.6	8	PVC																
37	433.4	8	PVC																
37A	295.7	8	PVC																
38	131.2	8	PVC																
47	419.8	8	PVC																
48	283.2	8	PVC			1				283.2		283.2							283.2
49	273.3	8	PVC							273.3		273.3				50		1	273.3
50	238.2	8	PVC				1			238.2		238.2							238.2
51	152	8	PVC			1				152		152							152
52	249.4	6	PVC		1					249.4	249.4								249.4
53	294.1	6	PVC		2					294.1	294.1								294.1
54	294.4	6	PVC		2					294.4	294.4								294.4
55	387.6	6	PVC		1					387.6	387.6								387.6
56	207	8	PVC			1				207		207							207
732	117.7	8	PVC				1			117.7		117.7							117.7
733	45.1	8	PVC																
734	202.2	8	PVC																
736	31	8	PVC																
737	229.5	8	PVC																
737A	131.2	8	PVC				1			131.2		131.2							131.2
738	113	8	PVC																
739	288.2	8	PVC																

GMC
2660 East Chase Lane, Suite 200
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1" 0" 1"
5"

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2022 CWSRF SANITARY SEWER REHAB. & REPLAC.
TOWN OF CAMP HILL, ALABAMA

CWSRF # CS010915-01
GMC # CMGM220156(3)

SUMMARY OF QUANTITIES ADD. ALT. NO. 1

G-009

DRAWING FILE T:\Montgomery\CMGM Dwg\Wilcox County Water Authority\180060 - C24 Waterline Relocation\n\Plans\C2.01 - NOTES & LEGEND.dwg

ADDITIVE ALTERNATE NO. 2 - MANHOLES

Existing		Work to be Peformed											
Manhole Number	Depth (ft)	Locate Existing Manhole (EA)	Pre-Con Manhole Inspection w/ Report (Incl. GIS Collection)	Excavate Existing Manhole (EA)	Manhole Height Adjustment (Incl. Ring & Cover Reset) (VF)	48" Manhole Ring & Cover (EA)	Manhole Rehabilitation (VF)	48" Diameter Manhole w/ Ring & Cover (4'-6') (EA)	48" Diameter Manhole w/ Ring & Cover (6'-8') (EA)	48" Diameter Manhole w/ Ring & Cover (8'-10') (EA)	48" Diameter Manhole w/ Ring & Cover (10'-12') (EA)	48" Diameter Manhole w/ Ring & Cover (12'-14') (EA)	Remove & Dispose of Existing Manhole (EA)
500	4.9												
501	12.2					1							
502A	5.6												
525	3.9						3.9						
526	4.9							1					1
527	5						5						
530	4.3						4.3						
531	10.8						10.8						
532		1	1										
533	17						17						
533A	11.8			1	0.3		11.8						
534	9						9						
535		1	1										
83	4.5						4.5						
85	9.9					1	9.9						
85A	9.1					1	9.1						
85B	4.9					1							
86	10.2					1							
87	5.4					1	5.4						
88	5					1	5						
88A	3.6												
89	7.1					1	7.1						
90	9.3						9.3						
90A		1	1										
90B	4.5												
90C		1	1										
90D		1	1										

ADDITIVE ALTERNATE NO. 2 - SEWER LINE

Existing				Work to be Peformed															
Sewer Line Number	Length (ft)	Diameter (in)	Material	6" Sag Repair (EA)	6" Point Repair (EA)	8" Sag Repair (EA)	8" Point Repair (EA)	10" Point Repair (EA)	15" Point Repair (EA)	Various Diameter Heavy Cleaning (LF)	6" CIPP (LF)	8" CIPP (LF)	10" CIPP (LF)	15" CIPP (LF)	Replacement - 6" SDR26 PVC Gravity Sewer Main (LF)	Replacement - 8" SDR26 PVC Gravity Sewer Main (LF)	Replacement - 15" SDR26 PVC Gravity Sewer Main (LF)	Connect to Existing Manhole (EA)	Post-Con CCTV Inspection (LF)
500	259	8	VCP													259		2	259
501	267.7	8	VCP																
502A	265.8	6	VCP												265.8			2	265.8
525	92.9	4	PVC																
526	123.9	8	VCP / DI																
527	237.4	8	PVC / DI / VCP			1				237.4		237.4							237.4
530	287.3	8	DI / VCP																
531	217.8	8	VCP																
532	177.8	8	VCP																
533	239.5	8	VCP				2			239.5		239.5							239.5
533A	269.2	8	VCP				1			269.2		269.2							269.2
534	188.6	8	VCP				2			188.6		188.6							188.6
535	400	8	VCP				1			400		400							400
83	737.4	4 / 6	VCP		3					737.44	737.44								737.44
85	30.8	8	PVC																
85A	234.5	8	VCP													234.5		2	234.5
85B	193.5	6	VCP												193.5			2	193.5
86	316.5	8	PVC																
87	291.4	8	PVC / VCP							291.4		291.4				170		1	291.4
88	253.5	6	VCP		1					253.5	253.5								253.5
88A	98.0	6	PVC		1					98.0	98.0								98.0
89	198.3	8	PVC																
90	278.6	8	PVC				1			278.6		278.6							278.6
90A	335.2	8	PVC / DI				1			335.2		335.2							335.2
90B	284.5	8	PVC / DI				1			284.5		284.5							284.5
90C	190.4	8	PVC																
90D	332.9	8	PVC																

GMC
2660 East Chase Lane, Suite 200
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1" 0" 1"

ISSUE	DATE
BID SET	02.12.2025
ADDENDUM NO. 1	03.06.2025

DRAWN BY: KMM
DESIGNED BY: KMM
CHECKED BY: JWC

2022 CWSRF SANITARY
SEWER REHAB. & REPLAC.
TOWN OF CAMP HILL, ALABAMA

CWSRF # CS010915-01
GMC # CMGM220156(3)

SUMMARY OF QUANTITIES ADD. ALT. NO. 2

G-010

DRAWING FILE: T:\Montgomery\CMGM Dwg\Wilcox County Water Authority\180060 - CS24 Waterline Relocation\+Plans\C2(0) - NOTES & LEGEND.dwg

ADDITIVE ALTERNATE NO. 3 - MANHOLES

Existing		Work to be Peformed											
Manhole Number	Depth (ft)	Locate Existing Manhole (EA)	Pre-Con Manhole Inspection w/ Report (Incl. GIS Collection)	Excavate Existing Manhole (EA)	Manhole Height Adjustment (Incl. Ring & Cover Reset) (VF)	48" Manhole Ring & Cover (EA)	Manhole Rehabilitation (VF)	48" Diameter Manhole w/ Ring & Cover (4'-6') (EA)	48" Diameter Manhole w/ Ring & Cover (6'-8') (EA)	48" Diameter Manhole w/ Ring & Cover (8'-10') (EA)	48" Diameter Manhole w/ Ring & Cover (10'-12') (EA)	48" Diameter Manhole w/ Ring & Cover (12'-14') (EA)	Remove & Dispose of Existing Manhole (EA)
502	7.4						7.4						
502B		1	1										
502C		1	1										
503	6.4						6.4						
504	5.1					1	5.1						
505							8						
506							10						
507							10						
508		1	1										
618		1	1										

ADDITIVE ALTERNATE NO. 3 - SEWER LINE

Existing				Work to be Peformed															
Sewer Line Number	Length (ft)	Diameter (in)	Material	6" Sag Repair (EA)	6" Point Repair (EA)	8" Sag Repair (EA)	8" Point Repair (EA)	10" Point Repair (EA)	15" Point Repair (EA)	Various Diameter Heavy Cleaning (LF)	6" CIPP (LF)	8" CIPP (LF)	10" CIPP (LF)	15" CIPP (LF)	Replacement - 6" SDR26 PVC Gravity Sewer Main (LF)	Replacement - 8" SDR26 PVC Gravity Sewer Main (LF)	Replacement - 15" SDR26 PVC Gravity Sewer Main (LF)	Connect to Existing Manhole (EA)	Post-Con CCTV Inspection (LF)
502	295.5	8	PVC																
502B	176	8	PVC				1			176		176							176
502C	145.6	8	PVC																
503	272.1	8	PVC																
504	317.3	8	PVC				2			317.3		317.3							317.3
505	70.2															70.2		2	70.2
506	194.2															194.2		2	194.2
507	252.7					2	1			252.7		252.7							252.7
508	262.9					2	1			262.9		262.9							262.9
618	519.8					2	1			519.8		519.8				100			519.8

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DESIGNED BY:	KMM
CHECKED BY:	JWC

2022 CWSRF SANITARY
SEWER REHAB. & REPLAC.
TOWN OF CAMP HILL, ALABAMA

CWSRF # CS010915-01
GMC # CMGM220156(3)

SUMMARY OF QUANTITIES ADD. ALT. NO. 3

G-011

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ADDITIVE ALTERNATE NO. 4 - MANHOLES

Existing		Work to be Peformed											
Manhole Number	Depth (ft)	Locate Existing Manhole (EA)	Pre-Con Manhole Inspection w/ Report (Incl. GIS Collection)	Excavate Existing Manhole (EA)	Manhole Height Adjustment (Incl. Ring & Cover Reset) (VF)	48" Manhole Ring & Cover (EA)	Manhole Rehabilitation (VF)	48" Diameter Manhole w/ Ring & Cover (4'-6') (EA)	48" Diameter Manhole w/ Ring & Cover (6'-8') (EA)	48" Diameter Manhole w/ Ring & Cover (8'-10') (EA)	48" Diameter Manhole w/ Ring & Cover (10'-12') (EA)	48" Diameter Manhole w/ Ring & Cover (12'-14') (EA)	Remove & Dispose of Existing Manhole (EA)
100		1	1										
39	9.3					1	9.3						
39A	9.8												
40	8.7					1							
41	9.6					1							
41A						1	12						
42	7.9					1							
43	6.3					1							
46	6.5								1				1
46A	6.7					1							
46B	11.6												
46C		1	1										
91	8.5						8.5						
91A		1	1										
92	8.1						8.1						
93	8.9					1	8.9						
94	7.9						7.9						
95	9						9						
96	7.4					1	7.4						
97	8.3					1	8.3						
98	9.5			1	0.8								
98A	7.9						7.9						
99	9.7					1	9.7						

ADDITIVE ALTERNATE NO. 4 - SEWER LINES

Existing				Work to be Peformed															
Sewer Line Number	Length (ft)	Diameter (in)	Material	6" Sag Repair (EA)	6" Point Repair (EA)	8" Sag Repair (EA)	8" Point Repair (EA)	10" Point Repair (EA)	15" Point Repair (EA)	Various Diameter Heavy Cleaning (LF)	6" CIPP (LF)	8" CIPP (LF)	10" CIPP (LF)	15" CIPP (LF)	Replacement - 6" SDR26 PVC Gravity Sewer Main (LF)	Replacement - 8" SDR26 PVC Gravity Sewer Main (LF)	Replacement - 15" SDR26 PVC Gravity Sewer Main (LF)	Connect to Existing Manhole (EA)	Post-Con CCTV Inspection (LF)
100	257.2	8	PVC																
39	60.6	8	PVC				1			60.6		60.6							60.6
39A	168.3	8	PVC																
40	215	8	PVC																
41	414.4	8	PVC																
41A	64.3						1			64.3		64.3							64.3
42	288.6	8	PVC							288.6		288.6							288.6
43	389.4	8	PVC																
46	404.3	8	PVC																
46A	238.9	8	PVC																
46B	233.1	8	PVC																
46C	291.2	8	PVC																
91	139.5	8	PVC																
91A	157.6	8	PVC				1			157.6		157.6							157.6
92	102.1	8	PVC																
93	123	8	PVC																
94	151.3	8	PVC							151.3		151.3							151.3
95	98.5	8	PVC																
96	75.9	8	PVC																
97	341.2	8	PVC																
98	409.7	8	PVC																
98A	286.8	8	PVC																
99	154.1	8	PVC																

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DRAWN BY: KMM
DESIGNED BY: KMM
CHECKED BY: JWC

2022 CWSRF SANITARY SEWER REHAB. & REPLAC.
TOWN OF CAMP HILL, ALABAMA

CWSRF # CS010915-01
GMC # CMGM220156(3)

SUMMARY OF QUANTITIES ADD. ALT. NO. 4

G-012

DRAWING FILE: T:\Montgomery\CMGM Dwg\Wilcox County Water Authority\180060 - CR24 Waterline Relocation\Plans\C2.01 - NOTES & LEGEND.dwg

ADDITIVE ALTERNATE NO. 5 - MANHOLES

Existing		Work to be Peformed											
Manhole Number	Depth (ft)	Locate Existing Manhole (EA)	Pre-Con Manhole Inspection w/ Report (Incl. GIS Collection)	Excavate Existing Manhole (EA)	Manhole Height Adjustment (Incl. Ring & Cover Reset) (VF)	48" Manhole Ring & Cover (EA)	Manhole Rehabilitation (VF)	48" Diameter Manhole w/ Ring & Cover (4'-6') (EA)	48" Diameter Manhole w/ Ring & Cover (6'-8') (EA)	48" Diameter Manhole w/ Ring & Cover (8'-10') (EA)	48" Diameter Manhole w/ Ring & Cover (10'-12') (EA)	48" Diameter Manhole w/ Ring & Cover (12'-14') (EA)	Remove & Dispose of Existing Manhole (EA)
10	7					1							
11	14.7					1							
12	13.4					1							
13	4.6					1							
14	4.9					1							
15	7.6					1	7.6						
16	11.3					1							
17	5.8												
18	6					1							
19	6.7					1							
20	7					1							
6	9.2					1							
7	7					1							
8	8					1	8						
8A	6.4					1	6.4						
9	9.1					1							
9A	6.2			1	0.2								

ADDITIVE ALTERNATE NO. 5 - SEWER LINES

Existing				Work to be Peformed															
Sewer Line Number	Length (ft)	Diameter (in)	Material	6" Sag Repair (EA)	6" Point Repair (EA)	8" Sag Repair (EA)	8" Point Repair (EA)	10" Point Repair (EA)	15" Point Repair (EA)	Various Diameter Heavy Cleaning (LF)	6" CIPP (LF)	8" CIPP (LF)	10" CIPP (LF)	15" CIPP (LF)	Replacement - 6" SDR26 PVC Gravity Sewer Main (LF)	Replacement - 8" SDR26 PVC Gravity Sewer Main (LF)	Replacement - 15" SDR26 PVC Gravity Sewer Main (LF)	Connect to Existing Manhole (EA)	Post-Con CCTV Inspection (LF)
10	400.3	8	TRUSS																
11	345.4	8	TRUSS																
12	385.1	8	TRUSS			2				385.1		385.1							385.1
13	395.3	8	TRUSS																
14	396	8	TRUSS																
15	245.1	8	TRUSS			1				245.1		245.1				65			245.1
16	22.3	8	DI				1			22.31		22.31							22.31
17	160.2	8	TRUSS				1			160.2		160.2							160.2
18	244.4	8	TRUSS																
19	170.4	8	TRUSS																
20		8	TRUSS																
6	237.5	8	DI / TRUSS																
7	311.6	8	TRUSS			1				311.6		311.6							311.6
8	34.6	8	DI				1			34.6		34.6							34.6
8A	111.8	8	TRUSS																
9	250.4	8	TRUSS																
9A	393.4	8	TRUSS				1			393.4		393.4							393.4

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TOWN OF CAMP HILL, ALABAMA

CWSRF # CS010915-01
GMC # CMGM220156(3)

SUMMARY OF QUANTITIES ADD. ALT. NO. 5

G-013

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