



Request for Bid
Sewer Rehab Group 4 CIPP Addendum No. 2 to
RFB No. 400605.71.0386
January 17, 2019



The following information encompasses Addendum No. 2 for the above referenced RFB. Bidders shall fully consider and acknowledge this Addendum in the preparation and submittal of its formal Bid. Failure to do so may result in the rejection of the Bid.

Section 1 – Additional Bidder Questions

Section 2 – Updated 00370 Subcontract Commercial Bid Form

Section 3 – Updated Technical Specifications / Maps

All other conditions and requirements remain unchanged.

Section 1
Additional Bidder Questions

Q1: We see where there is a DBE participation goal of 15% on this RFB. However, are there any specific Good Faith Effort requirements, such as it being mandatory to reach out to at least 10 DBE firms, etc.?

SARP10: No, there is no Good Faith Effort requirement or documentation required for this bid.

Q2: Will OC assist with Property Access?

SARP10: The Contractor is responsible for coordinating and securing access, but SARP10 will assist as deemed necessary.

Q3: Will additional Railroad insurance be required, or is it already in place? There are multiple locations that will require bypass under the railroad and another where a manhole is located between two tracks, where the track splits. This will require work between the tracks.

SARP10: The Contractor is responsible for securing and identifying any insurance necessary for the work. SARP10 has a point of contact with City of Memphis Engineering to assist.

Q4: The manhole shown on Grid Z1 is shown to be located at the front entrance of a building. We could not locate this manhole and have concerns it could be under concrete (side walk, steps, building). Will OC please assist with the location and exposure of this and any other manholes, if the need arises?

SARP10: Yes, SARP10 will assist with locating and raising manholes as needed.

Q5: The manholes located on Map Grid L7 could not be located due to construction by others. Will OC please provide assistance in locating these manholes and coordination with other contractors?

SARP10: Yes, SARP10 will assist with locating and coordinating this work with the other contractors.

Q6: Has the Postal Service been made aware of this project? There are lines designated for rehab that will require traffic control located outside the Postal Service entrance. Will OC assist in coordination with the postal service?

SARP10: Coordination with USPS will be the responsibility of the contractor. SARP10 will assist as necessary, as per the response given for Question 2.

Q7: On Map Grid M5, FS031407S is called out for rehab. However, there is a bend in the line and no manhole shown at the bend. Will OC please consider adding the installation of a new manhole to the bid schedule in this location?

SARP10: Yes, please see the attached amended maps and quantities for this change.



Request for Bid
Sewer Rehab Group 4 CIPP Addendum No. 2 to
RFB No. 400605.71.0386
January 17, 2019



Q8: Will OC please provide a list of streets that only allow working hours of 9am -3pm?

SARP10: Yes, the list is as follows. Work on these streets is prohibited between 7:00 AM – 9:00 AM and 4:00 PM – 6:00 PM. Work can occur outside of these times, but all equipment and personnel must be out of the way by the specified times.

- i) Germantown Parkway (Wolf River Boulevard to Highway 64)
- ii) Poplar Avenue (I-240 to Kirby Parkway)
- iii) Poplar Avenue (Perkins Extended to I-240)
- iv) Lamar Avenue (Holmes Road to Winchester Road)
- v) Ridgeway Road (Primacy Parkway to Poplar Avenue)
- vi) Park Avenue (Primacy Parkway to Massey Road)
- vii) Summer Avenue (Highway 70) (N Perkins Road to Sycamore View Road)
- viii) Shelby Drive (Pleasant Hill Road to S Mendenhall Road)
- ix) Walnut Grove Road (I-240 to Germantown Parkway)
- x) Walnut Grove Road (N Perkins Road/Perkins Extended to I-240)
- xi) Highway 64 (Appling Road to I-40)
- xii) Sycamore View Road (Summer Avenue to Macon Road)
- xiii) Lamar Avenue (East Parkway S to Airways Boulevard)
- xiv) Getwell Road (American Way to Park Avenue)
- xv) Park Avenue (Colonial Road to White Station Road)
- xvi) Highland Street (Park Avenue to Walnut Grove Road)
- xvii) S Perkins Road/Perkins Extended (Park Avenue to Poplar Avenue)
- xviii) S Perkins Road (American Way to I-240)
- xix) Wolf River Boulevard (Kirby Parkway to Germantown Parkway)
- xx) East Parkway (Poplar Avenue to Summer Avenue)
- xxi) Covington Pike (Pleasant View Road to Summer Avenue)
- xxii) Mendenhall Road (Park Avenue to Walnut Grove Road)
- xxiii) Bellevue Boulevard (Union Avenue to Lamar Avenue)
- xxiv) Mullins Station Road (Farm Road to Appling Road)
- xxv) Farm Road (Walnut Grove Road to Mullins Station Road)
- xxvi) Pauline Street (Union Avenue to Poplar Avenue)

Q9: The CIPP design criteria in the specifications states the contractor is to design the CIPP to meet a Tensile Strength of 3,000 psi. Please note that this pipe is a Gravity sewer pipe. According to ASTM F1216, tensile strength design is not required for gravity pipe. Therefore, will OC please remove this design requirement from the specification?

SARP10: This is a requirement of the SARP10 specifications as listed in 02535.2.02.A and will not be modified or removed.

Q10: The specifications state both a One and Five-year warranty period. Can the CIPP warranty be reduced to the standard one-year warranty?

SARP10: The warranty period of five (5) years for CIPP, as stated in 02535.3.06.G.1, will remain and will not be reduced.



Request for Bid
Sewer Rehab Group 4 CIPP Addendum No. 2 to
RFB No. 400605.71.0386
January 17, 2019



Q11: In the Pre-Bid meeting, it was mentioned that Overland will not be responsible for Security. During our Pre-Bid Site visit/review, we encountered some extreme safety concerns. Therefore, will OC please add an allowance item to the bid form for security for the contractor, subcontractors, and SARP 10 personnel.

SARP10: SARP10 can coordinate with MPD to increase patrols in areas where work is occurring. A bid item will not be added for security.

Q12: Section 02535 Cured in Place Pipe (CIPP) Installation – The spec indicates Air Inversion/Steam Cure (AISC) is allowed in Part 1.02. However, later in the CIPP spec, it is indicated that AISC shall only be allowed on a case-by-case basis. Therefore, please clarify if bidders are to assume we can use AISC. Or, if it will be approved only on a case-by-case basis, and the intent is that we shall assume water installation only, since we cannot estimate the project based on a “case-by-case” assumption that may or may not come to fruition. If the latter, please note that any savings that may have been achieved through the use of AISC will be lost to the Owner and Program, as again, we cannot submit a responsible bid based on something that may or may not be approved.

SARP10: As stated in section 02535.3.02.D, all pricing shall be made under the assumption that only water inversion shall be used. AISC will be approved on a case-by-case basis.



**Request for Bid
Sewer Rehab Group 4 CIPP Addendum No. 2 to
RFB No. 400605.71.0386
January 17, 2019**



**Section 2
Updated 00370 Subcontract Commercial Bid Form**

Table 00370.3.1 - Unit Price Bid Form

Bidder should refer to Section 00270, Instructions to Bidders, when completing this Bid Form. Bidder shall complete this form entirely and return it with Bidder's Bid.					
Bid Submitted by: (Company Name)					
00370.3 Bid Pricing Information					
00370.3.1 Unit Pricing					
Bidder proposes to complete the RFB Work based on firm, fixed, unit prices (US dollars), which prices multiplied by the final Work quantities would represent the full consideration to Bidder for its complete and satisfactory performance of the Work in compliance with all the terms and conditions of the RFB Documents. The Unit Prices in this Table include the cost of all the work which is required or implied by the RFB documents or which may be inferred therefrom, and which is customarily provided in furnishing a complete and finished work item of its kind. Further, any and all alterations, modifications, and adjustments to the work item, which is reasonably foreseeable or customarily encountered in providing and installing equipment, material, and services of the work item kind, will be performed without additional compensation.					
In the event of a Purchaser-approved change in the scope of Work for which a unit price from this Table is not applicable, as determined by the Purchaser, the Subcontractor shall provide a new unit price for review and acceptance by the Purchaser. Subcontractor shall provide all information requested by the Purchaser to substantiate the value of the new unit price.					
00370.3.1.1 Unit Prices				Bidder Response	
Item Number	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Extension Price
Manhole Replacement/Installation					
02531-4.01.A	Manhole Replacement with Precast Manhole	Vertical Foot	64		\$ -
02531-4.01.B	Precast Manhole Installation	Vertical Foot	63 60		\$ -
02531-4.01.C	Pavement Backfill for Manholes	Cubic Yards	70 75		\$ -
02531-4.01.D	Traffic Control per MH Installation/Replacement	Crew Day	44 12		\$ -
Manhole Rehabilitation					
02533-4.01.A	Manhole Rehabilitation - Cementitious Coating	Vertical Foot	2,405		\$ -
02533-4.01.C	Invert and Bench Replacement	Each	165		\$ -
02533-4.01.B.1	Sewer Manhole Inside Drop Construction (<5')	Each	25		\$ -
02533-4.01.B.2	Sewer Manhole Inside Drop Construction (5'-10')	Each	29		\$ -
02533-4.01.B.3	Sewer Manhole Inside Drop Construction (>10')	Each	1		\$ -
02533-4.01.E	Traffic Control for Manhole Rehabilitation	Crew Day	324		\$ -
CIPP					
02535-4.01.A-1.1	8" Diameter CIPP (0-10 feet)	Linear Foot	22,935		\$ -
02535-4.01.A-1.2	8" Diameter CIPP (10-20 feet)	Linear Foot	9,775 9,230		\$ -
02535-4.01.A-2.1	10" Diameter CIPP (0-10 feet)	Linear Foot	5,805		\$ -
02535-4.01.A-2.2	10" Diameter CIPP (10-20 feet)	Linear Foot	3,375		\$ -
02535-4.01.A-3.1	12" Diameter CIPP (0-10 feet)	Linear Foot	1,195		\$ -
02535-4.01.A-3.2	12" Diameter CIPP (10-20 feet)	Linear Foot	1,575		\$ -
02535-4.01.A-3.3	12" Diameter CIPP (>20 feet)	Linear Foot	375		\$ -
02535-4.01.A-4.1	15" Diameter CIPP (0-10 feet)	Linear Foot	205		\$ -
02535-4.01.A-4.2	15" Diameter CIPP (10-20 feet)	Linear Foot	545		\$ -
02535-4.01.A-5.1	18" Diameter CIPP (10-20 feet)	Linear Foot	580		\$ -
02535-4.01.A-6.1	21" Diameter CIPP (0-10 feet)	Linear Foot	380		\$ -

Item Number	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Extension Price
02535-4.01.A-7.1	24" Diameter CIPP (0-10 feet)	Linear Foot	435		\$ -
02535-4.01.A-7.2	24" Diameter CIPP (10-20 feet)	Linear Foot	475		\$ -
02535-4.01.A-8.1	36" Diameter CIPP (10-20 feet)	Linear Foot	200		\$ -
02535-4.01.B-1	Bypass Pumping (12" Diameter)	Each	13		\$ -
02535-4.01.B-2	Bypass Pumping (15" Diameter)	Each	4		\$ -
02535-4.01.B-3	Bypass Pumping (18" Diameter)	Each	2		\$ -
02535-4.01.B-4	Bypass Pumping (21" Diameter)	Each	1		\$ -
02535-4.01.B-5	Bypass Pumping (24" Diameter)	Each	2		\$ -
02535-4.01.B-6	Bypass Pumping (36" Diameter)	Each	1		\$ -
02535-4.01.C	Lateral Reinstatement	Each	1,491 1,487		\$ -
02535-4.01.D	Locate and Expose Mainline Terminus	Each	5 6		\$ -
02535-4.01.E	Traffic Control for CIPP	Crew Day	227 225		\$ -
Mainline Point Repair					
02540-4.01.A-1.1	Sewer Point Repair, 6" Through 10" Pipe (<10' Deep)	Each	15		\$ -
02540-4.01.A-1.2	Each Additional Linear Foot Beyond the 10 Feet Minimum, For Sewer Point Repair, 6" Through 10" Pipe (<10' Deep)	Linear Foot	0		\$ -
02540-4.01.A-2.1	Sewer Point Repair, 6" Through 10" Pipe (10.1'-15' Deep)	Each	44 7		\$ -
02540-4.01.A-2.2	Each Additional Linear Foot Beyond the 10 Feet Minimum, For Sewer Point Repair, 6" Through 10" Pipe (10.1'-15' Deep)	Linear Foot	40 0		\$ -
02540-4.01.A-3.1	Sewer Point Repair, 6" Through 10" Pipe (15.1'-20' Deep)	Each	1		\$ -
02540-4.01.A-3.2	Each Additional Linear Foot Beyond the 10 Feet Minimum, For Sewer Point Repair, 6" Through 10" Pipe (15.1'-20' Deep)	Linear Foot	0		\$ -
02540-4.01.A-4.1	Sewer Point Repair, 12" Through 18" Pipe (10.1'-15' Deep)	Each	2		\$ -
02540-4.01.A-4.2	Each Additional Linear Foot Beyond the 10 Feet Minimum, For Sewer Point Repair, 12" Through 18" Pipe (10.1'-15' Deep)	Linear Foot	0		\$ -
102540-4.01.A-5.1	Sewer Point Repair, 21" Through 27" Pipe (<10' Deep)	Each	1		\$ -
02540-4.01.A-5.2	Each Additional Linear Foot Beyond the 10 Feet Minimum, For Sewer Point Repair, 21" Through 27" Pipe (<10' Deep)	Linear Foot	0		\$ -
02540-4.01.B	Each Service Connection and Associated Lateral Pipe Included In a Sewer Point Repair, All Depths, All Diameters	Each	23 22		\$ -
02540-4.01.C	Traffic Control per Point Repair	Crew Day	25 21		\$ -
02540-4.01.D	Pavement Backfill for Point Repair	Cubic Yards	395 300		\$ -
02540-4.01.E	Hydroexcavation/Hand Digging	Each	30 26		\$ -
Post-Rehabilitation PACP Inspection					
02541-4.01.A	Post Rehab CCTV Inspection For All Diameters (<24")	Linear Foot	46,730 46,185		\$ -
02542-4.01.A	CCTV & Sonar Inspection for All Diameters (24" and Larger Diameter)	Linear Foot	1,110		\$ -
Post-Rehabilitation MACP Inspection					
02544-4.01.A	GPS Coordinates of Manhole Cover	Each	376 377		\$ -
02544-4.01.C-1	Post Rehab MACP Level 2 Manhole Inspections	Each	357 358		\$ -
02544-4.01.C-2	Post Rehab MACP Level 2 Manhole Inspections with 3D Scan	Each	19		\$ -
Site Preparation and Restoration					
02630-4.01.A	Removal and Replacement of Vegetated/Turfed Areas	Square Yard	140		\$ -

Item Number	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Extension Price
Pavement and Incidentals					
02950-4.01.A-1	Asphaltic Concrete Pavement Removal and Replacement	Square Yard	359 <u>200</u>		\$ -
02950-4.01.A-2	Concrete Pavement Removal and Replacement	Square Yard	19		\$ -
02950-4.01.B	Concrete Sidewalk Removal and Replacement	Square Yard	25 <u>37</u>		\$ -
02950-4.01.C	Concrete Curb and Gutter Removal and Replacement	Linear Foot	75		\$ -
02950-4.01.D	Gravel Driveway and Gravel Area Removal and Replacement With Crushed Stone	Ton	0		\$ -
Total Estimated Unit Price Value					\$ -



**Request for Bid
Sewer Rehab Group 4 CIPP Addendum No. 2 to
RFB No. 400605.71.0386
January 17, 2019**



**Section 3
Updated Technical Specifications / Maps**

Note: Pipe FS031299S (Pages N4 and N5 of the initial map set) have been removed. Amended maps and quantities are attached, and full-size files will be available at <http://www.sarp10.com/projects/>

Pipe ID	Sheet	US MH [Approx. Depth (ft)]	DS MH [Approx. Depth (ft)]	Diameter (in.)	Material	Approx. Repair Length (ft)	Approx. Repair Depth (ft)	Approx. # of Taps	Repair Method	Notes
FS020221S	G5	FS020221 [13]	FS020218 [14.3]	15	Concrete Pipe (non-reinforced)	188.5	13.7	2	CIPP	
FS020373.04S	G7	FS020373.04 [5.5]	FS020373 [6.3]	8	Concrete Pipe (non-reinforced)	43.4	5.9	0	CIPP	
FS020416S	G8	FS020416 [10.9]	FS020415 [5]	8	Vitrified Clay Pipe	467	8	32	CIPP	
FS020592S	H7	FS020592 [7.4]	FS020464 [6.2]	12	Vitrified Clay Pipe	248.2	6.8	5	CIPP	
FS020464S	H8	FS020464 [6.2]	FS020463 [6.9]	12	Vitrified Clay Pipe	51	6.6	0	CIPP	
FS020332.01S	H9	FS020332.01 [12.3]	FS020332.09 [Not Inspected]	15	Vitrified Clay Pipe	118.6	12.3	1	CIPP	
FS031481S	I5	FS031481 [16]	FS031469 [0]	10	Vitrified Clay Pipe	409.5	8	8	CIPP	Point Repair @ 391.6' DS from 1481 for 10' for HSV
FS033724.04S	J10	FS033724.04 [6.1]	FS033725 [4.9]	10	Ductile Iron Pipe	172.2	5.5	0	CIPP	
FS033725S	J10	FS033725 [4.9]	FS033724 [28.1]	10	Clay Tile	42.5	16.5	0	CIPP	
FS031332S	K4	FS031332 [7.6]	FS031331 [8]	8	Reinforced Plastic Pipe (Truss Pipe)	187.7	7.8	2	CIPP	
FS031333S	K4	FS031333 [7]	FS031332 [7.6]	8	Ductile Iron Pipe	103.46	7.3	0	CIPP	
FS032404S	K4	FS032404 [7.5]	FS031479 [20.5]	10	Reinforced Plastic Pipe (Truss Pipe)	29.1	14	1	CIPP	
FS031369S-1	K5	FS031369 [6.4]	FS031173 [5.9]	8	Vitrified Clay Pipe	137.79	6.2	2	CIPP	
FS031369S-2	K5	FS031369 [6.4]	FS031292 [4.1]	8	Vitrified Clay Pipe	92	5.3	2	CIPP	
FS031075S	K8	FS031075 [5.6]	FS031074 [6.4]	10	Concrete Pipe (non-reinforced)	317.5	6	2	CIPP	
FS031430S	K8	FS031430 [7.7]	FS031429 [7.6]	10	Concrete Pipe (non-reinforced)	253.1	7.7	2	CIPP	
FS031156S	K9	FS031156 [4.4]	FS031155 [14.6]	12	Vitrified Clay Pipe	459	9.5	3	CIPP	
FS031016.01S	L5	FS031016.01 [11.8]	FS031016 [21.9]	36	Cast Iron	197.7	16.9	2	CIPP	
FS031107S	L5	FS031107 [6.4]	FS031503 [8.4]	10	Vitrified Clay Pipe	130.9	7.4	6	CIPP	
FS031172S	L5	FS031172 [5.6]	FS031107 [6.4]	8	Vitrified Clay Pipe	283.9	6	24	CIPP	
FS031501S	L5	FS031501 [Not Inspected]	FS031503 [8.4]	10	Vitrified Clay Pipe	140.5	8.4	14	CIPP	
FS031507.01S	L5	FS031507.01 [5.3]	FS031507 [5.1]	8	Polyvinyl Chloride	58.7	5.2	0	CIPP	
FS031507S	L5	FS031507 [5.1]	FS031508 [4.7]	8	Ductile Iron Pipe	102.2	4.9	0	CIPP	

Pipe ID	Sheet	US MH [Approx. Depth (ft)]	DS MH [Approx. Depth (ft)]	Diameter (in.)	Material	Approx. Repair Length (ft)	Approx. Repair Depth (ft)	Approx. # of Taps	Repair Method	Notes
FS031608S	L7	FS031608 [Not Inspected]	FS031607 [Not Inspected]	12	Vitrified Clay Pipe	142.73	9.2	9	CIPP	
FS031407S	M4	FS031407 [Not Inspected]	FS031018 [14.7]	8	Vitrified Clay Pipe	404.65	14.7	2	CIPP	
FS031025S	M5	FS031025 [10.7]	FS031024 [Not Inspected]	10	Vitrified Clay Pipe	98.9	10.7	10	CIPP	
FS032141S	M5	FS0322141 [Not Inspected]	FS031028 [7.2]	10	Vitrified Clay Pipe	316.1	7.2	19	CIPP	
FS031094S	M7	FS031094 [10.2]	FS031093 [9.1]	10	Vitrified Clay Pipe	280.1	9.7	11	CIPP	
FS031419S	M7	FS031419 [7.5]	FS031195 [8.2]	12	Vitrified Clay Pipe	147.1	7.9	0	CIPP	
FS031447S	M7	FS031447 [Not Inspected]	FS031195 [8.2]	8	Vitrified Clay Pipe	163.8	8.2	1	CIPP	
FS031045.01S	N5	FS031045.01 [9.3]	FS031045 [10]	8	Vitrified Clay Pipe	231.35	9.7	4	CIPP	
FS031299S	N5	FS031299 [13.7]	FS031044 [6.6]	8	Vitrified Clay- Pipe	544.4	11.2	4	CIPP	Point Repair @ 55.8'-DS from 1299 for 10' for DMV Point Repair @ 89.8'-DS from 1299 for 10' for BAY Point Repair @ 92.3'-DS from 1299 for 10' for IR Point Repair @ 105'-DS from 1299 for 20' for JOL
FS030318S	O3	FS030318 [9]	FS030302 [8.8]	12	Concrete Pipe (non-reinforced)	143.4	8.9	0	CIPP	
FS031301S	O5	FS031301 [5]	FS031048 [11.7]	8	Vitrified Clay Pipe	199.8	8.4	0	CIPP	
FS031813S	O8	FS031813 [Not Inspected]	FS031812 [12.3]	24	Vitrified Clay Pipe	474	12.2	30	CIPP	
FS033055S	O8	FS033055 [9.5]	FS033054.01 [6.2]	8	Clay Tile	133.09	7.8	7	CIPP	
FS033538.01S	O12	FS033538.01 [9.9]	FS033538 [13.7]	10	Vitrified Clay Pipe	237.5	11.4	5	CIPP	
FS030301S	P3	FS030301 [8.7]	FS030108 [15.1]	8	Vitrified Clay Pipe	238.46	11.9	0	CIPP	
FS030129S	P4	FS030129 [Not Inspected]	FS030100.01 [Not Inspected]	24	Vitrified Clay Pipe	435.4	7.2	5	CIPP	Point Repair @ 307.6' US from 0100.01 for 10' for B
FS033540.01S	P12	FS033540.01 [10.4]	FS033540 [10]	15	Vitrified Clay Pipe	236.3	10.2	6	CIPP	
FS033542S	P13	FS033542 [11.3]	FS033541.02 [8.8]	10	Vitrified Clay Pipe	628.64	10.1	20	CIPP	
FS030112S	Q3	FS030112 [15.5]	FS030111 [12.5]	12	Vitrified Clay Pipe	202.3	13.8	5	CIPP	
FS030130S	Q4	FS030130 [9.7]	FS030129 [Not Inspected]	21	Vitrified Clay Pipe	380.8	9.2	10	CIPP	
FS032024S	Q5	FS032024 [6.5]	FS032023 [6.6]	8	Vitrified Clay Pipe	212.7	6.6	3	CIPP	
FS031906S	Q8	FS031906 [11.3]	FS031905 [10.7]	8	Vitrified Clay Pipe	477.5	11.1	26	CIPP	
FS033629S	Q14	FS033629 [12.1]	FS033559 [13.5]	8	Clay Tile	446.6	12.8	6	CIPP	

Pipe ID	Sheet	US MH [Approx. Depth (ft)]	DS MH [Approx. Depth (ft)]	Diameter (in.)	Material	Approx. Repair Length (ft)	Approx. Repair Depth (ft)	Approx. # of Taps	Repair Method	Notes
PI0102045-1	R1	PI010204 [10.2]	PI010203 [11.7]	8	Vitrified Clay Pipe	269.83	11	6	CIPP	Point Repair @ 46.8' US from 0203 for 10' for JOL, Point Repair @ 130.1' US from 0203 for 10' for OBJ
FS031887S	R6	FS031887 [11.6]	FS031886 [9.9]	12	Vitrified Clay Pipe	199.6	10.8	6	CIPP	Point Repair @ 31.9' DS from 1887 for 10' for JOM, Point Repair @ 109' DS from 1887 for 10' for D
FS032089S	R7	FS032089 [9.8]	FS032054.01 [6.2]	8	Vitrified Clay Pipe	170.1	8	11	CIPP	
FS032854.01S	R8	FS032854.01 [4.4]	FS032854 [9.5]	8	Vitrified Clay Pipe	106.1	6.5	2	CIPP	
FS032956S	R8	FS032956 [8.4]	FS032955 [6.3]	8	Vitrified Clay Pipe	83.2	7.2	0	CIPP	
FS033562S	R14	FS033562 [11.8]	FS033561 [5.6]	10	Vitrified Clay Pipe	311.6	8.7	6	CIPP	Point Repair @ 97.2' US from 3561 for 10' for BVV, Point Repair @ 307.9' US from 3561 for 10' for JOL
FS045334S	R16	FS045334 [11.6]	FS045333 [5.8]	8	Vitrified Clay Pipe	624.3	8.7	14	CIPP	
PI010224S	S2	PI010224 [12.2]	PI010191 [15.4]	10	Reinforced Concrete Pipe	229.6	13.8	5	CIPP	
FS030505.02S	S3	FS030505.02 [9]	FS030505.01 [13.3]	8	Vitrified Clay Pipe	286.4	11.2	11	CIPP	
FS030506S	S3	FS030506 [4.2]	FS030505 [6.6]	8	Vitrified Clay Pipe	160.2	5.4	4	CIPP	
FS031998S	S6	FS031998 [7.6]	FS031997 [8.2]	8	Vitrified Clay Pipe	61	7.9	2	CIPP	
FS031834S	S7	FS031834 [7.4]	FS031833 [7.4]	8	Vitrified Clay Pipe	242.55	7.4	6	CIPP	
FS031837S	S7	FS031837 [9.6]	FS031832 [7.4]	15	Vitrified Clay Pipe	201	8.5	13	CIPP	
FS031827S	S8	FS031827 [6.1]	FS031826 [9.6]	8	Vitrified Clay Pipe	374	7.8	11	CIPP	
FS031834.01S	S8	FS031834.01 [8.1]	FS031834 [7.4]	8	Vitrified Clay Pipe	275.04	7.8	12	CIPP	
FS032912S	S9	FS032912 [Not Inspected]	FS032911 [Dead End]	8	Vitrified Clay Pipe	439.7	12.6	13	CIPP	Point Repair @ 56.6' DS from 2912 for 10' for BSV
PI010191S	T2	PI010191 [15.4]	PI010190 [18.5]	12	Concrete Pipe (non-reinforced)	207.4	17	1	CIPP	
FS030142S	T4	FS030142 [14.1]	FS030141 [6.4]	18	Vitrified Clay Pipe	210	10.1	4	CIPP	
FS031983S	T5	FS031983 [9]	FS031982 [9.1]	8	Vitrified Clay Pipe	385.6	9.1	11	CIPP	Point Repair @ 169.7' DS from 1983 for 10' for BVV
FS031839S	T7	FS031839 [10.3]	FS031838 [11.3]	12	Vitrified Clay Pipe	165.6	10.9	4	CIPP	
FS031918S	T7	FS031918 [6.8]	FS031919 [6.3]	8	Vitrified Clay Pipe	162.5	6.6	5	CIPP	Point Repair @ 70.1' DS from 1918 for 10' for BVV
FS031843S	T8	FS031843 [8.4]	FS031842 [13]	12	Vitrified Clay Pipe	311	10.7	5	CIPP	
FS032119S	T8	FS032119 [8.9]	FS031842.01 [10.3]	8	Vitrified Clay Pipe	340.2	9.6	12	CIPP	Point Repair @ 11.8' DS from 2119 for 10' for JOM

Pipe ID	Sheet	US MH [Approx. Depth (ft)]	DS MH [Approx. Depth (ft)]	Diameter (in.)	Material	Approx. Repair Length (ft)	Approx. Repair Depth (ft)	Approx. # of Taps	Repair Method	Notes
FS030235S	U3	FS030235 [7.1]	FS030234 [8.3]	8	Vitrified Clay Pipe	251.8	7.7	2	CIPP	Point Repair @ 183.5' DS from 0235 for 10' for HSV, Point Repair @ 222.4' DS from 0235 for 10' for HSV
FS032041S	U6	FS032041 [7.5]	FS031936 [8]	8	Vitrified Clay Pipe	604	7.8	24	CIPP	
FS030830S	U8	FS030830 [7.5]	FS032111 [7.9]	8	Vitrified Clay Pipe	547.59	7.7	29	CIPP	
FS031850S	U8	FS031850 [7.7]	FS031847 [7.4]	10	Vitrified Clay Pipe	426.7	7.6	15	CIPP	
FS031910S	U8	FS031910 [10.4]	FS031909 [7.7]	10	Vitrified Clay Pipe	338.8	9.1	3	CIPP	Point Repair @ 199.5' DS from 1910 for 10' for JOM, Point Repair @ 244.1' DS from 1910 for 10' for BSV
FS032107S	U8	FS032107 [7]	FS032106 [8]	8	Vitrified Clay Pipe	364.9	7.5	13	CIPP	Point Repair @ 167.2' US from 2106 for 10' for JSL
FS032690S	U9	FS032690 [10.7]	FS032689 [13.6]	8	Vitrified Clay Pipe	335.3	12.2	14	CIPP	
FS032691S	U9	FS032691 [Dead End]	FS032690 [10.7]	8	Vitrified Clay Pipe	425.4	10.7	13	CIPP	
FS032866S	U9	FS032866 [Dead End]	FS032690 [10.7]	8	Vitrified Clay Pipe	262.9	10.7	14	CIPP	
FS032645S	U11	FS032645 [8.2]	FS032644 [12.9]	12	Vitrified Clay Pipe	487.5	10.5	7	CIPP	
FS030389S	V3	FS030389 [15.7]	FS030188 [17]	8	Vitrified Clay Pipe	352.7	16.4	7	CIPP	
FS030188S	V4	FS030188 [17]	FS030170.01 [14.7]	10	Vitrified Clay Pipe	375.62	15.9	7	CIPP	Point Repair @ 175.7' DS from 0188 for 10' for H
FS030194S	V4	FS030194 [17.5]	FS030173.01 [4.8]	18	Vitrified Clay Pipe	370.2	11.3	8	CIPP	
FS030161S	V5	FS030161 [7.6]	FS030160 [7.6]	8	Vitrified Clay Pipe	361.25	7.6	11	CIPP	
FS030471S	V5	FS030471 [7.1]	FS030160 [7.6]	8	Vitrified Clay Pipe	391.4	7.4	10	CIPP	
FS032045S	V6	FS032045 [9.1]	FS032044 [14.9]	8	Vitrified Clay Pipe	349.6	12	8	CIPP	
FS031851S	V8	FS031851 [7.9]	FS031850 [7.7]	10	Vitrified Clay Pipe	245.6	7.8	10	CIPP	
FS031852.01S	V8	FS031852.01 [9.1]	FS031852 [8]	10	Vitrified Clay Pipe	186.37	8.6	4	CIPP	
FS031953S	V8	FS031953 [9.2]	FS031952.01 [Not Inspected]	8	Vitrified Clay Pipe	235.28	9.2	11	CIPP	
FS032740S	V12	FS032740 [6.2]	FS032739 [6]	8	Vitrified Clay Pipe	644.7	6.1	20	CIPP	
PI010171S	W3	PI010171 [Unknown]	PI010170 [5.3]	10	Vitrified Clay Pipe	110.5	5.3	4	CIPP	
PI010173S	W3	PI010173 [12.1]	PI010171 [Unknown]	10	Vitrified Clay Pipe	269.1	12.1	11	CIPP	Point Repair @ 267.1' DS from 0173 for 10' for BSV
FS030176S	W4	FS030176 [4.7]	FS030175 [3.7]	10	Vitrified Clay Pipe	277.23	4.2	3	CIPP	

Pipe ID	Sheet	US MH [Approx. Depth (ft)]	DS MH [Approx. Depth (ft)]	Diameter (in.)	Material	Approx. Repair Length (ft)	Approx. Repair Depth (ft)	Approx. # of Taps	Repair Method	Notes
FS030177S	W4	FS030177 [5.6]	FS030176 [4.7]	10	Vitrified Clay Pipe	248.1	5.2	0	CIPP	
FS030178S	W4	FS030178 [4.1]	FS030177 [5.6]	8	Vitrified Clay Pipe	59	4.9	6	CIPP	
FS030179S	W4	FS030179 [6.8]	FS030178 [4.1]	8	Vitrified Clay Pipe	120.8	5.5	1	CIPP	
FS030414S	W4	FS030414 [6.8]	FS030177 [5.6]	8	Vitrified Clay Pipe	347.1	6.2	37	CIPP	
FS030555S	W4	FS030555 [7.3]	FS030176 [4.7]	8	Vitrified Clay Pipe	249.3	6	21	CIPP	
FS030455S	W5	FS030455 [8.8]	FS030454.01 [Not Inspected]	8	Vitrified Clay Pipe	302.9	8.8	11	CIPP	
FS030377S	W6	FS030377 [8.3]	FS030376 [8.4]	8	Vitrified Clay Pipe	285.4	8.4	11	CIPP	
FS030378S	W6	FS030378 [9.9]	FS030377 [8.3]	8	Vitrified Clay Pipe	290.4	9.1	12	CIPP	
FS032070S	W6	FS032070 [8.8]	FS032045 [9.1]	8	Vitrified Clay Pipe	362.8	9	17	CIPP	
FS032047S	W7	FS032047 [8.3]	FS032046 [8.8]	8	Vitrified Clay Pipe	316.21	8.6	8	CIPP	
FS031857S	W8	FS031857 [9]	FS031855 [9.9]	8	Vitrified Clay Pipe	621.9	9.5	17	CIPP	
FS032132S	W8	FS032132 [7.4]	FS031898 [9.9]	8	Vitrified Clay Pipe	455.7	8.7	22	CIPP	
FS032133S	W9	FS032133 [3.3]	FS032132 [7.4]	8	Vitrified Clay Pipe	524.3	5.4	20	CIPP	Point Repair @ 7' DS from 2133 for 10' for D
FS032134S	W9	FS032134 [11.7]	FS032133 [3.3]	8	Vitrified Clay Pipe	397.7	7.5	10	CIPP	
FS032658S	W9	FS032658 [7.2]	FS032746 [8.2]	10	Vitrified Clay Pipe	75.7	7.7	1	CIPP	
FS032659S	W9	FS032659 [7.8]	FS032658 [7.2]	8	Vitrified Clay Pipe	348.7	7.5	13	CIPP	
FS032743S	W11	FS032743 [Not Inspected]	FS032722 [9.2]	8	Vitrified Clay Pipe	462.76	9.2	12	CIPP	
PI010160.02S	X1	PI010160.02 [Not Inspected]	PI010160.01 [13.5]	8	Vitrified Clay Pipe	94.9	13.4	2	CIPP	
PI010212S	X3	PI010212 [9.4]	PI010211 [12.8]	8	Vitrified Clay Pipe	163.81	11.1	13	CIPP	
FS030569S	X4	FS030569 [10.6]	FS030568 [13.7]	8	Vitrified Clay Pipe	243.6	12.2	15	CIPP	
FS030659S	X4	FS030659 [7.1]	FS030658 [3.9]	8	Vitrified Clay Pipe	423	5.5	24	CIPP	
FS030446S	X5	FS030446 [Dead End]	FS030426 [9.2]	8	Vitrified Clay Pipe	90.65	9.2	5	CIPP	
FS030443.01S	X6	FS030443.01 [3.4]	FS030443 [4.8]	8	Vitrified Clay Pipe	474.2	4.1	20	CIPP	
FS030222S	X7	FS030222 [14.3]	FS030221 [18.6]	8	Vitrified Clay Pipe	302.8	16.5	8	CIPP	

Pipe ID	Sheet	US MH [Approx. Depth (ft)]	DS MH [Approx. Depth (ft)]	Diameter (in.)	Material	Approx. Repair Length (ft)	Approx. Repair Depth (ft)	Approx. # of Taps	Repair Method	Notes
FS030223S	X7	FS030223 [7.8]	FS030222 [14.3]	8	Vitrified Clay Pipe	473.1	11.1	18	CIPP	
FS030298S	X7	FS030298 [5.8]	FS030223 [7.8]	8	Vitrified Clay Pipe	321.8	6.8	6	CIPP	
FS030224S	X8	FS030224 [11]	FS030223 [7.8]	8	Vitrified Clay Pipe	449.4	9.4	9	CIPP	
FS030225S	X8	FS030225 [9.3]	FS030224 [11]	8	Vitrified Clay Pipe	450.83	10.2	10	CIPP	Point Repair @ 210.2' DS from 0225 for 10' for JOL, Point Repair @ 451.2' DS from 0225 for 10' for HWV
FS030829S	X8	FS030829 [5.9]	FS031855 [9.9]	8	Vitrified Clay Pipe	419.9	7.9	15	CIPP	
FS030515S	Y4	FS030515 [8.3]	FS030395 [28.7]	8	Vitrified Clay Pipe	533.5	18.5	14	CIPP	
FS030571S	Y4	FS030571 [7]	FS030570.01 [7.5]	8	Vitrified Clay Pipe	444.59	7.3	32	CIPP	
FS030202S	Y6	FS030202 [21.4]	FS030201 [Not Inspected]	12	Vitrified Clay Pipe	373.3	21.4	12	CIPP	
FS030203S	Y6	FS030203 [15.6]	FS030202 [21.4]	10	Vitrified Clay Pipe	426.3	18.5	9	CIPP	
FS030205.01S	Y6	FS030205.01 [9.1]	FS030205 [11.8]	8	Vitrified Clay Pipe	448.64	10.5	16	CIPP	Point Repair @ 360.3' US from 0205 for 10' for HSV
FS030630S	Y6	FS030630 [8.8]	FS030403.01 [11.2]	8	Vitrified Clay Pipe	268.7	10	6	CIPP	
FS030208S	Y7	FS030208 [7.9]	FS030207 [5]	10	Vitrified Clay Pipe	344.6	6.5	17	CIPP	
FS030245.03S	Y8	FS030245.03 [9.7]	FS030245.01 [8.2]	8	Vitrified Clay Pipe	540.02	9	25	CIPP	
FS030246S	Y8	FS030246 [13.6]	FS030245.01 [8.2]	10	Vitrified Clay Pipe	425.4	10.9	7	CIPP	
FS030277S	Y8	FS030277 [9.5]	FS030246 [13.6]	8	Vitrified Clay Pipe	184.1	11.6	3	CIPP	
FS030278S	Y8	FS030278 [10.2]	FS030277 [9.5]	8	Vitrified Clay Pipe	652	9.9	20	CIPP	
FS030402S-1	Y9	FS030402 [6.8]	FS030282 [9.6]	8	Vitrified Clay Pipe	489	8.2	17	CIPP	Point Repair @ 391.3' US from 0282 for 10' for BSV, Point Repair @ 485.9' US from 0282 for 10' for LL
FS030418S	Y10	FS030418 [5.6]	FS030417 [3.6]	8	Vitrified Clay Pipe	273	4.6	9	CIPP	
PI010162.01S	Z1	PI010162.01 [Not Inspected]	PI010162 [8.7]	8	Vitrified Clay Pipe	491.1	8.8	7	CIPP	
FS030561S	Z4	FS030561 [7.6]	FS030515 [8.3]	10	Vitrified Clay Pipe	304.6	8	10	CIPP	
FS030582S	Z4	FS030582 [5]	FS030562 [4.7]	8	Vitrified Clay Pipe	197.3	4.9	2	CIPP	
FS030205.02S	Z6	FS030205.02 [9.1]	FS030205.01 [9.1]	8	Vitrified Clay Pipe	516.84	9.1	16	CIPP	Tap Replacement @ 113' US from 0205.01 for 15' for TB
FS030880S	Z6	FS030880 [Not Inspected]	FS030403.01 [11.2]	8	Vitrified Clay Pipe	466.7	11.2	18	CIPP	

Pipe ID	Sheet	US MH [Approx. Depth (ft)]	DS MH [Approx. Depth (ft)]	Diameter (in.)	Material	Approx. Repair Length (ft)	Approx. Repair Depth (ft)	Approx. # of Taps	Repair Method	Notes
FS030881S	Z6	FS030881 [Dead End]	FS030880 [Not Inspected]	8	Vitrified Clay Pipe	130.8	11.2	5	CIPP	
FS030207.02S	Z7	FS030207.02 [10.2]	FS030207.01 [9.2]	8	Vitrified Clay Pipe	467.9	9.7	20	CIPP	
FS030260S	Z7	FS030260 [8]	FS030208 [7.9]	8	Vitrified Clay Pipe	516	8	18	CIPP	
FS030261S	Z7	FS030261 [13.1]	FS030260 [8]	8	Vitrified Clay Pipe	469.7	10.6	21	CIPP	
FS030245.04S	Z8	FS030245.04 [5.3]	FS030245.03 [9.7]	8	Vitrified Clay Pipe	654.4	7.5	17	CIPP	
FS030266S	Z9	FS030266 [Dead End]	FS030265 [12.5]	8	Vitrified Clay Pipe	540.2	12.5	22	CIPP	
FS030417S	Z10	FS030417 [3.6]	FS030281.01 [9.2]	8	Vitrified Clay Pipe	473.1	6.4	17	CIPP	
NN023341S	AA6	NN023341 [9.2]	NN023246 [9.6]	8	Vitrified Clay Pipe	452.66	9.4	15	CIPP	
NN023174.01S	AA7	NN023174.01 [12.7]	FS030261 [13.1]	8	#N/A	87	12.9	0	CIPP	
NN023245S	AA7	NN023245 [9.3]	NN023174.01 [12.7]	8	Vitrified Clay Pipe	348.5	11	5	CIPP	
FS030250S	AA8	FS030250 [14.7]	FS030249 [15]	10	Vitrified Clay Pipe	292.4	14.9	2	CIPP	
FS030251.01S	AA9	FS030251.01 [12.1]	FS030251 [11.3]	10	Vitrified Clay Pipe	318.4	11.7	3	CIPP	
FS030255S	AA9	FS030255 [3.1]	FS030254 [9.5]	10	Vitrified Clay Pipe	497.79	6.3	17	CIPP	
FS030256S	AA9	FS030256 [2.7]	FS030255 [3.1]	8	Vitrified Clay Pipe	50	2.9	0	CIPP	
FS030263S	AA9	FS030263 [3.8]	FS030255 [3.1]	10	Ductile Iron Pipe	67	3.5	0	CIPP	
FS030264S	AA9	FS030264 [7.6]	FS030263 [3.8]	10	Vitrified Clay Pipe	351.5	5.7	12	CIPP	
FS030257S	AA10	FS030257 [7.2]	FS030256 [2.7]	8	Vitrified Clay Pipe	321.1	5	10	CIPP	

Group 2 ClPP Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS020193	E6	48	Cement Coating: Entire MH	None	13.8	0.0
FS020197	E6	48	Install Inside Drop	None	10.6	0.0
FS020403	E7	40	Repair Bench/Channel	Cement Coating: Entire MH	4.4	0.0
FS020270	F6	48	Cement Coating: Entire MH	None	9.7	0.0
FS020347.01	F7	40	Repair Bench/Channel	None	5.6	0.0
FS020111.02	G6	48	Cement Coating: Entire MH	None	20.5	0.0
FS020249	G6	48	Install Inside Drop	Cement Coating: Entire MH	13.3	0.0
FS020373.04	G7	48	Repair Bench/Channel	Install Inside Drop	5.5	0.0
FS020373.03	G8	48	Repair Bench/Channel	None	3.7	0.0
FS020354	G9	40	Install Inside Drop	Cement Coating: Entire MH	9.9	0.0
FS020513	H7	48	Cement Coating: Entire MH	None	8.8	0.0
FS020592	H7	40	Cement Coating: Entire MH	None	7.4	0.0
FS020592.01	H8	40	Cement Coating: Entire MH	None	5.7	0.0
FS020358.01	H9	48	Cement Coating: Entire MH	None	5.0	0.0
FS031142.01	I5	48	Cement Coating: Entire MH	None	16.1	0.0
FS020117	I6	48	Install Inside Drop	Cement Coating: Entire MH	11.7	0.0
FS020121	I6	48	Repair Bench/Channel	None	5.4	0.0
FS031334.02	I6	48	Install Inside Drop	Cement Coating: Entire MH	14.0	0.0
FS020499	I7	48	Install Inside Drop	Cement Coating: Entire MH	9.8	0.0
FS020499.01	I7	36	Replace Manhole	None	5.0	0.0
FS020500	I7	48	Repair Bench/Channel	None	8.6	0.0

Group 2 ClPP Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS020537	J17	48	Repair Bench/Channel	Cement Coating: Entire MH	3.6	0.0
FS020535	J18	48	Cement Coating: Entire MH	None	8.3	0.0
FS020335	J19	40	Repair Bench/Channel	Cement Coating: Entire MH	7.7	0.0
FS020339	J19	40	Cement Coating: Entire MH	None	10.6	0.0
FS020340	J10	48	Cement Coating: Entire MH	None	11.4	0.0
FS020556	J10	48	Cement Coating: Entire MH	None	9.2	0.0
FS031482	J4	48	Cement Coating: Entire MH	None	12.6	0.0
FS031234	J5	36	Repair Bench/Channel	None	4.2	0.0
FS031334.01	J5	32	Repair Bench/Channel	None	5.6	0.0
FS032407	J5	48	Install Inside Drop	None	14.0	0.0
FS031009	J6	48	Install Inside Drop	Cement Coating: Entire MH	18.7	0.0
FS031132	J6	48	Repair Bench/Channel	Install Inside Drop	8.0	0.0
FS031600	J6	48	Repair Bench/Channel	None	7.8	0.0
FS031339	J7	48	Cement Coating: Entire MH	None	8.8	0.0
FS031522	J8	48	Cement Coating: Entire MH	None	9.5	0.0
FS031522.01	J8	48	Install Inside Drop	Cement Coating: Entire MH	9.7	0.0
FS031524	J9	40	Cement Coating: Entire MH	None	7.2	0.0
FS033725	J10	30	Cement Coating: Entire MH	None	4.9	0.0
FS033726	J10	48	Cement Coating: Entire MH	None	7.4	0.0
FS033512	J11	38	Cement Coating: Entire MH	None	14.6	0.0

Group 2 ClPP Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS033547	J11	48	Repair Bench/Channel	None	12.8	0.0
FS031514	K4	40	Cement Coating: Entire MH	None	7.9	0.0
FS031231	K5	40	Cement Coating: Entire MH	None	6.7	0.0
FS031238	K5	40	Cement Coating: Entire MH	None	7.0	0.0
FS031294.02	K5	40	Cement Coating: Entire MH	None	6.0	0.0
FS031368	K5	40	Cement Coating: Entire MH	None	6.4	0.0
FS031369	K5	40	Cement Coating: Entire MH	None	6.4	0.0
FS031370	K5	40	Cement Coating: Entire MH	None	6.6	0.0
FS031104.01	K6	40	Cement Coating: Entire MH	None	5.8	0.0
FS031176	K6	40	Cement Coating: Entire MH	None	6.0	0.0
FS031179	K6	40	Repair Bench/Channel	None	7.7	0.0
FS031315	K6	40	Repair Bench/Channel	Cement Coating: Entire MH	10.6	0.0
FS031057	K7	48	Repair Bench/Channel	Cement Coating: Entire MH	14.2	0.5
FS031061	K7	48	Repair Bench/Channel	Cement Coating: Entire MH	9.4	0.0
FS031062	K7	48	Repair Bench/Channel	Cement Coating: Entire MH	9.2	0.0
FS031438	K7	48	Repair Bench/Channel	None	13.7	0.5
FS031069	K8	48	Repair Bench/Channel	Cement Coating: Entire MH	6.2	0.0
FS031076	K8	48	Repair Bench/Channel	None	9.4	0.0
FS031430	K8	48	Repair Bench/Channel	None	7.7	0.0
FS031487	K8	48	Repair Bench/Channel	Cement Coating: Entire MH	14.5	0.0

Group 2 ClPP Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS031155	K9	48	Repair Bench/Channel	Cement Coating: Entire MH	14.6	0.0
FS031156	K9	36	Repair Bench/Channel	Cement Coating: Entire MH	4.4	0.0
FS033749	K9	48	Repair Bench/Channel	Install Inside Drop	13.6	0.0
FS033586	K10	48	Repair Bench/Channel	None	9.5	0.0
FS033691	K10	48	Cement Coating: Entire MH	None	10.0	0.0
FS033700	K10	48	Repair Bench/Channel	None	16.2	0.0
FS033700.01	K10	38	Install Inside Drop	Cement Coating: Entire MH	16.3	0.0
FS033890	K11	48	Repair Bench/Channel	Cement Coating: Entire MH	9.5	0.0
FS033883	K13	48	Repair Bench/Channel	Cement Coating: Entire MH	5.3	0.0
FS031266	L4	40	Repair Bench/Channel	None	7.5	0.0
FS031267	L4	40	Repair Bench/Channel	Cement Coating: Entire MH	7.4	0.0
FS031017	L5	48	Cement Coating: Entire MH	None	10.9	0.0
FS031106	L5	40	Cement Coating: Entire MH	None	9.5	0.0
FS031110	L5	36	Repair Bench/Channel	None	4.9	0.0
FS031172	L5	40	Repair Bench/Channel	Cement Coating: Entire MH	5.6	0.0
FS031502	L5	48	Repair Bench/Channel	None	9.9	0.0
FS031508	L5	40	Repair Bench/Channel	None	4.7	0.0
FS031509	L5	48	Cement Coating: Entire MH	None	7.9	0.0
FS031188	L6	40	Replace Manhole	None	6.4	0.0
FS031197	L6	40	Cement Coating: Entire MH	None	6.1	0.0
FS031395.01	L6	48	Repair Bench/Channel	None	7.6	0.8
FS031082	L7	48	Repair Bench/Channel	None	9.5	0.5

Group 2 Clipp Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS031084	L7	40	Repair Bench/Channel	Cement Coating: Entire MH	9.0	0.0
FS031089	L7	40	Repair Bench/Channel	Cement Coating: Entire MH	8.5	0.0
FS031605	L7	40	Cement Coating: Entire MH	None	9.1	0.0
FS031700	L7	40	Repair Bench/Channel	Cement Coating: Entire MH	6.6	0.0
FS031701	L7	40	Cement Coating: Entire MH	None	8.7	0.0
FS031067	L8	48	Install Inside Drop	None	15.4	0.0
FS031087	L8	36	Repair Bench/Channel	Cement Coating: Entire MH	4.3	0.0
FS031458	L8	40	Repair Bench/Channel	Cement Coating: Entire MH	5.6	0.0
FS032981	L9	36	Replace Manhole	None	3.7	0.0
FS032981.01	L9	36	Repair Bench/Channel	None	5.6	0.0
FS032988	L9	38	Cement Coating: Entire MH	None	6.7	0.0
FS032989	L9	38	Cement Coating: Entire MH	None	9.8	0.0
FS033029	L9	30	Replace Manhole	None	3.8	0.0
FS032991	L10	42	Install Inside Drop	Cement Coating: Entire MH	11.9	0.0
FS033609	L10	48	Repair Bench/Channel	Cement Coating: Entire MH	19.8	0.0
FS033838	L10	42	Repair Bench/Channel	Cement Coating: Entire MH	9.7	0.0
FS033867	L10	48	Repair Bench/Channel	None	14.0	0.0
FS033597	L11	38	Cement Coating: Entire MH	None	13.4	0.0
FS033748	L11	38	Cement Coating: Entire MH	None	7.8	0.0
FS033759	L11	48	Repair Bench/Channel	None	10.2	0.0

Group 2 ClPP Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS033770	L12	38	Cement Coating: Entire MH	None	10.2	0.0
FS033771	L12	48	Repair Bench/Channel	None	7.1	0.0
FS033797	L12	38	Repair Bench/Channel	Cement Coating: Entire MH	7.3	0.0
FS033827	L12	38	Repair Bench/Channel	Cement Coating: Entire MH	8.3	0.0
FS033798	L13	38	Repair Bench/Channel	None	8.9	0.0
FS033800	L13	48	Repair Bench/Channel	Cement Coating: Entire MH	7.5	0.0
FS030589	M3	48	Repair Bench/Channel	None	10.4	0.0
FS031328	M3	40	Repair Bench/Channel	None	3.7	0.0
FS031124	M4	48	Repair Bench/Channel	None	7.5	0.0
FS031126	M4	48	Cement Coating: Entire MH	None	7.4	0.0
FS031126.01	M4	48	Repair Bench/Channel	None	7.5	0.0
FS031323.02	M4	48	Cement Coating: Entire MH	None	8.2	0.0
FS030940	M5	40	Repair Bench/Channel	Cement Coating: Entire MH	6.0	0.0
FS030941	M5	30	Repair Bench/Channel	None	3.5	0.0
FS031019	M5	48	Cement Coating: Entire MH	None	13.1	0.0
FS031020	M5	40	Cement Coating: Entire MH	None	8.9	0.0
FS031021	M5	48	Repair Bench/Channel	None	7.2	0.0
FS031025	M5	48	Cement Coating: Entire MH	None	10.7	0.0
FS031200	M6	40	Repair Bench/Channel	Cement Coating: Entire MH	5.7	0.0
FS031697	M6	40	Cement Coating: Entire MH	None	5.9	0.0
FS031093	M7	47	Cement Coating: Entire MH	None	9.1	0.0
FS031419	M7	40	Install Inside Drop	None	7.5	0.0

Group 2 CIPP Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS033037	M8	32	Cement Coating: Entire MH	None	5.9	0.0
FS033052	M8	38	Repair Bench/Channel	Cement Coating: Entire MH	6.6	0.0
FS032983	M9	36	Repair Bench/Channel	None	6.0	0.0
FS032984	M9	42	Cement Coating: Entire MH	None	11.4	0.0
FS032992	M10	42	Cement Coating: Entire MH	None	11.9	0.0
FS033839	M10	32	Repair Bench/Channel	Cement Coating: Entire MH	6.5	0.0
FS033840	M10	38	Repair Bench/Channel	Cement Coating: Entire MH	6.4	0.0
FS033527	M11	48	Cement Coating: Entire MH	None	9.9	0.0
FS033528	M11	48	Cement Coating: Entire MH	None	9.5	0.0
FS033791	M11	38	Cement Coating: Entire MH	None	6.6	0.0
FS033735	M12	38	Cement Coating: Entire MH	None	7.5	0.0
FS033808	M12	48	Repair Bench/Channel	None	9.8	1.1
FS033810	M12	38	Cement Coating: Entire MH	None	8.0	0.0
FS033812	M12	38	Cement Coating: Entire MH	None	8.3	1.0
FS033801	M13	48	Repair Bench/Channel	None	7.6	0.0
FS031209	N4	40	Repair Bench/Channel	None	4.8	0.0
FS031219	N4	40	Repair Bench/Channel	Cement Coating: Entire MH	7.4	0.0
FS031221	N4	40	Repair Bench/Channel	Cement Coating: Entire MH	4.8	0.0
FS031045.01	N5	48	Install Inside Drop	Cement Coating: Entire MH	9.3	0.0

Group 2 ClPP Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS032142	N6	47	Install Inside Drop	Cement Coating: Entire MH	13.2	0.0
FS032149	N6	48	Cement Coating: Entire MH	None	9.7	0.0
FS033041	N8	38	Repair Bench/Channel	None	4.8	0.0
FS033071.01	N8	36	Cement Coating: Entire MH	None	7.1	0.0
FS033071.18	N8	48	Repair Bench/Channel	None	7.1	0.0
FS033071.33	N8	48	Repair Bench/Channel	None	6.4	0
FS033071.34	N8	38	Cement Coating: Entire MH	None	5.7	0
FS032994	N10	38	Repair Bench/Channel	Cement Coating: Entire MH	11.5	0
FS032996	N10	38	Repair Bench/Channel	Cement Coating: Entire MH	9.5	0
FS033002	N10	48	Repair Bench/Channel	None	6.6	0
FS033719	N10	32	Cement Coating: Entire MH	None	6	0
FS033529.01	N11	48	Cement Coating: Entire MH	None	9.3	0
FS033529.02	N11	48	Repair Bench/Channel	None	12.3	0
FS033648	N11	36	Cement Coating: Entire MH	None	7.5	0
FS033649	N11	36	Cement Coating: Entire MH	None	8.1	0
FS033650	N11	36	Cement Coating: Entire MH	None	9.5	0
FS033651	N11	36	Cement Coating: Entire MH	None	9.2	0
FS033729	N11	40	Cement Coating: Entire MH	None	7.8	0
FS033734	N11	30	Cement Coating: Entire MH	None	3.8	0
FS033532	N12	42	Repair Bench/Channel	Install Inside Drop	11.8	0
FS033782	N12	48	Repair Bench/Channel	None	3.4	0

Group 2 ClPP Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS033813	N12	42	Cement Coating: Entire MH	None	9.6	0
FS033818	N13	48	Repair Bench/Channel	None	9.7	0
FS030315	O3	40	Repair Bench/Channel	Cement Coating: Entire MH	8.6	0
FS030316	O3	40	Cement Coating: Entire MH	None	7.7	0
FS030496	O3	48	Repair Bench/Channel	None	3.1	0
FS030895	O3	48	Repair Bench/Channel	None	9.9	0
FS030127.01	O4	48	Repair Bench/Channel	None	5.9	0
FS031047	O5	48	Cement Coating: Entire MH	None	11.5	0
FS031865	O6	40	Cement Coating: Entire MH	None	7.1	0
FS031867	O6	24	Replace Manhole	None	3.1	0
FS032160	O6	40	Cement Coating: Entire MH	None	8.8	0
FS031410.01	O7	48	Cement Coating: Entire MH	None	10.2	0
FS031527	O7	48	Install Inside Drop	None	11.8	0
FS031861	O7	48	Repair Bench/Channel	None	7.3	0
FS032166	O7	48	Cement Coating: Entire MH	None	10.6	0
FS033042	O8	30	Repair Bench/Channel	None	3.6	0
FS033054.01	O8	48	Cement Coating: Entire MH	None	6.2	0
FS033071.19	O8	48	Repair Bench/Channel	None	5.7	0
FS033072	O8	38	Repair Bench/Channel	Cement Coating: Entire MH	13.4	0
FS033046	O9	36	Repair Bench/Channel	Cement Coating: Entire MH	6.7	0
FS033047	O9	48	Repair Bench/Channel	None	6.2	0
FS033048	O9	30	Repair Bench/Channel	None	4.2	0
FS033049	O9	36	Repair Bench/Channel	None	4.4	0

Group 2 Clipp Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS033057	O9	38	Cement Coating: Entire MH	None	6.6	0
FS032997	O10	38	Repair Bench/Channel	Cement Coating: Entire MH	9.2	0
FS033003	O10	36	Repair Bench/Channel	None	10.3	0
FS033022	O10	36	Replace Manhole	None	3.6	0
FS033025	O10	36	Repair Bench/Channel	Cement Coating: Entire MH	8.6	0
FS033651.03	O11	48	Cement Coating: Entire MH	None	12.3	0
FS033655.01	O11	48	Repair Bench/Channel	None	8.9	0
FS033711	O11	48	Repair Bench/Channel	None	7.8	0
FS033821	O11	38	Cement Coating: Entire MH	None	7.9	0
FS033536	O12	48	Repair Bench/Channel	Cement Coating: Entire MH	12.8	0
FS033537	O12	48	Cement Coating: Entire MH	None	16.3	0
FS033538	O12	48	Install Inside Drop	Cement Coating: Entire MH	13.7	0.9
FS033538.01	O12	48	Cement Coating: Entire MH	None	9.9	0
FS033829	O12	38	Cement Coating: Entire MH	None	15.1	0
FS033871	O13	36	Repair Bench/Channel	Cement Coating: Entire MH	6.3	0
FS033872	O13	48	Cement Coating: Entire MH	None	7.2	0
FS030103	P3	48	Repair Bench/Channel	Cement Coating: Entire MH	6.8	0
FS030106	P3	48	Cement Coating: Entire MH	None	14.5	0
FS030301	P3	40	Cement Coating: Entire MH	None	8.7	0

Group 2 CIPP Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS030100	P4	24	Cement Coating: Entire MH	None	3.1	0
FS030100.02	P4	48	Repair Bench/Channel	Cement Coating: Entire MH	4.9	0
FS030100.03	P4	48	Replace Manhole	None	4.9	0
FS032021	P5	48	Cement Coating: Entire MH	None	8	0
FS032004	P7	48	Repair Bench/Channel	Cement Coating: Entire MH	11	0
FS032835	P9	36	Cement Coating: Entire MH	None	7.3	0
FS032836.01	P9	48	Cement Coating: Entire MH	None	8.9	0
FS032837	P9	48	Cement Coating: Entire MH	None	8.4	0
FS032847	P9	48	Cement Coating: Entire MH	None	9.9	0
FS033018	P10	38	Cement Coating: Entire MH	None	10.3	0
FS033672.01	P11	48	Cement Coating: Entire MH	None	7.6	0
FS033794	P11	48	Repair Bench/Channel	None	6.3	0
FS033795	P11	48	Repair Bench/Channel	None	6.6	0
FS033822	P11	38	Repair Bench/Channel	Cement Coating: Entire MH	5.4	0
FS033540	P12	30	Repair Bench/Channel	None	10	0
FS033656	P12	48	Repair Bench/Channel	None	11.8	0
FS033541	P13	38	Repair Bench/Channel	Cement Coating: Entire MH	9.7	0
FS033542	P13	48	Repair Bench/Channel	Cement Coating: Entire MH	11.3	0
FS033552	P13	48	Cement Coating: Entire MH	None	14.1	0
FS033554	P13	38	Repair Bench/Channel	Cement Coating: Entire MH	9.7	0

Group 2 ClPP Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS033555	P13	38	Install Inside Drop	Cement Coating: Entire MH	9	0
FS033555.02	P13	48	Cement Coating: Entire MH	None	9.6	0
FS030130	Q4	40	Cement Coating: Entire MH	None	9.7	0.5
FS030497	Q4	48	Cement Coating: Entire MH	None	7	0
FS030498	Q5	48	Cement Coating: Entire MH	None	10.7	0
FS030500	Q5	48	Install Inside Drop	Cement Coating: Entire MH	11.6	0
FS032024	Q5	48	Install Inside Drop	Cement Coating: Entire MH	6.5	0
FS031978	Q7	40	Repair Bench/Channel	None	11.9	0
FS032954	Q8	48	Repair Bench/Channel	None	5.2	0
FS032616	Q9	38	Cement Coating: Entire MH	None	17.6	0
FS032617	Q9	36	Cement Coating: Entire MH	None	8.4	0
FS032617.02	Q9	36	Repair Bench/Channel	Cement Coating: Entire MH	4.5	0
FS032710	Q9	38	Install Inside Drop	Cement Coating: Entire MH	12.7	0
FS032797	Q9	48	Cement Coating: Entire MH	None	9.2	0
FS032826	Q9	48	Cement Coating: Entire MH	None	7	0
FS032868	Q9	38	Cement Coating: Entire MH	None	8.7	0
FS033032	Q10	38	Repair Bench/Channel	Cement Coating: Entire MH	11.9	0
FS033033	Q11	38	Cement Coating: Entire MH	None	10.2	0
FS033671	Q11	48	Repair Bench/Channel	None	9.4	0

Group 2 ClPP Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS033823	Q11	38	Repair Bench/Channel	Cement Coating: Entire MH	6.7	0
FS033824.01	Q11	30	Repair Bench/Channel	None	3.9	0
FS033660	Q12	48	Install Inside Drop	None	16.3	0
FS033660.01	Q12	48	Cement Coating: Entire MH	None	10.1	0
FS033853	Q12	48	Repair Bench/Channel	None	8.1	0
PI010204	R1	48	Install Inside Drop	Cement Coating: Entire MH	10.2	0
PI010238.01	R1	42	Replace Manhole	None	11.3	0
FS030353	R2	40	Cement Coating: Entire MH	None	7	0
FS030528	R3	48	Cement Coating: Entire MH	None	12	0
FS030147	R4	48	Cement Coating: Entire MH	None	6.9	0
FS030617	R4	48	Repair Bench/Channel	None	7.4	0
FS030148	R5	48	Cement Coating: Entire MH	None	9.7	0
FS032053	R7	8	Replace Manhole	None	8.3	0
FS032091	R8	6	Cement Coating: Entire MH	None	3.4	0
FS032621	R9	48	Repair Bench/Channel	None	7.8	0
FS032665	R9	48	Repair Bench/Channel	None	5.9	0
FS032775	R9	38	Cement Coating: Entire MH	None	7	0
FS032626	R10	38	Cement Coating: Entire MH	None	12.5	0
FS032877	R10	38	Cement Coating: Entire MH	None	10.4	0
FS032903.01	R10	48	Cement Coating: Entire MH	None	8.7	0
FS032905	R10	38	Cement Coating: Entire MH	None	9.9	0

Group 2 ClPP Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS033876	R13	42	Repair Bench/Channel	Cement Coating: Entire MH	7.8	0
FS033560	R14	36	Cement Coating: Entire MH	None	10.1	0
FS033633	R15	38	Cement Coating: Entire MH	None	11.4	0
PI010201	S1	38	Cement Coating: Entire MH	None	9.3	0
PI010248	S1	48	Cement Coating: Entire MH	None	8.1	0
PI010239	S2	48	Cement Coating: Entire MH	None	7.8	0
FS030531	S3	48	Cement Coating: Entire MH	None	9.3	0
FS031833	S7	48	Cement Coating: Entire MH	None	7.4	0
FS032121	S8	48	Cement Coating: Entire MH	None	9.6	0
FS032672	S9	48	Cement Coating: Entire MH	None	10.1	0
FS032772.01	S9	36	Repair Bench/Channel	None	5.4	0
FS032776	S9	42	Cement Coating: Entire MH	None	11.3	0
FS032777.01	S9	38	Cement Coating: Entire MH	None	6.3	0
FS032792.02	S9	48	Repair Bench/Channel	None	9.4	0
FS032794.01	S9	36	Repair Bench/Channel	None	5.9	0
FS032909	S9	30	Cement Coating: Entire MH	None	4.9	0
FS032629	S10	60	Repair Bench/Channel	None	12.2	0
FS032631	S10	48	Cement Coating: Entire MH	None	9.1	0
FS032638	S10	48	Repair Bench/Channel	None	7.8	0
FS032944	S10	48	Repair Bench/Channel	None	4.2	0
FS032945	S10	48	Replace Manhole	None	2.4	0

Group 2 ClPP Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS033564	S14	36	Repair Bench/Channel	Cement Coating: Entire MH	6.6	0
FS030184	T3	48	Repair Bench/Channel	Cement Coating: Entire MH	9.4	0
FS030628	T5	48	Repair Bench/Channel	Cement Coating: Entire MH	9.2	0
FS031983	T5	40	Cement Coating: Entire MH	None	9	0
FS031932	T6	48	Cement Coating: Entire MH	None	12	0
FS031982	T6	40	Cement Coating: Entire MH	None	9.1	0
FS032027	T6	40	Cement Coating: Entire MH	None	7.4	0
FS032099	T6	40	Repair Bench/Channel	Cement Coating: Entire MH	7.7	0
FS031841	T8	48	Cement Coating: Entire MH	None	15	0
FS031842.01	T8	48	Repair Bench/Channel	Cement Coating: Entire MH	10.3	0
FS031843	T8	40	Cement Coating: Entire MH	None	8.4	0
FS032763	T9	48	Cement Coating: Entire MH	None	14.1	0
FS032860	T9	36	Cement Coating: Entire MH	None	9.1	0
FS032861	T9	48	Repair Bench/Channel	Cement Coating: Entire MH	7.6	0
FS032881	T10	48	Repair Bench/Channel	None	5.8	0
FS032926	T12	38	Cement Coating: Entire MH	None	7.5	0
FS032927	T12	48	Repair Bench/Channel	Install Inside Drop	8.5	0
FS032927.01	T12	48	Repair Bench/Channel	None	5	0
FS032941	T13	30	Cement Coating: Entire MH	None	4.1	0

Group 2 Clipp Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
PI010102	U1	48	Cement Coating: Entire MH	None	34.2	0
FS030234.01	U3	48	Repair Bench/Channel	None	7.9	0
FS030912	U5	36	Repair Bench/Channel	Cement Coating: Entire MH	4.9	0
FS031933	U6	48	Cement Coating: Entire MH	None	16	0
FS031934	U6	40	Cement Coating: Entire MH	None	17.6	0
FS031935	U6	48	Cement Coating: Entire MH	None	12.5	0
FS031986	U6	48	Cement Coating: Entire MH	None	7.1	0
FS031925	U8	40	Repair Bench/Channel	None	6.1	0
FS031952	U8	40	Cement Coating: Entire MH	None	9.4	0
FS032691	U9	48	Install New Manhole	None	10.7	0
FS032866	U9	48	Install New Manhole	None	10.7	0
FS032914	U9	42	Cement Coating: Entire MH	None	9.8	0
FS032917	U9	38	Cement Coating: Entire MH	None	7.2	0
FS032922	U10	30	Repair Bench/Channel	None	4.1	0
FS032645	U11	38	Repair Bench/Channel	Cement Coating: Entire MH	8.2	0
FS032645.01	U11	48	Replace Manhole	None	7.7	0
FS032646	U11	48	Cement Coating: Entire MH	None	7.2	0
FS032784	U11	48	Repair Bench/Channel	None	9.6	0
FS032923	U11	48	Install Inside Drop	Cement Coating: Entire MH	15.5	0
FS032930	U12	48	Repair Bench/Channel	Cement Coating: Entire MH	9.4	0
FS032933	U12	48	Repair Bench/Channel	None	9.8	0

Group 2 CIPP Project - Manhole Bid Schedule

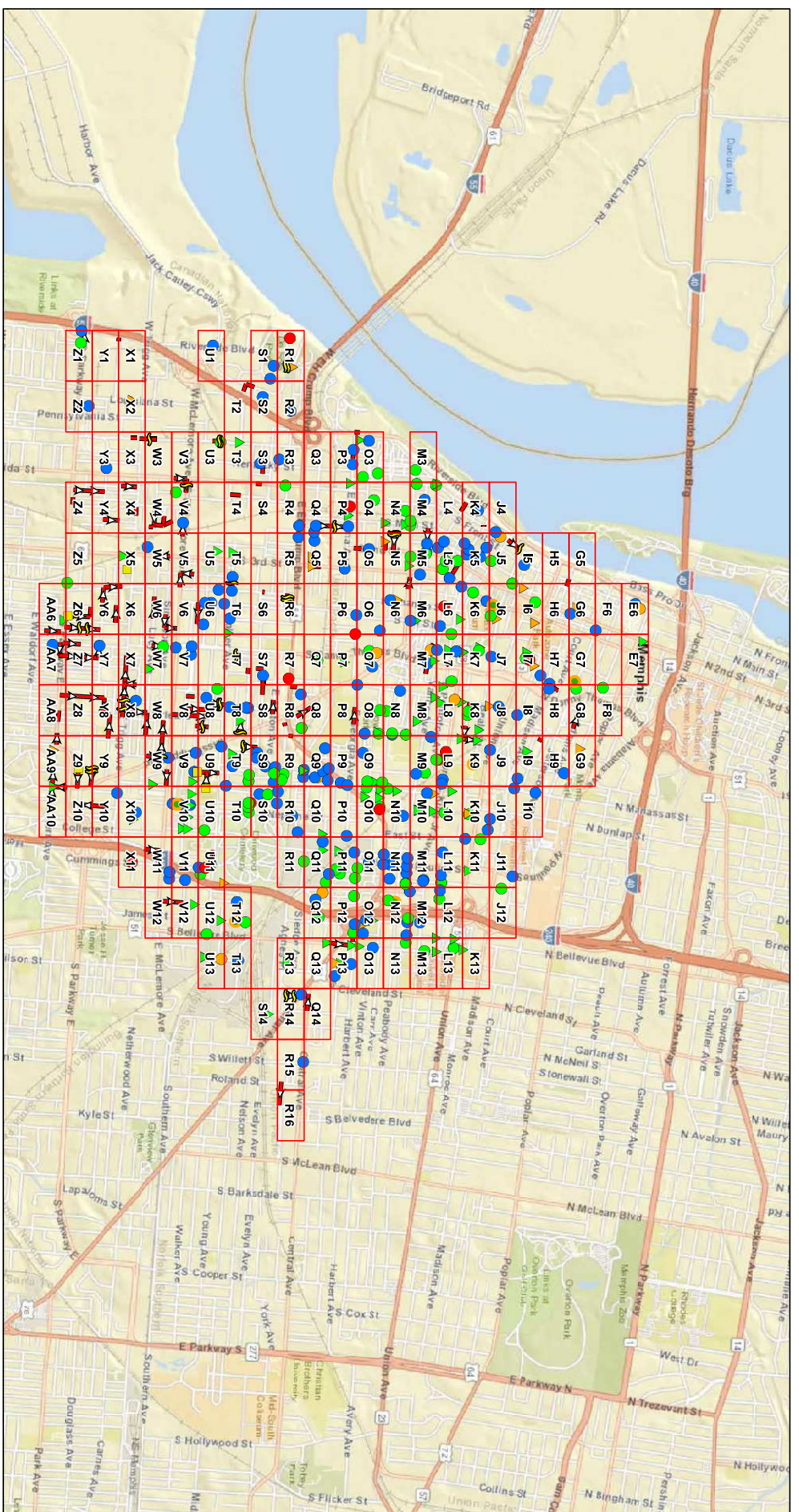
MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
FS032939	U13	48	Repair Bench/Channel	Cement Coating: Entire MH	11	0
FS032940	U13	48	Install Inside Drop	None	15.2	0
FS030173.01	V4	48	Cement Coating: Entire MH	None	4.8	0
FS030889	V4	48	Repair Bench/Channel	None	5.5	0
FS031940	V7	40	Cement Coating: Entire MH	None	8.8	0
FS031941	V7	40	Cement Coating: Entire MH	None	8.4	0
FS032067	V7	40	Cement Coating: Entire MH	None	8.3	0
FS032692	V9	38	Repair Bench/Channel	Cement Coating: Entire MH	7.7	0
FS032693	V9	38	Cement Coating: Entire MH	None	9.3	0
FS032653	V10	38	Repair Bench/Channel	Cement Coating: Entire MH	14.2	0
FS032654	V10	38	Repair Bench/Channel	Cement Coating: Entire MH	7	0
FS032715	V10	38	Cement Coating: Entire MH	None	14.3	0
FS032716	V10	36	Repair Bench/Channel	Cement Coating: Entire MH	13.3	0
FS032717	V10	38	Repair Bench/Channel	Cement Coating: Entire MH	10	0
FS032718	V10	38	Repair Bench/Channel	Cement Coating: Entire MH	8.5	0
FS032724	V10	30	Cement Coating: Entire MH	None	11.3	0
FS032724.01	V10	48	Repair Bench/Channel	Install Inside Drop	11.2	0
FS032725	V10	38	Cement Coating: Entire MH	None	11.3	0
FS032874	V11	36	Cement Coating: Entire MH	None	4.5	0

Group 2 Clipp Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
NN022603	V11	48	Cement Coating: Entire MH	None	10.4	0
NN022604	V11	48	Cement Coating: Entire MH	None	8.1	0
FS032737	V12	38	Repair Bench/Channel	Cement Coating: Entire MH	7.4	0
FS030195	W5	48	Cement Coating: Entire MH	None	15.2	0
FS032046	W7	40	Repair Bench/Channel	None	8.8	0
FS032049	W7	36	Repair Bench/Channel	Cement Coating: Entire MH	4.3	0
FS032660	W9	38	Cement Coating: Entire MH	None	9	0
FS032746.01	W9	36	Repair Bench/Channel	Cement Coating: Entire MH	5.1	0
PI010132.01	X2	48	Install Inside Drop	Cement Coating: Entire MH	10.3	0
FS030230	X5	40	Repair Bench/Channel	Cement Coating: Entire MH	4.2	0
FS030446	X5	48	Install New Manhole	None	9.2	0
FS030224.01	X8	48	Cement Coating: Entire MH	None	7.7	0
FS032731.04	X10	38	Cement Coating: Entire MH	None	9.4	0
FS032731.05	X10	36	Repair Bench/Channel	Cement Coating: Entire MH	5.8	0
FS032963.01	X10	38	Cement Coating: Entire MH	None	7.1	0
NN022785	X11	24	Replace Manhole	None	3.2	0
NN022787	X11	24	Repair Bench/Channel	None	2	0
FS030397	Y3	36	Cement Coating: Entire MH	None	3.4	0
FS030207	Y7	40	Cement Coating: Entire MH	None	5	0

Group 2 CIPP Project - Manhole Bid Schedule

MH ID	Sheet	Diameter (in.)	Repair Method 1	Repair Method 2	Manhole Height (ft)	Height Above Grade (ft)
PI010163	Z1	36	Cement Coating: Entire MH	None	9.9	0
PI010164	Z1	48	Repair Bench/Channel	None	10.7	0
PI010245	Z2	48	Cement Coating: Entire MH	None	7.9	0
FS030695	Z5	48	Repair Bench/Channel	None	7.9	0
FS030405	Z6	48	Repair Bench/Channel	Cement Coating: Entire MH	11	0
FS030881	Z6	48	Install New Manhole	None	9.1	0
FS030266	Z9	48	Install New Manhole	None	12.5	0
NN023252	AA7	48	Cement Coating: Entire MH	None	9.4	0
FS030253	AA9	48	Install Inside Drop	Cement Coating: Entire MH	10.2	0
FS030263	AA9	48	Repair Bench/Channel	Cement Coating: Entire MH	3.8	0
FS031018.01	M5	48	Install New Manhole	None	6.9	0

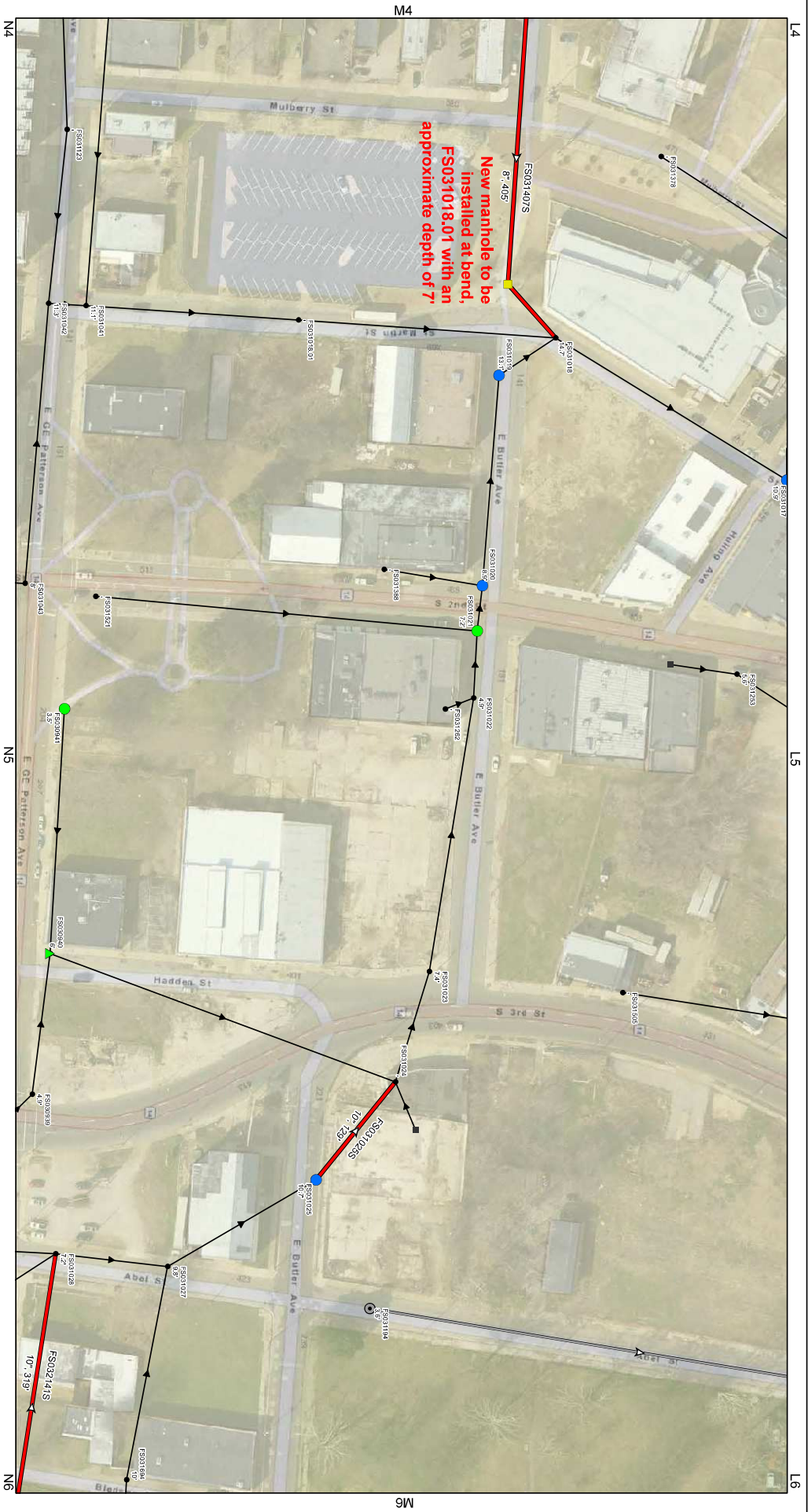


- ### Manhole Rehab
- Install New Manhole (7)
 - Install Inside Drop (7)
 - Cementitious Coating (167)
 - Repair Bench/Channel (84)
 - Cementitious Coating and Install Inside Drop (20)
 - Cementitious Coating and Repair Bench/Channel (75)
 - Repair Bench/Channel and Install Inside Drop (6)
 - Structurally Replace Manhole (12)
- ### Pipe Rehab
- CIPP (155)
 - Point Repair (30)
- Install New Manhole (Rehab By Others)
- Manhole (Rehab By Others)
- Manhole (No Rehab)
- Gravily Main (Rehab By Others)
- Gravily Main (No Rehab)

Overview

Group 4 CIPP

Note: Recorded manhole firm to invert measurements are indicated below the Facility ID. Point Repair locations are approximate. Maps have some overlap with other map pages.



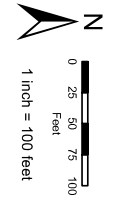
New manhole to be installed at bend, FS031018.01 with an approximate depth of 7'



- ### Manhole Rehab
- Install New Manhole (0 1)
 - Install Inside Drop (0)
 - Cementitious Coating (4)
 - Repair Bench/Channel (2)
 - Cementitious Coating and Install Inside Drop (0)
 - Cementitious Coating and Repair Bench/Channel (1)
 - Repair Bench/Channel and Install Inside Drop (0)
 - Structurally Replace Manhole (0)

- ### Pipe Rehab
- CIPP (3)
 - Point Repair (0)

- Install New Manhole (Rehab By Others)
- Manhole (Rehab By Others)
- Manhole (No Rehab)
- Gravily Main (Rehab By Others)
- Gravily Main (No Rehab)

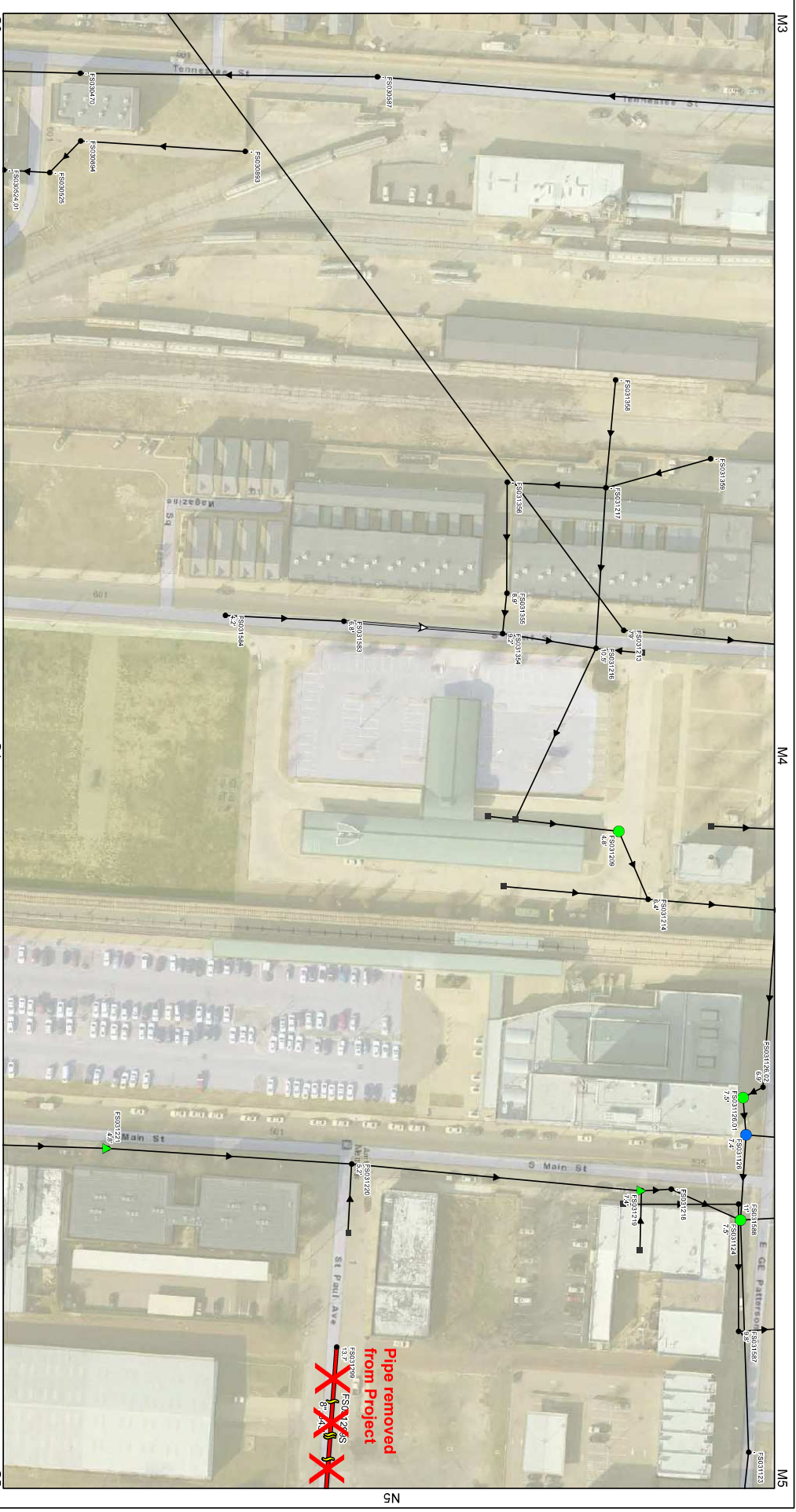


Group 4 CIPP
Grid M5

BLACK & VEATCH
Building the World of Infrastructure

Page 51 of 197

Note: Recorded manhole rim to invert measurements are indicated below the Facility ID. Point Repair locations are approximate. Maps have some overlap with other map pages.



Current Grid: N4

U1	U2	U3	U4	U5	U6	U7	U8	U9	U10	U11
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11
S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11
T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11
V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11
W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11
X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11
Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11
Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Z9	Z10	Z11
AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK
AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV
AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG
BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR
BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC
CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN
CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY
CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ
DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU
DV	DW	DX	DY	EA	EB	EC	ED	EE	EF	EG
EH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER
ES	ET	EU	EV	EW	EX	EY	EZ	FA	FB	FC
FD	FE	FF	FG	FH	FI	FJ	FK	FL	FM	FN
FO	FP	FQ	FR	FS	FT	FU	FV	FW	FX	FY
FZ	GA	GB	GC	GD	GE	GF	GG	GH	GI	GJ
GK	GL	GM	GN	GO	GP	GQ	GR	GS	GT	GU
GV	GW	GX	GY	HA	HB	HC	HD	HE	HF	HG
HH	HI	HJ	HK	HL	HM	HN	HO	HP	HQ	HR
HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB	IC
ID	IE	IF	IG	IH	II	IJ	IK	IL	IM	IN
IO	IP	IQ	IR	IS	IT	IU	IV	IW	IX	IY
IZ	JA	JB	JC	JD	JE	JF	JG	JH	JI	JJ
JK	KL	KM	KN	KO	KP	KQ	KR	KS	KT	KU
KV	KW	KX	KY	KZ	LA	LB	LC	LD	LE	LF
LG	LH	LI	LJ	LK	LM	LN	LO	LP	LQ	LR
LS	LT	LU	LV	LW	LX	LY	LZ	MA	MB	MC
MD	ME	MF	MG	MH	MI	MJ	MK	ML	MM	MN
MO	MP	MQ	MR	MS	MT	MU	MV	MW	MX	MY
MZ	NA	NB	NC	ND	NE	NF	NG	NH	NI	NJ
NK	NL	NM	NO	NP	NQ	NR	NS	NT	NU	NV
NS	NT	NU	NV	NW	NX	NY	NZ	OA	OB	OC
OD	OE	OF	OG	OH	OI	OJ	OK	OL	OM	ON
OO	OP	OQ	OR	OS	OT	OU	OV	OW	OX	OY
OZ	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ
PK	PL	PM	PN	PO	PP	PQ	PR	PS	PT	PV
PW	PX	PY	PZ	QA	QB	QC	QD	QE	QF	QG
QH	QI	QJ	QK	QL	QM	QN	QO	QP	QQ	QR
QS	QT	QU	QV	QW	QX	QY	QZ	RA	RB	RC
RD	RE	RF	RG	RH	RI	RJ	RK	RL	RM	RN
RO	RP	RQ	RR	RS	RT	RU	RV	RW	RX	RY
RZ	SA	SB	SC	SD	SE	SF	SG	SH	SI	SJ
SK	SL	SM	SN	SO	SP	SQ	SR	SS	ST	SV
SW	SX	SY	SZ	TA	TB	TC	TD	TE	TF	TG
TH	TI	TJ	TK	TL	TM	TN	TO	TP	TQ	TR
TS	TT	TU	TV	TW	TX	TY	TZ	UA	UB	UC
UD	UE	UF	UG	UH	UI	UJ	UK	UL	UM	UN
UO	UP	UQ	UR	US	UT	UV	UW	UX	UY	UZ

- ### Manhole Rehab
- Install New Manhole (0)
 - Install Inside Drop (0)
 - Cementitious Coating (1)
 - Repair Bench/Channel (3)
 - Cementitious Coating and Repair Bench/Channel (0)
 - Repair Bench/Channel and Install Inside Drop (0)
 - Repair Bench/Channel and Install Inside Drop (2)
 - Structurally Replace Manhole (0)
- ### Pipe Rehab
- CI/PP (1 0)
 - Point Repair (4 0)
- Install New Manhole (Rehab By Others)
- Manhole (Rehab By Others)
- Manhole (No Rehab)
- Gravily Main (Rehab By Others)
- Gravily Main (No Rehab)

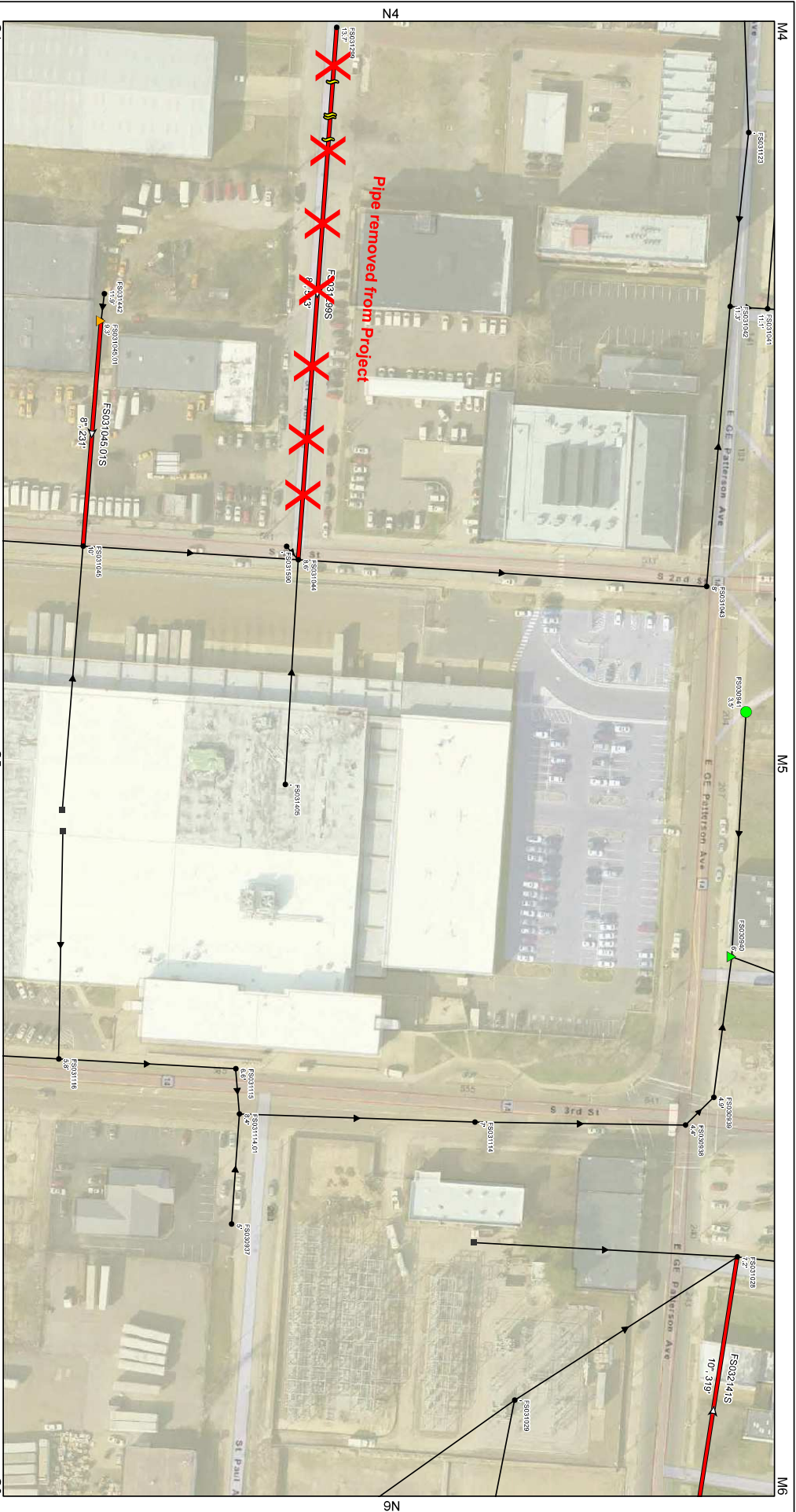
Page 60 of 197

Group 4 CI/PP
Grid N4

BLACK & VEATCH
Building a World of Difference

S&P

Note: Recorded manhole firm to invert measurements are indicated below the Facility ID. Point Repair locations are approximate. Maps have some overlap with other map pages.



Current Grid: N5

U1	U2	U3	U4	U5	U6	U7	U8	U9	U10	U11	U12
T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
O1	O2	O3	O4	O5	O6	O7	O8	O9	O10	O11	O12
N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12
M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12
K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	K11	K12
J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12
I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12
H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12
G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12
F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12
E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12
D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12

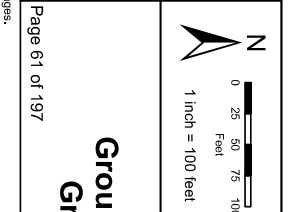
- Manhole Rehab**
- Install New Manhole (0)
 - Install Inside Drop (0)
 - Cementitious Coating (0)
 - Repair Bench/Channel (1)
 - Cementitious Coating and Install Inside Drop (1)
 - Cementitious Coating and Repair Bench/Channel (1)
 - Repair Bench/Channel and Install Inside Drop (0)
 - Structurally Replace Manhole (0)
- Pipe Rehab**
- ClPP (3 2)
 - Point Repair (4 0)
- Install New Manhole (Rehab By Others)
- Manhole (Rehab By Others)
- Manhole (No Rehab)
- Gravily Main (Rehab By Others)
- Gravily Main (No Rehab)

Page 61 of 197

Group 4 ClPP
Grid N5

BLACK & VEATCH
Building's World of Services

S&P



Note: Recorded manhole rim to invert measurements are indicated below the Facility ID. Point Repair locations are approximate. Maps have some overlap with other map pages.