Request for Proposal
Phase 6 SSES Project Addendum No. 2 to
RFP No. 197414.78.0070
December 15, 2017

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

Section 1 – Bidder Questions

Section 2 – Mandatory Pre-Proposal Meeting Sign-In Sheet and Notes, Including Safety Fact Sheet

Section 3 – Updated Table 00380.3.1 – Unit Price Proposal Form

Section 4 – Updated Technical Specifications Section 02541 (changes noted in red)

All other conditions and requirements remain unchanged.

Section 1
Bidder Questions

Q1: Is the number of manhole inspections in the interceptor contracts accurate and will the contractor be required to assess all of them?
SARP10: The revised number of manholes that need assessment and GPS locations is updated in the bid tab issued as part of this addendum. Because some manholes are being surveyed as part of a separate effort not in this contract, GPS locating these manholes is not needed. Their coordinates will be supplied to the Phase 6 SSES Subcontractor by SARP10 upon being awarded the contract. Therefore the Phase 6 SSES Subcontractor will not be paid for GPS locating those manholes.

Q2: Is Monday the only day you accept smoke data?
SARP10: All data for the week should be submitted by Monday COB. If delivery will be delayed, an email must be sent to the data manager explaining the circumstances.

Q3: Are there any liquidated damages associated with this work?
SARP10: Information regarding liquidated damages can be found in Section 00581.3 of the RFP.
"Beginning on the first calendar day after the specified milestone completion date for each milestone and continuing for thirty calendar days or until the milestone is completed, whichever is earlier, delay liquidated damages will be assessed at the rate of five hundred dollars ($500.00) per calendar day."
"Beginning on the thirty first calendar day after the specified milestone completion date for each milestone and continuing until the milestone is completed, delay liquidated damages will be assessed at the rate of one thousand dollars ($1,000.00) per calendar day."

Section 2
Mandatory Pre-Proposal Meeting Sign-In Sheet and Notes, Including Safety Fact Sheet

SIGN-IN SHEET

Project:	Phase 6 SSES	**Meeting Date:**	December 12, 2017
Meeting:	Preproposal Meeting	**Time:**	2:30 P.M.
Facilitator:	Scott McAmis	**Place/Room:**	Benjamin Hooks Library

Name	Company	Phone	E-Mail
David Chamberlin	TREKK Design Group	816-278-0339	dchamberlin@trekkllc.com
DANE MILLER	TREKK DESIGN GROUP	314-459-8314	dhaner@trekkllc.com
KENDERICK NORRIS	CAMBRIDGE	901-591-7302	cnorris@cmiac.us knorris@cmiac.us
WileyRichards	WJT Contracting Corporation	901-497-1291	WileyRichards at MSN.com
Terrell Richards	W&T Contracting	901-331-1780	terrellrichards250@gmail.com
Tim Jacobs	CES	404-886-1520	TJacobs@CES-SSES.com
Marty Brossard	CES	404-886-1520	MBrossard@CES-SSES.com
J.T. Burden	Hydromax USA	812.305.0380	jeremy.burden@hydromaxusa.com
M. Boatright	Southeast pipe	9126472549 (901)649-9000	M.Boatright@southeastpipe.com
Rod Brown	Bruce Construction Many		BCM853@Gmail.com
IVAN Tamayo	AIS/MALASRI ENG	9015520146	ivan@malasriengineering.com
JustinAvent	SARP10	901-849-6554	justin_avent@sspnet.com
Lee Owens	SARP10/AWPM	901-237-0009	lee@allworldmail.com
Chad Siegfried	Ace Pipe Cleaning	816-627-9819	csiegfried@acepipe.com
Mark Calvert	Ace Pipe Cleaning	816-853-6989	mcalvert@acepipe.com
RON WILSON	SYNERGETIC	205-960-7374	rwilson@sesinc.us
Eddie Starks	ELS Construction	901-870-2908	ELSConstruction@AOL.com

Name	Company	Phone	E-Mail
[illegible]	SARP 10		
Jane Sangalli	MOS / REDZONE	601-414-1895	jsanes@mos-env.com
Scott Helfrick	ADS	770-639-7795	shelfrick@idexcorp.com
Kieu-Anh Tran	@Solutions Inc	404-579-5779	KA.TRAN@@SIWORLD.COM
Bob Conrad	Mid South Boring & Piping	901-484-1185	bconrad@midsouthec.com
Patricia Cadena	Small Business Services	901-348-0540	office@smallbusinessservices.net
JT MALASRI	MALASRI ENG.	901-602-2884	JT@MALASRIENGINEERING.com
Ty Owen	United Rental Trench	901-486-9761	powen@ur.com
Emmanuel Tuomba	~~Etuo~~ ABES Engineering	901-340-3011	etuomba@abesengineering.com
Riley Thopson	BV/SARP	901 495 2645	ThopsonLR@BV.com
Scott McAmis	SARP 10	865-809-8618	scott_mcamis@gspnet.com
Morgan Unger	Black & Veatch	(314) 825-3888	ungerm2@bv.com

SIGN-IN SHEET

Project:	Phase 6 SSES	**Meeting Date:**	December 12, 2017
Meeting:	Preproposal Meeting	**Time:**	2:30 P.M.
Facilitator:	Scott McAmis	**Place/Room:**	Benjamin Hooks Library

Name	Company	Phone	E-Mail
David Hamberlin	TREKK Design Group	816-278-0339	dhamberlin@trekkllc.com
Dan Hanner	TREKK Design Group	314-459-7314	dhanner@trekkllc.com
Kenderick Norris	Cambridge	901-591-7302	tmoore@ccminc.us, emoore@ccminc.us, knorris@ccminc.us
Wiley Richards	W & T Contracting Corp	901-497-1291	wileyrichards@msn.com
Terrell Richards	W & T Contracting Corp	901-331-1780	terrellrichards250@gmail.com
Tim Jacobs	CES	404-886-1520	tjacobs@ces-sses.com
Marty Broussard	CES	404-886-1520	mbroussard@ces-sses.com
J.T Burden	Hydromax USA	812-305-6386	jeremy.burden@hydromaxusa.com
M. Boatright	Southeast Pipe	912-647-2849	m.boatright@southeastpipe.com
Rod Brown	Bruce Construction Mgmt	901-649-9000	bcm853@gmail.com
Ivan Tamayo	ADS/Malasri	901-849-6554	ivan@malasriengineering.com
Justin Avent	SARP10	901-849-6554	justin_avent@gspnet.com
Lee Owens	SARP 10/AWPM	901-237-0009	lee@allworldmail.com
Chad Siegfried	Ace Pipe Cleaning	816-627-9819	csiegfried@acepipe.com
Mark Calvert	Ace Pipe Cleaning	816-853-6989	mcalvert@acepipe.com
Ron Wilson	Synergetic	205-960-7374	rwilson@sesinc.us
Eddie Starks	ELS Construction	901-820-2908	ELSconstruction2@aol.com

Name	Company	Phone	E-Mail
Hal Humphrey	SARP10	205-937-5409	hal_humphrey@gspnet.com
Shane Sangalli	MOS/Redzone	901-414-1885	shanes@mosenv.com
Scott Helfrick	ADS	770-639-7795	shelfrick@idexcorp.com
Kieu-Ann Tran	Q Solutions	404-579-5779	ka.tran@qsiworld.com
Bob Conrad	MidSouth Piping	901-484-1185	bconrad@midsouthseptic.com
Patricia Cordova	Small Business Services	901-348-0590	office@smallbusinessserv.net
JT Malasri	Malasri Eng	901-602-2889	jt@malasriengineering.com
Ty Owen	United Rental Trench	901-486-9761	powen@ur.com
Emmanuel Tuombe	ABES Engineering	901-340-3011	etuombe@abesengineering.com
Riley Thompson	SARP 10/BV	901-495-2649	thompsonlr@bv.com
Scott McAmis	SARP10	865-809-8618	scott_mcamis@gspnet.com
Morgan Unger	SARP10/Black & Veatch	314-825-3888	ungerm2@bv.com

Safety Information and FAQs

SARP10 Program Safety Manager
Riley Thompson
901-495-2649 O
901-495-5605 C
800-351-4301 F
thompsonlr@bv.com

Contractor Qualification

All contractors are required to pre-qualify for work on the SARP10 program, before a contract is issued or work can begin. There are two levels Prime and Sub-Contractor. Prime is a contractor who will contract direct to SARP10 and have others working for them. Sub is any company working on the program for companies other than us. All contractors are looked at on an individual basis, if you have any concerns please contact me. We have helped numerous contractors through our approval process.

To qualify as a Prime:

- Step One: Send an email to Ginny Dorsey DorseyV@bv.com with the subject line "New SARP10 Vendor – Phase 6 SSES Project". The message should include a main point of contact name, phone number, email address, and remit to address. The email must also include a PDF attachment of the Firm's W-9 Request for Taxpayer Identification Number and Certification.
- Step Two: A Black & Veatch Sourcing Specialist will send a separate email requesting additional information for review and approval by Black & Veatch / OCI.

To qualify as a Sub:
Contact Riley for a list of safety documents to provide for review and approval.

SARP10 Safety Program

You can get a copy of our Safety program by contacting Riley or it is available for download at http://www.sarp10.com/facts/ on that page the first thing you will see is a link to download our Loss Control Manual. This works on computer, phone and tablet.

Section 3
Updated Table 00380.3.1 – Unit Price Proposal Form

Table 00380.3.1 - Unit Price Proposal Form

Bidder should refer to Section 00280, Instructions to Bidders, when completing this Proposal Form.
Bidder shall complete this form entirely and return it with Bidder's Proposal.

Submitted by (Company Name)

00380.3 Proposal Pricing Information

00380.3.1 Unit Pricing

Bidder proposes to complete the RFP 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 RFP Documents. The Unit Prices in this Table include the cost of all the work which is required or implied by the RFP 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 Service Contractor shall provide a new unit price for review and acceptance by the Purchaser. Service Contractor shall provide all information requested by the Purchaser to substantiate the value of the new unit price.

00380.3.1.1 Unit Prices

Item Number	Item Description	Unit of Measure	Estimated Quantity	Bidder Response: Unit Price	Bidder Response: Extension Price
Horn Lake Interceptor (HL01-1, NO01, NO02)					
Elevated Manhole Access					
01501-4.01.A	Elevated Manhole Access	Each	10	$ -	$ -
CCTV					
02541-4.01.A	Pipeline Assessment and Certification Program (PACP) CCTV Inspection with Light Cleaning of Sewer				
	6 inch pipe	LF	245	$ -	$ -
	8 inch pipe	LF	4,300	$ -	$ -
	10 inch pipe	LF	6,500	$ -	$ -
	12 inch pipe	LF	4,400	$ -	$ -
	15 inch pipe	LF	400	$ -	$ -
	18 inch pipe	LF	2,500	$ -	$ -
	21 inch pipe	LF	100	$ -	$ -
02541-4.01.B	Heavy Cleaning of Sewer Line				
	6 inch pipe	LF	25	$ -	$ -
	8 inch pipe	LF	430	$ -	$ -
	10 inch pipe	LF	650	$ -	$ -
	12 inch pipe	LF	440	$ -	$ -
	15 inch pipe	LF	40	$ -	$ -
	18 inch pipe	LF	250	$ -	$ -
	21 inch pipe	LF	10	$ -	$ -
02541-4.01.C	Remote Trimming of Protruding Service Lateral	Each	20	$ -	$ -
02542-4.01.A	Sonar/TV				
	24 inch pipe	LF	600	$ -	$ -
	30 inch pipe	LF	1,000	$ -	$ -
	36 inch pipe	LF	3,000	$ -	$ -
	42 inch pipe	LF	1,200	$ -	$ -
	48 inch pipe	LF	3,700	$ -	$ -
	60 inch pipe	LF	7,000	$ -	$ -
	72 inch pipe	LF	21,000	$ -	$ -
	84 inch pipe	LF	16,800	$ -	$ -
	90 inch pipe	LF	18,500	$ -	$ -
	96 inch pipe	LF	28,400	$ -	$ -
	108 inch pipe	LF	900	$ -	$ -

Item Number	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Extension Price
Manholes					
02544-4.01.A	GPS at Submeter Accuracy	Each	~~190~~ 65	$ -	$ -
02544-4.01.B	Manhole Assessment and Certification Program (MACP) Level 1 Inspection	Each	10	$ -	$ -
02544-4.01.C-1	Manhole Assessment and Certification Program (MACP) Level 2 Inspection - No 3D Scan	Each	30	$ -	$ -
02544-4.01.C-2	Manhole Assessment and Certification Program (MACP) Level 2 Inspection with 3D Scan	Each	150	$ -	$ -
Smoke Testing					
02546-4.01.A	Smoke Testing with GPS at Submeter Accuracy				
	6 inch pipe	LF	245	$ -	$ -
	8 inch pipe	LF	4,300	$ -	$ -
	10 inch pipe	LF	6,500	$ -	$ -
	12 inch pipe	LF	4,400	$ -	$ -
	15 inch pipe	LF	400	$ -	$ -
	18 inch pipe	LF	2,500	$ -	$ -
02546-4.01.B-1	Dye Testing Type 1	Each	5	$ -	$ -
02546-4.01.B-2	Dye Testing Type 2	Each	5	$ -	$ -
02546-4.01.B-3	Dye Testing Type 3	Each	2	$ -	$ -
02546-4.01.C-1	Dye Testing Type 1	Man Hour	20	$ -	$ -
02546-4.01.C-2	Dye Testing Type 2	Man Hour	20	$ -	$ -
02546.4.01.C-3	Dye Testing Type 3	Man Hour	20	$ -	$ -
02547-4.01.A	Interceptor & Manhole Cleaning				
	Interceptor & Manhole Cleaning	Crew-Hour	200	$ -	$ -
Miscellaneous					
	Mobilization and Demobilization (not to exceed 8% of the total of all other bid items or $50,000)	Lump Sum	1	$ -	$ -
Horn Lake Interceptor (HL01-1, NO01, NO02) Subtotal Estimated Unit Price Value					$ -

Table 00380.3.1 - Unit Price Proposal Form

Bidder should refer to Section 00280, Instructions to Bidders, when completing this Proposal Form. Bidder shall complete this form entirely and return it with Bidder's Proposal.

Submitted by (Company Name)

00380.3 Proposal Pricing Information

00380.3.1 Unit Pricing

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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 Service Contractor shall provide a new unit price for review and acceptance by the Purchaser. Service Contractor shall provide all information requested by the Purchaser to substantiate the value of the new unit price.

00380.3.1.1 Unit Prices				Bidder Response	
Item Number	**Item Description**	**Unit of Measure**	**Estimated Quantity**	**Unit Price**	**Extension Price**
Nonconnah Interceptor (NO03, NO04, NO05, NO06, NO07, NO08)					
Elevated Manhole Access					
01501-4.01.A	Elevated Manhole Access	Each	35	$ -	$ -
CCTV					
02541-4.01.A	Pipeline Assessment and Certification Program (PACP) CCTV Inspection with Light Cleaning of Sewer				
	6 inch pipe	LF	500	$ -	$ -
	8 inch pipe	LF	55,700	$ -	$ -
	10 inch pipe	LF	9,750	$ -	$ -
	12 inch pipe	LF	8,800	$ -	$ -
	15 inch pipe	LF	3,500	$ -	$ -
	18 inch pipe	LF	3,800	$ -	$ -
	20 inch pipe	LF	1,900	$ -	$ -
02541-4.01.B	Heavy Cleaning of Sewer Line				
	6 inch pipe	LF	50	$ -	$ -
	8 inch pipe	LF	5,570	$ -	$ -
	10 inch pipe	LF	975	$ -	$ -
	12 inch pipe	LF	880	$ -	$ -
	15 inch pipe	LF	350	$ -	$ -
	18 inch pipe	LF	380	$ -	$ -
	20 inch pipe	LF	190	$ -	$ -
02541-4.01.C	Remote Trimming of Protruding Service Lateral	Each	20	$ -	$ -
02541-4.01.D	**10 inch Siphon Cleaning and CCTV Inspection**	**LF**	**150**	**$ -**	**$ -**
02542-4.01.A	Sonar/TV				
	24 inch pipe	LF	11,600	$ -	$ -
	30 inch pipe	LF	1,600	$ -	$ -
	36 inch pipe	LF	53,600	$ -	$ -
	42 inch pipe	LF	26,750	$ -	$ -
	48 inch pipe	LF	12,600	$ -	$ -
	60 inch pipe	LF	8,000	$ -	$ -
	72 inch pipe	LF	19,500	$ -	$ -
	84 inch pipe	LF	200	$ -	$ -

Item Number	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Extension Price
Manholes					
02544-4.01.A	GPS at Submeter Accuracy	Each	~~685~~ ~~230~~ **400**	$ -	$ -
02544-4.01.B	Manhole Assessment and Certification Program (MACP) Level 1 Inspection	Each	50	$ -	$ -
02544-4.01.C-1	Manhole Assessment and Certification Program (MACP) Level 2 Inspection - No 3D Scan	Each	~~30~~ **335**	$ -	$ -
02544-4.01.C-2	Manhole Assessment and Certification Program (MACP) Level 2 Inspection with 3D Scan	Each	~~150~~ **300**	$ -	$ -
Smoke Testing					
02546-4.01.A	Smoke Testing with GPS at Submeter Accuracy				
	6 inch pipe	LF	500	$ -	$ -
	8 inch pipe	LF	55700	$ -	$ -
	10 inch pipe	LF	9750	$ -	$ -
	12 inch pipe	LF	8800	$ -	$ -
	15 inch pipe	LF	3,500	$ -	$ -
	18 inch pipe	LF	3800	$ -	$ -
02546-4.01.B-1	Dye Testing Type 1	Each	5	$ -	$ -
02546-4.01.B-2	Dye Testing Type 2	Each	5	$ -	$ -
02546-4.01.B-3	Dye Testing Type 3	Each	2	$ -	$ -
02546-4.01.C-1	Dye Testing Type 1	Man Hour	20	$ -	$ -
02546-4.01.C-2	Dye Testing Type 2	Man Hour	20	$ -	$ -
02546.4.01.C-3	Dye Testing Type 3	Man Hour	20	$ -	$ -
02547-4.01.A	Interceptor & Manhole Cleaning				
	Interceptor & Manhole Cleaning	Crew-Hour	250	$ -	$ -
Miscellaneous					
	Mobilization and Demobilization (not to exceed 8% of the total of all other bid items or $50,000)	Lump Sum	1	$ -	$ -
onconnah Interceptor (NO03, NO04, NO05, NO06, NO07, NO08) Subtotal Estimated Unit Price Value					$ -

Table 00380.3.1 - Unit Price Proposal Form

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Submitted by (Company Name)

00380.3 Proposal Pricing Information

00380.3.1 Unit Pricing

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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 Service Contractor shall provide a new unit price for review and acceptance by the Purchaser. Service Contractor shall provide all information requested by the Purchaser to substantiate the value of the new unit price.

00380.3.1.1 Unit Prices

				Bidder Response	
Item Number	**Item Description**	**Unit of Measure**	**Estimated Quantity**	**Unit Price**	**Extension Price**
Nonconnah North Tributaries (NN03-1, NN03-2, NS01)					
CCTV					
02541-4.01.A	Pipeline Assessment and Certification Program (PACP) CCTV Inspection with Light Cleaning of Sewer				
	6 inch pipe	LF	1,150	$ -	$ -
	8 inch pipe	LF	295,000	$ -	$ -
	10 inch pipe	LF	15,750	$ -	$ -
	12 inch pipe	LF	14,000	$ -	$ -
	15 inch pipe	LF	5,000	$ -	$ -
	18 inch pipe	LF	6,000	$ -	$ -
02541-4.01.B	Heavy Cleaning of Sewer Line				
	6 inch pipe	LF	115	$ -	$ -
	8 inch pipe	LF	29,500	$ -	$ -
	10 inch pipe	LF	1,575	$ -	$ -
	12 inch pipe	LF	1,400	$ -	$ -
	15 inch pipe	LF	500	$ -	$ -
	18 inch pipe	LF	600	$ -	$ -
02541-4.01.C	Remote Trimming of Protruding Service Lateral	Each	20	$ -	$ -
02541-4.01.D-1	**8" Siphon Cleaning and CCTV Inspection**	**LF**	**800**	**$ -**	**$ -**
02541-4.01.D-2	**10" Siphon Cleaning and CCTV Inspection**	**LF**	**165**	**$ -**	**$ -**
02541-4.01.D-3	**12" Siphon Cleaning and CCTV Inspection**	**LF**	**350**	**$ -**	**$ -**
02542-4.01.A	Sonar/TV				
	24 inch pipe and greater	LF	1,150	$ -	$ -
Manholes					
02544-4.01.A	GPS at Submeter Accuracy	Each	1,170	$ -	$ -
02544-4.01.B	Manhole Assessment and Certification Program (MACP) Level 1 Inspection	Each	150	$ -	$ -
02544-4.01.C-1	Manhole Assessment and Certification Program (MACP) Level 2 Inspection - No 3D Scan	Each	1,000	$ -	$ -
02544-4.01.C-2	Manhole Assessment and Certification Program (MACP) Level 2 Inspection with 3D Scan	Each	20	$ -	$ -

Item Number	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Extension Price
Smoke Testing					
02546-4.01.A	Smoke Testing with GPS at Submeter Accuracy				
	6 inch pipe	LF	1,150	$ -	$ -
	8 inch pipe	LF	295,000	$ -	$ -
	10 inch pipe	LF	15,750	$ -	$ -
	12 inch pipe	LF	14,000	$ -	$ -
	15 inch pipe	LF	5,000	$ -	$ -
	18 inch pipe	LF	6,000	$ -	$ -
02546-4.01.B-1	Dye Testing Type 1	Each	5	$ -	$ -
02546-4.01.B-2	Dye Testing Type 2	Each	5	$ -	$ -
02546-4.01.B-3	Dye Testing Type 3	Each	2	$ -	$ -
02546-4.01.C-1	Dye Testing Type 1	Man Hour	20	$ -	$ -
02546-4.01.C-2	Dye Testing Type 2	Man Hour	20	$ -	$ -
02546.4.01.C-3	Dye Testing Type 3	Man Hour	20	$ -	$ -
Miscellaneous					
	Mobilization and Demobilization (not to exceed 8% of the total of all other bid items or $50,000)	Lump Sum	1	$ -	$ -
Nonconnah North Tributaries (NN03-1, NN03-2, NS01) Subtotal Estimated Unit Price Value					$ -

Table 00380.3.1 - Unit Price Proposal Form

Bidder should refer to Section 00280, Instructions to Bidders, when completing this Proposal Form. Bidder shall complete this form entirely and return it with Bidder's Proposal.

Submitted by (Company Name)

00380.3 Proposal Pricing Information

00380.3.1 Unit Pricing

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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 Service Contractor shall provide a new unit price for review and acceptance by the Purchaser. Service Contractor shall provide all information requested by the Purchaser to substantiate the value of the new unit price.

00380.3.1.1 Unit Prices

Item Number	Item Description	Unit of Measure	Estimated Quantity	Bidder Response: Unit Price	Bidder Response: Extension Price
Nonconnah South Tributaries (NS03, NS04, NS05-1)					
CCTV					
02541-4.01.A	Pipeline Assessment and Certification Program (PACP) CCTV Inspection with Light Cleaning of Sewer				
	6 inch pipe	LF	800	$ -	$ -
	8 inch pipe	LF	340,000	$ -	$ -
	10 inch pipe	LF	36,000	$ -	$ -
	12 inch pipe	LF	20,400	$ -	$ -
	15 inch pipe	LF	11,000	$ -	$ -
	18 inch pipe	LF	8,400	$ -	$ -
	21 inch pipe	LF	8,000	$ -	$ -
02541-4.01.B	Heavy Cleaning of Sewer Line				
	6 inch pipe	LF	80	$ -	$ -
	8 inch pipe	LF	34,000	$ -	$ -
	10 inch pipe	LF	3,600	$ -	$ -
	12 inch pipe	LF	2,040	$ -	$ -
	15 inch pipe	LF	1,100	$ -	$ -
	18 inch pipe	LF	840	$ -	$ -
	21 inch pipe	LF	800	$ -	$ -
02541-4.01.C	Remote Trimming of Protruding Service Lateral	Each	20	$ -	$ -
02541-4.01.D	**8" Siphon Cleaning and CCTV Inspection**	**LF**	**600**	**$ -**	**$ -**
02542-4.01.A	Sonar/TV				
	24 inch pipe and greater	LF	10,150	$ -	$ -
Manholes					
02544-4.01.A	GPS at Submeter Accuracy	Each	1,685	$ -	$ -
02544-4.01.B	Manhole Assessment and Certification Program (MACP) Level 1 Inspection	Each	150	$ -	$ -
02544-4.01.C-1	Manhole Assessment and Certification Program (MACP) Level 2 Inspection - No 3D Scan	Each	1,485	$ -	$ -
02544-4.01.C-2	Manhole Assessment and Certification Program (MACP) Level 2 Inspection with 3D Scan	Each	50	$ -	$ -

Item Number	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Extension Price
Smoke Testing					
02546-4.01.A	Smoke Testing with GPS at Submeter Accuracy				
	6 inch pipe	LF	800	$ -	$ -
	8 inch pipe	LF	340,000	$ -	$ -
	10 inch pipe	LF	36,000	$ -	$ -
	12 inch pipe	LF	20,400	$ -	$ -
	15 inch pipe	LF	11,000	$ -	$ -
	18 inch pipe	LF	8,400	$ -	$ -
02546-4.01.B-1	Dye Testing Type 1	Each	5	$ -	$ -
02546-4.01.B-2	Dye Testing Type 2	Each	5	$ -	$ -
02546-4.01.B-3	Dye Testing Type 3	Each	2	$ -	$ -
02546-4.01.C-1	Dye Testing Type 1	Man Hour	20	$ -	$ -
02546-4.01.C-2	Dye Testing Type 2	Man Hour	20	$ -	$ -
02546.4.01.C-3	Dye Testing Type 3	Man Hour	20	$ -	$ -
Miscellaneous					
	Mobilization and Demobilization (not to exceed 8% of the total of all other bid items or $50,000)	Lump Sum	1	$ -	$ -
Nonconnah South Tributaries (NS03, NS04, NS05-1) Subtotal Estimated Unit Price Value					$ -

Table 00380.3.1 - Unit Price Proposal Form

Bidder should refer to Section 00280, Instructions to Bidders, when completing this Proposal Form. Bidder shall complete this form entirely and return it with Bidder's Proposal.

Submitted by (Company Name)

00380.3 Proposal Pricing Information

00380.3.1 Unit Pricing

Bidder proposes to complete the RFP 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 RFP Documents. The Unit Prices in this Table include the cost of all the work which is required or implied by the RFP 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 Service Contractor shall provide a new unit price for review and acceptance by the Purchaser. Service Contractor shall provide all information requested by the Purchaser to substantiate the value of the new unit price.

00380.3.1.1 Unit Prices

Item Number	Item Description	Unit of Measure	Estimated Quantity	Bidder Response: Unit Price	Bidder Response: Extension Price
Horn Lake South Tributaries (NS02-2, HL01)					
CCTV					
02541-4.01.A	Pipeline Assessment and Certification Program (PACP) CCTV Inspection with Light Cleaning of Sewer				
	6 inch pipe	LF	5,800	$ -	$ -
	8 inch pipe	LF	541,000	$ -	$ -
	10 inch pipe	LF	31,600	$ -	$ -
	12 inch pipe	LF	22,500	$ -	$ -
	15 inch pipe	LF	20,200	$ -	$ -
	18 inch pipe	LF	15,500	$ -	$ -
02541-4.01.B	Heavy Cleaning of Sewer Line				
	6 inch pipe	LF	580	$ -	$ -
	8 inch pipe	LF	54,100	$ -	$ -
	10 inch pipe	LF	3,160	$ -	$ -
	12 inch pipe	LF	2,250	$ -	$ -
	15 inch pipe	LF	2,020	$ -	$ -
	18 inch pipe	LF	1,550	$ -	$ -
02541-4.01.C	Remote Trimming of Protruding Service Lateral	Each	20	$ -	$ -
02541-4.01.D	**8" Siphon Cleaning and CCTV Inspection**	**LF**	**400**	**$ -**	**$ -**
02542-4.01.A	Sonar/TV				
	24 inch pipe and greater	LF	15,300	$ -	$ -
Manholes					
02544-4.01.A	GPS at Submeter Accuracy	Each	2,600	$ -	$ -
02544-4.01.B	Manhole Assessment and Certification Program (MACP) Level 1 Inspection	Each	250	$ -	$ -
02544-4.01.C-1	Manhole Assessment and Certification Program (MACP) Level 2 Inspection - No 3D Scan	Each	2,250	$ -	$ -
02544-4.01.C-2	Manhole Assessment and Certification Program (MACP) Level 2 Inspection - with 3D Scan	Each	100	$ -	$ -

Item Number	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Extension Price
Smoke Testing					
02546-4.01.A	Smoke Testing with GPS at Submeter Accuracy				
	6 inch pipe	LF	5,800	$ -	$ -
	8 inch pipe	LF	541,000	$ -	$ -
	10 inch pipe	LF	31,600	$ -	$ -
	12 inch pipe	LF	22,500	$ -	$ -
	15 inch pipe	LF	20,200	$ -	$ -
	18 inch pipe	LF	15,500	$ -	$ -
02546-4.01.B-1	Dye Testing Type 1	Each	5	$ -	$ -
02546-4.01.B-2	Dye Testing Type 2	Each	5	$ -	$ -
02546-4.01.B-3	Dye Testing Type 3	Each	2	$ -	$ -
02546-4.01.C-1	Dye Testing Type 1	Man Hour	20	$ -	$ -
02546-4.01.C-2	Dye Testing Type 2	Man Hour	20	$ -	$ -
02546.4.01.C-3	Dye Testing Type 3	Man Hour	20	$ -	$ -
Miscellaneous					
	Mobilization and Demobilization (not to exceed 8% of the total of all other bid items or $50,000)	Lump Sum	1	$ -	$ -
Horn Lake South Tributaries (NS02-2, HL01) Subtotal Estimated Unit Price Value					$ -

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Section 4
Updated Technical Specifications Section 02541
(changes noted in red)

SECTION 02541
CLOSED CIRCUIT TELEVISION INSPECTION OF SEWER MAINS & CONNECTIONS

PART 1 General

1.01 SCOPE

A. This Work will consist of cleaning and Pipeline Assessment Certification Program (PACP) internal closed circuit television (CCTV) surveys to digitally inspect and record conditions of existing sanitary sewer mains and connections. Sewer pipes and connections to be inspected are located in both improved streets, arterial and primary roads, backyards and unimproved easements.

B. The Work covered by this section includes furnishing all labor, competent PACP certified technicians, equipment, tools, accessories, and materials required to clean and inspect the designated sanitary sewer lines.

1.02 SUBMITTALS

A. PACP Requirements

1. PACP compliant inspections, logs, data, and photos shall be delivered to the Program Manager (from hereon Program Manager shall be interpreted as “Program Manager or his designee”) on external hard drive(s) which will become property of the Program Manager. Data files shall be formatted to facilitate upload into a PACP compliant Exchange database or internet uploads formats to an FTP site approved by the Program Manager.

B. Unless otherwise specified all sample submittals shall be delivered to the Program Manager within two weeks of the NTP.

C. For rehabilitation work, only Post-Rehabilitation PACP submittals will be required by the Purchaser. All CCTV done prior to rehabilitation shall be at the expense of the Subcontractor to ensure conformance with the Specifications.

D. Traffic Control

1. Traffic Control Plan shall be submitted to the Program Manager, including the following items:

a. Outline of permit acquisition procedure for lane closures.

b. Methods for proper signing and barricades, which comply with City of Memphis requirements.

c. Major streets (e.g. Shelby County Principal Arterial & Minor Arterial) requiring a City approved permit if taking a lane for mobile operations, secured through Traffic Control Plan submittal to the City and signed by a TN P.E. The City requires two-week lead time for permit processing.

i. The Subcontractor will be required to deliver a sample primary/arterial road Traffic Control Plan for review by the City.

ii. If the City determines that the nature of the work operation or the type of road in which the Subcontractor is working requires a permit, the Subcontractor will be

required to modify the sample Traffic Control Plan to obtain a permit from the City.

d. For everywhere else where a permit is not required, the Subcontractor shall develop, provide, and implement a traffic control plan for all mobile operations in accordance with standard MUTCD specifications.

E. Permits

1. The Subcontractor is also responsible for acquiring all necessary disposal and/or landfill site permits as required to perform this work.

2. Railroad Rights of Way: The Subcontractor shall notify the Program Manager when work or access to manholes and sanitary sewers lie within the 25 feet railroad easement as measured by 25 feet outside the nearest rail of the tracks. To access sewer facilities within the 25 feet of the railroad right of way the Subcontractor shall contact the Program Manager 48 hours in advance who will alert the City's Zone Construction Inspector to coordinate individual railroad direction and guidance.

3. Permit required confined space entry plans in compliance with the Loss Control Manual.

F. Copies of National Association of Sewer Service Companies (NASSCO) certification for all field staff conducting PACP inspections.

G. Sample of PACP compliant television survey log in MS Access format.

H. Sample of PACP compliant video inspection in MP-4 (Web optimized) format.

I. Cleaning and CCTV vehicle, equipment, and cleaning supplies list.

J. Disposal site(s) and appropriate landfill permits for appropriate disposal of all waste materials removed from the sewer during the light and heavy cleaning operations.

1.03 DELIVERABLES

A. Records

1. Pipe Cleaning Record

a. The Subcontractor shall provide a dated manifest of the volume or weight of the dewatered sewer cleaning loads taken and dumped at the permitted landfill. Each waste load manifest shall be associated with a list of corresponding sewer segments from where the waste originated.

2. Digital Inspection Record

a. In the digital PACP V.6.0.1 compliant format, the Subcontractor shall provide the following information:

i. Digital CCTV survey inspection which shall be recorded and shall be continuous as the inspection proceeds through the manholes and sewer pipes. Inspection videos should be delivered in an MP-4 (Web optimized) format.

ii. Digital Recordings: The digital recording shall document the visual and audio record of the manhole and sewer pipe inspection and shall be the basis of measurement and payment. Digital recording playback shall be at the same

speed that it was recorded. Original digital recordings for the Project shall be forwarded to the Program Manager on clearly labeled external hard drive(s) in PACP ACCESS format with final report submittals and shall become the property of the Program Manager. Data for a single facility asset will not be split across multiple hard drives. Digital recordings shall be available to the Program Manager by the close of business on the Monday following a week after data acquisition. File naming must be consistent. Additional instructions, naming conventions, file structures, etc. will be provided after contract award.

(1) Picture Quality: The sewer inspection digital record shall be free of steam, fog, vapor, or other headspace distortion that degrades the quality of the picture from the intended purpose of evaluating the sewer for structural and watertight integrity. If necessary, the Subcontractor shall provide positive ventilation or other means through the sewer pipe to draw out steam, fog, and vapor that will degrade the recorded image of the pipe.

3. Inspection Documentation Logs

a. Observations made during television inspection shall be documented in an unmodified PACP compliant manner within an electronic inspection log form, supported by accompanying audio, digital photographs and MP-4 (Web optimized) format recording written to an external hard drive and submitted to the Program Manager. Hard copies of completed inspection log photographs shall be furnished to the Program Manager with invoicing.

4. Electronic & Hard Copy Records

a. Reports:

i. The Subcontractor shall prepare printed inspection log reports for each associated sewer pipes inspected during the actual field inspection activities. These field logs shall then be reviewed by the Subcontractor's technical staff, along with reviewing the associated digital video record, as a means of ensuring that no defects or entries are omitted or incorrect. Edited field logs shall then be used in the final project reports and submitted in pdf format.

b. Draft Report and Final Report:

i. The Draft Final Report will contain electronic and hard copies of each of the PACP CCTV log pipe segment inspection logs. Digital recordings of the inspections written to an external hard drive and the PACP compliant database of the inspections in ACCESS format shall also be submitted in electronic and pdf format.

ii. Draft Report shall be delivered to the Program Manager within fifteen working days the last or final inspection. The Program Manager will have two work weeks to review and comment. Subcontractor shall address all comments provided and submit a Final Report within one work week upon receipt of comments. At the Program Manager’s discretion a meeting will be held so the Subcontractor can explain the processes used to address the comments.

5. Quality

a. Rejection of deliverables will be submitted to the Subcontractor via the Program Team in a written communication discussing issues that must be addressed. The Subcontractor will be required to follow up with a response within three business days upon receipt of the written communication. Subcontractors will have seven (7)

calendar days from the rejection notice date to make the necessary corrections and resubmit the data deliverable in its entirety.

PART 2 PRODUCTS

2.01 EQUIPMENT

A. General

1. All equipment used for PACP compliant CCTV sewer segment inspections of existing sanitary sewer mains and connections shall be specifically designed and manufactured for the purpose intended under this Contract. The software and hardware for the electronic capture of the inspection defects and recorded observations must be Version 6.0.1NASSCO PACP compliant.

2. The Subcontractor shall submit an equipment list to the Program Manager for approval before the commencement of the Work and shall certify that back-up equipment is available and can be delivered to the worksite within 72 hours.

3. The Subcontractor shall provide equipment to perform inspections of sewer mains located in streets, street rights-of-way, backyards, easements and rights-of way that are off-road.

    a. Including but not limited to portable CCTV equipment, vehicles capable of transporting TV equipment and accessing remote easements, and adequate cleaning equipment rights of way or easement applications.

B. PACP Compliant Software & Data Logger Requirements

1. Data logger

    a. Internal inspection logs created and captured electronically during the television inspection through the use of commercially available electronic data loggers in the truck are required. NASSCO PACP protocols Version 6.0.1 shall be used for capturing and recording the observations. Audio commentary made during the inspection and captured on the digital video shall correspond with the PACP observations on the log.

    b. The data logger equipment and software shall allow the Program Manager access directly to the captured electronic data and provide for a non-proprietary export of the data into MS ACCESS databases in accordance with PACP standards for standalone database review.

2. Software must be compliant with the NASSCO PACP V.6.0.1 standards. Follow PACP protocol for recording of observations and defects for sewer mains.

    a. All software shall be capable of providing complete survey reports in compliance with PACP, and the software shall be the V.6.0.1 of the PACP compliant software.

    b. The Program Manager has no intent to specify which software the Subcontractor shall use, but requires the software and the submitted database to be fully compliant with PACP V.6.0.1 and capable of being exported to ACCESS databases. No payment will be rendered for improperly formatted data.

    c. Software and data logger must be capable of capturing sewer main and sewer lateral observations by PACP descriptions, record travel footage along pipeline, and video

time stamp the recorded observations to support hyper linking from the digital record to the event point or location within the digital inspection record. The same requirements apply to still photo images (if provided) which shall follow PACP guidelines and be hyperlinked to the inspection log.

C. Sewer Main CCTV

1. Sewer Main Digital Color Video Camera

a. All cameras used shall be digital format color CCTV units specifically designed and constructed for use in sewer pipe inspection work. The cameras shall be operable in 100 percent humidity conditions. The camera shall have a high-resolution, 360-degree pan and tilt or rotating head with a wide viewing angle lens and either automatic or remote focus and iris controls. Camera lighting shall be sufficient for use with digital color inspection cameras and for the manhole and pipe diameters identified in the contract.

i. Camera, Television Monitor, and Other Components shall be capable of producing a high resolution color digital inspection record.

ii. Video file to be in MP-4 (Web optimized) format

b. In all cases, the complete digital inspection system (camera, lens, lighting, cables, monitors, and recorders) shall be capable of providing a digital picture and digital video quality acceptable to the Program Manager. Inadequate lighting, image distortions, blurry or murky images, and dirty lenses will be a cause for rejection. No payment will be made for unsatisfactory inspections and the Subcontractor shall perform work until deliverable is of acceptable quality. Digital video cameras/digital recorders not specifically intended for use for internal television inspection of manholes and sewer lines shall not be permitted.

c. Pan and tilt type camera, capable of turning at right angles to pipe's axis over an entire pipe wall perimeter shall be used.

i. The camera lens shall be capable of self-righting itself after a lateral view or connection view with a return view down the pipe with a "home" capability for the lens.

d. Lighting shall be suitable to allow clear picture of entire inner pipe wall extending at least 10 feet in front, including black High Density Polyethylene (HDPE) pipe.

e. Document header and observations shall be in accordance with PACP V.6.0.1protocols.

f. Subcontractor shall have equipment capable of cleaning and assessing 12" and smaller diameter siphons.

D. Cleaning Equipment

1. Hydraulic sewer pipe cleaners or combination hydraulic/vacuum cleaners shall be specifically designed and constructed for such cleaning.

2. Mechanical sewer pipe cleaners shall be specifically designed and constructed for such cleaning.

3. The Subcontractor shall possess equipment capable of hydraulically or mechanically cleaning a minimum of 1,000 linear feet of pipe from one direction and have a minimum 1,000 linear feet of hose or cable on-site during the cleaning execution.

4. Hydraulic sewer pipe cleaners shall be specifically designed and constructed for such cleaning. The sewer cleaner shall have a minimum usable water capacity of 600 gallons and a pump capable of delivering at least 30 gallons per minute at 1,500 psi at the nozzle.

    a. The hydraulic cleaning equipment shall have multiple hydraulic cleaner hose nozzles for a variety of sewer cleaning conditions, including grease, roots, debris and granular materials.

    b. Vacuum equipment shall be capable of lifting debris removed from the segment from the downstream manhole.

5. Mechanical sewer pipe cleaners (cable machines with buckets, brushes, swabs, root cutters, and power rodders with similar capability) shall be capable of controlled forward and reverse travel through the sewers without inflicting damage to the existing pipe in removing rocks, grit and other heavy debris and roots.

PART 3 EXECUTION

3.01 INSPECTIONS

A. CCTV Inspection of Sewer Mains

1. Cleaning

    a. Sewer pipe cleaners or combination hydraulic-vacuum cleaners must accompany CCTV units at all times. Ideally, sewers lines are to be cleaned and then followed immediately by CCTV inspection. All sewers must be cleaned in advance of CCTV during the same calendar day they are inspected.

    b. Light Cleaning

        i. Before CCTV work, the Subcontractor shall light clean the sewer line from manhole to manhole, from upstream to downstream direction unless an obstruction is encountered, one sewer section at a time and performed as efficiently as possible at the Subcontractor’s discretion.

        ii. Materials shall not be passed from one sewer segment to another but must be trapped and removed from each sewer segment prior to CCTV inspection.

    c. Heavy Cleaning

        i. If a camera is inserted and additional debris or impediments to inspection are observed following the required light cleaning, heavy cleaning shall be approved by the Program Manager. Sections of pipe containing significant roots, large areas of debris, and/or several inches of depth of sands and gravels that will require the use of additional hydraulic nozzles, cable/bucket machine, power rodders and root cutters is considered heavy cleaning.

        ii. Heavy cleaning will be proposed by the Subcontractor and approved by the Program Manager. The Subcontractor must obtain prior approval for heavy cleaning in each sewer segment in order to receive payment for heavy cleaning.

d. Cleaning Execution

i. No roots, grease or debris from light or heavy cleaning shall be passed from sewer segment to sewer segment during the cleaning operation. All debris flushed from the sewer must be collected, captured, and removed from the sewer at the downstream manhole.

ii. Roots shall be removed in the sections where root intrusion is a problem. Special precautions shall be exercised during the cleaning operation to assure complete removal of visible roots from the joint area and so as not to incur further damage to the pipe. Any visible roots that may impact rehabilitation efforts shall be removed. Fine roots are allowed if the Subcontractor made a heavy cleaning attempt to remove roots with proper root removal means. Procedures may include the use of mechanical devices such as rodding machines, expanding root cutters and porcupines, and hydraulic procedures such as high-pressure jet cleaners.

iii. The Subcontractor is responsible for safe, responsible and legal handling and disposal of all material and debris removed from the sewers. The Subcontractor is responsible for all permits and landfill fees associated with the disposal of debris collected and removed from the sewer.

iv. Proper disposal arrangements are the exclusive responsibility of the Subcontractor. The Subcontractor shall provide a dated manifest of the volume and weight of the dewatered sewer cleaning loads taken and dumped at the permitted landfill. The Subcontractor shall not dispose of debris at a City of Memphis Wastewater Treatment Plant. Each waste load manifest shall be associated with a list of corresponding sewer segments from where the waste originated.

v. Siphons shall be cleaned to remove 95% of the debris from the pipe.

2. Sewer Flow Levels During Inspection Operations

a. Maintain low sewer flow during inspection by using sandbags or flow-through plugs or by inspecting during low flow times of day, evening, or early morning hours while camera is moving and recording observations in the sewer segment. Any items used to restrict flow shall be removed immediately after intended use.

i. Flow-through Plugs: If used, secure the plugs so as to remain in place during inspection. Use a fail-safe device at the downstream pipe connection to ensure the plug is not lost in the downstream sewer segment if it becomes dislodged from the upstream pipe connection.

ii. Conduct all cleaning and CCTV operations to prevent building backups and sewer overflows.

iii. Subcontractor shall be responsible for cleanup, repair, fines, property damage costs, and claims for any sewage backup, spillage or sanitary sewer overflow during or as a result of the cleaning and inspection operations.

b. Allowable Depth of Flow For Inspection Operations

i. For effective inspection, all flow shall be minimized in the segment being inspected. However, the depth of flow at the upstream manhole of the interceptor section being worked shall be within the specified limits provided herein.

c. Maximum Allowable Depth of Flow for CCTV Inspection

i. 6 - 10 inch diameter Pipe - 20% of pipe diameter

ii. 12 - 18 inch diameter Pipe - 25% of pipe diameter

iii. 24-inch diameter and Larger Pipe - 30% of pipe diameter

iv. Exceptions to these guidelines shall result in rejection, and non-payment, of the CCTV inspection unless approved in advance by the Program Manager.

3. Camera Operations

a. Using the pan/tilt feature, pan the interior of the manhole for record purposes in accordance with V.6.0.1 PACP protocols and begin and terminate the inspection in the starting and ending manholes.

i. Capture the inside of manhole walls, manhole channel, and pipe connection to wall at both upstream and downstream manhole and lateral connections using the digital mainline sewer camera and the pan/tilt feature.

b. Place the camera at center of manhole and commence video before entering pipe.

i. Start footage counter at manhole wall/pipe connection or at a short pre-measured distance down the pipe for the sewer segment inspection.

c. Connections: The digital camera shall be used to look at connections and up laterals from the connection in the main sewer pipe being inspected. The camera shall pause, pan, and record all connections. Conditions noted in these sidelines and laterals shall be noted on the inspection logs.

d. Mainline camera operations:

i. Move through line at speed no greater than 30 feet per minute stopping for minimum 10 seconds to record lateral connections, mainline connections, defects, and features and points of interest.

ii. Do not float camera.

iii. Maintain technical quality, sharp focus, and distortion free picture with the camera lens centered in the pipe for the different diameters inspected.

(1) Eliminate steam in line for duration of inspection.

(2) Utilize blower as needed to defog sewer line.

iv. Digitally record a complete sewer segment in its entirety with no breaks, “blink-outs,” or interruptions from manhole to manhole according to PACP V.6.0.1 formats.

v. Pan, tilt, and rotate as necessary to best view and evaluate lateral connections, pipe defects, features, obstructions, and points of interest.

vi. Use power winches, powered rewinds, self-propelled tractors, or other devices that do not obstruct camera view or interfere with proper documentation of sewer conditions to move camera through sewer.

(1) Whenever non-remote powered and controlled winches are used, set up telephones or other suitable means of communication between manholes to insure good communication.

vii. Use hydraulic jet nozzle pressure and flow to remove standing water from depressions or sags in the sewer, if necessary, for complete inspection of the sag portion of the sewer segment.

viii. Measurement for location of defects and service laterals:

(1) At ground level by means of Program Manager-approved footage counter or metering device.

(2) Electronic display measurement meters: Accurate to PACP standards over length of section being televised.

(3) Do not pull unnecessary length of slack camera cable if it impacts the footage counter.

ix. Stop camera at service connections and inspect lateral with pan and tilt camera.

(1) Identify building connection in PACP compliant terms as active, capped, or abandoned.

(2) If no wastewater flows are being discharged from building, consider steady, clear observed flow as infiltration/inflow.

x. Identification of Defects

(1) If roots, sludge, or sediment material impedes inspection after the light cleaning, withdraw camera and perform heavy cleaning at the direction of the Program Manager.

(2) Upon completion of heavy cleaning operation, resume internal inspection.

(3) Furnish media confirmation for heavy cleaning (more than three passes with jet cleaner) to Program Manager.

(4) If protruding tap impedes inspection trim protruding tap to 1/2 inch.

xi. If obstructions are not passable and cannot be removed by sewer cleaning, withdraw CCTV equipment and perform a reverse inspection from opposite end of the sewer segment in accordance with PACP protocols.

(1) Subcontractor shall be responsible for costs associated for reverse set-ups when an obstruction is encountered that cannot be passed.

(2) Subcontractor shall be responsible for all judgments and impacts as to whether an obstruction in the sewer main can be passed. Costs involved in

extracting a stuck camera in the sewer main will be borne by the Subcontractor and at no additional cost to the Program Manager.

(3) When additional obstructions are encountered after reversal of equipment and no means are available for passing a second obstruction in order to complete the sewer main inspection, remand the segment inspection to the Program Manager for resolution. The portion of the main inspected will be paid for as prescribed.

xii. Undocumented facilities

(1) If undocumented manholes or sewer mains (facilities not on the field updated GIS sewer maps) are encountered during the inspection, the Subcontractor needs to complete the documentation requirements per PACP requirements and capture on the video the following:

(a) Approximate horizontal distance from the upstream or reference manhole.

(b) Approximate depth of the undocumented manhole by turning the pan/tilt camera vertically and estimating the height of the cover from the invert.

(c) A provisional manhole asset ID number shall be used by the Subcontractor by adding a dash and two-character number to the closest upstream manhole ID.

xiii. Retrieval of Stuck Equipment

(1) The Subcontractor is responsible for hiring a licensed sub-Subcontractor to retrieve any equipment/foreign objects that get stuck in the sewer system through the execution of the scope of work (fallen cameras, jet nozzles, inflatable plugs, sandbags etc.) at the Subcontractor's own cost. Such retrieval by an appropriately licensed sub-Subcontractor shall be made within 72 hours to avoid interfering with the City of Memphis sewer system operations. Any and all impacts and related costs due to the Subcontractor's equipment in the line shall be the responsibility of the Subcontractor. Subcontractor shall follow SARP10 sewer point repair specifications outlined in "Section 02540 Sanitary Sewer Point Repairs" and "Section 02950 Removal and Replacement of Pavements and Incidentals" during retrieval of equipment. Also per "00585.2.2 Safety, Health, and Accident Prevention Program," Purchaser must approve sub-tier Subcontractors prior to mobilization to the jobsite.

4. Quality Assurance

a. With each monthly invoice the Subcontractor shall provide a QA/QC memo documenting that 10% of the previous month's CCTV data has undergone a random, independent review by a PACP certified reviewer using NASSCO standards for Television Inspection of Main Sewer and PACP Quality control as the basis for the QA/QC procedures. The independent reviewer shall be a Tennessee P.E. or is a P.E. in another state and has a Tennessee P.E. license pending. Each line segment which has been randomly reviewed shall be identified in the QA/QC memo as well as any subsequent findings or recommendations. Internal independent QA/QC is acceptable, as long as the person is a Tennessee P.E. or is a P.E. in another state and has a Tennessee P.E. license pending. Failure to submit the QA/QC memo shall delay payment of the current month's invoice.

b. For all new Subcontractors and Operators who begin PACP coding, an initial review of CCTV data will consist of reviewing, at a minimum, 20 of the first 100 PACP inspection records submitted. Subsequent reviews will be based on the results of the initial reviews as explained below.

c. Auditing Procedures:

i. Header Information: As explained in the NASSCO PACP Quality Control Standards each audited inspection record is given an accuracy level for the header information and the detailed observation records. It is expected that the accuracy of the header record exceed 90% because the majority of the contents are based upon facts and not subject to operator judgment. To assess the accuracy level of the header, record the number of errors as compared to the total number of header fields using the following formula:

(1) **100% - (error count/total header fields)*100% = Header Accuracy**

ii. Detailed Observations: Determining the accuracy level for the detailed observation records is similar to the method for assessing the header record. The main difference being that a defect observation has multiple data entries that must also be counted towards the total number of entry fields. In the event that a defect is not coded all of the required entries for coding the missed defect are counted towards the total error count. The following formula is used to calculate the accuracy level of the detailed observation records:

(1) **100% - (error count/total entries) * 100% = Detail Accuracy**

iii. Review Scoring and Results

(1) Satisfactory Review, No changes required. Accuracy Level of 90% or above for both the Header Record and Observation Detail with no major errors or omissions found.

(2) Unsatisfactory Review (below levels of acceptance) will not be accepted by the Program Manager and will not be considered payable items in the Subcontractor's Request for Payment.

5. Deliverable Documentation

a. Mainline Sewer

i. Submit V.6.0.1 PACP compliant records, logs, and electronic inspection data for sewer line inspection to Program Manager by the close of business on the Monday following a week after data acquisition.

ii. Monthly QA/QC memo submittal listing which segments have been randomly reviewed, as well as any subsequent findings or recommendations.

iii. Digital videos, data, and photos shall be delivered to the Program Manager on external hard drives which will become property of the Program Manager.

iv. Data files shall be formatted to facilitate upload into a PACP Exchange Database with the approval of the Program Manager.

v. Inspections displaying poor digital video/audio quality will be rejected. Quality refers to, but is not limited to, grease or debris on lens, camera under water, image too dark or light, image washed-out, distorted image, out of focus images, lines improperly cleaned, and poor/no audio.

vi. Subcontractor will re-televise rejected inspections and resubmit inspections at no additional cost to the Program Manager.

b. Map changes/undocumented manholes:

i. For map changes identifying undocumented manholes and network changes which were found as a result of field inspections or observations, a Map Edit Form shall also be prepared and supplied by the Subcontractor with a drawing or sketch and shall indicate special details, field measurement or distances, or locations about an observed undocumented manhole or a change to the sewer network. The Map Edit Form should also identify buried manholes and siphons that have been encountered.

ii. Subcontractor shall indicate all buried manholes identified in the field via CCTV using the provided Buried Manhole Form. Any additional manholes that have not been located or verified via CCTV but are impeding the completion of required CCTV work should be designated as unable to locate (UTL) and be included on the form.

c. Incident observation and data collection:

i. The Subcontractor shall report all buried manholes, pipe collapses, large void, utility conflicts, Unable to Complete line segments, and heavy cleaning requests to the Program Manager through the program-defined reporting application (Teamworx) and shall fill out all required fields and attach picture documentation as necessary. At least one picture shall be included showing the incident or condition of the sewer line encountered that required it to be recorded. All reported incident observations will be monitored by the Program Manager and inadequate reporting will result in a meeting between the Program Manager and Subcontractor.

6. Easement or Turf Operation

a. The Subcontractor will restore the work area to its original condition as quickly as possible after the inspection is complete. The Subcontractor will not be allowed to postpone restoration of the site until the end of the project.

PART 4 MEASUREMENT & PAYMENT

4.01 MEASUREMENT

A. Light Cleaning & CCTV Inspection

1. Light cleaning and mainline CCTV inspection shall be measured by linear foot by each diameter of mainline sewer inspected and documented in accordance with the specification.

B. Heavy Cleaning

1. Heavy cleaning shall be measured by linear foot of each diameter of heavy cleaning approved by the Program Manager and documented.

C. Remote Trimming of Protruding Service Lateral

1. Remote trimming of protruding service lateral that prevent a thorough inspection of the pipe will be measured per each.

D. Siphon Cleaning and CCTV Inspection

1. Siphon Cleaning and CCTV inspection shall be measured per linear foot of each diameter 12" and smaller of sewer inspected and documented in accordance with the specifications.

4.02 PAYMENT

A. Mainline CCTV Inspection

1. Light cleaning and mainline CCTV inspection shall be paid for at the unit price for each linear foot of each diameter inspected and documented in accordance with the specification.

2. The unit price for Light Cleaning and Mainline CCTV inspection shall cover the entire cost of the required light cleaning and CCTV inspection and reporting in accordance with PACP V 6.0.1 format, including but not limited to labor, mobilization and access, CCTV equipment, recording media, traffic control, light cleaning of mainline sewer, documenting results in PACP records and logs, digital format recordings, photo equipment, power supply for equipment, interim and final reports and all other appurtenant work.

3. No additional payment will be made for:

   a. Re-inspection due to rejected inspection and/or records for any reason.

   b. Reversals.

   c. Performing excavation and associated sewer point repair to retrieve a stuck CCTV camera or hydraulic cleaning hose/nozzle.

   d. Incomplete electronic logs.

   e. Unapproved duplication of inspections: The Subcontractor is responsible to ensure duplications do not occur.

B. Heavy Cleaning

1. Heavy Cleaning shall be paid for at the unit price for each linear foot of each diameter of heavy cleaned sewers at the direction of the Program Manager and in accordance with the specification.

2. The unit price for Heavy Cleaning shall include the entire cost including but not limited to labor, mobilization and access, traffic control, appropriate disposal of sewer debris removed from sewer at permitted site and all other appurtenant work. Payment includes non-hydraulic jet efforts such as porcupines, cutters, power rodding, clam buckets, and other mechanical means, traffic control, and re-cleaning with hydraulic jet, labor, materials, and equipment necessary to clean mainline sufficiently to allow video reviewers a clear picture of pipe conditions.

3. No additional payment will be made for:

a. Additional passes of heavy cleaning if the inspection observation reveals roots, grease or other debris remaining in the sewer after the heavy cleaning passes.

C. Remote Trimming of Protruding Service Lateral

1. Remote trimming of protruding service lateral that prevent a thorough inspection of the pipe will be measured per each.

D. Siphon Cleaning and CCTV Inspection

1. Siphon cleaning and CCTV inspection shall be paid for at the unit price for each linear foot of each diameter 12" and smaller inspected and documented in accordance with the specification.

2. The unit price for Light Cleaning and Mainline CCTV inspection shall cover the entire cost of the required light cleaning and CCTV inspection and reporting in accordance with PACP V 6.0.1 format, including but not limited to labor, mobilization and access, CCTV equipment, recording media, traffic control, light cleaning of mainline sewer, documenting results in PACP records and logs, digital format recordings, photo equipment, power supply for equipment, interim and final reports and all other appurtenant work.

3. No additional payment will be made for:

a. Re-inspection due to rejected inspection and/or records for any reason.

b. Reversals.

c. Performing excavation and associated sewer point repair to retrieve a stuck CCTV camera or hydraulic cleaning hose/nozzle.

d. Incomplete electronic logs.

e. Unapproved duplication of inspections: The Subcontractor is responsible to ensure duplications do not occur.

4.03 PAYMENT WILL BE MADE UNDER:

Item No.	Pay Item	Pay Unit
02541-4.01.A	LIGHT CLEANING & MAINLINE CCTV INSPECTION FOR EACH DIAMETER	LINEAR FEET
02541-4.01.B	HEAVY CLEANING FOR EACH DIAMETER	LINEAR FEET
02541-4.01.C	REMOTE TRIMMING OF PROTRUDING LATERAL	EACH
02541-4.01.D	SIPHON CLEANING AND CCTV INSPECTION FOE EACH DIAMETER	LINEAR FEET

END OF SECTION 02541