

A & S Engineers, Inc.

Memo

To: Board of Directors
Harris County Municipal Utility District No. 61

From: Jack Flores, EIT *J.F.*

CC: David Marks – David M. Marks, P.C.
Jim Ainsworth, P.E. – A&S Engineers

Date: February 15, 2011

Re: Sanitary Sewer Rehabilitation
Explanation of Line Selection for Sewer Rehab
A & S Project No.120130

Cleanserve completed a televised cleaning of the District's sanitary sewer system that had not been previously rehabilitated. We tabulated the inspection results and prioritized line segments (manhole to manhole) according to the number of defects per 100 feet of pipe. Priority 1 reflects those sanitary sewer line segments with a frequency of three defects or greater per 100 feet. Priority 2 includes sewer line segments with a frequency of one and a half to three defects per 100 feet. Priority 3 includes line segments with one and half defects or less per 100 feet.

The attached spreadsheets provide preliminary cost projections for each sanitary sewer rehabilitation priority. Total soft costs including construction contract preparation, bidding and construction phase services and inspection will add approximately 12 – 15% to the price – depending upon the size (dollar value) of the construction project.

Should you have any questions, I will be pleased to discuss with you.

attach:

Harris County Municipal Utility District No. 61**A&S Engineers****Sanitary Sewer Rehabilitation Cost Analysis - Priority 1****February 3, 2011****A&S Job No. 120130****Sanitary Sewer Rehabilitation**

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>EXTENSION</u>
1	Traffic Control and Regulation	LS	1	\$3,000.00	\$3,000.00
2	Flagmen	LS	1	\$1,000.00	\$1,000.00
3	Trench Safety System	LF	4,000	\$1.00	\$4,000.00
4	Pipe Burst Exist. 8-inch Sanitary Sewer using 9.05-inch O.D. HDPE Pipe	LF	10,868	\$28.00	\$304,304.00
5	Pipe Burst Exist. 10-inch Sanitary Sewer using 13.20-inch O.D. HDPE Pipe	LF	504	\$32.00	\$16,128.00
6	Pipe Burst Exist. 15-inch Sanitary Sewer using 17.02-inch O.D. HDPE Pipe	LF	144	\$35.00	\$5,040.00
7	Manhole Rehabilitation - Wall Lining incl. Bench Repair	VF	600	\$75.00	\$45,000.00
8	Replace existing clean out with pre-cast sanitary sewer manhole, Complete in Place	EA	0	\$2,000.00	\$0.00
9	Replacement of Existing Sanitary Sewer Service Connection to Right-of-Way or Easement	EA	175	\$350.00	\$61,250.00
10	Point Repair to 8-inch Sanitary Sewer, All Depths	EA	2	\$1,200.00	\$2,400.00
11	Obstruction Removal for 8- inch Sanitary Sewer, All Depths	EA	0	\$750.00	\$0.00
Total Bid Items:					\$442,122.00
Extra Work Items (As Authorized By Engineer)					
<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>EXTENSION</u>
12	Remove and Replace Existing 8-Inch Sanitary Sewer using 8-inch SDR 26 PVC Pipe	LF	200	\$35.00	\$7,000.00
13	Cured-in-Place Rehabilitation of Existing 8-inch Sanitary Sewer	LF	500	\$40.00	\$20,000.00
14	Point Repair to 8-inch Sanitary Sewer, All Depths	EA	5	\$1,200.00	\$6,000.00
15	Obstruction Removal for 8- inch Sanitary Sewer, All Depths	EA	5	\$750.00	\$3,750.00
16	Remove & Replace Exist. Manhole Upper Section (up to 5-ft) incl. Throat, Cone, Frame& Cover	EA	5	\$500.00	\$2,500.00
17	Manhole Rehabilitation – Remove & Replace Frame & Cover	EA	5	\$350.00	\$1,750.00
18	Manhole Rehabilitation - Raise Frame & Cover to Grade	EA	5	\$250.00	\$1,250.00
Total Extra Work Items:					\$42,250.00

Construction Subtotal: \$484,372.00
Contingency (10%): \$48,437.20
Construction Total: \$532,809.20

Harris County Municipal Utility District No. 61
A&S Engineers
Sanitary Sewer Rehabilitation Cost Analysis - Priority 2
February 3, 2011
A&S Job No. 120130

Sanitary Sewer Rehabilitation

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	EXTENSION
1	Traffic Control and Regulation	LS	1	\$3,000.00	\$3,000.00
2	Flagmen	LS	1	\$1,000.00	\$1,000.00
3	Trench Safety System	LF	1,000	\$1.00	\$1,000.00
4	Pipe Burst Exist. 8-inch Sanitary Sewer using 9.05-inch O.D. HDPE Pipe	LF	3,081	\$28.00	\$86,268.00
5	Pipe Burst Exist. 10-inch Sanitary Sewer using 13.20-inch O.D. HDPE Pipe	LF	878	\$32.00	\$28,096.00
6	Pipe Burst Exist. 12-inch Sanitary Sewer using 13.20-inch O.D. HDPE Pipe	LF	218	\$34.00	\$7,412.00
7	Pipe Burst Exist. 15-inch Sanitary Sewer using 17.02-inch O.D. HDPE Pipe	LF	341	\$35.00	\$11,935.00
8	Manhole Rehabilitation - Wall Lining incl. Bench Repair	VF	240	\$75.00	\$18,000.00
9	Replace existing clean out with pre-cast sanitary sewer manhole, Complete in Place	EA	0	\$2,000.00	\$0.00
10	Replacement of Existing Sanitary Sewer Service Connection to Right-of-Way or Easement	EA	58	\$350.00	\$20,300.00
11	Point Repair to 8-inch Sanitary Sewer, All Depths	EA	1	\$1,200.00	\$1,200.00
12	Obstruction Removal for 8- inch Sanitary Sewer, All Depths	EA	0	\$750.00	\$0.00
Total Bid Items:					\$178,211.00

Extra Work Items (As Authorized By Engineer)

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	EXTENSION
13	Remove and Replace Existing 8-Inch Sanitary Sewer using 8-inch SDR 26 PVC Pipe	LF	200	\$35.00	\$7,000.00
14	Cured-in-Place Rehabilitation of Existing 8-inch Sanitary Sewer	LF	500	\$40.00	\$20,000.00
15	Point Repair to 8-inch Sanitary Sewer, All Depths	EA	5	\$1,200.00	\$6,000.00
16	Obstruction Removal for 8- inch Sanitary Sewer, All Depths	EA	5	\$750.00	\$3,750.00
17	Remove & Replace Exist. Manhole Upper Section (up to 5-ft) incl. Throat, Cone, Frame& Cover	EA	5	\$500.00	\$2,500.00
18	Manhole Rehabilitation – Remove & Replace Frame & Cover	EA	5	\$350.00	\$1,750.00
19	Manhole Rehabilitation - Raise Frame & Cover to Grade	EA	5	\$250.00	\$1,250.00
Total Extra Work Items:					\$42,250.00

Construction Subtotal: \$220,461.00
Contingency (10%): \$22,046.10
Construction Total: \$242,507.10

Harris County Municipal Utility District No. 61**A&S Engineers****Sanitary Sewer Rehabilitation Cost Analysis - Priority 3****February 3, 2011****A&S Job No. 120130****Sanitary Sewer Rehabilitation**

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	EXTENSION
1	Traffic Control and Regulation	LS	1	\$3,000.00	\$3,000.00
2	Flagmen	LS	1	\$1,000.00	\$1,000.00
3	Trench Safety System	LF	2,000	\$1.00	\$2,000.00
4	Pipe Burst Exist. 8-inch Sanitary Sewer using 9.05-inch O.D. HDPE Pipe	LF	6,438	\$28.00	\$180,264.00
5	Pipe Burst Exist. 10-inch Sanitary Sewer using 13.20-inch O.D. HDPE Pipe	LF	1,021	\$32.00	\$32,672.00
6	Pipe Burst Exist. 12-inch Sanitary Sewer using 13.20-inch O.D. HDPE Pipe	LF	842	\$34.00	\$28,628.00
7	Pipe Burst Exist. 15-inch Sanitary Sewer using 17.02-inch O.D. HDPE Pipe	LF	0	\$35.00	\$0.00
8	Manhole Rehabilitation - Wall Lining incl. Bench Repair	VF	400	\$75.00	\$30,000.00
9	Replace existing clean out with pre-cast sanitary sewer manhole, Complete in Place	EA	0	\$2,000.00	\$0.00
10	Replacement of Existing Sanitary Sewer Service Connection to Right-of-Way or Easement	EA	113	\$350.00	\$39,550.00
11	Point Repair to 8-inch Sanitary Sewer, All Depths	EA	0	\$1,200.00	\$0.00
12	Obstruction Removal for 8- inch Sanitary Sewer, All Depths	EA	0	\$750.00	\$0.00
Total Bid Items:					\$317,114.00

Extra Work Items (As Authorized By Engineer)

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	EXTENSION
13	Remove and Replace Existing 8-Inch Sanitary Sewer using 8-inch SDR 26 PVC Pipe	LF	200	\$35.00	\$7,000.00
14	Cured-in-Place Rehabilitation of Existing 8-inch Sanitary Sewer	LF	500	\$40.00	\$20,000.00
15	Point Repair to 8-inch Sanitary Sewer, All Depths	EA	5	\$1,200.00	\$6,000.00
16	Obstruction Removal for 8- inch Sanitary Sewer, All Depths	EA	5	\$750.00	\$3,750.00
17	Remove & Replace Exist. Manhole Upper Section (up to 5-ft) incl. Throat, Cone, Frame& Cover	EA	5	\$500.00	\$2,500.00
18	Manhole Rehabilitation – Remove & Replace Frame & Cover	EA	5	\$350.00	\$1,750.00
19	Manhole Rehabilitation - Raise Frame & Cover to Grade	EA	5	\$250.00	\$1,250.00
Total Extra Work Items:					\$42,250.00

Construction Subtotal: \$359,364.00**Contingency (10%): \$35,936.40****Construction Total: \$395,300.40**



- PRIORITY 1
- PRIORITY 2
- PRIORITY 3
- NO DEFECTS

LEGEND

- DISTRICT BOUNDARY
- SUBDIVISION BOUNDARY
- BLOCK NUMBER
- SANITARY MANHOLE
- LIFT STATION

HARRIS COUNTY MUNICIPAL DISTRICT NO. 1

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Scale 1" = 400'

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