

MH # 6047-042
Depth Unknown

MH # 6047-041
Approx depth = 11.8 ft

MH # 6047-040
Approx depth = 10.7 ft

MH # 6047-039
Approx depth = 7.2 ft

MH # 6047-038
Approx depth = 12.0 ft

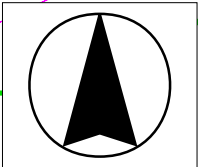
MH # 6047-037
Approx depth = 11.3 ft

5-1

Install 1572 lf of 15" Cured-in-Place Liner
from MH 6047-042 to MH 6047-039

NOTE: The 21" line does reduce to a 12" line as
shown on the south end. Contractor may bypass
pump to the 21" line. If a rain event does occur,
bypass would need to be carefully monitored.

SITE 5



LONGFORD

DOUGLAS

LINDEN

10" from Beech Aircraft

8427

8801

9111

333'

217'

15"

201'

423'

21"

142'

420'

311'

15"

8"

12"

18"

BONNIE BRAE

5-2

LONGFORD

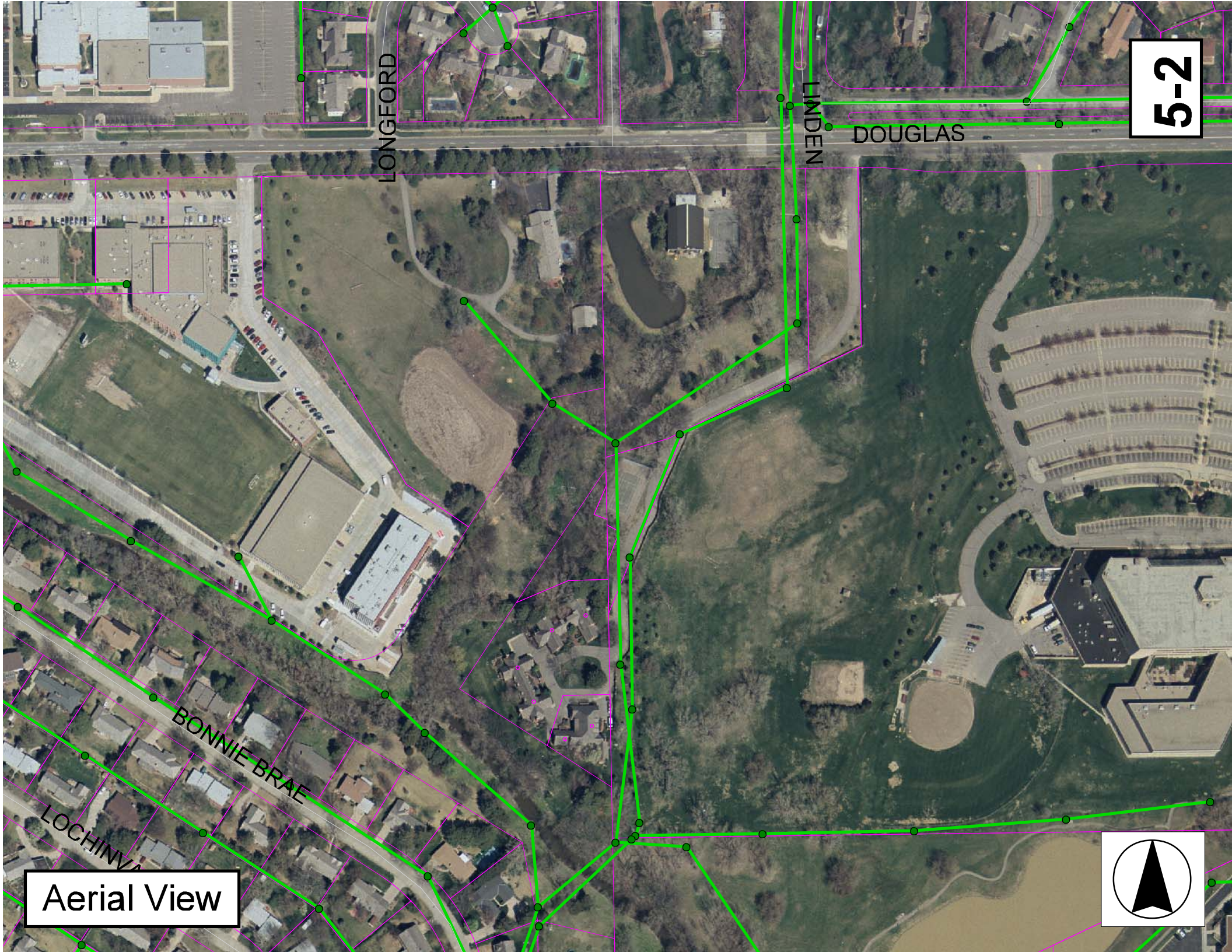
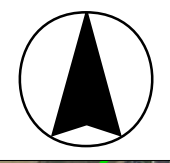
LINDEN

DOUGLAS

BONNIE BRAE

LOCHINVA

Aerial View



Television Inspection Master Report

1/5/2004
7:49:08AM

US Manhole: 6047-042
DS Manhole: 6047-041

20 N LINDEN DR
8501 E DOUGLAS AVE

Date Insp: 12/29/2003

Basin: E02A1

Dir Televised: Downstream To Upstream

Pipe Information

Shape: Round Length Status: Project No.: I-054
Dia/Ht Width: 15 0 Material: VCP Index:
Length: 216.5 Slope: 0.306 Surface:
Pipe Sec Length: Comment:

Inspection Information

Crew: 692 Percent Full: 0 Tape ID: 4184
Weather: Sunny Purpose: TV Existing Line Counter Start: 0.0
Surface Cond: Trees & Fences Flow: No Flow Counter Stop:
Dyed Test: No

Obs. #	VTR Counter Comment	Dist	Location	Description	Rating	Obsrvd (gpm)	Est. (gpm)	Ratings Struct	Clean	Remain (gpm)
1		0.0	DS Manhole 6047-041 / tv against the flow							0.000
2		4.0	Joint	Roots	3		0.008	5	8	0.008
3		9.0	Quad 1 / U-Rt	Crack-Radial	3		0.004	5	0	0.004
4		12.0	Crown	Crack-Horizontal	3		0.004	5	0	0.004
5		13.0	Joint	Roots	3		0.008	5	8	0.008
6		25.0	Joint	Roots	3		0.008	5	8	0.008
7		37.0	Joint	Roots	2		0.004	2	4	0.004
8		45.0	Crown	Crack-Horizontal	3		0.004	5	0	0.004
9		63.0	Quad 1 / U-Rt	Crack-Horizontal	3		0.004	5	0	0.004
10		64.0	Joint	Roots	2		0.004	2	4	0.004
11		66.0	Crown	Crack-Horizontal	3		0.004	5	0	0.004
12		68.0	Joint	Roots	2		0.004	2	4	0.004
13		69.0	Crown	Crack-Horizontal	3		0.004	5	0	0.004
14		70.0	Joint	Roots	3		0.008	5	8	0.008
15		73.0	Quad 1 / U-Rt	Crack-Horizontal	3		0.004	5	0	0.004
16		74.0	Joint	Roots	2		0.004	2	4	0.004
17		75.0	Quad 1 / U-Rt	Crack-Horizontal	3		0.004	5	0	0.004
18		76.0	Joint	Roots	2		0.004	2	4	0.004
19		82.0	Joint	Roots	2		0.004	2	4	0.004
20		85.0	Quad 1 / U-Rt	Crack-Horizontal	3		0.004	5	0	0.004
21		86.0	Joint	Roots	2		0.004	2	4	0.004
22		87.0	Quad 1 / U-Rt	Crack-Horizontal	3		0.004	5	0	0.004
23		88.0	Joint	Roots	3		0.008	5	8	0.008
24		89.0	Crown	Crack-Horizontal	3		0.004	5	0	0.004
25		93.0	Quad 1 / U-Rt	Crack-Horizontal	3		0.004	5	0	0.004
26		95.0	Joint	Roots	3		0.008	5	8	0.008
27		96.0	Crown	Crack-Horizontal	3		0.004	5	0	0.004
28		98.0	Crown	Crack-Horizontal	3		0.004	5	0	0.004
29		100.0	Joint	Roots	2		0.004	2	4	0.004
30		103.0	Quad 1 / U-Rt	Crack-Horizontal	3		0.004	5	0	0.004
31		104.0	Quad 1 / U-Rt	Crack-Horizontal	3		0.004	5	0	0.004
32		109.0	Quad 1 / U-Rt	Crack-Horizontal	3		0.004	5	0	0.004
33		210.0	US Manhole 6047-042							0.000

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Television Inspection Master Report

1/5/2004
7:49:08AM

US Manhole: 6047-041
DS Manhole: 6047-040

8501 E DOUGLAS AVE
8501 E DOUGLAS AV

Date Insp: 12/29/2003

Basin: E02A1

Dir Televised: Upstream To Downstream

Pipe Information

Shape: Round
Dia/Ht Width: 15
Length: 201.0
Pipe Sec Length:

Length Status:
Material: VCP
Slope: 0.299
Project No.: I-054
Index:
Surface:

Comment: POINT REPAIR BY SEWER MAINTENANCE FROM 40' TO 46' SOUTH OF MH 6047-041.
WORK COMPLETED 08-13-2003 TGC #####

Inspection Information

Crew: 692
Weather: Sunny
Surface Cond: Trees
Dyed Test: No

Percent Full: 0
Purpose: TV Existing Line
Flow: No Flow

Tape ID: 4184
Counter Start: 10.50
Counter Stop:

Obs. #	VTR Counter Comment	Dist	Location	Description	Rating	Obsrvd (gpm)	Est. (gpm)	Ratings Struct	Clean	Remain (gpm)
1		0.0	US Manhole 6047-041							0.000
2		17.0	Joint	Roots	3		0.008	5	8	0.008
3		20.0	Joint	Roots	3		0.008	5	8	0.008
4		23.0	Quad 4 / U-Lt	Crack-Horizontal	3		0.004	5	0	0.004
5		24.0	Joint	Roots	3		0.008	5	8	0.008
6		25.0	Crown	Crack-Radial	3		0.004	5	0	0.004
7		27.0	Crown	Crack-Radial	3		0.004	5	0	0.004
8		29.0	Quad 1 / U-Rt	Crack-Radial	3		0.004	5	0	0.004
9		32.0	Joint	Roots	3		0.008	5	8	0.008
10		39.0	Joint	PVC BEGINS						
11		45.0	Joint	PVC ENDS						
12		47.0	Joint	Roots	2		0.004	2	4	0.004
13		48.0	Quad 1 / U-Rt	Crack-Radial	3		0.004	5	0	0.004
14		51.0	Joint	Roots	4		0.010	10	25	0.010
15		68.0	Crown	Broken Pipe	2		0.008	44	0	0.008
16		72.0	Joint	PVC PIPE BEGINS						
17		113.0	Joint	PVC PIPE ENDS						
18		140.0	Crown	Broken Pipe	2		0.008	44	0	0.008
19		147.0	Crown	Crack-Horizontal	3		0.004	5	0	0.004
20		152.0	Joint	Roots	2		0.004	2	4	0.004
21		158.0	Joint	Roots	2		0.004	2	4	0.004
22		159.0	Crown	Crack-Radial	3		0.004	5	0	0.004
23		173.0	Joint	Roots	3		0.008	5	8	0.008
24		185.0	Joint	Roots	2		0.004	2	4	0.004
25		188.0	Joint	Roots	3		0.008	5	8	0.008
26		191.0	Crown	Crack-Horizontal	3		0.004	5	0	0.004
27		194.0	Joint	Roots	4		0.010	10	25	0.010
28		200.0	DS Manhole 6047-040							0.000

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Television Inspection Master Report

1/5/2004
7:49:08AM

US Manhole: 6047-040
DS Manhole: 6047-039

8501 E DOUGLAS AV

Date Insp: 8/22/2003

Basin: E02A1

Dir Televised: Upstream To Downstream

Pipe Information

Shape: Round Length Status: Project No.: I-054
Dia/Ht Width: 15 0 Material: VCP Index:
Length: 423.0 Slope: 0.307 Surface:
Pipe Sec Length: Comment:

Inspection Information

Crew: 692 Percent Full: Tape ID: 4035

Obs. #	VTR Counter Comment	Dist	Location	Description	Rating	Obsrvd (gpm)	Est. (gpm)	Ratings Struct	Clean	Remain (gpm)
1		0.0	US Manhole 6047-040							0.000
2		2.0	Joint	Roots	2		0.004	2	4	0.004
3		97.0	Joint	Roots	2		0.004	2	4	0.004
4		100.0	Joint	Roots	3		0.008	5	8	0.008
5		103.0	Joint	Roots	2		0.004	2	4	0.004
6		106.0	Joint	Roots	3		0.008	5	8	0.008
7		115.0	Joint	Roots	3		0.008	5	8	0.008
8		163.0	Joint	Roots	3		0.008	5	8	0.008
9		172.0	Joint	Roots	2		0.004	2	4	0.004
10		180.0	Joint	Roots	2		0.004	2	4	0.004
11		189.0	Joint	Roots	2		0.004	2	4	0.004
12		193.0	Joint	Roots	2		0.004	2	4	0.004
13		198.0	Joint	Roots	3		0.008	5	8	0.008
14		236.0	Quad 1 / U-Rt	Broken Pipe	2		0.008	44	0	0.008
15		238.0	Quad 1 / U-Rt	Broken Pipe	2		0.008	44	0	0.008
16		240.0	Joint	Roots	3		0.008	5	8	0.008
17		243.0	Quad 1 / U-Rt	Broken Pipe	2		0.008	44	0	0.008
18		246.0	Joint	Roots	3		0.008	5	8	0.008
19		249.0	Joint	Roots	4		0.010	10	25	0.010
20		251.0	Quad 1 / U-Rt	Broken Pipe	2		0.008	44	0	0.008
21		252.0	Joint	Roots	3		0.008	5	8	0.008
22		254.0	Crown	Broken Pipe	3		0.010	60	0	0.010
23		256.0	Joint	Roots	2		0.004	2	4	0.004
24		257.0	Crown	Broken Pipe	2		0.008	44	0	0.008
25		258.0	Joint	Roots	3		0.008	5	8	0.008
26		264.0	Crown	Broken Pipe	3		0.010	60	0	0.010
27		265.0	Joint	Roots	3		0.008	5	8	0.008
28		266.0	Joint	Roots	3		0.008	5	8	0.008
29		268.0	Joint	Roots	3		0.008	5	8	0.008
30		270.0	Crown	Broken Pipe	2		0.008	44	0	0.008
31		271.0	Crown	Broken Pipe	2		0.008	44	0	0.008
32		274.0	Joint	Roots	3		0.008	5	8	0.008
33		280.0	Joint	Roots	2		0.004	2	4	0.004
34		282.0	Joint	Roots	2		0.004	2	4	0.004
35		295.0	Joint	Roots	3		0.008	5	8	0.008
36		313.0	Joint	Roots	2		0.004	2	4	0.004
37		316.0	Joint	Roots	3		0.008	5	8	0.008
38		331.0	Joint	Roots	2		0.004	2	4	0.004
39		358.0	Joint	Roots	2		0.004	2	4	0.004

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Television Inspection Master Report

1/5/2004
7:49:08AM

US Manhole: 6047-040 8501 E DOUGLAS AV Date Insp: 8/22/2003 Basin: E02A1
DS Manhole: 6047-039

40	361.0	Joint	Roots	2	0.004	2	4	0.004
41	370.0	Joint	Roots	2	0.004	2	4	0.004
42	376.0	Joint	Roots	3	0.008	5	8	0.008
43	382.0	Crown	Broken Pipe	2	0.008	44	0	0.008
44	385.0	Crown	Broken Pipe	2	0.008	44	0	0.008
45	388.0	Crown	Broken Pipe	2	0.008	44	0	0.008
46	391.0	Joint	Roots	2	0.004	2	4	0.004
47	393.0	Joint	Roots	4	0.010	10	25	0.010
48	395.0	Crown	Broken Pipe	3	0.010	60	0	0.010
49	397.0	Crown	Broken Pipe	2	0.008	44	0	0.008
50	400.0	Crown	Broken Pipe	2	0.008	44	0	0.008
51	403.0	Joint	Roots	3	0.008	5	8	0.008
52	404.0	Crown	Broken Pipe	2	0.008	44	0	0.008
53	406.0	Joint	Roots	3	0.008	5	8	0.008
54	407.0	Crown	Broken Pipe	3	0.010	60	0	0.010
55	409.0	Joint	Roots	2	0.004	2	4	0.004
56	414.0	DS Manhole 6047-039						0.000

No connections on the line

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Television Inspection Master Report

1/5/2004
7:49:08AM

US Manhole: 6047-039
DS Manhole: 6047-038

8905 E DOUGLAS AVE

Date Insp: 8/26/2003

Basin: E02A1

Dir Televised: Upstream To Downstream

Pipe Information

Shape:	Round	Length Status:	Project No.:	I-054
Dia/Ht Width:	15 0	Material:	VCP	Index:
Length:	420.2	Slope:	0.190	Surface:
Pipe Sec Length:	Comment:			

Obs. #	VTR Counter	Dist	Location	Description	Rating	Obsrvd (gpm)	Est. (gpm)	Ratings Struct	Clean	Remain (gpm)
1		2.0	Joint	Roots	2		0.004	2	4	0.004
2		9.0	Joint	Roots	3		0.008	5	8	0.008
3		13.0	Joint	Roots	1		0.002	1	1	0.002
4		16.0	Joint	Roots	1		0.002	1	1	0.002
5		16.0	Crown	Crack-Horizontal	2		0.002	2	0	0.002
6		19.0	Joint	Roots	4		0.010	10	25	0.010
7		19.0	Crown	Broken Pipe	3		0.010	60	0	0.010
8		25.0	Quad 1 / U-Rt	Crack-Horizontal	2		0.002	2	0	0.002
9		28.0	Joint	Roots	2		0.004	2	4	0.004
10		29.0	Crown	Crack-Horizontal	3		0.004	5	0	0.004
11		31.0	Joint	Roots	2		0.004	2	4	0.004
12		37.0	Joint	Roots	2		0.004	2	4	0.004
13		40.0	Joint	Roots	2		0.004	2	4	0.004
82		42.0	Camera Lens Submerge							0.000
14		43.0	Joint	Roots	2		0.004	2	4	0.004
15		46.0	Joint	Roots	3		0.008	5	8	0.008
16		46.0	Crown	Broken Pipe	1		0.004	30	0	0.004
17		49.0	Joint	Roots	2		0.004	2	4	0.004
18		52.0	Joint	Roots	1		0.002	1	1	0.002
19		52.0	Crown	Crack-Horizontal	2		0.002	2	0	0.002
20		55.0	Joint	Roots	2		0.004	2	4	0.004
21		61.0	Joint	Roots	2		0.004	2	4	0.004
83		77.0	Camera Lens Emerged							0.000
22		89.0	Quad 4 / U-Lt	Broken Pipe	1		0.004	30	0	0.004
23		95.0	Quad 1 / U-Rt	Crack-Radial	1		0.001	1	0	0.001
84		106.0	Camera Lens Submerge							0.000
24		108.0	East	Wye Service (possibly sealed away from the main?)						
25		143.0	Joint	Roots	3		0.008	5	8	0.008
26		145.0	Joint	Roots	4		0.010	10	25	0.010
27		152.0	Crown	Roots	4		0.010	10	25	0.010
28		152.0	Crown	Broken Pipe (large root ball here, possibly an East Tap?)	4		0.030	78	0	0.030
29		158.0	Joint	Roots	1		0.002	1	1	0.002
30		163.0	Joint	Roots	2		0.004	2	4	0.004
31		166.0	Joint	Roots	2		0.004	2	4	0.004
32		178.0	Joint	Roots	1		0.002	1	1	0.002
33		187.0	Crown	Roots	4		0.010	10	25	0.010
34		187.0	Crown	Broken Pipe	4		0.030	78	0	0.030
35		190.0	Joint	Roots	1		0.002	1	1	0.002
36		193.0	Quad 1 / U-Rt	Crack-Horizontal	1		0.001	1	0	0.001
37		199.0	Joint	Roots	1		0.002	1	1	0.002
38		203.0	Joint	Roots	2		0.004	2	4	0.004
39		205.0	Joint	Roots	2		0.004	2	4	0.004
40		217.0	Crown	Crack-Horizontal	1		0.001	1	0	0.001

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Television Inspection Master Report

1/5/2004
7:49:08AM

US Manhole: 6047-039 Date Insp: 8/26/2003 Basin: E02A1
DS Manhole: 6047-038 8905 E DOUGLAS AVE

41	224.0	Crown	Crack-Horizontal	2	0.002	2	0	0.002
42	229.0	Crown	Broken Pipe	1	0.004	30	0	0.004
43	232.0	Joint	Roots	3	0.008	5	8	0.008
44	235.0	Joint	Roots	1	0.002	1	1	0.002
45	235.0	Crown	Broken Pipe	1	0.004	30	0	0.004
46	238.0	Crown	Crack-Horizontal	1	0.001	1	0	0.001
47	241.0	Crown	Crack-Horizontal	1	0.001	1	0	0.001
48	244.0	Joint	Roots	1	0.002	1	1	0.002
49	244.0	Quad 1 / U-Rt	Crack-Horizontal	2	0.002	2	0	0.002
50	247.0	Joint	Roots	1	0.002	1	1	0.002
51	248.0	Crown	Crack-Horizontal	1	0.001	1	0	0.001
52	250.0	Joint	Roots	2	0.004	2	4	0.004
53	252.0	Quad 1 / U-Rt	Crack-Horizontal	1	0.001	1	0	0.001
54	253.0	Joint	Roots	2	0.004	2	4	0.004
55	254.0	Crown	Crack-Horizontal	2	0.002	2	0	0.002
56	256.0	Joint	Roots	2	0.004	2	4	0.004
57	256.0	Quad 4 / U-Lt	Crack-Horizontal	1	0.001	1	0	0.001
58	259.0	Quad 1 / U-Rt	Broken Pipe	3	0.010	60	0	0.010
59	259.0	Joint	Roots	1	0.002	1	1	0.002
60	261.0	Joint	Roots	1	0.002	1	1	0.002
61	261.0	Quad 1 / U-Rt	Broken Pipe	3	0.010	60	0	0.010
62	265.0	Joint	Roots	1	0.002	1	1	0.002
63	265.0	Quad 1 / U-Rt	Crack-Horizontal	2	0.002	2	0	0.002
64	268.0	Joint	Roots	2	0.004	2	4	0.004
65	268.0	Quad 1 / U-Rt	Broken Pipe	2	0.008	44	0	0.008
66	289.0	Joint	Roots	4	0.010	10	25	0.010
67	295.0	Joint	Roots	4	0.010	10	25	0.010
68	309.0	East	Wye Service (possibly sealed away from the main?)					
69	313.0	Joint	Roots	1	0.002	1	1	0.002
70	313.0	Crown	Crack-Horizontal	1	0.001	1	0	0.001
85	314.0	Camera Lens Emerged						0.000
71	347.0	Crown	Crack-Horizontal	2	0.002	2	0	0.002
72	352.0	Crown	Crack-Horizontal	2	0.002	2	0	0.002
73	353.0	Crown	Crack-Horizontal	2	0.002	2	0	0.002
74	365.0	Crown	Crack-Horizontal	2	0.002	2	0	0.002
75	368.0	Crown	Crack-Horizontal	2	0.002	2	0	0.002
76	376.0	East	Wye Service (possibly sealed away from the main?)					
77	388.0	Quad 1 / U-Rt	Crack-Horizontal	1	0.001	1	0	0.001
78	389.0	Quad 4 / U-Lt	Crack-Horizontal	1	0.001	1	0	0.001
79	395.0	Quad 4 / U-Lt	Broken Pipe	2	0.008	44	0	0.008
80	407.0	West	TAP FOR 8911 E DOUGLAS					
81	413.0	West	TAP FOR 8909 E DOUGLAS					
86	420.0	DS Manhole	6047-038					

Camera was under water for most of the way from 313 ft to 388 ft, but not sure if this is really a sag
Camera was under water in manhole 6047-038

5-8

Television Inspection Master Report

1/5/2004
7:49:08AM

US Manhole: 6047-038
DS Manhole: 6047-037

8905 E DOUGLAS AV
9111 E DOUGLAS AV

Date Insp: 8/26/2003

Basin: E02A1

Dir Televised: Upstream To Downstream

Pipe Information

Shape:	Round	Length Status:	Project No.:	I-054
Dia/Ht Width:	15 0	Material:	VCP	Index:
Length:	310.9	Slope:	0.161	Surface:
Pipe Sec Length:	Comment:			

Obs. #	VTR Counter	Dist	Location	Description	Rating	Obsrvd (gpm)	Est. (gpm)	Ratings Struct	Clean	Remain (gpm)
1		0.0	US Manhole							0.000
2		9.0	Quad 1 / U-Rt	Broken Pipe	2		0.008	44	0	0.008
3		11.0	Quad 1 / U-Rt	Crack-Horizontal	2		0.002	2	0	0.002
4		14.0	Crown	Crack-Horizontal	1		0.001	1	0	0.001
5		20.0	Crown	Crack-Horizontal	1		0.001	1	0	0.001
6		34.0	East	Wye Service (possibly sealed away from the main?)						
7		47.0	Crown	Crack-Horizontal	1		0.001	1	0	0.001
8		50.0	Quad 1 / U-Rt	Crack-Horizontal	1		0.001	1	0	0.001
9		53.0	Crown	Crack-Horizontal	2		0.002	2	0	0.002
10		56.0	Crown	Broken Pipe	1		0.004	30	0	0.004
11		57.0	Invert	Broken Pipe	3		0.010	60	0	0.010
12		62.0	Crown	Broken Pipe	2		0.008	44	0	0.008
13		67.0	East	Wye Service (possibly sealed away from the main?)						
14		68.0	Crown	Crack-Horizontal	1		0.001	1	0	0.001
15		76.0	Joint	Roots	2		0.004	2	4	0.004
16		80.0	Joint	Roots	1		0.002	1	1	0.002
17		86.0	Joint	Roots	1		0.002	1	1	0.002
18		89.0	Joint	Roots	2		0.004	2	4	0.004
19		101.0	East	Wye Service (possibly sealed away from the main?)						
20		116.0	Joint	Roots	2		0.004	2	4	0.004
21		120.0	West	Break-In Conn / 8907 E DOUGLAS						
22		122.0	Joint	Roots	1		0.002	1	1	0.002
23		153.0	Quad 4 / U-Lt	Broken Pipe	2		0.008	44	0	0.008
24		153.0	Joint	Roots	1		0.002	1	1	0.002
25		156.0	Joint	Roots	1		0.002	1	1	0.002
26		159.0	Crown	Broken Pipe	2		0.008	44	0	0.008
27		162.0	Quad 4 / U-Lt	Broken Pipe	2		0.008	44	0	0.008
28		190.0	West	Break-In Conn / 8905 E DOUGLAS						
29		209.0	Crown	Crack-Horizontal	1		0.001	1	0	0.001
30		211.0	Quad 4 / U-Lt	Crack-Horizontal	2		0.002	2	0	0.002
32		227.0	Quad 1 / U-Rt	Broken Pipe	1		0.004	30	0	0.004
31		225.0	East	Wye Service / Packed with roots						
33		229.0	Joint	Roots	1		0.002	1	1	0.002
35		235.0	Quad 1 / U-Rt	Broken Pipe	3		0.010	60	0	0.010
36		238.0	Crown	Crack-Horizontal	1		0.001	1	0	0.001
37		244.0	Quad 1 / U-Rt	Broken Pipe	1		0.004	30	0	0.004
38		253.0	Quad 4 / U-Lt	Crack-Horizontal	1		0.001	1	0	0.001
39		261.0	Crown	Broken Pipe	2		0.008	44	0	0.008
40		263.0	Quad 1 / U-Rt	Broken Pipe	1		0.004	30	0	0.004
41		275.0	Quad 1 / U-Rt	Broken Pipe	2		0.008	44	0	0.008
42		284.0	Quad 1 / U-Rt	Broken Pipe	1		0.004	30	0	0.004
43		287.0	Joint	Roots	1		0.002	1	1	0.002
44		303.0	DS Manhole / 6047-037							0.000

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