

**APPENDIX A(R1) - TABLE E17.1: SITE SPECIFIC DESIGN CONDITIONS AND REPAIR REQUIREMENTS PRIOR TO PERFORMING SEWER LINING**

<b>Buchanan Boulevard (Asset No. MA20001787)</b> <b>Waste Water Sewer</b>	<b>1st MH (MH20001578) N of Peltier Ave. to 2nd MH (MH20001615) N of Peltier Ave.</b>
Drawing Number	13265
Size / Shape	250mm circular
Material Type	Concrete
Total Length	91.5
Maximum Sewer Depth to Invert	4.05m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20001578 (m)	
1.8	Remove roots at service @ 12:00
9.8	Remove roots at service @ 2:00
16.3	Remove roots at service @ 12:00
34.5	Remove encrustation from pipe joint @ 2:00
47.0	Remove encrustation from pipe wall @ 5:00
75.5	Remove roots at service @ 2:00
76.6	Remove encrustation from pipe wall @ 7:00

<b>Rouge Road (W PL) [Asset No. MA20003904]</b> <b>Waste Water Sewer</b>	<b>2nd MH (MH20002879) N of Browning Bv. to MH (MH20003585) at Jolliett Cr.</b>
Drawing Number	13266
Size / Shape	200mm circular
Material Type	Concrete
Total Length	90.9
Maximum Sewer Depth to Invert	3.71m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20002879 (m)	
0.3	Remove encrustation from pipe joints @ 8:00
3.8	Remove intruding service @ 2:00
4.8	Remove intruding service @ 1:00
10.1	Remove intruding service @ 10:00
20.3	Remove intruding service @ 3:00
26.3	Remove intruding service @ 9:00
40.0 to 40.3	Remove grease from pipe wall @ 7:00
40.8	Remove intruding service @ 2:00
43.3	Remove intruding service @ 10:00
43.6	Remove encrustation from pipe joints @ 7:00
53.7	Remove encrustation from pipe joints @ 4:00
59.8	Remove encrustation from pipe joints @ 4:00
60.3	Remove intruding service @ 9:00
61.8	Repair existing sewer service and reconnect to main @ 2:00
62.3	Remove intruding service @ 2:00
67.5	Remove encrustation from pipe joint, 7:00 to 5:00
67.7	Remove encrustation from pipe wall below service @ 2:00
72.0	Remove encrustation from pipe joint @ 7:00
77.7	Remove intruding service @ 9:00
89.4	Remove intruding service @ 9:00
90.1 to 90.3	Remove encrustation from pipe wall @ 4:00

<b>Rouge Road (W PL) [Asset No. MA20003158]</b> <b>Waste Water Sewer</b>	<b>MH (MH20002872) at Browning Bv. To 1st MH (MH20002880) N of Browning Bv.</b>
Drawing Number	13267
Size / Shape	200mm circular
Material Type	Concrete
Total Length	91.9
Maximum Sewer Depth to Invert	2.65m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20002872 (m)	
0.0	Remove encrustation from pipe joint, 9:00 to 4:00
14.8	Caution displaced joint
42.3	Remove encrustation below service @ 10:00
58.4	Remove intruding service @ 9:00
78.5	Remove intruding service @ 9:00
79.9	Remove intruding service @ 3:00
80.7	Remove intruding service @ 3:00

<b>Browning Boulevard (S PL) [Asset No. MA20002901]</b> <b>Waste Water Sewer</b>	<b>1st MH (MH20002633) E of Reynolds By. to MH (MH20002872) at Rouge Rd.</b>
Drawing Number	13268
Size / Shape	200mm Circular
Material Type	Concrete
Total Length	106.4m
Maximum Sewer Depth to Invert	2.79m

Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20002633 (m)	
0.0	Remove encrustation from pipe/MH wall @ 12:00
0.6	Remove roots from pipe joint from 3:00 to 9:00
2.1	Remove roots from service @ 9:00
2.7	Remove roots from service @ 2:00
6.3 to 7.1	Remove encrustation from pipe wall from 7:00 to 5:00
10.1	Remove encrustation from pipe wall @ 9:00
20.9 to 21.2	Remove encrustation from pipe wall from 7:00 to 10:00
21.5	Remove encrustation from pipe wall from 7:00 to 10:00
21.7	Remove encrustation from pipe wall from 7:00 to 5:00
35.8	Remove roots at service @ 9:00
36.5	Remove roots at service @ 3:00
36.6	Remove encrustations from pipe wall @ 3:00
50.9	Remove encrustations from pipe wall @ 8:00
51.1	Remove roots from pipe wall @ 3:00
55.0	Remove encrustations from pipe wall @ 9:00
55.7	Remove encrustations and roots at service @ 9:00
56.2	Remove roots from service @ 3:00
64.7	Remove encrustations from pipe wall from 9:00 to 3:00
65.7	Remove encrustations from pipe wall @ 9:00
67.2	Remove encrustations from pipe wall @ 3:00
74.3 to 74.6	Remove encrustations from pipe wall from 7:00 to 5:00
78.4 to 78.6	Remove encrustations from pipe wall from 1:00 to 5:00
79.5	Remove encrustations from pipe wall @ 5:00
80.8 to 80.9	Remove encrustations from pipe wall from 7:00 to 5:00
88.5	Remove encrustations from pipe wall from 7:00 to 5:00
90.9	Remove encrustations from pipe wall from 7:00 to 5:00
92.4 to 93.2	Remove encrustations from pipe wall from 7:00 to 5:00
96.9	Remove encrustations from pipe wall from 7:00 to 5:00

<b>Rouge Road (W PL) [Asset No. MA20003156]</b>	<b>1st MH (MH20002875) S of Browning Bv. to MH (MH20002872) at Browning Bv.</b>
<b>Waste Water Sewer</b>	
Drawing Number	13269
Size / Shape	200mm circular
Material Type	Concrete
Total Length	110.5
Maximum Sewer Depth to Invert	2.69m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20002875 (m)	
0.1 to 97.8	Remove roots from pipe joints
0.9	Remove intruding service @ 3:00
1.5	note: material change to PVC
2.4	note: material change to Concrete
17.0	Remove intruding service @ 3:00
19.3	Remove intruding service @ 9:00
32.8	Remove intruding service @ 3:00
34.7	Remove intruding service @ 9:00
41.9	Remove encrustation from pipe wall @ 3:00
48.5	Remove intruding service with roots @ 3:00
49.7	Roots at service @ 9:00
65.2	Remove intruding service @ 3:00
99.2	Remove intruding service @ 3:00
102.2 to 108.0	Remove roots from pipe joints
110.1	Remove encrustation from benching, 3:00 to 5:00

<b>Rouge Road (W PL) [Asset No. MA20003015]</b>	<b>2nd MH (MH20002686) S of Browning Bv. To 1st MH (MH20002736) S of Erlandson Dr.</b>
<b>Waste Water Sewer</b>	
Drawing Number	13270
Size / Shape	250mm circular
Material Type	Concrete
Total Length	93.0m
Maximum Sewer Depth to Invert	3.07m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20002686 (m)	
1.1	Remove roots from pipe joint @ 8:00 and 4:00
6.2	Remove intruding service @ 10:00
6.7	Remove intruding service @ 2:00
9.3	Remove encrustation from pipe joint @ 9:00
9.3 to 15.8	Remove grease from pipe wall @ 10:00 and 2:00
30.1 to 31.3	Remove grease from pipe wall @ 10:00 and 2:00
37.8	Remove encrustation from pipe joint @ 8:00
39.1	Remove encrustation from pipe joint from 1:00 to 4:00
47.6	Remove encrustation from pipe joint from 9:00 to 4:00
48.8	Remove encrustation from pipe joint from 8:00 to 12:00
55.3	Remove intruding service @ 10:00
55.5	Remove intruding service @ 2:00

63.0	Remove encrustation from pipe wall @ 9:00
73.9	Remove encrustation around CN @ 2:00
74.1	Remove encrustation below CN @ 10:00
91.1 to 91.5	Remove encrustation from pipe wall, 7:00 to 4:00
91.5 to 92.1	Remove roots from pipe joints and pipe wall

<b>Rouge Road (W PL) [Asset No. MA20003016] Waste Water Sewer</b>	<b>1st MH (MH20002736) S of Erlandson Dr. to MH (MH20002735) at West Ave.</b>
Drawing Number	13271
Size / Shape	250mm circular
Material Type	Concrete
Total Length	86.8m
Maximum Sewer Depth to Invert	3.9m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20002736 (m)	
0.6	Remove roots from pipe joint @ 5:00 and 7:00
2.3	Remove intruding service @ 2:00
13.1	Remove encrustation from pipe joints @ 4:00
13.9 to 14.6	Remove grease from pipe wall at 4:00
14.5	Remove intruding service @ 10:00
15.2	Remove intruding service (PVC) with roots @ 12:00
15.3	Remove intruding service @ 2:00
29.6	Remove intruding service with roots @ 2:00
30.2	Remove roots from pipe joint
32.8	Remove roots from pipe joint @ 8:00 and 4:00
36.9 to 42.3	Remove grease from pipe wall from 10:00 to 2:00
43.0	Remove roots at service @ 2:00
49.2 to 61.6	Remove grease from pipe wall from 10:00 to 2:00
69.7	Remove intruding service @ 10:00
85.1	Remove intruding service @ 10:00

<b>Yard between 7&amp;9 Carriage Bay (Asset No. 20000317) Land Drainage Sewer</b>	<b>3rd MH (MH20000258) W of Heritage Bv. To 2nd MH (MH20000259) W of Heritage Bv (In BL)</b>
Drawing Number	13272
Size / Shape	300mm circular
Material Type	Concrete
Total Length	37.7m
Maximum Sewer Depth to Invert	1.65m
Design Condition	Fully Deteriorated 3% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20000258 (m)	
3.2	note: material change to PVC
3.6	note: material change to Concrete
26.4	Remove encrustation from pipe wall @ 3:00 and 9:00
34.9 to 37.3	Remove encrustation from pipe wall from 1:00 to 10:00

<b>Quail Ridge Road (Asset No. MA20001627) Land Drainage Sewer</b>	<b>1st MH (MH20001475) S of Saskatchewan Ave. to MH (MH20001474) at Hollyburn Rd.</b>
Drawing Number	13273
Size / Shape	375mm circular
Material Type	Concrete
Total Length	40.0m
Maximum Sewer Depth to Invert	3.08m
Design Condition	Fully Deteriorated 10% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20001475 (m)	
2.9 to 6.7	EPR including 1 service connection

<b>Cree Crescent (Asset No. 20006723) Waste Water Sewer</b>	<b>1st MH (MH20006186) S of Murray Park Rd. to MH (MH20006249) at Murray Park Rd.</b>
Drawing Number	13274
Size / Shape	300mm circular
Material Type	Concrete
Total Length	116.4m
Maximum Sewer Depth to Invert	4.04m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20006186 (m)	
0.2	Remove encrustation from pipe wall @ 1:00
2.0	Remove roots from pipe joint
11.1	Remove encrustation from pipe joint from 7:00 to 10:00
18.4	Remove encrustation from pipe joint from 12:00 to 5:00
20.3	Remove encrustation from pipe joint from 12:00 to 5:00
23.9	Remove encrustation from pipe joint from 12:00 to 5:00
40.4	Remove encrustation from pipe joint @ 3:00
75.4	Remove roots from pipe joint
85.6 to 86.6	Remove encrustation from pipe wall @ 2:00
88.1	Remove roots from pipe joint

100.8 to 108.6	Remove roots from pipe wall
115.6	Remove encrustation from pipe wall at MH @ 5:00

<b>Backlane N of Portage Avenue (Asset No. MA20008757) Combined Sewer</b>	<b>MH (MH20008186) at Roseberry St. to MH (MH20008075) at Collegiate St.</b>
Drawing Number	13275
Size / Shape	375mm circular
Material Type	VC
Total Length	89.7m
Maximum Sewer Depth to Invert	4.4m
Design Condition	Fully Deteriorated 5% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20008186 (m)	
15.7	Remove piece of metal rod on pipe invert
24.9	Remove intruding service @ 1:00
30.6	Remove encrustation from pipe joint from 9:00 to 1:00
39.1	Remove encrustation from pipe wall @ 10:00
46.7	Remove encrustation from pipe wall @ 7:00
46.9	Remove encrustation from pipe joint @ 8:00
56.9	Remove encrustation from pipe joint @ 8:00
66.5	Remove intruding service @ 10:00

<b>Parkview Street (Asset No. MA20008790) Combined Sewer</b>	<b>2nd MH (MH20008101) N Assiniboine Ave. to 1st MH (MH20008102) N Assiniboine Ave.</b>
Drawing Number	13276
Size / Shape	300mm circular
Material Type	VC
Total Length	123.0m
Maximum Sewer Depth to Invert	3.19m
Design Condition	Fully Deteriorated 4% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20008101 (m)	
3.6 to 4.0	Remove grease off pipe wall @ 2:00
5.0	Remove roots at service @ 2:00
6.3	note: material change to PVC (displaced joint)
8.7	note: material change to VC (displaced joint)
14.9	note: material change to PVC
21.1	note: material change to VC
28.7	note: material change to PVC
34.2	note: material change to VC
52.0	Remove roots from pipe joint @ 9:00
52.8	Remove roots from pipe joint @ 9:00
54.5	Remove roots from service @ 9:00
55.6	Remove intruding CN and roots @ 9:00
58.9	Remove roots from pipe joint @ 2:00
60.4	Remove roots from pipe joint @ 3:00
63.3	Remove roots from pipe joint @ 9:00 and 3:00
66.4	note: material change to Concrete
66.4 to 68.8	Remove grease from pipe wall
69.0	Remove roots from pipe joint from 10:00 to 3:00
71.2	note: material change to PVC
82.7	note: material change to VC
95.1	Remove encrustation from pipe wall @ 4:00
116.1	Remove intruding service @ 10:00

<b>Dundas Street (Asset No. MA20009917) Combined Sewer</b>	<b>MH (MH20009063) at Yukon Ave. to MH (MH20009604) at Sargent Ave.</b>
Drawing Number	13277
Size / Shape	200mm circular
Material Type	VC
Total Length	129.2m
Maximum Sewer Depth to Invert	3.95m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20009063 (m)	
3.7	note: material change to VC
8.9	note: material change to PVC
12.7	note: material change to VC
24.2	note: material change to PVC
26.7	note: material change to VC
34.5	Remove intruding service @ 10:00
61.9	Remove encrustation from pipe joint from 9:00 to 3:00
74.2	Remove encrustation from pipe joint @ 7:00
78.5	note: material change to PVC
80.4	note: material change to VC
84.0	Remove encrustation from pipe wall @ 8:00
86.6	Remove encrustation from pipe joint from 1:00 to 3:00
86.8	Remove encrustation from pipe wall from 8:00 to 10:00
89.6	Remove encrustation from pipe joint @ 9:00
97.1	note: material change to PVC

100.1	note: material change to VC
101.1	Remove encrustation from pipe wall @ 4:00
101.7	Remove encrustation from pipe joint @ 9:00
103.2	Remove encrustation from pipe joint @ 9:00, 3:00
104.0	Remove encrustation form pipe joint @ 3:00
105.6	Remove encrustation from pipe joint @ 3:00
106.3	Remove encrustation from pipe joint @ 3:00
109.4	Remove encrustation from pipe joint @ 3:00
114.8	Remove encrustation from pipe joint @ 9:00, 3:00
115.5 to 115.8	Remove encrustation from pipe wall @ 3:00
117.1	Remove encrustation from pipe joint @ 9:00
121.7	Remove encrustation from pipe joint @ 10:00, 2:00
123.3	Remove encrustation from pipe joint @ 10:00, 2:00
128.0	200 CN @ 6:00 (Drop Pipe)

<b>St. Matthews Avenue (Asset No. 20009772)</b>	
<b>Combined Sewer</b>	
Drawing Number	13278
Size / Shape	450mm circular
Material Type	Concrete
Total Length	100.5m
Maximum Sewer Depth to Invert	6.17m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20008942 (m)	
0.0 to 3.0	Possible pipe size change. Provide taper in CIPP liner to transition between pipe sizes as required
7.3	Remove encrustation from pipe joint @ 8:00
8.1	Remove encrustation from pipe joint @ 8:00
31.4	Remove encrustation from pipe wall below service @ 10:00
42.2	Remove encrustation from pipe wall below service @ 3:00
46.1	Remove intruding service @ 11:00
62.4	Remove intruding service @ 9:00 (250mm Conc.)
63.0	Gravel starts upstream
65.0	Pipe 50% full of debris/gravel
66.3	Remove intruding service @ 3:00
68.1 to 69.0	EPR
71.8	Survey abandoned ; pipe is 40% filled with gravel
Distance from MH20008937 (m)	
1.2	Remove encrustation from pipe joint @ 8:00
3.5	Remove encrustation from service @ 2:00
4.2	Remove encrustation from service @ 10:00
4.2	Remove encrustation from pipe wall @ 6:00
5.6	Remove encrustation from service @ 2:00
12.8 to 13.9	Remove encrustation from pipe wall @ 4:00
13.2	Remove encrustation from pipe joint @ 7:00
13.9	Remove encrustation from pipe joint @ 5:00
20.3	Remove intruding service @ 3:00
20.3	Gravel starts downstream
24.7	Survey abandoned ; piece of large debris

<b>Logan Avenue (CL) [Asset No. MA20012534]</b>	
<b>Combined Sewer</b>	
Drawing Number	13279
Size / Shape	450mm circular
Material Type	VC
Total Length	79.0m
Maximum Sewer Depth to Invert	3.57m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20011445 (m)	
10.5	Remove intruding service @ 2:00
16.3	Remove encrustation from pipe joint @ 6:00
26.4	Remove encrustation below service @ 10:00
27.1	Remove encrustation below service @ 2:00
33.3	Remove intruding service @ 2:00
39.6	Remove intruding service @ 2:00
52.8	Remove intruding service @ 10:00
71.8	Remove encrustation from pipe wall under serve @ 10:00

<b>Alexander Avenue (Asset No. MA70039174)</b>	
<b>Combined Sewer</b>	
Drawing Number	13280
Size / Shape	375mm circular
Material Type	VC
Total Length	72.0m
Maximum Sewer Depth to Invert	4.2m
Design Condition	Fully Deteriorated 7% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20010939 (m)	

0.3 to 23.0	Remove grease from pipe wall from 9:00 to 3:00
27.8	Remove encrustation from pipe wall below service @ 2:00
33.6	Remove encrustation from pipe wall @ 6:00
33.7	note: material change to PVC
33.7 to 37.0	Remove grease from pipe wall from 9:00 to 3:00
38.2	note: material change to VC
42.4	Remove encrustation from below service @ 2:00
47.3	Remove intruding service @ 2:00
52.8 to 53.0	Remove encrustation from pipe wall from 1:00 to 3:00

<b>Winks Street (East Easement) [Asset No. MA70012246] Combined Sewer</b>	
<b>1st MH (MH70004926) N of Logan Ave. to MH (MH20011918) at Logan Ave.</b>	
Drawing Number	13281
Size / Shape	375mm circular
Material Type	VC
Total Length	129.8m
Maximum Sewer Depth to Invert	5.76m
Design Condition	Fully Deteriorated 15% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH70004926	
0.0	Grout around manholoe to pipe interface from 9:00 to 12:00 (void)
0.7	Remove encrustation from pipe joint
2.4	Remove encrustation from pipe joint
5.3	Remove encrustation from pipe joint
9.1	Remove encrustation from pipe joint
33.5	Remove encrustation from pipe joint @ 3:00
34.3 to 35.6	Remove encrustation from pipe wall @ 3:00
34.9 to 108.3	remove roots from joints and cracks
128.5	note: material change to PVC
129.0	Caution: PVC bend in line

<b>Alexander Avenue (Asset No. MA20013035) Combined Sewer</b>	
<b>1st MH (MH20011860) E of Winks St. to 2nd MH (MH20017453) E of Winks St.</b>	
Drawing Number	13282
Size / Shape	300mm circular
Material Type	VC
Total Length	104.1m
Maximum Sewer Depth to Invert	3.28m
Design Condition	Fully Deteriorated 7% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20011860 (m)	
0.0	repair benching and MH grouting around pipe
12.8	Remove intruding service @ 3:00
13.6	note: material change to PVC
14.4	note: material change to VC
25.3 to 26.5	EPR including 1 service connection. Water service crossbore (see below)
Distance from MH20017453 (m)	
30.1 to 31.5	EPR including 2 service connections
38.9	Remove intruding service @ 10:00
42.8	Remove intruding service @ 3:00
60.1	Remove intruding service @ 9:00
62.6	Remove intruding service @ 10:00
69.7	Remove encrustation from pipe wall @ 7:00
76.9 to 78.1	EPR including 1 service connection. Water service crossbore (see above)

<b>Alexander Avenue (Asset No. MA20019430) Combined Sewer</b>	
<b>2nd MH (MH20017453) E of Winks St. to MH (MH20017613) at Yeomans St.</b>	
Drawing Number	13283
Size / Shape	300mm circular
Material Type	VC
Total Length	93.7m
Maximum Sewer Depth to Invert	4.0m
Design Condition	Fully Deteriorated 8% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20017453 (m)	
14.3	Repair existing sewer service and reconnect to main @ 10:00
21.2	Remove intruding service @ 2:00
42.3	Remove encrustation from pipe joint @ 3:00
48.3	Remove encrustation from pipe joint from 9:00 to 4:00
49.0	Remove encrustation from pipe joint from 9:00 to 4:00
72.2	Remove encrustation from pipe wall @ 10:00
73.9	Remove encrustation from pipe joint @ 8:00
85.8 to 86.3	Remove encrustation from pipe wall from 3:00 to 9:00
90.0 to 91.7	EPR including 1 service connection

<b>Maude Street (Asset No. MA20019671) Combined Sewer</b>	
<b>1st MH (MH20017678) S of Henry Ave. to MH (MH20017722) at Henry Ave.</b>	
Drawing Number	13284
Size / Shape	300mm circular
Material Type	VC

Total Length	78.4m
Maximum Sewer Depth to Invert	4.63m
Design Condition	Fully Deteriorated 6% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20017678 (m)	
2.8	Remove intruding service @ 10:00
6.5 to 6.7	Remove encrustation from pipe wall from 5:00 to 7:00
18.6	Remove roots from pipe joint @ 6:00
21.7	Remove roots from pipe joint @ 6:00
25.0	Remove encrustation from pipe joint @ 4:00
30.3	Remove encrustation from pipe joint from 3:00 to 5:00
32.7	Remove encrustation from pipe joint @ 4:00
43.7	Remove encrustation from pipe joint @ 4:00
52.2	Remove encrustation from pipe joint @ 6:00
56.1	Remove encrustation from pipe joint from 2:00 to 9:00
57.0	Remove encrustation from pipe joint @ 9:00
60.0	Remove roots from pipe joint @ 6:00
61.6	Remove encrustation from pipe joint @ 5:00
67.9	Remove encrustation from pipe joint @ 6:00
77.4 to 77.6	Remove encrustation from pipe wall from 5:00 to 6:00

<b>Winnipeg Avenue (Asset No. MA20017800)</b> <b>Combined Sewer</b>	<b>1st MH (MH20015923) W of McPhillips St. to MH (MH20015957) at McPhillips St.</b>
Drawing Number	13285
Size / Shape	450mm circular
Material Type	VC
Total Length	110.7m
Maximum Sewer Depth to Invert	6.71m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20015923 (m)	
3.1	note: material change to PVC - displaced joint
3.5	Remove intruding PVC service @ 9:00
4.3	note: material change to VC - displaced joint
5.9	Remove encrustation from pipe wall from 2:00 to 6:00
6.3	note: material change to PVC
8.7	note: material change to VC
8.7	Remove encrustation from pipe joint @ 11:00
28.6	Remove rebar from pipe joint @ 7:00
30.2 to 30.4	Remove encrustation from pipe wall @ 2:00
30.5 to 32.8	Remove grease from pipe wall @ 5:00, 7:00
33.8	Pipe size change. Provide taper in CIPP liner to transition between pipe sizes as required
40.9	Pipe size change. Provide taper in CIPP liner to transition between pipe sizes as required
41.0	Remove encrustation from pipe wall from 7:00 to 11:00
43.1	Remove encrustation from pipe joint from 9:00 to 3:00
44.4	Remove encrustation from pipe joint from 1:00 to 4:00
46.2	Remove encrustation from pipe joint @ 2:00
50.1 to 50.9	Remove encrustation from pipe wall from 7:00 to 11:00
51.2	Remove encrustation below service @ 10:00
51.7	Remove encrustation from pipe joint @ 9:00
61.5	Remove encrustation below service @ 10:00
64.7	Remove encrustation from pipe joint
71.4	Remove intruding service @ 10:00
72.0	Remove encrustation below service @ 10:00
74.5	note: material change to PVC
77.6	note: material change to VC
77.6	Remove encrustation from pipe joint from 7:00 to 5:00
77.7	Remove encrustation from pipe wall @ 2:00
79.6	Remove encrustation below service @ 10:00
80.2	Remove encrustation below service @ 2:00
80.2 to 83.4	Remove grease from pipe wall @ 7:00, 5:00
84.3	Remove intruding service @ 2:00
93.2	Remove encrustation from pipe joint from 1:00 to 5:00
98.5 to 98.8	Remove encrustation from pipe wall from 7:00 to 5:00
99.3	Remove encrustation from pipe joint @ 5:00, 7:00
102.7 to 104.1	Remove grease from pipe wall @ 7:00, 5:00
104.6	Remove encrustation from pipe wall from 12:00 to 2:00

<b>Dominion Street (Asset No. MA20010313)</b> <b>Combined Sewer</b>	<b>3rd MH (MH20009418) N of Yarwood St. to 4th MH (MH20009417) N of Yarwood St.</b>
Drawing Number	13286
Size / Shape	375mm circular
Material Type	VC
Total Length	116.6m
Maximum Sewer Depth to Invert	5.15m
Design Condition	Fully Deteriorated 4% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20009418 (m)	

10.4	Remove encrustation from pipe wall at service @ 2:00
29.3	Remove intruding service @ 10:00
57.0	note: material change to PVC
60.7	note: material change to VC
82.7	Remove encrustation from pipe joint @ 4:00
82.9	Remove encrustation from pipe wall @ 10:00
89.1	Remove intruding service @ 2:00
90.1	Repair existing sewer service and reconnect to main @ 10:00
100.2	Repair existing sewer service and reconnect to main @ 10:00

<b>Grundy Avenue (Asset No. MA70021913)</b>	<b>Node W (No ex. MH) of Ingersoll St. to MH (MH20015894) at Ingersoll St.</b>
<b>Combined Sewer</b>	
Drawing Number	13287
Size / Shape	300mm circular
Material Type	VC
Total Length	40.2m
Maximum Sewer Depth to Invert	4.78m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20015894 (m)	



3.4	Survey abandoned due to displaced joint
<b>Ingersoll Street (Asset No. MA20017740) Combined Sewer</b>	
<b>MH (MH20015855) at Yarwood Ave. to 1st MH (MH20015904) N of Yarwood Ave.</b>	
Drawing Number	13288
Size / Shape	300mm circular
Material Type	VC
Total Length	83.4m
Maximum Sewer Depth to Invert	4.22m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20015855 (m)	
7.5 to 8.0	Remove grease from pipe wall @ 4:00, 8:00
25.8	Remove encrustation from pipe wall @ 9:00
81.8	Repair existing sewer service and reconnect to main @ 10:00
82.2	note: material change to Concrete
<b>Wellington Avenue (Asset No. MA20010465) Combined Sewer</b>	
<b>1st MH (MH20009117) E of Strathcona St. to MH (MH20009553) at Strathcona St.</b>	
Drawing Number	13289
Size / Shape	300mm circular
Material Type	Concrete
Total Length	24.0m
Maximum Sewer Depth to Invert	3.56m
Design Condition	Fully Deteriorated 4% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20009117 (m)	
0.0 to 3.8	Remove encrustation from pipe wall from 5:00 to 7:00
4.9 to 6.6	Remove encrustation from pipe wall from 5:00 to 7:00
17.4	Remove encrustation from pipe joint from 5:00 to 7:00
18.2 to 20.0	Remove encrustation from pipe wall @ 6:00
20.6	Remove encrustation from pipe joint from 5:00 to 7:00
21.3 to 21.8	Remove encrustation from pipe wall from 5:00 to 7:00
22.9	note: material change to VC
<b>Wellington Avenue (Asset No. MA20009975) Combined Sewer</b>	
<b>MH (MH20009116) at Ashburn St. to MH (MH20009204) at Valour Rd.</b>	
Drawing Number	13290
Size / Shape	300mm circular
Material Type	VC / Concrete
Total Length	75.4m
Maximum Sewer Depth to Invert	3.81m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20009116 (m)	
0.0 to 0.5	note: material change to Concrete
0.5	Remove encrustation from pipe joint from 3:00 to 6:00
2.2	Remove encrustation from pipe joint from 9:00 to 3:00
31.2	Remove encrustation from pipe joint @ 7:00
31.2 to 31.7	Remove grease from pipe wall @ 5:00 and 7:00
32.7	Remove encrustation from pipe joint @ 7:00
34.8 to 36.0	Remove grease from pipe wall @ 5:00 and 7:00
40.5	Remove encrustation from pipe joint @ 5:00
41.4	Remove encrustation from pipe joint @ 7:00
41.9	Remove encrustation from pipe wall from 5:00 to 7:00
42.9	Remove encrustation from pipe joint @ 5:00
46.0	Remove enrustation from pipe joint @ 5:00
47.6	Remove encrustation from pipe joint from 5:00 to 7:00
48.4	Remove encrustation from pipe joint from 5:00 to 7:00
50.6	Remove encrustation from pipe joint from 5:00 to 7:00
51.4	Remove encrustation from pipe joint from 5:00 to 7:00
59.0	Remove encrustation from pipe joint from 5:00 to 7:00
59.9	Remove encrustation from pipe joint @ 4:00
69.2	Remove encrustation from pipe joint @ 6:00
72.3	Remove encrustation from pipe joint @ 5:00
74.5	note: material change to VC
<b>Valour Road (Asset No. MA20010078) Combined Sewer</b>	
<b>1st MH (MH20009205) N of Wellington Ave. to MH (MH20009204) at Wellington Ave.</b>	
Drawing Number	13291
Size / Shape	300mm circular
Material Type	Concrete
Total Length	92.6m
Maximum Sewer Depth to Invert	3.81m
Design Condition	Fully Deteriorated 4% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20009205 (m)	
7.2 to 12.8	Remove encrustation from pipe joints (8 joints) @ 6:00
19.7	Remove encrustation from pipe joint @ 6:00

26.7	Remove encrustation from pipe joint @ 5:00 and 7:00
29.0	Remove encrustation from pipe joint @ 5:00 and 7:00
29.8	Remove encrustation from pipe joint @ 5:00
32.2	Remove encrustation from pipe joint @ 5:00
33.6	Remove encrustation from pipe joint @ 5:00 and 7:00
34.5	Remove encrustation from pipe joint @ 5:00 and 7:00
40.7	Remove encrustation from pipe joint @ 5:00 and 7:00
41.4	Remove encrustation from pipe joint @ 7:00
42.3	Remove encrustation from pipe joint @ 5:00 and 7:00
43.8	Remove encrustation from pipe joint @ 5:00
50.0 to 50.1	Remove encrustation from pipe wall @ 7:00
55.9	Remove encrustation from pipe wall @ 3:00
73.4	Remove encrustation from pipe wall @ 5:00
74.1	Remove encrustation from pipe joint @ 7:00
76.4	note: material change to VC
83.5	Remove encrustation from pipe joint @ 6:00

<b>Spruce Street (Asset No. 20010094) Combined Sewer</b>	<b>1st MH (MH20009220) N of Wellington Ave. to MH (MH20009216) at Wellington Ave.</b>
Drawing Number	13292
Size / Shape	375mm circular
Material Type	VC
Total Length	76.4m
Maximum Sewer Depth to Invert	3.63
Design Condition	Fully Deteriorated 3% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20009216 (m)	
0.0 to 1.0	Remove encrustation from pipe wall @ 5:00
5.8	Remove encrustation from pipe wall below service @ 2:00
6.2	Remove encrustation from pipe joint from 5:00 to 7:00
8.6	Remove encrustation from pipe joint from 5:00 to 7:00
10.8	Remove encrustation from pipe joint @ 5:00
11.6	Remove encrustation from pipe joint from 5:00 to 7:00
13.6	Remove intruding service @ 2:00
13.8	Remove encrustation from pipe joint @ 5:00
20.9	Remove encrustation from pipe joint @ 5:00
21.6	Remove encrustation from pipe joint @ 5:00
22.3	Remove intruding service @ 2:00
24.1	Remove intruding service @ 10:00
25.5	Remove encrustation from pipe joint @ 5:00
28.5	Remove encrustation from pipe joint @ 5:00
29.4	Remove encrustation from pipe joint from 5:00 to 7:00
31.0	Remove encrustation from pipe joint @ 7:00
31.7	Remove encrustation from pipe joint @ 8:00
33.2	Remove encrustation from pipe joint @ 6:00
33.5	Remove roots at service @ 2:00
34.1 to 37.1	Remove roots from pipe joints
37.1	Remove encrustation from pipe joint @ 4:00
37.8	Remove encrustation from pipe joint @ 7:00
38.9	Remove roots at service @ 2:00
39.5 to 51.7	Remove roots from pipe joints and pipe walls
52.3	Remove encrustation from pipe joints from 5:00 to 7:00
53.9	Remove encrustation from pipe joints from 4:00 to 8:00
57.0	Remove encrustation from pipe joint @ 7:00
58.0	remove roots from CN @ 2:00
Distance from MH20009220 (m)	
0.7 to 18.0	Remove roots from pipe joints
9.0	Remove encrustation from pipe joint @ 7:00
18.5	remove roots from CN @ 10:00

<b>Home Street (Asset No. MA20018013) Combined Sewer</b>	<b>1st MH (MH20016134) N of Wellington Ave. to MH (MH20016115) at Wellington Ave NPL</b>
Drawing Number	13293
Size / Shape	375mm circular
Material Type	VC
Total Length	86.0m
Maximum Sewer Depth to Invert	4.51m
Design Condition	Fully Deteriorated 7% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20016134 (m)	
2.8	Remove roots from pipe joint @ 11:00
7.4	Remove encrustation from pipe wall @ 8:00
7.6	Remove encrustation from pipe wall @ 8:00
10.4	Remove encrustation from pipe joint from 7:00 to 5:00
11.6	Remove encrustation from joint @ 3:00
37.7	Remove encrustation from pipe wall @ 12:00
41.3	Remove piece of VC pipe from invert
44.2	Remove piece of metal from invert
59.5	Remove encrustation from pipe joint @ 3:00
60.6	Remove intruding service @ 10:00
62.9	Remove encrustation below service @ 10:00

66.0 to 70.2	Remove grease from pipe wall @ 9:00, 3:00
76.3	Remove encrustation from pipe joint @ 6:00
77.6	Remove encrustation from pipe wall @ 9:00
84.3	Remove encrustation from pipe joint @ 2:00
85.0	Remove encrustation from pipe joint from 9:00 to 3:00

<b>Wellington Avenue (Asset No. MA20017989) Combined Sewer</b>	<b>1st MH (MH20016093) W of Home St. to MH (MH20016092) at Arlington St.</b>
Drawing Number	13294
Size / Shape	300mm circular
Material Type	VC
Total Length	73.2m
Maximum Sewer Depth to Invert	4.02m
Design Condition	Fully Deteriorated 11% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20016093 (m)	
5.3	Remove encrustation from pipe wall @ 9:00
33.3	Remove encrustation below service @ 10:00
64.4	Remove encrustation from pipe joint @ 6:00
72.2	Remove encrustation from pipe wall @ 5:00

<b>Downing Street (Asset No. MA20009605) Combined Sewer</b>	<b>1st MH (MH20008775) S of Sargent Ave. to 2nd MH (MH20008782) S of Sargent Ave.</b>
Drawing Number	13295
Size / Shape	300mm circular
Material Type	VC
Total Length	96.0m
Maximum Sewer Depth to Invert	3.05m
Design Condition	Fully Deteriorated 6% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20008775 (m)	
24.0	Remove roots at service @ 2:00
28.5	Remove roots at pipe joint @ 5:00
29.2	Remove roots at pipe joint @ 4:00
33.3	Remove roots at service @ 2:00

<b>Home Street (Asset No. 70033343) Combined Sewer</b>	<b>5th MH (MH20015698) S of Wellington Ave. to MH (MH20015699) at Sargent Ave.</b>
Drawing Number	13296
Size / Shape	450mm circular
Material Type	VC
Total Length	95.2m
Maximum Sewer Depth to Invert	5.67m
Design Condition	Fully Deteriorated 11% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20015698 (m)	
3.1	note: material change to VC
4.4	Remove encrustation from pipe joint @ 9:00
9.0 to 10.2	Remove encrustation from pipe wall from 5:00 to 7:00
9.1	Repair existing sewer service and reconnect to main @ 10:00
14.0	Remove encrustation from pipe joint @ 5:00
18.6 to 21.8	Remove grease from pipe wall @ 4:00
23.8 to 24.0	Remove encrustation from pipe wall @ 3:00
33.3	Remove intruding service @ 2:00
33.7	Remove encrustation from pipe wall @ 3:00
42.8 to 45.5	Remove grease from pipe wall @ 3:00
46.7	Remove encrustation from pipe wall below service @ 10:00
47.4	Remove encrustation from pipe wall below service @ 2:00
51.1	Remove intruding service @ 2:00
56.7	Remove encrustation from pipe joint @ 9:00
69.0	Remove intruding service @ 2:00
72.0	note: material change to PVC
79.9	note: material change to VC
79.9	Remove encrustation from pipe joint @ 8:00 and 4:00
82.0 to 84.6	Remove grease from pipe wall @ 7:00 and 5:00
86.4	Remove encrustation from pipe joint @ 9:00
87.1	Remove encrustation from pipe joint @ 4:00
94.0	note: material change to Concrete

<b>Sargent Avenue (Asset No. MA20017512) Combined Sewer</b>	<b>MH (MH20015781) at Beverley St. to MH (MH20015729) at Simcoe St.</b>
Drawing Number	13297
Size / Shape	450mm circular
Material Type	VC
Total Length	83.2m
Maximum Sewer Depth to Invert	4.2m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>

Distance from MH20015781 (m)	
0.0 to 1.5	Possible pipe size change. Provide taper in CIPP liner to transition between pipe sizes as required
1.5	note: material change to VC
15.2 to 16.4	Remove grease from pipe wall @ 4:00 and 8:00
27.0	Remove encrustation from pipe wall below service @ 2:00
51.2	Remove intruding service @ 11:00
55.6	Remove encrustation from pipe joint from 2:00 to 4:00
61.8	Remove intruding service @ 1:00

<b>Wall Street (Asset No. MA20009476) Combined Sewer</b>	<b>2nd MH (MH20008659) N of St Matthews Ave. to 1st MH (MH20008658) N of St Matthews Ave</b>
Drawing Number	13298
Size / Shape	375mm circular
Material Type	VC
Total Length	86.1m
Maximum Sewer Depth to Invert	4.6m
Design Condition	Fully Deteriorated 4% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20008659 (m)	
0.0	Remove encrustation from pipe wall @ 6:00
1.5	Note: material change to VC
8.1	Remove intruding PVC saddle @ 10:00
23.7	Remove encrustation from pipe wall below service @ 10:00
34.4	Remove intruding service @ 10:00
Distance from MH20008658 (m)	
2.6	Note: material change to VC
18.2	Remove encrustation from pipe wall 8:00 to 3:00
21.8	Remove encrustation from pipe wall @ 10:00
42.7	Remove encrustation from pipe wall below service @ 10:00
46.2	Remove encrustation from pipe wall below service @ 2:00
51.6	Remove intruding service @ 2:00

<b>Minto Street (Asset No. MA20009553) Combined Sewer</b>	<b>1st MH (MH20008741) S of Armoury Ave to 2nd MH (MH20008726) S of Armoury Ave</b>
Drawing Number	13299
Size / Shape	300mm circular
Material Type	VC
Total Length	63.3m
Maximum Sewer Depth to Invert	4.25m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20008741 (m)	
8.0	note: material change from PVC to VC
9.7 to 10.3	Remove encrustation from pipe wall, 1:00 to 4:00
18.0	Remove encrustation from pipe joint from 8:00 to 3:00
19.6	note: material change to PVC
21.2	note: material change to VC
22.6	Remove encrustation from pipe joint @ 3:00
24.2	note: material change to PVC
26.7	note: material change to VC
26.8	Remove encrustation from pipe wall @ 9:00
62.8	Remove encrustation from pipe wall @ 4:00

<b>Garfield Street North (Asset No. MA20009425) Combined Sewer</b>	<b>1st MH (MH20008724) N St Matthews Ave. to MH (MH20008628) at St Matthews Ave.</b>
Drawing Number	13300
Size / Shape	375mm circular
Material Type	VC
Total Length	84.6m
Maximum Sewer Depth to Invert	6.94m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20008724 (m)	
2.7 to 3.6	Remove encrustation from pipe wall, 12:00 to 7:00
32.3	Remove encrustation from pipe joint, 1:00 to 4:00
44.8 to 45.2	Remove encrustation from pipe wall @ 9:00
45.7	Remove encrustation from pipe wall @ 3:00
46.1	Remove encrustation from pipe wall
47.2	Remove intruding connection @ 10:00
54.8	Remove encrustation from pipe joint @ 7:00
80.4 to 82.4	Size change to PVC. Provide taper in CIPP liner to transition between pipe sizes

<b>Garfield Street North (Asset No. MA70022296) Combined Sewer</b>	<b>1st MH (MH20010364) S of St Matthews Ave. to MH (MH20008628) at St Matthews Ave.</b>
Drawing Number	13301
Size / Shape	300mm circular
Material Type	VC
Total Length	85.5m

Maximum Sewer Depth to Invert	6.94m
Design Condition	Fully Deteriorated 9% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20010364 (m)	
2.4	note: material change to VC
7.7	Remove intruding service @ 10:00
25.5	Remove encrustation from pipe wall @ 10:00
29.1	Remove encrustation from pipe joint @ 8:00
29.7	Remove encrustation from pipe joint @ 8:00
44.0	note: material change to PVC
44.8	note: material change to VC
49.6	Remove encrustation from pipe joint @ 8:00
52.2	Remove encrustation from pipe joint @ 4:00
53.9	Remove encrustation from pipe joint @ 1:00
60.8	Remove encrustation from pipe joint @ 9:00
61.4	Remove encrustation from pipe joint @ 2:00
65.2	Remove encrustation from pipe joint @ 4:00
67.7	Remove encrustation from pipe joint @ 8:00
73.6	Remove encrustation from pipe wall below service @ 2:00
74.6	Remove encrustation from pipe wall from 2:00 to 4:00
83.4	note: material change to PVC

<b>Beverley Street (Asset No. MA70033321)</b>	<b>1st MH (MH20014017) S of St Matthews Ave. to 2nd MH (MH20013995) S of St Matthews Ave.</b>
<b>Combined Sewer</b>	
Drawing Number	13302
Size / Shape	450mm circular
Material Type	VC
Total Length	121.8m
Maximum Sewer Depth to Invert	5.41m
Design Condition	Fully Deteriorated 3% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20014017 (m)	
0.0 to 2.2	note: metal spot repair
2.2	note: material change to VC
22.1	Remove intruding service @ 2:00
22.2	Remove encrustation from pipe wall @ 4:00
22.5	Remove roots from pipe joint
25.6	Remove encrustation from pipe joint @ 10:00
25.9	Remove encrustation from pipe wall below service @ 10:00
27.0	Remove encrustation from pipe joint @ 5:00
34.4	Remove intruding service @ 11:00
37.3	note: material change to PVC
38.9 to 47.1	Remove grease from pipe wall @ 3:00 and 10:00
41.3	note: material change to VC
41.3	Remove encrustation from pipe wall @ 7:00
47.4	Remove roots from pipe wall below service @ 10:00
48.8 to 73.3	Remove grease from pipe wall @ 3:00 and 9:00
55.9	Remove encrustation from pipe wall below service @ 10:00
66.7	Remove intruding service @ 10:00
76.6 to 79.7	Remove grease from pipe wall @ 3:00 and 8:00
95.8	Remove encrustation from pipe joint @ 3:00
97.7	Remove roots from service @ 10:00

<b>Beverley Street (Asset No. MA20015454)</b>	<b>MH (MH20013919) at Portage Ave. to 2nd MH (MH20013995) S of St Matthews Ave.</b>
<b>Combined Sewer</b>	
Drawing Number	13303
Size / Shape	450mm circular
Material Type	VC
Total Length	121.8m
Maximum Sewer Depth to Invert	6.64m
Design Condition	Fully Deteriorated 4% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20013995 (m)	
3.8 to 5.9	Remove grease from pipe wall @ 5:00 and 7:00
4.7	Remove roots from service @ 10:00
13.1	Remove encrustation from pipe joint @ 7:00
14.7	Remove encrustation from pipe wall below service @ 2:00
19.1	Remove encrustation from pipe joint @ 11:00 and 4:00
23.7	Remove encrustation from pipe wall below service @ 2:00
29.5 to 29.7	Remove grease from pipe wall @ 5:00
31.5	Remove grease from pipe wall @ 5:00
32.5	Remove grease from pipe wall @ 5:00
35.4	Remove intruding service @ 10:00
37.6	Remove encrustation below service @ 2:00
43.9	Remove intruding service @ 11:00
52.4	Remove encrustation from pipe wall below service @ 2:00
57.5 to 58.3	Remove encrustation from pipe wall from 7:00 to 5:00
69.9	Remove encrustation from pipe joint @ 9:00
70.3	Remove encrustation from pipe wall @ 3:00
72.3	Remove encrustation from pipe wall below service @ 2:00

Distance from MH20013919 (m)	
16.2	Remove encrustation below service @ 10:00
33.3	Remove encrustation from pipe wall below service @ 10:00
33.6 to 39.9	Remove grease from pipe wall @ 9:00 and 3:00
43.0 to 46.9	Remove grease from pipe wall @ 9:00 and 3:00
49.0	Remove encrustation from pipe joint from 9:00 and 3:00
50.0	Remove encrustation from pipe wall @ 3:00
51.1	Survey abandoned at downstream encrustation

<b>Wall Street (Asset No. MA20011160) Combined Sewer</b>	<b>MH (MH20010236) at Wolever Ave. (S PL) to 1st MH (MH20010161) S of Wolever Ave.</b>
Drawing Number	13304
Size / Shape	300mm circular
Material Type	VC
Total Length	90.9
Maximum Sewer Depth to Invert	3.43m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20010236 (m)	
0.0 to 0.9	Remove encrustation from pipe wall @ 6:00
3.0	Remove encrustation from pipe wall @ 9:00
6.2	Remove encrustation from pipe wall @ 9:00
6.8	Remove encrustation from pipe wall @ 8:00
7.3	Remove encrustation from pipe joint @ 11:00
8.9	Remove encrustation from pipe joint from 7:00 to 5:00
12.3	Remove encrustation from pipe wall @ 9:00 below service
20.5	Remove encrustation below service @ 10:00
32.8	Remove encrustation from pipe joint @ 4:00
80.6	Remove encrustation below service @ 10:00
81.2	Remove encrustation below service @ 2:00
88.2	Remove encrustation below service @ 10:00
88.8	Remove encrustation below service @ 2:00

<b>Greenwood Place (Asset No. MA20011168) Combined Sewer</b>	<b>MH (MH20010259) at Wolever Ave. to 1st MH (MH2001079) S of Wolever Ave.</b>
Drawing Number	13305
Size / Shape	300mm circular
Material Type	VC
Total Length	78.8m
Maximum Sewer Depth to Invert	3.58m
Design Condition	Fully Deteriorated 12% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20010179 (m)	
7.2	Remove intruding service @ 10:00
Distance from MH20010259 (m)	
6.4	Remove encrustation from pipe joint @ 6:00
36.7	Remove encrustation from pipe wall @ 9:00
44.8	Remove encrustation from pipe joint @ 5:00
51.7 to 59.5	Remove roots from pipe joints
69.4	Remove roots from pipe joint @ 9:00

<b>Greenwood Place (Asset No. MA200011174) Combined Sewer</b>	<b>1st MH (MH20010179) S of Wolever Ave. to 2nd MH (MH20010187) N Portage Ave.</b>
Drawing Number	13306
Size / Shape	300mm circular
Material Type	VC
Total Length	79.2
Maximum Sewer Depth to Invert	4.12m
Design Condition	Fully Deteriorated 12% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20010179 (m)	
22.1	Remove roots at service @ 10:00
34.3	Remove solid debris from pipe joint @ 5:00
51.8	Remove roots below service @ 10:00
52.1	Remove encrustation from pipe joint @ 9:00
53.1	Remove encrustation from pipe wall at service @ 10:00
53.6 to 58.3	Remove encrustation from pipe joints
66.2	note: material change to PVC

<b>Banning Street (Asset No. MA20015186) Combined Sewer</b>	<b>1st MH (MH20013691) N of Portage Ave. to MH (MH20013692) at Portage Ave. (WCL)</b>
Drawing Number	13307
Size / Shape	375mm circular
Material Type	VC
Total Length	85.4m
Maximum Sewer Depth to Invert	8.29m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20013691 (m)	

3.3	note: material change to PVC
4.6 to 5.9	Remove roots from pipe invert
9.1	note: material change to VC
9.9	Remove encrustation from pipe wall from 7:00 to 11:00
12.9	Remove encrustation from pipe wall @ 5:00
13.3	Remove encrustation from pipe wall @ 10:00
14.5 to 15.4	Remove encrustation from pipe wall @ 10:00
16.5	Remove encrustation from pipe joint from 7:00 to 5:00
16.9	Remove encrustation from pipe wall @ 9:00
17.1	Remove encrustation from pipe joint @ 8:00
24.4	Remove encrustation from pipe joint @ 5:00
25.3	Remove encrustation from service @ 10:00
28.8	Remove encrustation from pipe joint @ 10:00
31.1	note: material change to PVC
32.7	note: material change to VC
33.0	Remove encrustation from pipe joint @ 10:00
36.9 to 37.4	Remove encrustation from pipe wall from 7:00 to 5:00
49.1	Remove encrustation from pipe wall below service @ 2:00
55.6	Remove encrustation from pipe joint @ 12:00
57.4	Remove encrustation from pipe joint @ 3:00
77.8	Remove solid debris from invert (piece of broken pipe)
85.4	Remove wood from bottom MH

<b>Lenore Street (Asset No. MA70029505) Combined Sewer</b>	
<b>MH (MH20013735) at Preston Ave. (CL) to MH (MH20013741) at Portage Ave.</b>	
Drawing Number	13308
Size / Shape	450mm circular
Material Type	Concrete / VC
Total Length	139.2m
Maximum Sewer Depth to Invert	7.68m
Design Condition	Fully Deteriorated 10% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20013735 (m)	
2.1	note: material change to VC
11.6	Remove intruding CN @ 2:00
19.2	Remove intruding CN @ 10:00
20.0	Remove encrustation from pipe joint @ 3:00
20.2	Remove intruding CN @ 2:00
51.0	note: material change to PVC
65.0	note: material change to VC
67.6 to 70.6	EPR including 3 service connections
72.8 to 73.1	Remove encrustation from pipe wall from 9:00 to 3:00
73.0	Remove intruding service @ 12:00
75.4	Remove encrustation from pipe wall at service @ 3:00
77.3	Remove roots from CN @ 3:00
81.8	Remove encrustation from pipe joint
87.6	Remove encrustation from pipe joint @ 9:00
89.1	Remove encrustation from pipe wall @ 10:00
92.0	Remove metal wire casing from pipe joint
93.5 to 95.1	Remove metal wire casing from pipe invert
101.5 to 102.0	Remove metal wire casing from pipe invert
112.1	Remove intruding service @ 12:00
118.9	Remove encrustation from pipe joint @ 5:00
121.5	Remove metal wire casing from pipe joint
123.4	note: material change to Poly Liner
128.3	note: material change to VC
136.5 to 137.0	Remove grease from pipe wall @ 4:00

<b>Sherburn Street (Asset No. 20014945) Combined Sewer</b>	
<b>MH (MH20013495) at Westminister Ave. to 1st MH (MH20013494) N of Westminister Ave.</b>	
Drawing Number	13309
Size / Shape	300mm circular
Material Type	VC
Total Length	101.7m
Maximum Sewer Depth to Invert	4.32m
Design Condition	Fully Deteriorated 8% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20013495 (m)	
1.4 to 10.2	Remove encrustation from pipe wall
11.2 to 18.9	Remove encrustation from pipe wall from 7:00 to 5:00
21.3 to 22.0	Remove encrustation from pipe wall from 3:00 to 8:00
39.2	Repair existing sewer service and reconnect to main @ 10:00
59.4	Remove encrustation from pipe joint @ 5:00
78.9	Remove roots from pipe joint @ 10:00
88.7	Remove roots from pipe joint @ 9:00
89.3	Remove roots from pipe joint @ 3:00
89.5	Remove roots from service @ 2:00

<b>Home Street (CL) [Asset No. MA20015096] Combined Sewer</b>	
<b>3rd MH (MH20013805) S of Preston Ave. (S. Leg) to MH (MH20013600) at Westminister Ave.</b>	
Drawing Number	13310

Size / Shape	300mm circular
Material Type	VC
Total Length	43.4m
Maximum Sewer Depth to Invert	5.98m
Design Condition	Fully Deteriorated 10% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20013805 (m)	
11.2	Remove intruding service @ 1:00
16.0 to 16.2	Remove encrustation from pipe wall @ 3:00
29.2	note: material change to PVC
34.2	note: material change to VC

<b>Ruby Street (Asset No. MA20013823) Combined Sewer</b>	<b>MH (MH20012514) at Wolseley Ave to 1st MH (MH20012515) N of Wolseley Ave</b>
Drawing Number	13311
Size / Shape	375mm circular
Material Type	VC
Total Length	82.1m
Maximum Sewer Depth to Invert	5.2m
Design Condition	Fully Deteriorated 4% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20012514 (m)	
1.5 to 4.5	EPR
22.9	Remove encrustation from pipe wall below service @ 10:00
31.5	Repair existing sewer service and reconnect to main @ 10:00
43.4	Repair existing sewer service and reconnect to main @ 2:00
65.6	Remove roots from pipe joint @ 7:00
73.3	Repair existing sewer service and reconnect to main @ 2:00
78.0	note: material change to Concrete
80.6	note: material change to VC

<b>Wolseley Avenue (Asset No. MA20013804) Combined Sewer</b>	<b>MH (MH20012514) at Ruby St. to Node (No Ex. MH) W of Ruby Street</b>
Drawing Number	13312
Size / Shape	300mm circular
Material Type	VC
Total Length	34.6m
Maximum Sewer Depth to Invert	4.97m
Design Condition	Fully Deteriorated 4% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20012514 (m)	
1.0 to 1.7	Remove encrustation from pipe wall @ 6:00
3.6 to 3.8	Remove encrustation from pipe wall @ 6:00
5.1 to 5.2	Remove encrustation from pipe wall @ 6:00
5.8 to 6.0	Remove encrustation from pipe wall @ 6:00
7.1 to 8.3	Remove encrustation from pipe wall @ 6:00
10.4	Remove encrustation from pipe wall @ 6:00
15.9 to 16.2	Remove encrustation from pipe wall @ 6:00
19.7 to 20.4	Remove encrustation from pipe wall @ 6:00
20.8 to 22.7	Remove encrustation from pipe wall @ 6:00
23.4 to 25.9	Remove encrustation from pipe wall @ 6:00
28.2	Remove encrustation from pipe joint @ 12:00
33.3 to 33.5	Remove encrustation from pipe wall @ 9:00
33.7 to 33.8	Remove encrustation from pipe wall @ 5:00
34.5 to 35.5	Remove encrustation from pipe wall from 4:00 to 8:00
35.2	Remove intruding service @ 10:00

<b>Lenore Street (Asset No. MA70033357) Combined Sewer</b>	<b>4th MH (MH20012531) N of Palmerston Ave. to MH (MH20012546) at Wolseley Ave.</b>
Drawing Number	13313
Size / Shape	300mm circular
Material Type	VC
Total Length	75.8m
Maximum Sewer Depth to Invert	4.57m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20012531 (m)	
0.0	note: starts as PVC material
5.4	note: material change to VC
7.2 to 9.1	EPR
24.5	Remove intruding service @ 10:00
58.7	Remove encrustation from pipe wall @ 9:00
60.6	note: material change to PVC

<b>Palmerston Avenue (E. Leg) [Asset No. MA70033380] Combined Sewer</b>	<b>MH (MH20012617) at Palmerston Ave. (S Leg) to MH (MH70006098) at Wolseley Ave.</b>
Drawing Number	13314



Size / Shape	300mm circular
Material Type	VC
Total Length	46.7m
Maximum Sewer Depth to Invert	2.6m
Design Condition	Fully Deteriorated 6% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20012617 (m)	
0.0	temporarily remove 150 service pipe to allow for prep and lining works. Pipe to be reinstalled following the works
10.4	note: material change to VC
11.5	Remove roots from pipe joint @ 8:00
23.7	Remove intruding service @ 10:00
44.9	note: material change to PVC

<b>MacDonald Avenue (Asset No. MA20013526)</b> <b>Combined Sewer</b>	<b>1st MH (MH20012244) W of Gomez St. to MH (MH20012245) at Waterfront Dr</b>
Drawing Number	13315
Size / Shape	300mm circular
Material Type	VC
Total Length	103.8m
Maximum Sewer Depth to Invert	2.76m
Design Condition	Fully Deteriorated 7% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20012244 (m)	
0.6	note: material change to VC
16.8	Remove encrustation from pipe joint @ 5:00 and 7:00
23.3	Remove intruding service @ 3:00
32.8	Remove encrustation from pipe wall below service @ 10:00
40.3	note: material change to PVC
45.7	note: material change to VC
47.3	Remove encrustation from pipe joint @ 8:00
48.0	Remove encrustation from pipe joint @ 3:00
52.9	Remove encrustation from pipe wall below service @ 10:00
53.6	Remove encrustation from pipe wall below service @ 2:00
57.4	Remove encrustation from pipe joint @ 10:00
59.9	Remove encrustation from pipe wall below below service @ 2:00
66.0	Remove encrustation from pipe joint @ 9:00
70.7 to 71.3	Remove encrustation from pipe joint from 8:00 to 10:00
72.4	Remove intruding service @ 9:00

<b>Gomez Street (Asset No. MA20013468)</b> <b>Combined Sewer</b>	<b>MH (MH20012237) At MacDonald Ave. to 1st MH (MH20012192) S of MacDonald Ave.</b>
Drawing Number	13316
Size / Shape	300mm circular
Material Type	VC
Total Length	94.5m
Maximum Sewer Depth to Invert	3.58m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH20012192 (m)	
0.0	Remove encrustation from pipe wall from 5:00 to 7:00
4.2	Remove encrustation from pipe joint @ 10:00
4.3	Remove encrustation from pipe joint below service @ 10:00
5.4	Remove roots from pipe joint @ 9:00
10.0 to 11.3	Remove encrustation from pipe wall
14.1	Remove encrustation from pipe wall @ 3:00
14.8	Remove encrustation from pipe wall @ 9:00
15.3 to 15.9	Remove encrustation from pipe wall from 1:00 to 4:00
16.3	Remove intruding service @ 9:00
21.6	Remove encrustation from pipe joint @ 10:00
22.6 to 22.8	Remove encrustation from pipe wall @ 9:00
26.4	Remove encrustation from pipe wall @ 9:00
29.6	Remove encrustation from pipe wall @ 2:00
32.2 to 32.8	Remove encrustation from pipe wall @ 9:00
34.0 to 34.3	Remove encrustation from pipe wall @ 9:00
34.8	Remove intruding service @ 2:00
46.4	Remove intruding service @ 11:00
74.2	Remove encrustation from pipe joint @ 5:00
83.5	Remove encrustation from pipe joint @ 7:00
83.5	note: material change to Concrete
84.7	note: material change to VC
88.3	Remove encrustation from pipe joint @ 12:00
89.9	Remove encrustation from pipe joint @ 8:00
93.7	Remove encrustation from pipe joint @ 12:00

<b>Enniskillen Avenue (Asset No. MA00008474)</b>	<b>1st MH (MH00009824) E of McGregor St. to MH (MH00009583) at McGregor St.</b>
Drawing Number	13317
Size / Shape	300mm circular
Material Type	Concrete

Total Length	94.2m
Maximum Sewer Depth to Invert	5.65m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH00009824 (m)	
3.8	Remove encrustation from pipe joint @ 10:00
6.2	Remove encrustation from pipe joint @ 10:00
8.6	Remove encrustation from pipe joint @ 4:00
9.4	Remove encrustation from pipe wall below service @ 2:00
10.0	Remove encrustation from pipe joint @ 8:00
10.9	Remove encrustation from pipe joint from 3:00 to 8:00
12.8	Remove encrustation from pipe wall below service @ 10:00
14.9	Remove encrustation from pipe wall @ 3:00
15.5	Remove encrustation from pipe joint @ 7:00
18.9	Remove encrustation from pipe wall from 7:00 to 10:00
23.2	Remove encrustation from pipe joint @ 7:00
29.4	Remove encrustation from pipe joint from 3:00 to 6:00
35.6	Remove encrustation from pipe joint @ 5:00
44.0	Remove encrustation from pipe wall below service @ 10:00
46.4	Remove encrustation from pipe joint from 5:00 to 9:00
49.4	Remove encrustation from pipe joint @ 5:00
58.8	Remove encrustation from pipe joint @ 7:00
60.4 to 61.9	EPR including 1 service connection (see below)
Distance from MH00009583 (m)	
4.0	Remove encrustation from pipe joint @ 5:00
13.3	Remove encrustation from pipe joint @ 5:00
15.7	Remove encrustation from pipe joint from 2:00 to 4:00
18.8	Remove encrustation from pipe joint @ 5:00
19.6	Remove encrustation from pipe joint from 7:00 to 12:00
19.9 to 20.3	Remove encrustation from pipe wall @ 7:00
23.7	Remove encrustation from pipe joint @ 11:00
26.9	Remove encrustation from pipe wall @ 12:00
32.3	Remove encrustation from pipe wall below service @ 2:00
32.6 to 34.1	EPR including 1 service connection (see above)

<b>Murray Avenue (S of CL) [Asset No. MA00000403] Waste Water Sewer</b>	<b>MH (MH00000342) at Frog Plain Wy. to 1st MH (MH00000354) E of Frog Plain Wy.</b>
Drawing Number	13318
Size / Shape	250mm circular
Material Type	Concrete
Total Length	110.9m
Maximum Sewer Depth to Invert	4.95m
Design Condition	Fully Deteriorated 2% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH00000342 (m)	
0.0 to 1.1	Remove grease from pipe wall from 10:00 to 2:00
18.4	Remove hanging gasket from 7:00 to 10:00
30.8	Remove encrustation from pipe wall from 2:00 to 5:00
41.9 to 42.2	Remove encrustation from pipe wall from 9:00 to 3:00
47.2 to 48.4	Remove grease from pipe wall from 11:00 to 1:00
69.9 to 70.3	Remove encrustation from pipe wall from 7:00 to 5:00
80.9	Remove encrustation from pipe joint @ 2:00
80.9 to 84.0	Remove grease from pipe wall from 11:00 to 1:00

<b>Red River Boulevard (N of CL) [Asset No. MA00000593] Waste Water Sewer</b>	<b>MH (MH00000503) at Main St. (W PL) to MH (MH00000506) at Main St. (W of CL)</b>
Drawing Number	13319
Size / Shape	300mm circular
Material Type	Concrete
Total Length	19.4m
Maximum Sewer Depth to Invert	10.31m
Design Condition	Fully Deteriorated 5% ovality
<b>Site Specific Repairs</b>	
<b>Location</b>	<b>Action Required</b>
Distance from MH00000503 (m)	
0.0 to 1.5	Remove grease from pipe walls from 10:00 to 2:00
2.4	Remove encrustation from pipe joint @ 5:00 and 7:00
14.7	Remove hanging gasket @ 3:00
15.9	Remove hanging gasket from 9:00 to 3:00
17.1	Remove hanging gaskets from 8:00 to 12:00, 1:00 to 3:00
18.4	Remove hanging gasket from 4:00 to 7:00

<b>Hillock Street [Asset No. MA20019657] Combined Sewer</b>	<b>1st MH (MH20017663) West of McPhillips St to MH (MH20017662) at McPhillips St (WPL)</b>
Drawing Number	13236
Size / Shape	375mm circular
Material Type	Clay
Total Length	68.8m
Maximum Sewer Depth to Invert	4.18m
Design Condition	Fully Deteriorated 5% ovality
<b>Site Specific Repairs</b>	

Location	Action Required
Distance from MH20019663 (m)	
2.1	note: material change to VC
2.4	Remove intruding service @ 1:00
9.2	Remove encrustation from pipe wall below service @ 2:00
54.1 ro 56.0	Remove encrustation from pipe wall from 1:00 to 5:00, 7:00 to 11:00. CAUTION, 900 feedermain above damaged pipe section and in close proximity to sewer pipe. Robotic cutter or other methods approved by Contract Administrator to be used for sewer preparation works in proximity to feedermain to mitigate potential to futher damage existing sewer pipe and undermine feedermain pipe.