

TOWN OF BELMONT, MA

Figure 1
Mystic River Watershed Sampling Results
North Belmont

Illicit Discharge Investigations
January 2021

1 inch = 250 feet

500 250 0 500 Feet



LEGEND

- Matchline
- 2020 Outfall Sampling Data
- Drain Manhole
- Catch Basin
- Drain
- Catch Basin Outlet Drain
- Stream/Brook
- Parcels

Sample Number
Sample Date
Sample Result
(MPN/100 mL)

OF 8-4
11/9/20 22,000

OF 10-1
11/10/20 7,900

OF 8-3
11/9/20 500

OF 8-2
11/9/20 19,700

OF 8-1
11/9/20 1,350

OF 11
11/9/20 1,200

OF 11A
11/10/20 2,600

OF 12
11/10/20 200
12/16/20 700

OF 15
11/10/20 700

OF 15A
11/10/20 <100

OF 13
11/10/20 100

OF 9A
11/9/20 DRY

OF 9
11/9/20 NO FLOW

OF 8
11/9/20 400

OF 6
11/9/20 DRY

TOWN OF BELMONT, MA

Figure 2
Mystic River Watershed Sampling Results
South Belmont

Illicit Discharge Investigations
January 2021

1 inch = 250 feet
500 250 0 500 Feet



LEGEND

- Matchline
- 2020 Outfall Sampling Data
- Drain Manhole
- Catch Basin
- Drain
- Catch Basin Outlet Drain
- Stream/Brook
- Parcels

Sample Number
Sample Date Sample Result
(MPN/100 mL)

OF 8-6
11/9/20 10,600
11/20/20 1,300

OF 8-5
11/9/20 4,800

OF 5
11/9/20 NO FLOW

OF 4
11/10/20 NO FLOW

OF 3
11/10/20 NO FLOW

OF 2
11/10/20 15,200

OF 1
11/9/20 <100
12/16/20 <100

TOWN OF BELMONT, MA

Figure 3
Upper Tributary Sampling Results
Subcatchment Area 1

Illicit Discharge Investigations
January 2021

1 inch = 80 feet

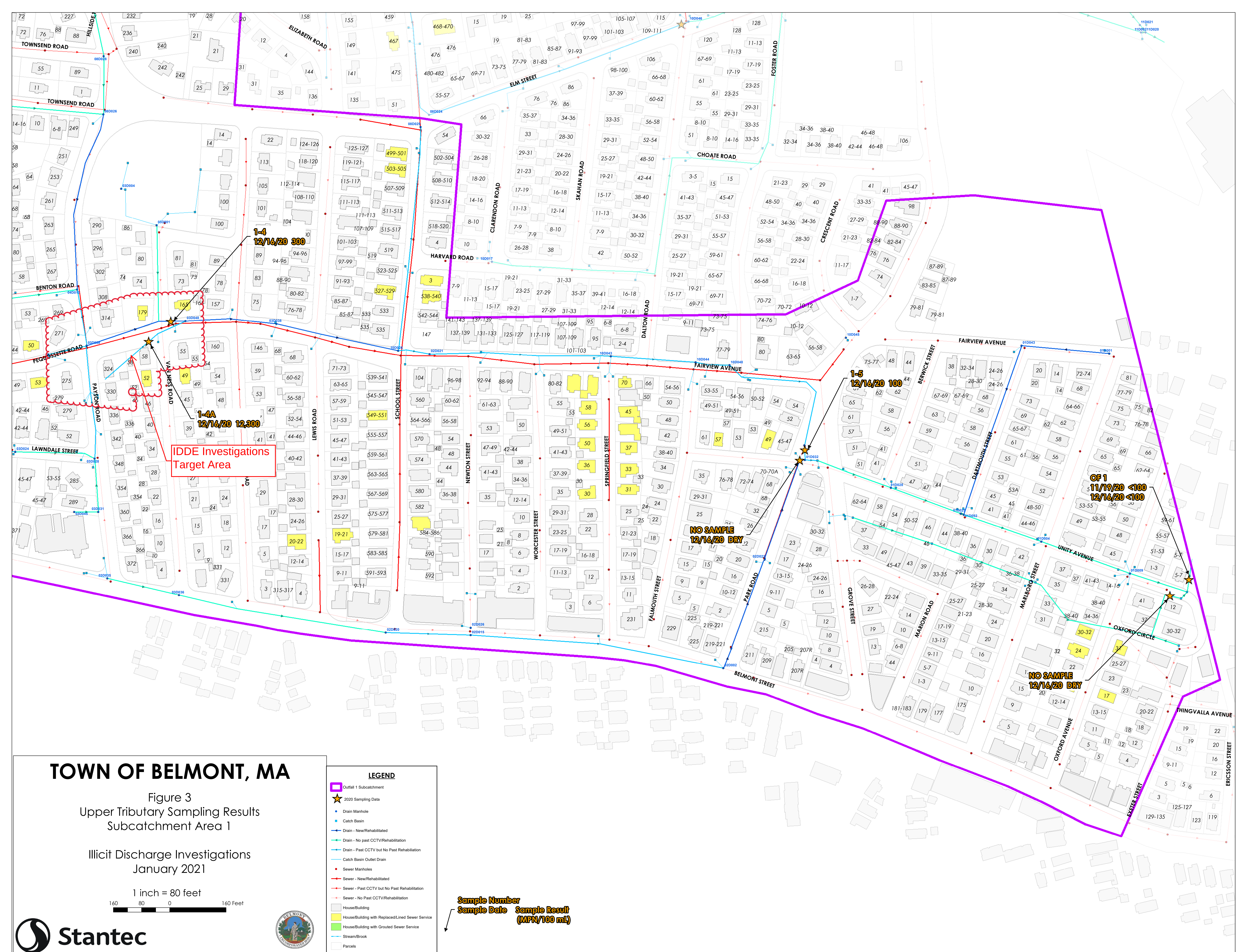
160 80 0 160 Feet

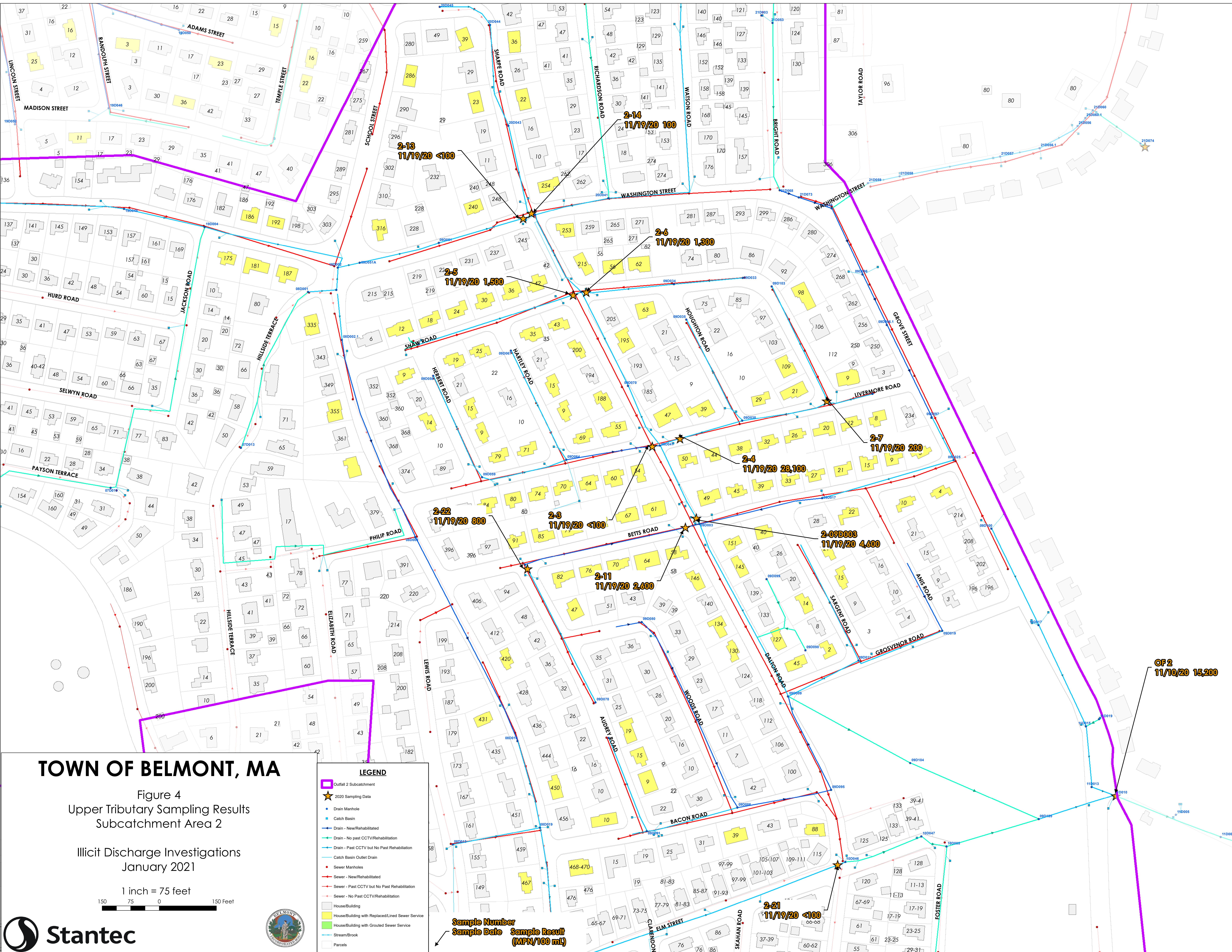


LEGEND

- Outfall 1 Subcatchment
- 2020 Sampling Data
- Drain Manhole
- Catch Basin
- Drain - New/Rehabilitated
- Drain - No past CCTV/Rehabilitation
- Drain - Past CCTV but No Past Rehabilitation
- Catch Basin Outlet Drain
- Sewer Manholes
- Sewer - New/Rehabilitated
- Sewer - Past CCTV but No Past Rehabilitation
- Sewer - No Past CCTV/Rehabilitation
- House/Building
- House/Building with Replaced/Lined Sewer Service
- House/Building with Grouted Sewer Service
- Stream/Brook
- Parcels

Sample Number
Sample Date
Sample Result
(MPN/100 ml)





TOWN OF BELMONT, MA

Figure 4
Upper Tributary Sampling Results
Subcatchment Area 2

Illicit Discharge Investigations
January 2021

1 inch = 75 feet



LEGEND

- Outfall 2 Subcatchment
- 2020 Sampling Data
- Drain Manhole
- Catch Basin
- Drain - New/Rehabilitated
- Drain - No past CCTV/Rehabilitation
- Drain - Past CCTV but No Past Rehabilitation
- Catch Basin Outlet Drain
- Sewer Manholes
- Sewer - New/Rehabilitated
- Sewer - Past CCTV but No Past Rehabilitation
- Sewer - No Past CCTV/Rehabilitation
- House/Building
- House/Building with Replaced/Lined Sewer Service
- House/Building with Grouted Sewer Service
- Stream/Brook
- Parcels

Sample Number
Sample Date
Sample Result
(MPN/100 mL)

2-13
11/19/20 <100

2-14
11/19/20 100

2-6
11/19/20 1,300

2-5
11/19/20 1,500

2-4
11/19/20 28,100

2-7
11/19/20 200

2-09D003
11/19/20 4,600

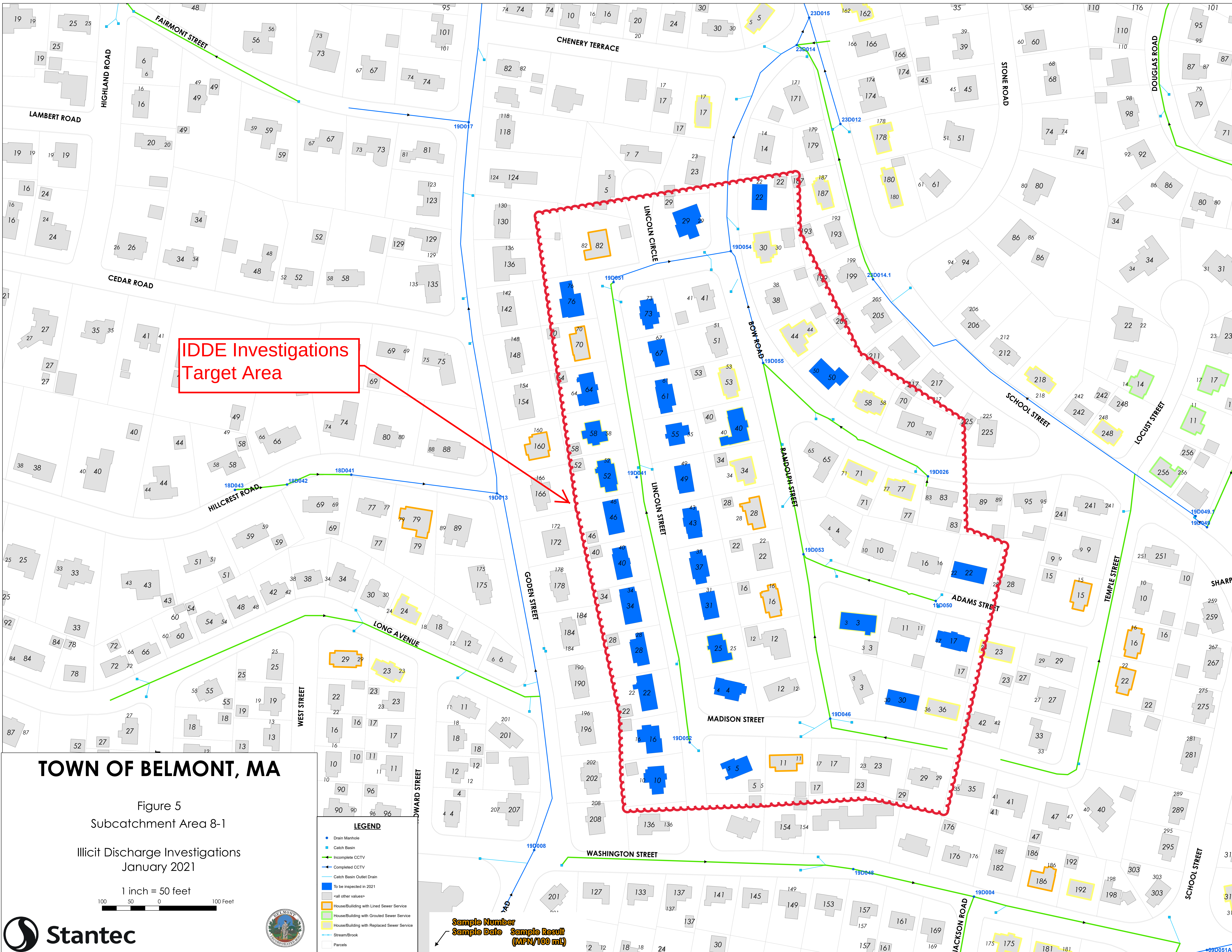
2-3
11/19/20 <100

2-11
11/19/20 2,600

2-22
11/19/20 800

OF 2
11/10/20 15,200

2-21
11/19/20 <100



IDDE Investigations
Target Area

TOWN OF BELMONT, MA

Figure 5
Subcatchment Area 8-1
Illicit Discharge Investigations
January 2021

1 inch = 50 feet
100 50 0 100 Feet



- LEGEND**
- Drain Manhole
 - Catch Basin
 - Incomplete CCTV
 - Completed CCTV
 - Catch Basin Outlet Drain
 - To be inspected in 2021
 - <all other values>
 - House/Building with Lined Sewer Service
 - House/Building with Grouted Sewer Service
 - House/Building with Replaced Sewer Service
 - Stream/Brook
 - Parcels

Sample Number
Sample Date
Sample Result
(MPN/100 mL)

TOWN OF BELMONT, MA

Figure 6
Upper Tributary Sampling Results
Subcatchment Area 8-6

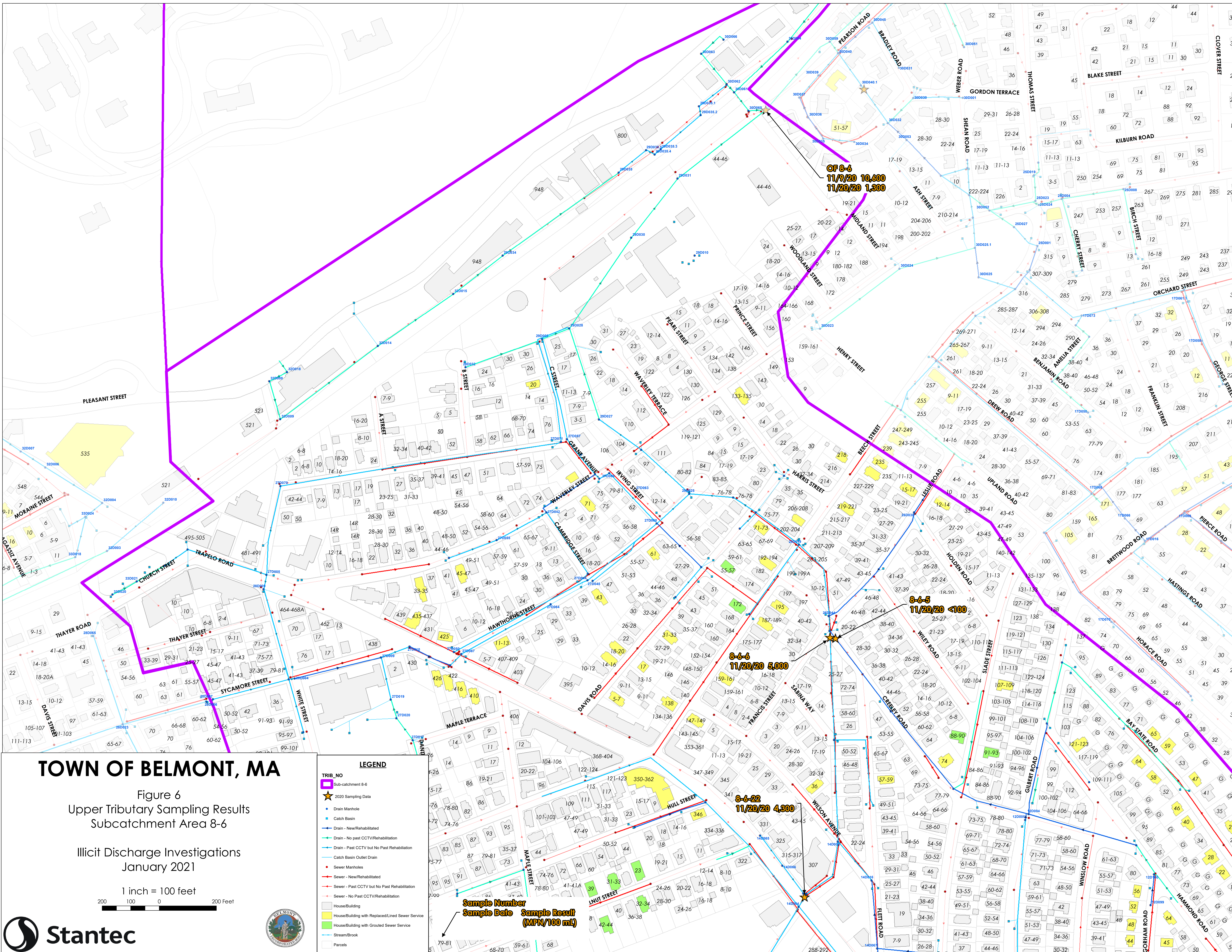
Illicit Discharge Investigations
January 2021

1 inch = 100 feet
200 100 0 200 Feet

LEGEND

- TRIB_NO**
- Sub-catchment 8-6
- Sampling Data**
- 2020 Sampling Data
- Drainage**
- Drain - New/Rehabilitated
 - Drain - No past CCTV/Rehabilitation
 - Drain - Past CCTV but No Past Rehabilitation
 - Catch Basin Outlet Drain
- Sewer**
- Sewer - New/Rehabilitated
 - Sewer - Past CCTV but No Past Rehabilitation
 - Sewer - No Past CCTV/Rehabilitation
- Other**
- House/Building
 - House/Building with Replaced/Lined Sewer Service
 - House/Building with Grouted Sewer Service
 - Stream/Brook
 - Parcels

Sample Number
Sample Date
Sample Result
(MPN/100 ml)



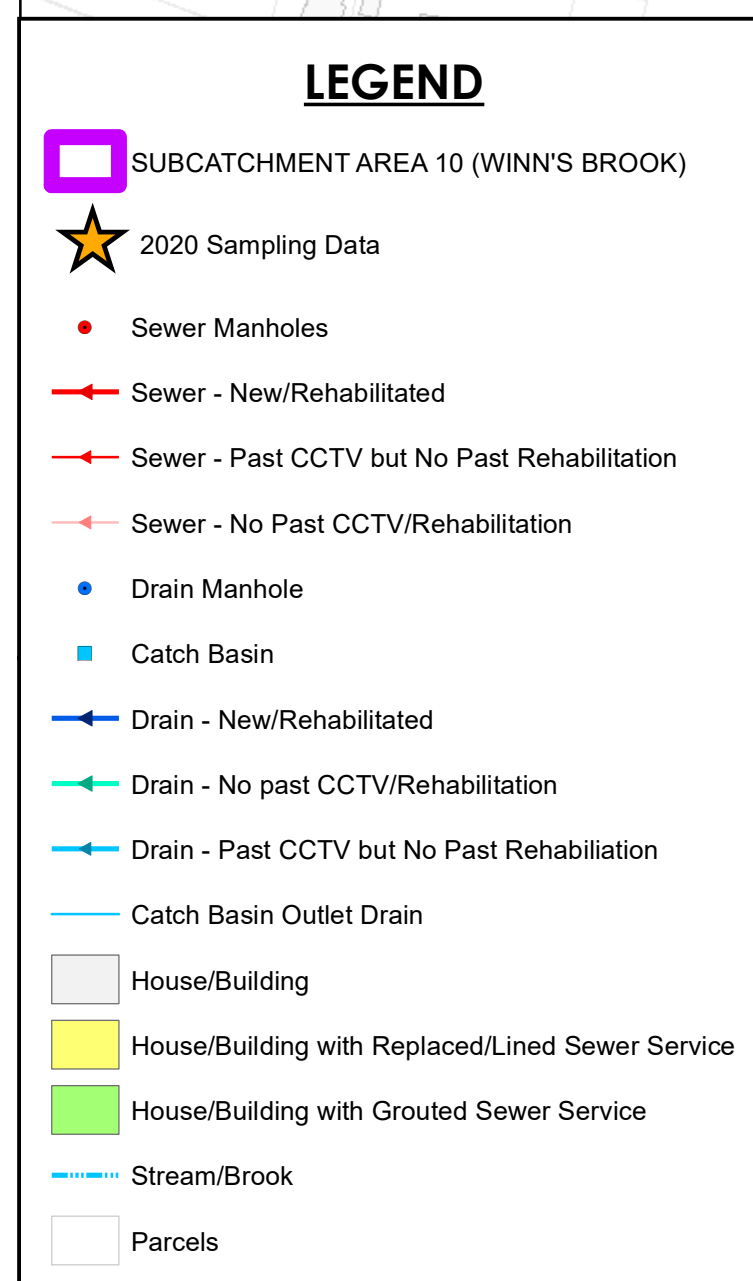
TOWN OF BELMONT, MA

Figure 7
Upper Tributary Sampling Results
Subcatchment Area 10-1

Illicit Discharge Investigations
January 2021

1 inch = 150 feet

300 150 0 300 Feet



Sample Number
Sample Date
Sample Result
(MPN/100 mL)

10-1-3
12/16/20 <100

10-1-4
12/16/20 2,400

10-1-5
12/16/20 1,500

10-1-1
12/16/20 2,100

OF 10-1
11/10/20 7,900

10-1-2
12/16/20 10,600



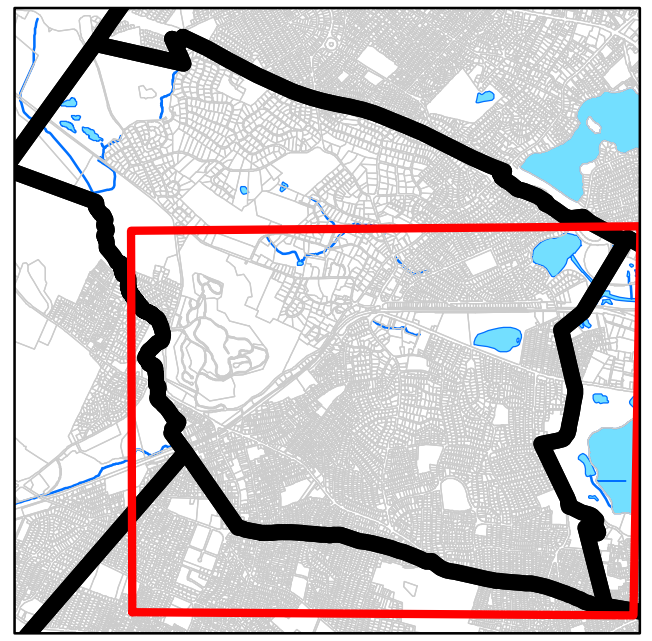
LEGEND

- Matchline
- Stream/Brook
- Water
- Building
- Parcel
- Potential Indirect Sources
- Blockage Reported
- Illicit Connections

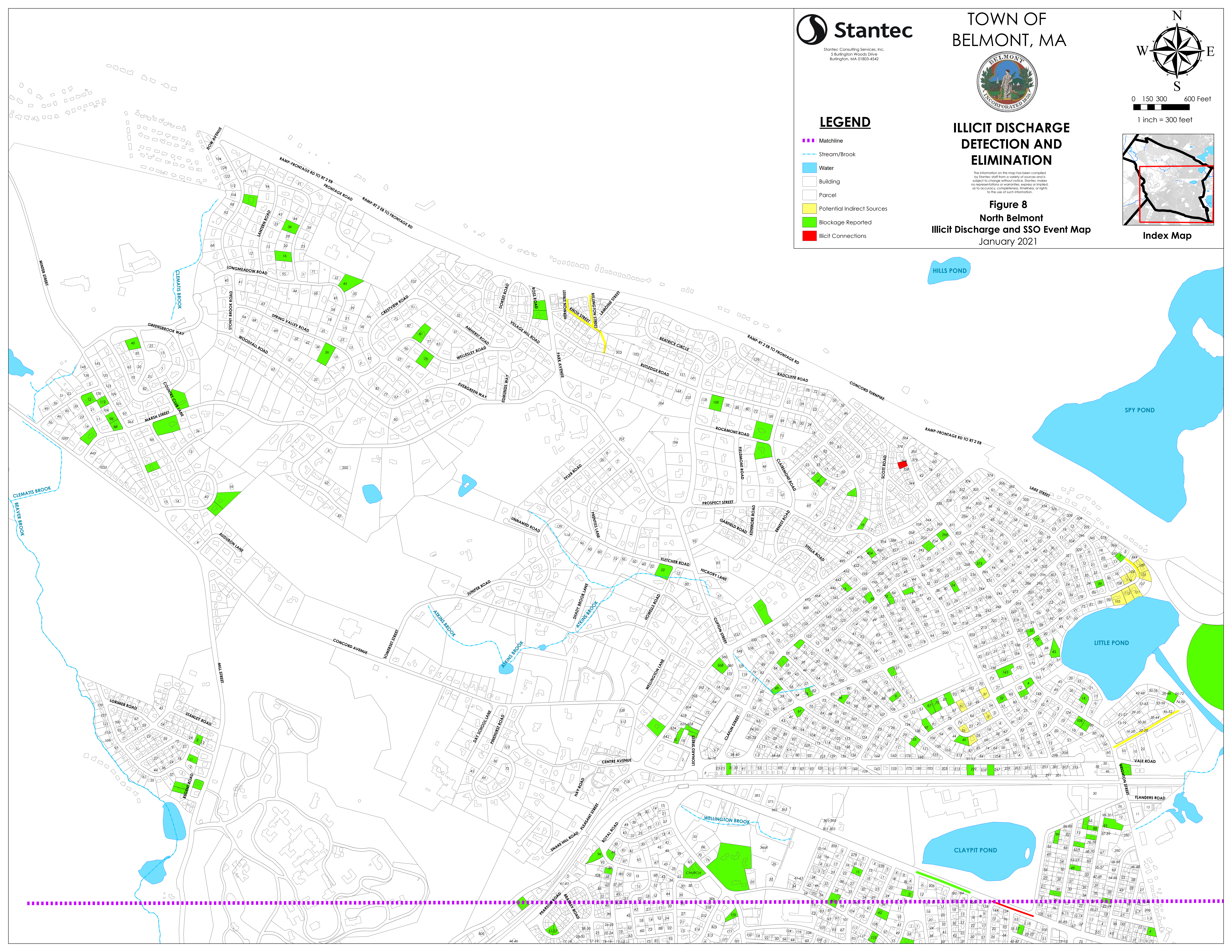
**ILLICIT DISCHARGE
DETECTION AND
ELIMINATION**

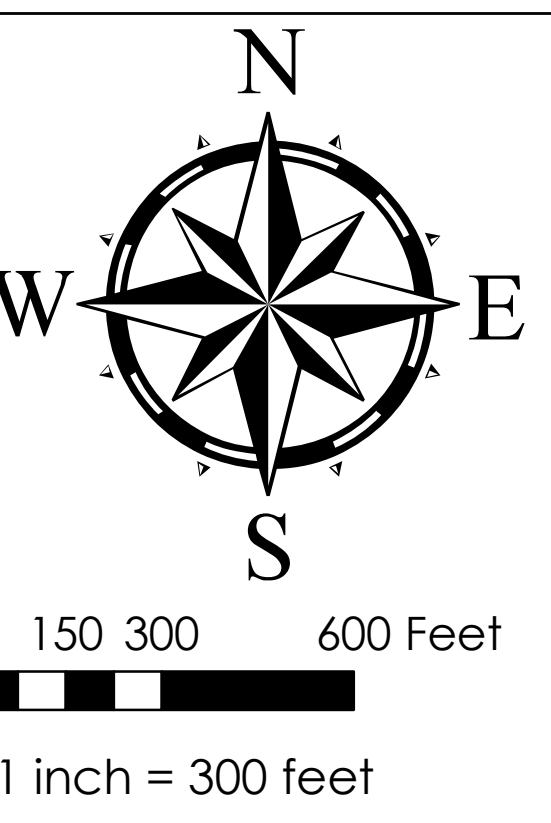
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Figure 8
North Belmont
Illicit Discharge and SSO Event Map
January 2021



Index Map





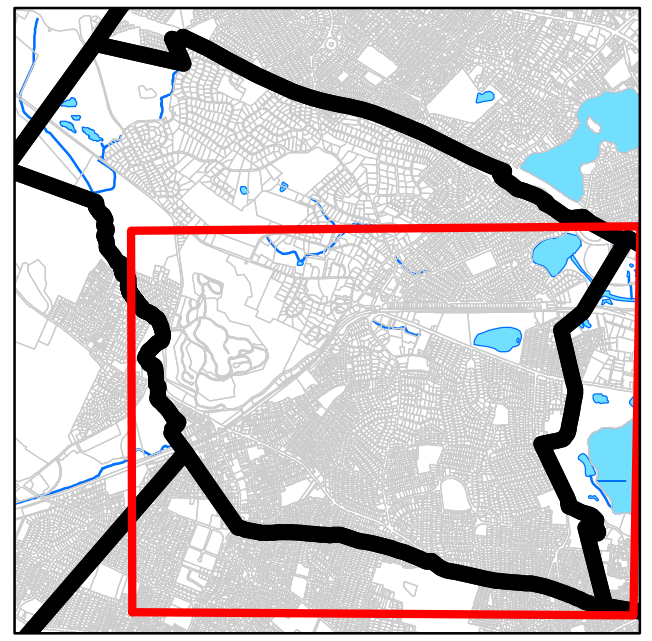
LEGEND

- Matchline
- Stream/Brook
- Water
- Building
- Parcel
- Potential Indirect Sources
- Blockage Reported
- Illicit Connections

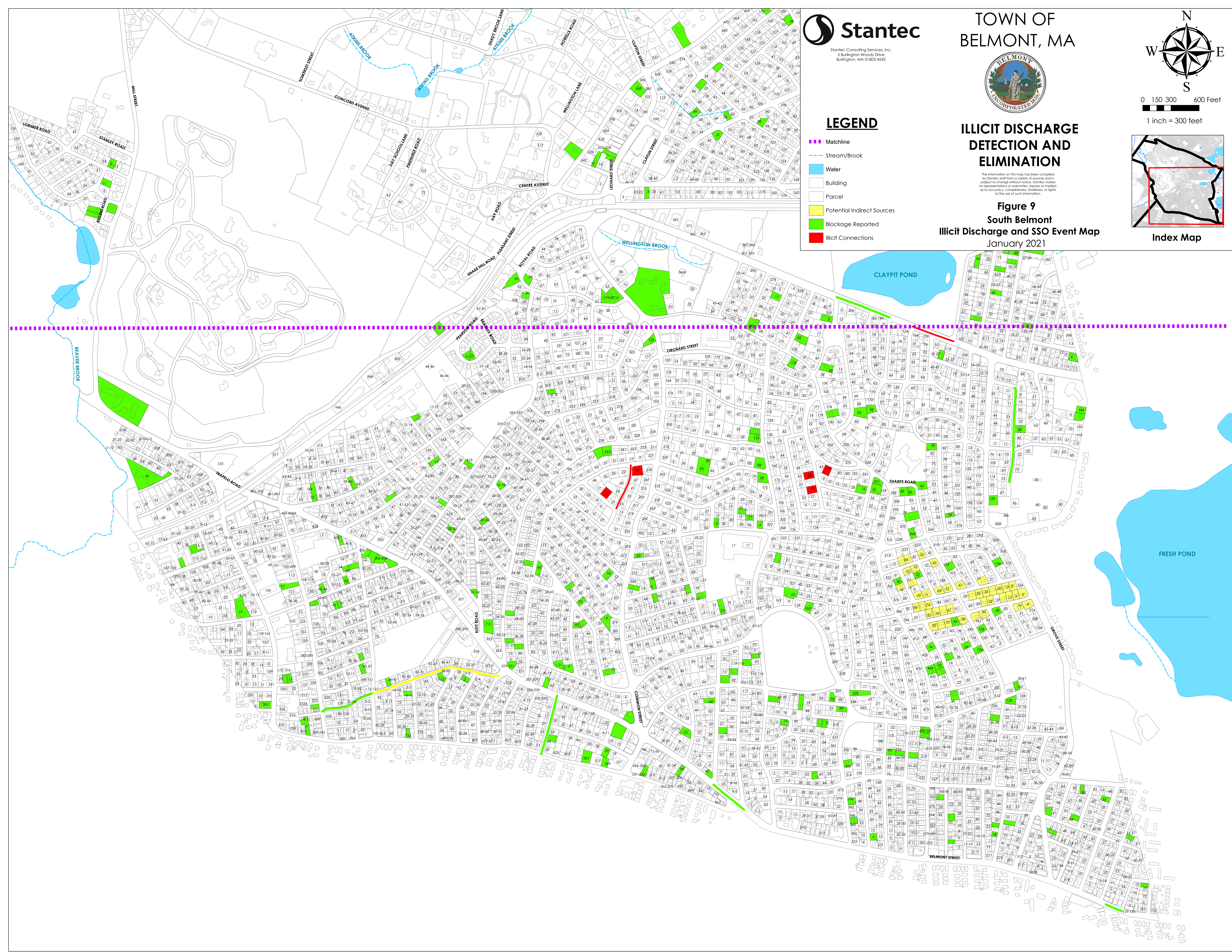
**ILLICIT DISCHARGE
DETECTION AND
ELIMINATION**

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Figure 9
South Belmont
Illicit Discharge and SSO Event Map
January 2021



Index Map



BELMONT, MA
2020 IDDE INVESTIGATIONS - EPA Compliance Report January 2021

TABLE 1
Sub-catchment Areas - Reporting Period Sampling Results

Dry Weather Sub-catchment Sampling																													
Sampling Parameter	Unit	Threshold Value	Sampling Location, Sampling Date, and Measured Value																										
			OF-1				OF-2				OF-3		OF-4		OF-5		OF-6		OF-8		OF-9		OF-9A		OF-10 (10-2)				
			11/8/2016	6/23/2017	7/18/2017	11/9/2020	12/16/2020	11/8/2016	7/18/2017	11/10/2020	11/8/2016	11/10/2020	11/8/2016	11/10/2020	11/8/2016	11/9/2020	11/8/2016	11/9/2020	11/8/2016	11/9/2020	11/8/2016	11/9/2020	11/8/2016	11/9/2020	11/8/2016	9/1/2017	11/9/2018	7/26/2019	11/10/2020
E-Coli	MPN/100mL	235	100	1,900	600	<100	<100	5550	6,800	15,200	DRY	NS	DRY	NS	DRY	NS	DRY	DRY	100	400	DRY	NS	DRY	DRY	200	200	1000	100	<100
Enterococci	MPN/100mL	61	50	N.T.	N.T.	N.T.	N.T.	1150	N.T.	N.T.	DRY	NS	DRY	NS	DRY	NS	DRY	DRY	700	N.T.	DRY	NS	DRY	DRY	3450	N.T.	N.T.	N.T.	N.T.
Ammonia (NH ₃)	mg/L	0.5	0	0.12	0.12	0	0	0.25	3	3	DRY	NS	DRY	NS	DRY	NS	DRY	DRY	3	0.25	DRY	NS	DRY	DRY	0.5	0	0.5	N.T.	0
Surfactants	ppm	0.25	0.1	0.1	0.1	N.T.	N.T.	0.25	0.5	N.T.	DRY	NS	DRY	NS	DRY	NS	DRY	DRY	0.25	N.T.	DRY	NS	DRY	DRY	0.25	N.T.	N.T.	N.T.	N.T.
Chlorine (Cl ₂)	mg/L		ND	N.T.	N.T.	N.T.	N.T.	0	N.T.	N.T.	DRY	NS	DRY	NS	DRY	NS	DRY	DRY	0.05	N.T.	DRY	NS	DRY	DRY	0.19	N.T.	N.T.	N.T.	N.T.
Salinity	ppt		0	N.T.	N.T.	N.T.	N.T.	0	N.T.	N.T.	DRY	NS	DRY	NS	DRY	NS	DRY	DRY	0	N.T.	DRY	NS	DRY	DRY	0	N.T.	N.T.	N.T.	N.T.
Conductivity	µs		0	N.T.	N.T.	N.T.	N.T.	0	N.T.	N.T.	DRY	NS	DRY	NS	DRY	NS	DRY	DRY	0	N.T.	DRY	NS	DRY	DRY	0	N.T.	N.T.	N.T.	N.T.
Temperature	°C		7.8	N.T.	N.T.	N.T.	N.T.	8.4	N.T.	N.T.	DRY	NS	DRY	NS	DRY	NS	DRY	DRY	8.9	N.T.	DRY	NS	DRY	DRY	7.4	N.T.	N.T.	N.T.	N.T.
pH			8.33	N.T.	N.T.	N.T.	N.T.	7.97	N.T.	N.T.	DRY	NS	DRY	NS	DRY	NS	DRY	DRY	7.72	N.T.	DRY	NS	DRY	DRY	7.84	N.T.	N.T.	N.T.	N.T.

Dry Weather Sub-catchment Sampling																										
Sampling Parameter	Unit	Threshold Value	Sampling Location, Sampling Date, and Measured Value																							
			OF-11				OF-11A				OF-12				OF-13				OF-15				OF-15A			
			11/8/2016	6/23/2017	11/9/2020	11/8/2016	6/23/2017	11/10/2020	11/8/2016	6/23/2017	11/10/2020	12/16/2020	11/8/2016	11/10/2020	11/8/2016	7/27/2017	8/17/2017	12/11/2018	11/10/2020	11/8/2016	8/17/2017	12/11/2018	11/10/2020			
E-Coli	MPN/100mL	235	>10,000	13,800	1,200	8,600	>20,000	2,600	>10,000	16,000	200	700	50	100	DRY	10,200	3,000	1,900	700	1,050	14,900	12,600	<100			
Enterococci	MPN/100mL	61	2700	N.T.	N.T.	3200	N.T.	N.T.	300	N.T.	N.T.	N.T.	50	N.T.	DRY	N.T.	N.T.	N.T.	N.T.	900	N.T.	N.T.	N.T.			
Ammonia (NH ₃)	mg/L	0.5	0.35	0.6	0.25	3	>6	0.6	0.35	4	0.25	0	0.4	1	DRY	0.25	0.5	0.25	0	0.80	3.00	0.75	6.00			
Surfactants	ppm	0.25	0.30	0.5	N.T.	0.50	0.6	N.T.	0.25	0.4	N.T.	N.T.	0.25	N.T.	DRY	N.T.	0.5	N.T.	N.T.	0.25	0.10	N.T.	N.T.			
Chlorine (Cl ₂)	mg/L		0.23	N.T.	N.T.	0.17	N.T.	N.T.	0.29	N.T.	N.T.	N.T.	0	N.T.	DRY	N.T.	N.T.	N.T.	N.T.	0.12	N.T.	N.T.	N.T.			
Salinity	ppt		0	N.T.	N.T.	0	N.T.	N.T.	0	N.T.	N.T.	N.T.	0	N.T.	DRY	N.T.	N.T.	N.T.	N.T.	0	N.T.	N.T.	N.T.			
Conductivity	µs		0	N.T.	N.T.	0	N.T.	N.T.	0	N.T.	N.T.	N.T.	0	N.T.	DRY	N.T.	N.T.	N.T.	N.T.	0	N.T.	N.T.	N.T.			
Temperature	°C		11.5	N.T.	N.T.	10.1	N.T.	N.T.	17.9	N.T.	N.T.	N.T.	13.6	N.T.	DRY	N.T.	N.T.	N.T.	N.T.	17.6	N.T.	N.T.	N.T.			
pH			7.46	N.T.	N.T.	7.55	N.T.	N.T.	7.85	N.T.	N.T.	N.T.	7.08	N.T.	DRY	N.T.	N.T.	N.T.	N.T.	7.71	N.T.	N.T.	N.T.			

Dry Weather Sub-catchment Sampling																														
Sampling Parameter	Unit	Threshold Value	Sampling Location, Sampling Date, and Measured Value																											
			8-1				8-2				8-3				8-4				8-5				8-6				10-1			
			11/8/2016	7/18/2017	8/17/2017	11/9/2020	11/8/2016	7/27/2017	8/11/2017	11/9/2020	11/8/2016	11/9/2020	11/8/2016	11/9/2020	11/8/2016	3/27/2020	11/9/2020	11/8/2016	7/27/2017	11/9/2018	11/9/2020	11/20/2020	11/8/2016	1,250	7/27/2017	11/10/2020				
E-Coli	MPN/100mL	235	ND	1,700	800	1,350	1,950	1,100	1,300	19,700	ND	500	ND	22,000	1,100	220	4,800	1,550	14,400	1,200	10,600	1,300	1,250	ND	7,900					
Enterococci	MPN/100mL	61	50	N.T.	N.T.	N.T.	300	N.T.	N.T.	N.T.	ND	N.T.	ND	N.T.	2600	N.T.	N.T.	150	N.T.	N.T.	N.T.	N.T.	450	N.T.	N.T.					
Ammonia (NH ₃)	mg/L	0.5	0.3	0.3	0.3	0	2.0	0.3	0.1	0.25	0.1	0.25	0.3	0	0.6	0.25	2	0.1	0.2	N.T.	0.25	0	0	0	0.25					
Surfactants	ppm	0.25	0.25	0.1	0.1	N.T.	0.25	N.T.	0.25	N.T.	0.15	N.T.	0.20	N.T.	0.20	N.T.	N.T.	0.25	N.T.	N.T.	N.T.	N.T.	0.25	N.T.	N.T.					
Chlorine (Cl ₂)	mg/L		0.37	N.T.	N.T.	N.T.	0.17	N.T.	N.T.	N.T.	0.24	N.T.	0.63	N.T.	0.10	N.T.	N.T.	0.08	N.T.	N.T.	N.T.	N.T.	0.21	N.T.	N.T.					
Salinity	ppt		0	N.T.	N.T.	N.T.	0	N.T.	N.T.	N.T.	0	N.T.	0	N.T.	0	N.T.	N.T.	0	N.T.	N.T.	N.T.	N.T.	0	N.T.	N.T.					
Conductivity	µs		0	N.T.	N.T.	N.T.	0	N.T.	N.T.	N.T.	0	N.T.	1.9	N.T.	0	N.T.	N.T.	0	N.T.	N.T.	N.T.	N.T.	0	N.T.	N.T.					
Temperature	°C		6.7	N.T.	N.T.	N.T.	10.4	N.T.	N.T.	N.T.	14.9	N.T.	13.1	N.T.	12.1	N.T.	N.T.	4.8	N.T.	N.T.	N.T.	N.T.	5.8	N.T.	N.T.					
pH			8.14	N.T.	N.T.	N.T.	7.83	N.T.	N.T.	N.T.	7.65	N.T.	7.58	N.T.	7.95	N.T.	N.T.	7.62	N.T.	N.T.	N.T.	N.T.	7.56	N.T.	N.T.					

Most Recent Reporting Period
ND Sampled - None Detected
N.T. Not Tested
NS Not Sampled - Very little flow or wet but no flow
DRY System was dry

BELMONT, MASSACHUSETTS
2020 IDDE INVESTIGATIONS - EPA Compliance Report January 2021

TABLE 2
MYSTIC RIVER WATERSHED - CLEAN AND CCTV INSPECTIONS
SUMMARY OF FINDINGS AND RECOMMENDATIONS

Street	Outfall Area	Priority*	Type	Manhole No.			Pipe Diameter (inches)	Pipe Material	Length Surveyed (feet)	Approx. Segment Length (feet)	Joint Spacing (feet)	No. of Point Repairs	No. of Point Repairs Liners	Point Repair Locations **	Recommended Rehabilitation		No. of Service Connections	No. of Protruding Services	Location of Protruding Services	No. of Service Connections Replaced	Location of Services Replaced **	New Manhole	Notes
				Direction	Start	End									Line	Replace							
OUTFALL 2																							
Anis Rd	2	4	Sewer	Downstream	09S009	09S010	8	VC	254	254	3				254	NRR	6						Many location with minor to moderate cracks/fractures
Anis Rd	2	2	Drain	Upstream	09D019	Cap	12	VC	195	195	3				NRR	NRR	0					1	Pipe in good structural condition; A few minor offset joints <1"; several joints with minor to moderate roots; defective concc. cap at end of pipe
Woods Rd	2	2	Drain	Upstream	09D080	Upstream	6	VC	70	70	3				NRR	NRR	0					1	Pipe in good condition possible cap at end of pipe or a possible bend to the right to #55.
Dalton Rd	2	2	Drain	Downstream	09D108	09D046	24	RCP	239	239	5				NRR	NRR	0						Pipe is in good structural condition; all joints appear to have some mineral deposits indicating past minor seepage, but no active infiltration; capped service infiltrating at 198' <0.1 gpm
Dalton Rd	2	2	Drain	Downstream	09D046	09D070	24	RCP	270	270	5				NRR	NRR	5						Pipe is in good structural condition; all joints appear to have some mineral deposits indicating past minor seepage, but no active infiltration; 4 of 5 services steady flow at 0.10 gpm
Dalton Rd	2	2	Drain	Downstream	09D070	09D041	24	RCP	180	180	5				NRR	NRR	4						Pipe is in good structural condition; all joints appear to have some mineral deposits indicating past minor seepage, but no active infiltration; fine minor root at one joint; service at 16' has moderate deposits in service (25%); 3 of 4 services steady flow at 0.1 gpm; service connection infiltration dripper at 132'(12:00), 0.05 gpm
Dalton Rd	2	3	Drain	Downstream	09D041	09D003	24	RCP	227	227	5				227	NRR	2						Pipe is in good structural condition; all joints appear to have some minor to moderate mineral deposits indicating past minor seepage, one joint with active infiltration 0.25 gpm; small hole in pipe with minor seepage 0.05 gpm; all services steady flow at 0.1 gpm;
Dalton Rd	2	4	Drain	Downstream	09D003	09D009	24	RCP	511	511	5				511	NRR	12			12	All pipe connections		Pipe is in good structural condition; active infiltration at several joints total of 1.0 gpm, all joints appear to have some minor to moderate mineral deposits indicating past minor seepage; all services are break-in connections that are poor or not standard, several services protruding 1", poor seal at connection; 2" hole for service at 397'(9:00)
Woods Rd	2	2-INC	Drain	Upstream	09D080	None	6	VC	10		3				NRR	0	0						minor roots; bend at 10' that camera could not navigate; severall other moderate cracks
Woods Rd	2	4	Drain	Downstream	09D080	09D083	10	VC	297	297	3	1		42'-65'	297	NRR	9			2	54'(3:00), 162'(9:00)		Severe longitudinal cracks from 42'-65' and servcie at 54' has plastic baseball bat in service; broken service at 162'; severall service appear suspicious
Woods Rd	2	4	Drain	Downstream	09D083	09D086	12	VC	254	254	3				254	NRR	7						Severe longitudinal cracks from 38'-60' and 135'-168' at 12:00 (deformed 5%); severe longitudinal cracks at 116'-142' at 12:00; severall other moderate cracks throughout; severall services appear suspicious (i.e. possible sewer service)
Bacon Rd	2	4	Drain	Downstream	09D086	09D095	15	VC	254	254	3				254	NRR	3	1	76'(1")				Minor to moderate roots throughout; severall locations with minor to moderate longitudinal cracks at 12:00, partially deformed at 180' (deformed 5%)
OUTFALL 10																							
Newcastle Rd	10	1	Sewer	Upstream	37S033A	37S026	8	PVC	199	199	13				NRR	NRR	6						Pipe in excellent condition. PVC mainline and services
Newcastle Rd	10	2	Drain	Downstream	37D038	Culvert	18	VC	232	234	3				NRR	NRR	0						Pipe in good condition with a few minor cracks; Moderate cracks at 232'
TOTALS									2,673	2,665		1	0		1,543	0	48	1		14		0	

* 1 (Excellent Condition) - 5 (Severe Deterioration)

** Distance from Starting Manhole in feet (Orientation of Service Lateral)

Inspected and described in previous reporting period

Will be included in upcoming 2021 Sump Pump Removal and Sewer Rehabilitation Contract

Table 3
07-01-2020 to 12-31-2020 Total Stoppage

Date	Address	Results
2020-07-08	6 REGENT RD	24' roots
2020-07-13	7 FLETT RD	Main line
2020-07-11	399 MARSH ST	Flushed from manhole
2020-07-11	135 GODEN ST	Flushed w/ garden hose
2020-07-12	444 SCHOOL ST	Rodded 12' pushed out
2020-07-12	48 DARTMOUTH ST	No Access
2020-07-14	4 GORHAM RD	Flushed the line
2020-07-19	51 GORDON TER	Flushed main
2020-07-30	17 ROSS RD	54' Roots
2020-07-30	18 TOWNSEND RD	18-24' roots and paper
2020-07-31	137-143 BELMONT ST	Roots @ 24'
2020-08-02	62 BEECH ST	Pushed out @ 18'
2020-08-10	10 TEMPLE ST	Pushed out at 12'
2020-08-13	127 CROSS ST	Rodded 8' Roots
2020-08-21	16-18 LESLIE	Rodded 18', Flushed - Paper
2020-08-21	15 PREBLE GARDENS RD	Rodded 24' Pushed out
2020-08-24	76 TOWNSEND RD	18' Pushed out
2020-08-25	5 REGENT RD	Main line
2020-08-27	655 TRAPELO RD	Main line - flushed
2020-08-25	12 MOORE ST	6' Push out
2020-08-28	44 TRAPELO RD	No Access
2020-08-29	298 BRIGHTON ST	Rodded 30' Roots
2020-09-01	6 BROAD ST	Internal Problem
2020-09-02	15 PEARL ST	Rodded line-roots & paper at 18' and Cameraed the line - pipe fine.
2020-09-02	16 HORACE RD	Rodded roots @ 18' went out 48' bagged
2020-09-08	88 WINTER ST	18' Roots
2020-09-09	177 CLAFLIN ST	No Access- Flushed Main
2020-09-10	33 BETTS RD	No Access
2020-09-10	505 PLEASANT ST	Rodded manhole from sidewalk to house - roots and wipes
2020-09-14	130 BRIGHT RD	Roots @ 36'
2020-09-14	88 WINTER ST	Roots @ 18'
2020-09-15	505 PLEASANT ST	Rodded line main is fine & residents line is clear
2020-09-15	14 TOWNSEND RD	Rodded 18'-pushout-paper
2020-09-16	4 GORHAM RD	54' Roots and flushed line
2020-09-17	366 MARSH ST	Rodded from house & Rodded and bagged from manhole in yard - clear
2020-09-17	67 SHERMAN ST	Flushed house from manhole & flushed main - clear
2020-09-20	42 SHARPE RD	Rodded paper & roots @ 12' - bagged to clear
2020-09-20	135 GODEN ST	Bagged & cleared

2020-09-20	67 SHERMAN ST	Main line flushed
2020-09-23	16 HORACE RD	18-20' Roots
2020-09-28	43 OAK AVE	Blew out w/ flusher
2020-09-29	120 TRAPELO RD	Backed up at the new manhole, cleared manhole
2020-09-29	4 BETTS RD	Main line flushed clear
2020-10-01	503 SCHOOL ST	12' & 18' roots
2020-10-02	81 WELLESLEY RD	42' Mega Roots
2020-10-05	40 CHESTNUT ST	Cleared main line w/ flusher
2020-10-06	5 REGENT RD	Rodded, bagged, & flushed line-roots at 30ft
2020-10-10	25 LINDEN AVE	Pushed out at 12'
2020-10-14	34 AGASSIZ AVE	Main Line
2020-10-18	37 GROVE ST	Cleared & flushed main line
2020-10-18	191 TRAPELO RD	Rod the line & pushed out
2020-10-21	6 BROAD ST	Flushed service line w/ flusher-tons of paper
2020-10-22	4 GORHAM RD	Bagged w/ Flusher
2020-10-26	117 OAKLEY RD	Roots @ 12' and 20'
2020-10-26	127 SYCAMORE ST	Grease-Flushed main and bagged house
2020-10-27	127 SYCAMORE ST	Flushed main
2020-10-29	105 TRAPELO RD	Flushed main-grease
2020-10-29	106 PINE ST	Rod & Cut Roots @ 18' & 20'
2020-10-30	25 ROSS RD	Blew out w/ flusher
2020-10-31	4 MERRILL AVE	No Access
2020-11-01	89 HILLCREST RD	No Access
2020-11-02	89 HILLCREST RD	No Access
2020-11-03	531 BELMONT ST	12' pushed out
2020-11-06	4 BAY STATE RD	Push out 18'
2020-11-10	4 GARDEN ST	18' Roots
2020-11-14	19 BURNHAM ST	No Access-Main is fine
2020-11-20	20 MARLBORO ST	No Access
2020-11-21	133 ELM ST	Roots 10'
2020-11-24	88 HILLCREST RD	46' Roots
2020-11-23	91 BAKER ST	Service line flushed out
2020-11-27	98 LEWIS RD	Roots @ 24' & 30'
2020-11-28	136 BLANCHARD RD	Main Line-Flush & Clear
2020-11-29	24 COWDIN ST	No Access
2020-11-30	8 LORIMER RD	Roots @ 25'-Bagged/Flushed House Line
2020-12-01	99 GILBERT RD	Roots @ 30ft
2020-12-03	97 HOITT RD	No-Backup. Flushed main.
2020-12-09	2 YORK RD	30' Roots
2020-12-14	100-102 GILBERT RD	No Stoppage
2020-12-16	54 CLAIREMONT RD	No Access
2020-12-18	275 BRIGHTON ST	30' Roots
2020-12-20	17 MAPLE ST	Rodded & Bagged line

2020-12-23	97-99 BARTLETT AVE	Push out at 18 feet
2020-12-24	17 MAPLE ST	30' Roots
2020-12-25	94 CLAFLIN ST	60' heavy paper
2020-12-25	88 BAKER ST	Main Line
2020-12-26	72 CHILTON ST	No Access
2020-12-27	7 GARRISON RD	6' heavy paper
2020-12-28	135 GODEN ST	40' push out, bagged w/ flusher

Attachment 1

Sanitary Sewer Rehabilitation Contract Drawings



TOWN OF BELMONT, MASSACHUSETTS

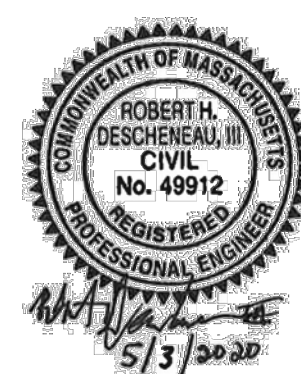
SEWER SYSTEM REHABILITATION
INFLOW/INFILTRATION REMOVAL
MWRA PROJECT NO. WRA-P11-04-3-1116

INDEX TO DRAWINGS

SHEET NO.	DRAWING NO.	TITLE
1	G-001	COVER
2	G-002	KEY PLAN -- NORTH
3	G-003	KEY PLAN -- SOUTH
4	C-001	LEGEND, ABBREVIATIONS AND GENERAL NOTES
5	C-101	BARTLETT AVENUE AND MAPLE STREET
6	C-102	OLIVER ROAD
7	C-103	BELLINGTON STREET, KNOX STREET AND HERMON STREET
8	C-104	HILL ROAD
9	C-105	WESTLUND ROAD AND HOITT ROAD
10	C-106	HOUGHTON ROAD, HERBERT ROAD AND SHAW ROAD
11	C-107	LIVERMORE ROAD
12	C-108	BETTS ROAD
13	C-501	DETAILS 1 OF 2
14	C-502	DETAILS 2 OF 2

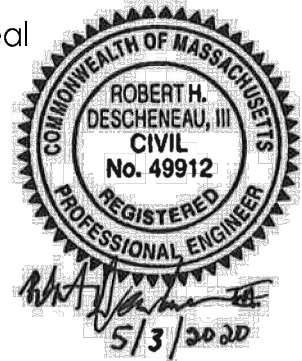
MAY 2020

Project Number: 195113362



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Client/Project
TOWN OF BELMONT, MASSACHUSETTS
MWRA PROJECT NO. WRA-P11-04-3-1116
SEWER SYSTEM REHABILITATION
INFLOW/INFILTRATION REMOVAL
BELMONT, MASSACHUSETTS



Project Number: 195113362			
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LEGEND



AREAS OF SEWER/DRAIN
WORK WITH SHEET NUMBER

LOCATION PLAN – SOUTH
SCALE: 1"=500'



Street Address
City, Prov/State County Code/Zip
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Revision

By

Appd.

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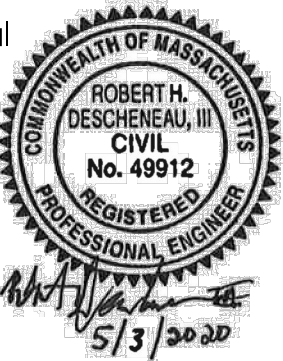
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Client/Project
TOWN OF BELMONT, MASSACHUSETTS
MWA PROJECT NO. WRA-P11-04-3-1116
SEWER SYSTEM REHABILITATION
INFLOW/INFILTRATION REMOVAL
BELMONT, MASSACHUSETTS
KEY PLAN - SOUTH

Permit-Seal


Project Number: 195113362

File Name: 3_G-003.DWG

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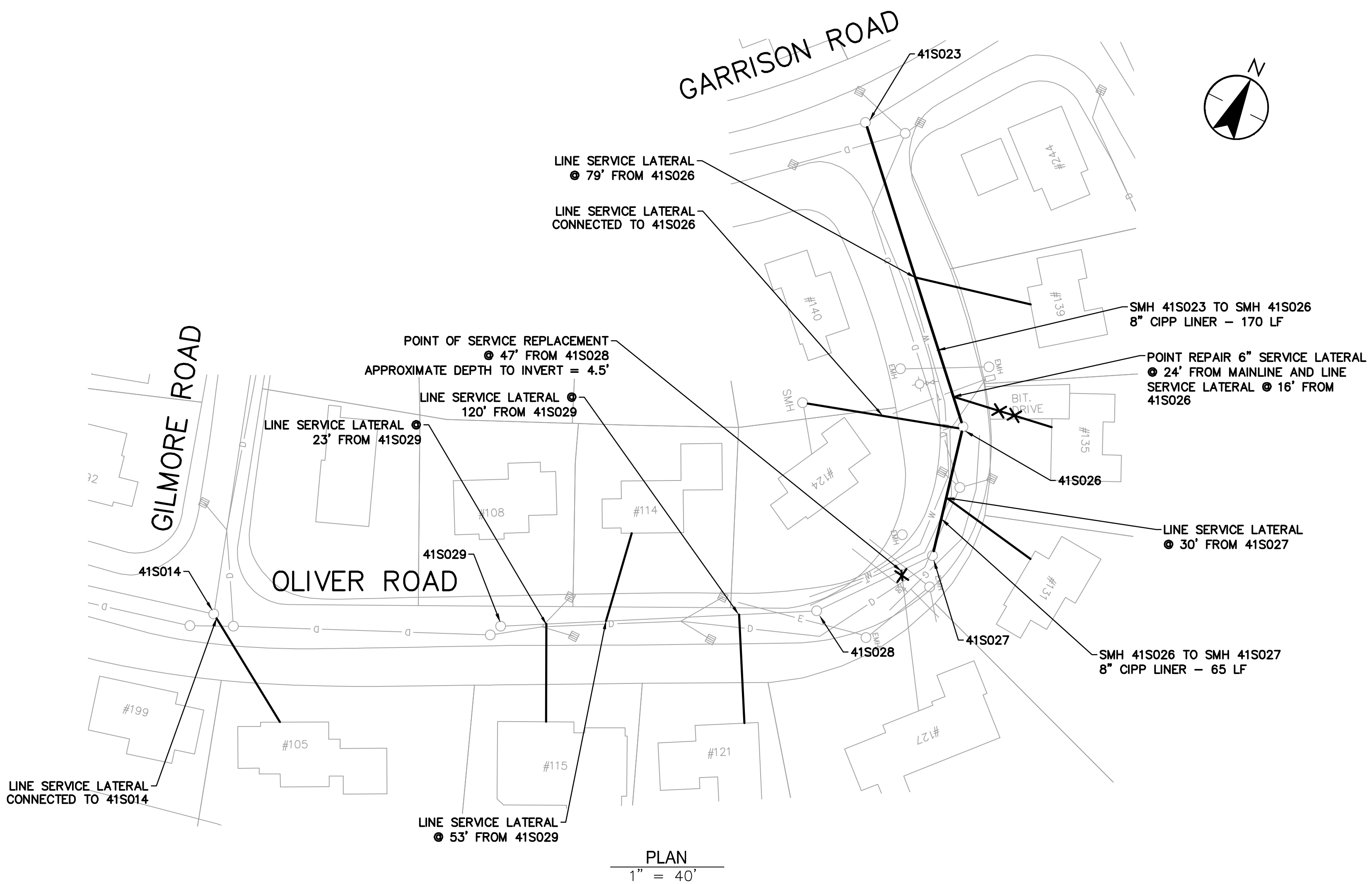
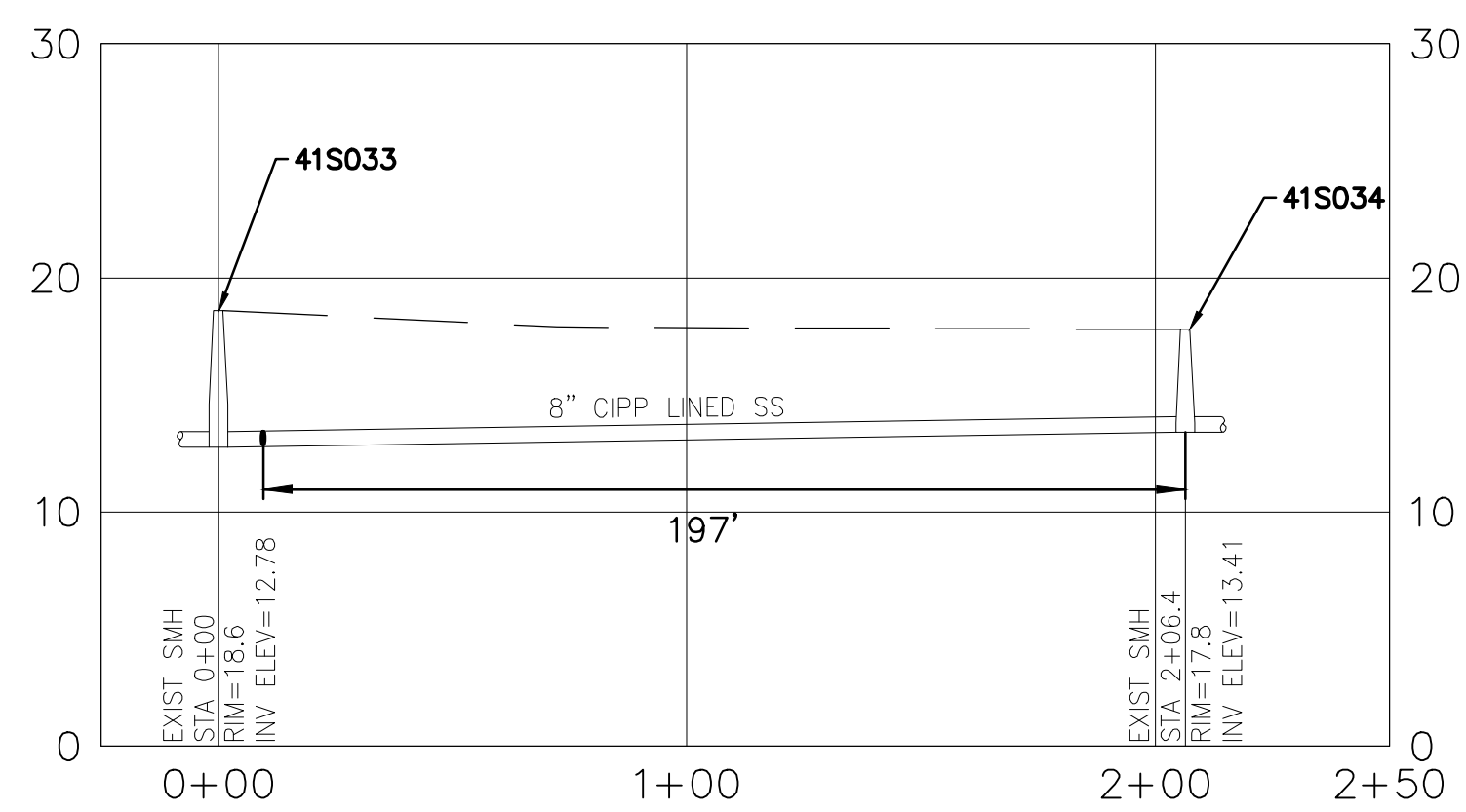
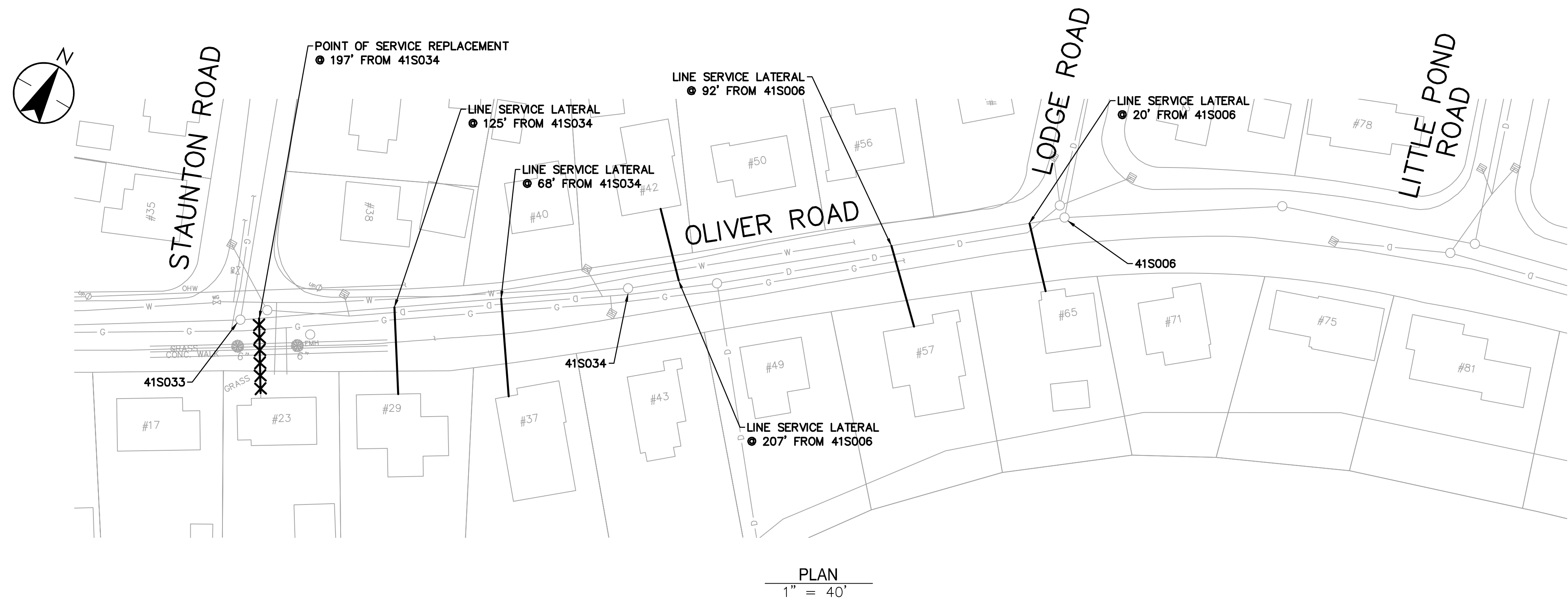
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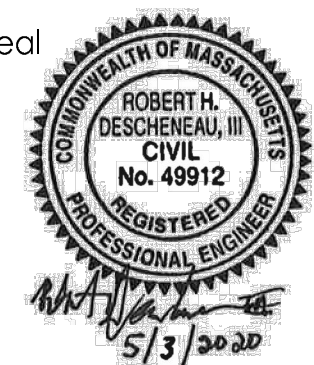
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TOWN OF BELMONT, MASSACHUSETTS
MMWA PROJECT NO. WRA-P11-04-3-1116
SEWER SYSTEM REHABILITATION
INFLOW/INFILTRATION REMOVAL
BELMONT, MASSACHUSETTS
OLIVER ROAD

Permit-Seal



Project Number: 195113362

File Name: C-102 OLIVER.DWG

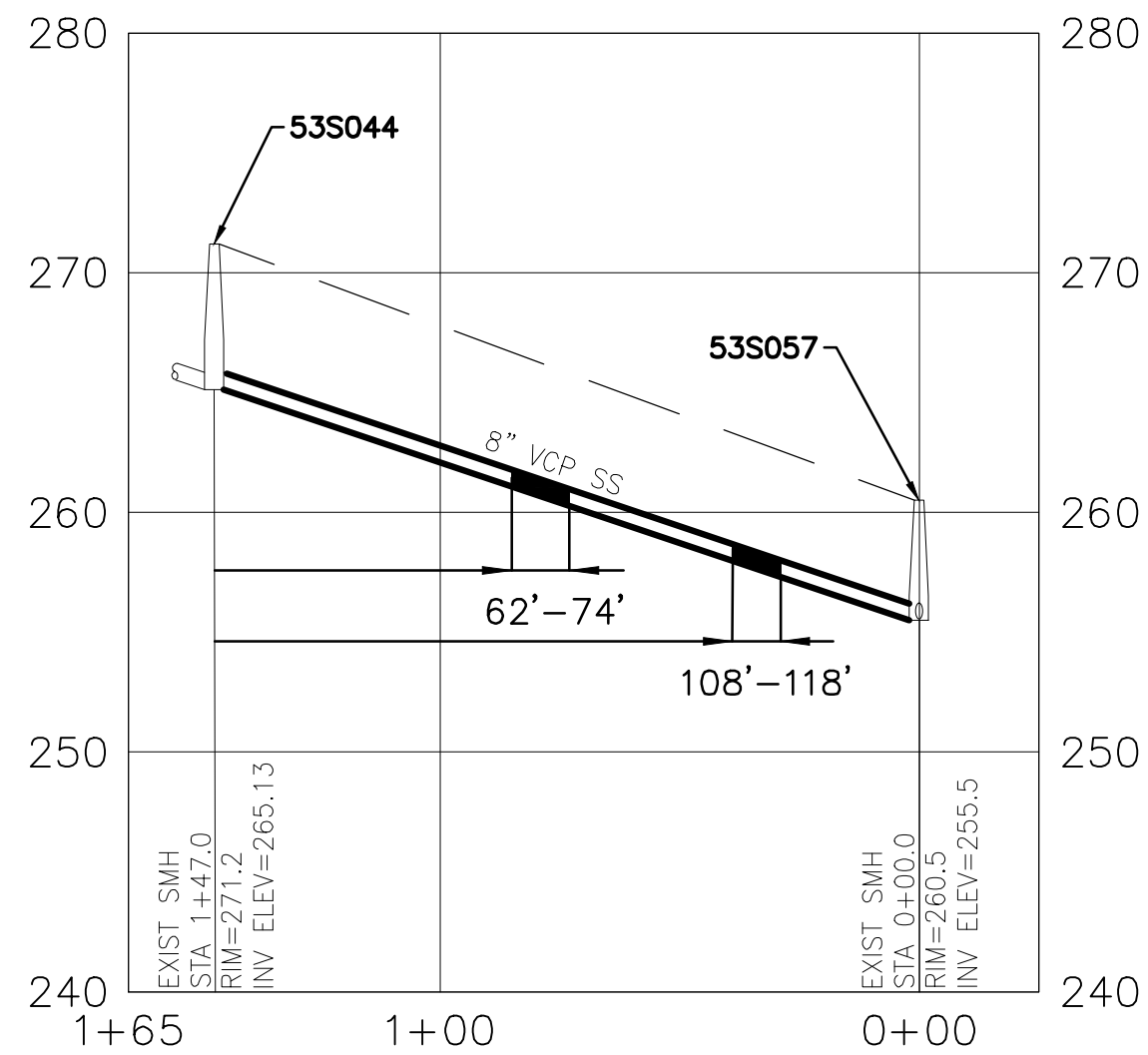
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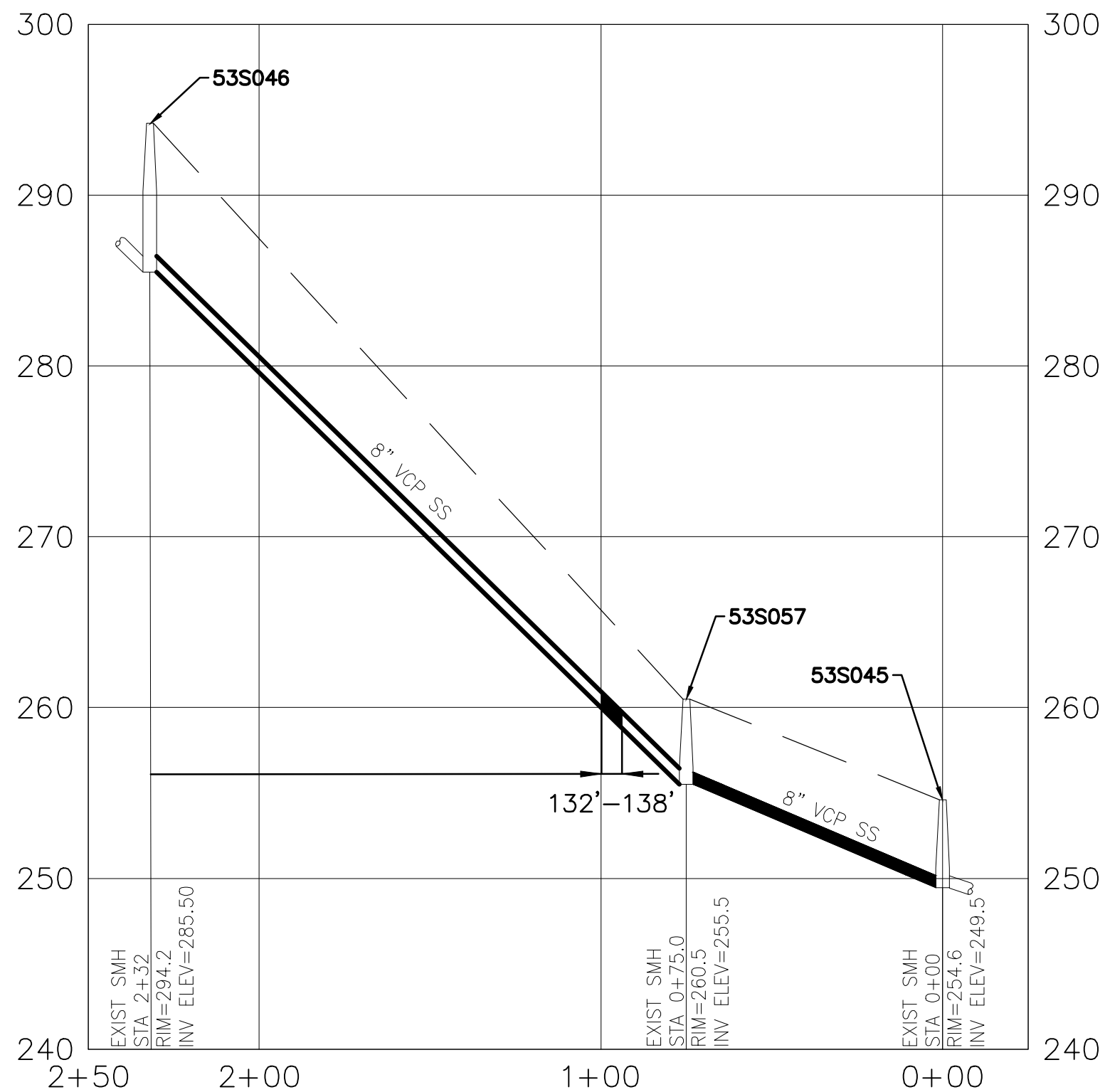
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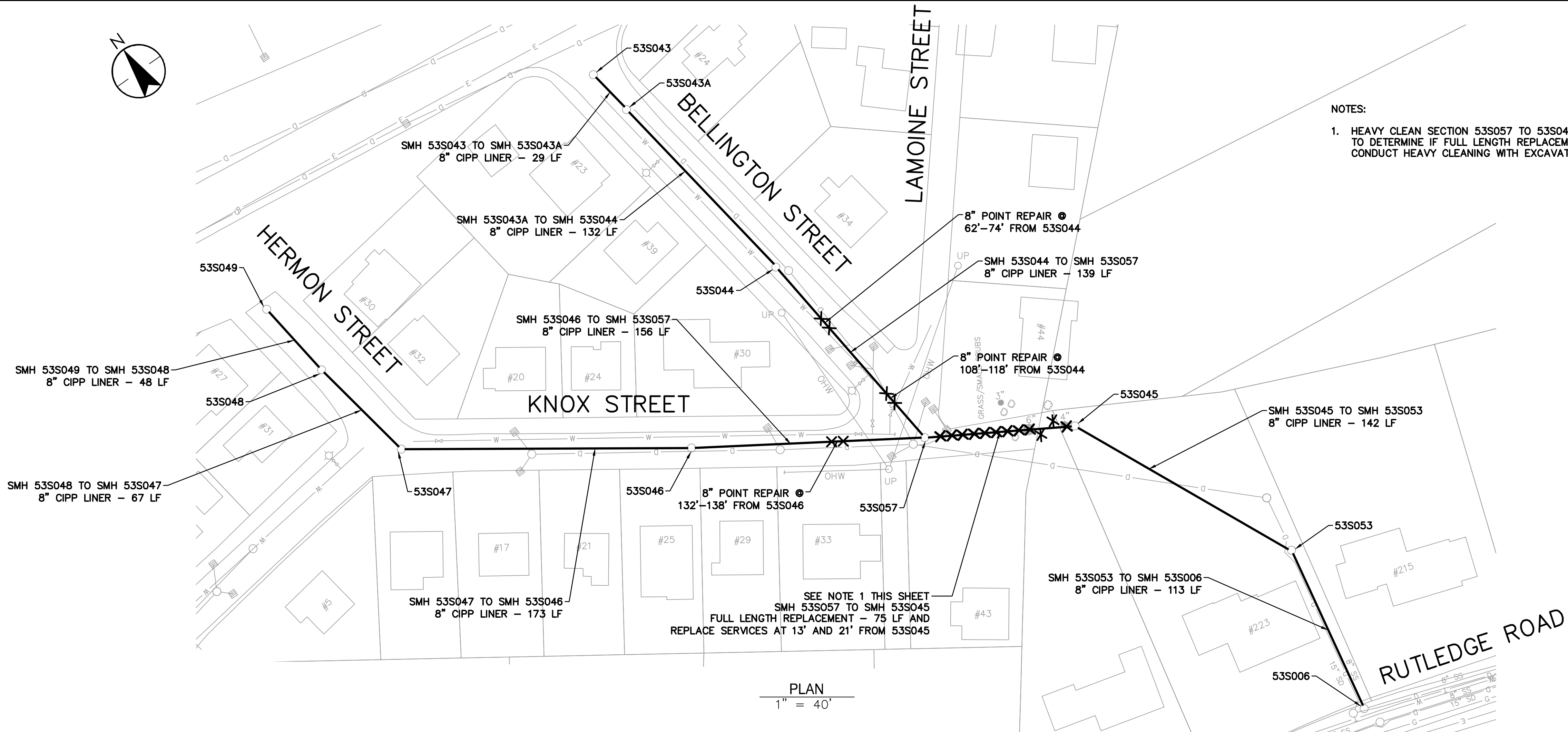
BELLINGTON STREET PROFILE

SCALE: HOR. 1"=40'
VERT. 1"=4'



KNOX STREET PROFILE

SCALE: HOR. 1"=40'
VERT. 1"=4'



PLAN
1" = 40'

NOTES:

1. HEAVY CLEAN SECTION 53S057 TO 53S045 PRIOR TO REPLACEMENT TO DETERMINE IF FULL LENGTH REPLACEMENT IS REQUIRED. CONDUCT HEAVY CLEANING WITH EXCAVATION EQUIPMENT ON SITE.

Revision			
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Issued			
By	Appd.	Y1MMDD	Y1MMDD

Street Address

City, Prov/State Country Code/Zip

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TOWN OF BELMONT, MASSACHUSETTS

MWRA PROJECT NO. WRA-P11-04-3-1116

SEWER SYSTEM REHABILITATION

INFLOW/INFILTRATION REMOVAL

BELMONT, MASSACHUSETTS

BELLINGTON STREET, KNOX STREET AND HERMON STREET

Permit-Seal

COMMONWEALTH OF MASSACHUSETTS

ROBERT H. DESCHENEAU III

CIVIL

No. 49912

REGISTERED PROFESSIONAL ENGINEER

5/3/2020

Project Number:

195113362

File Name:

C-103 BELLINGTON_KNOX_HERMON.DWG

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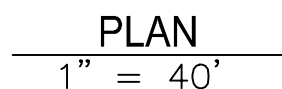
C-103

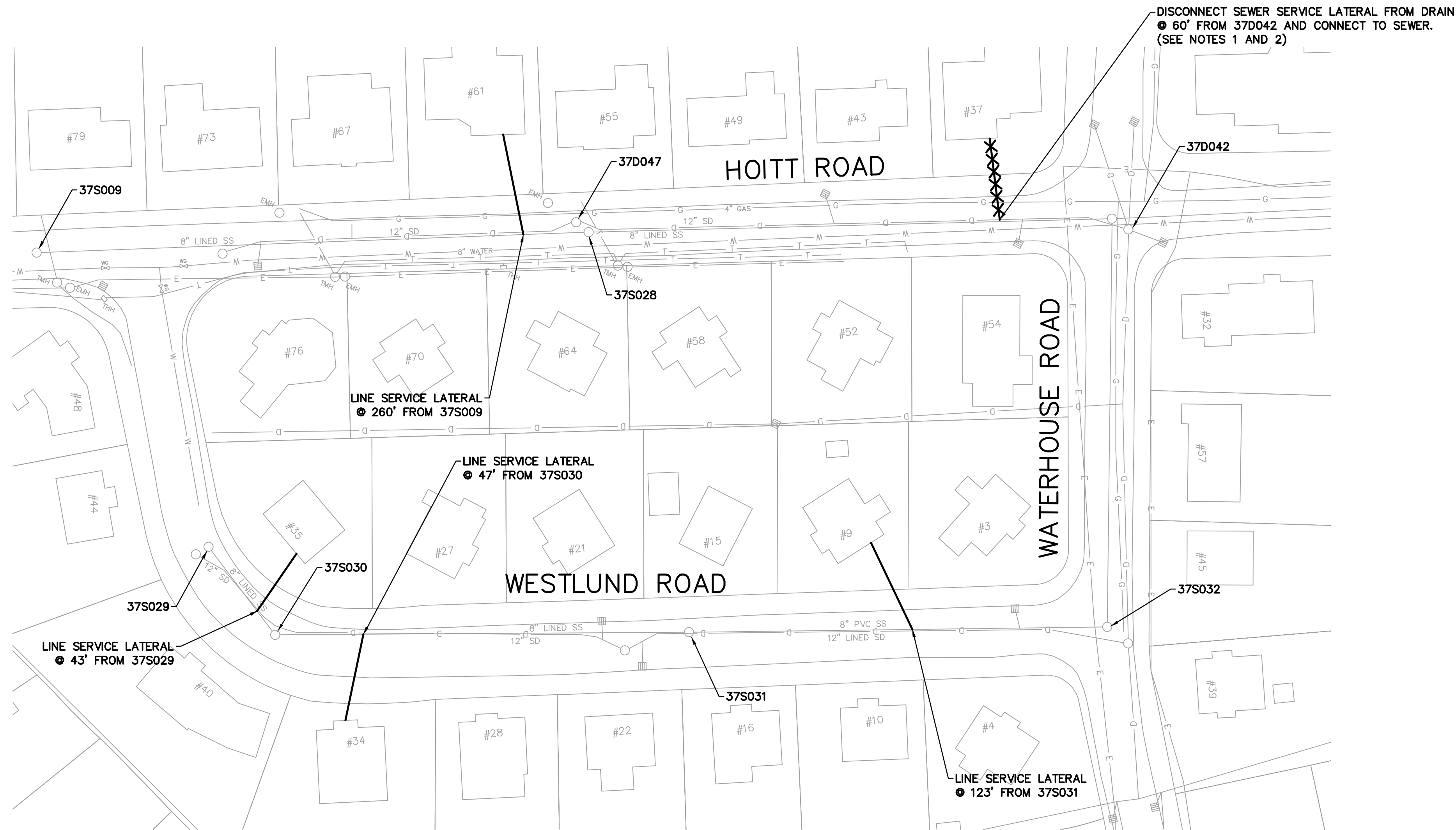
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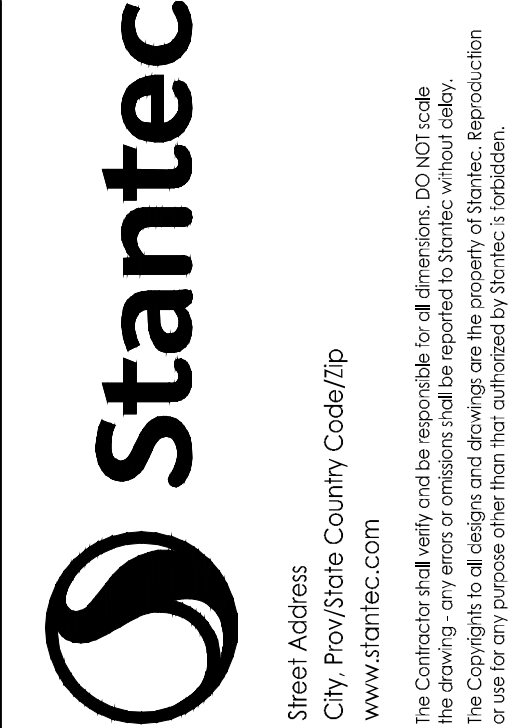


NOTES:

1. THE CONTRACTOR SHALL CONDUCT DYED-WATER TESTS TO POSITIVELY IDENTIFY SEWER AND STORM DRAIN SERVICE LATERALS PRIOR TO RECONNECTION. THE CONTRACTOR SHALL COORDINATE THE DYED-WATER TESTS WITH THE HOMEOWNER AND THE OWNER'S REPRESENTATIVE.
2. THE CONTRACTOR SHALL MAINTAIN AND/OR REMOVE AND REPLACE THE EXISTING SEWER WITHIN THE LIMIT OF WORK.

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Client/Project
TOWN OF BELMONT, MASSACHUSETTS
MWRA PROJECT NO. WRA-P11-04-3-1116

SEWER SYSTEM REHABILITATION
INFLOW/INFILTRATION REMOVAL
BELMONT, MASSACHUSETTS

Permit-Seed

HOUGHTON ROAD, HERBERT ROAD AND SHAW ROAD



Project Number: 195113362

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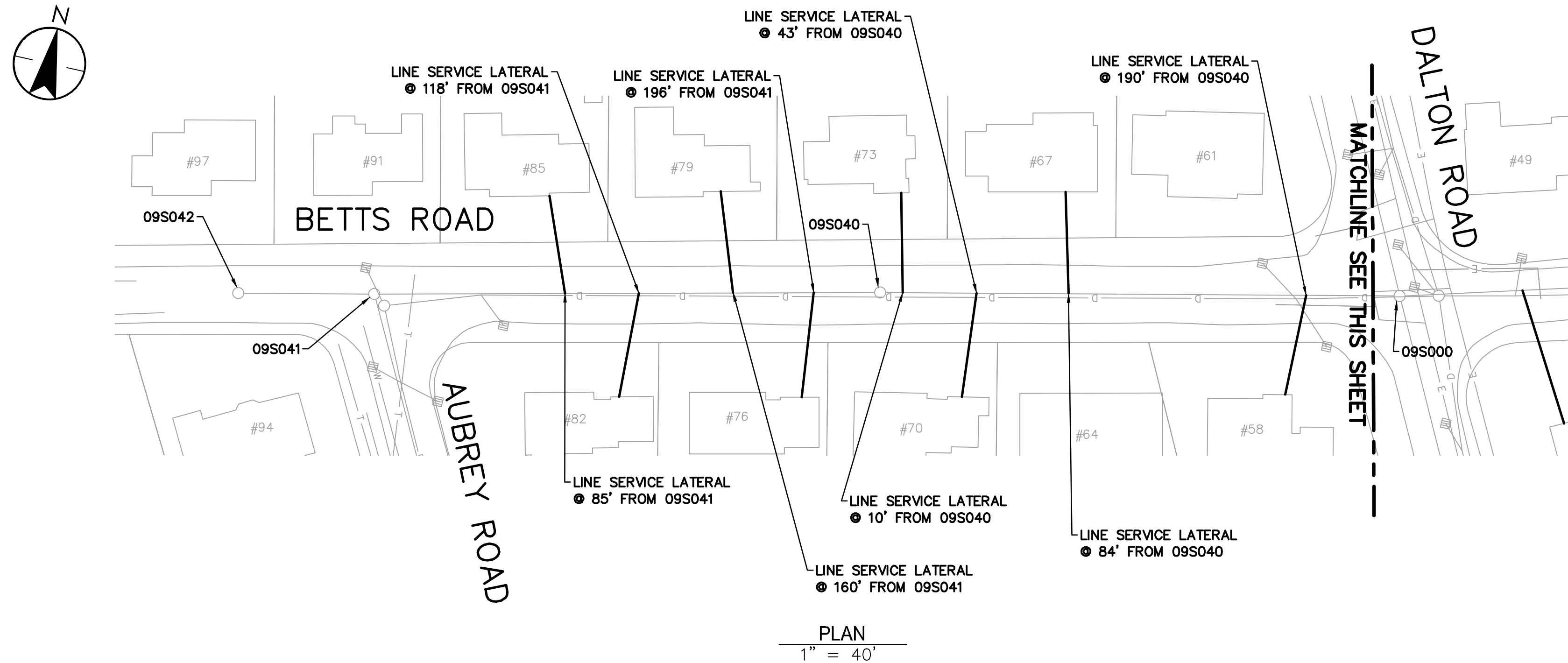
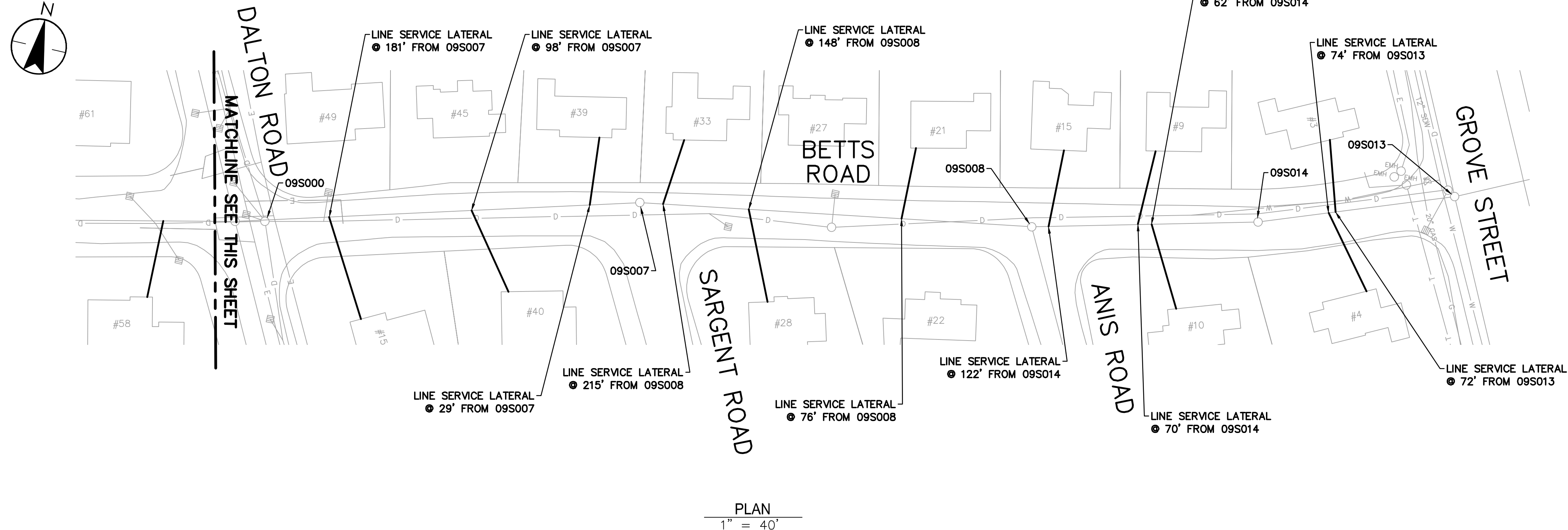
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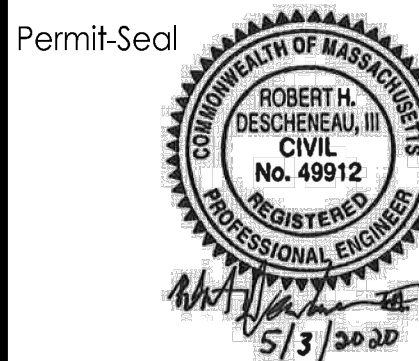
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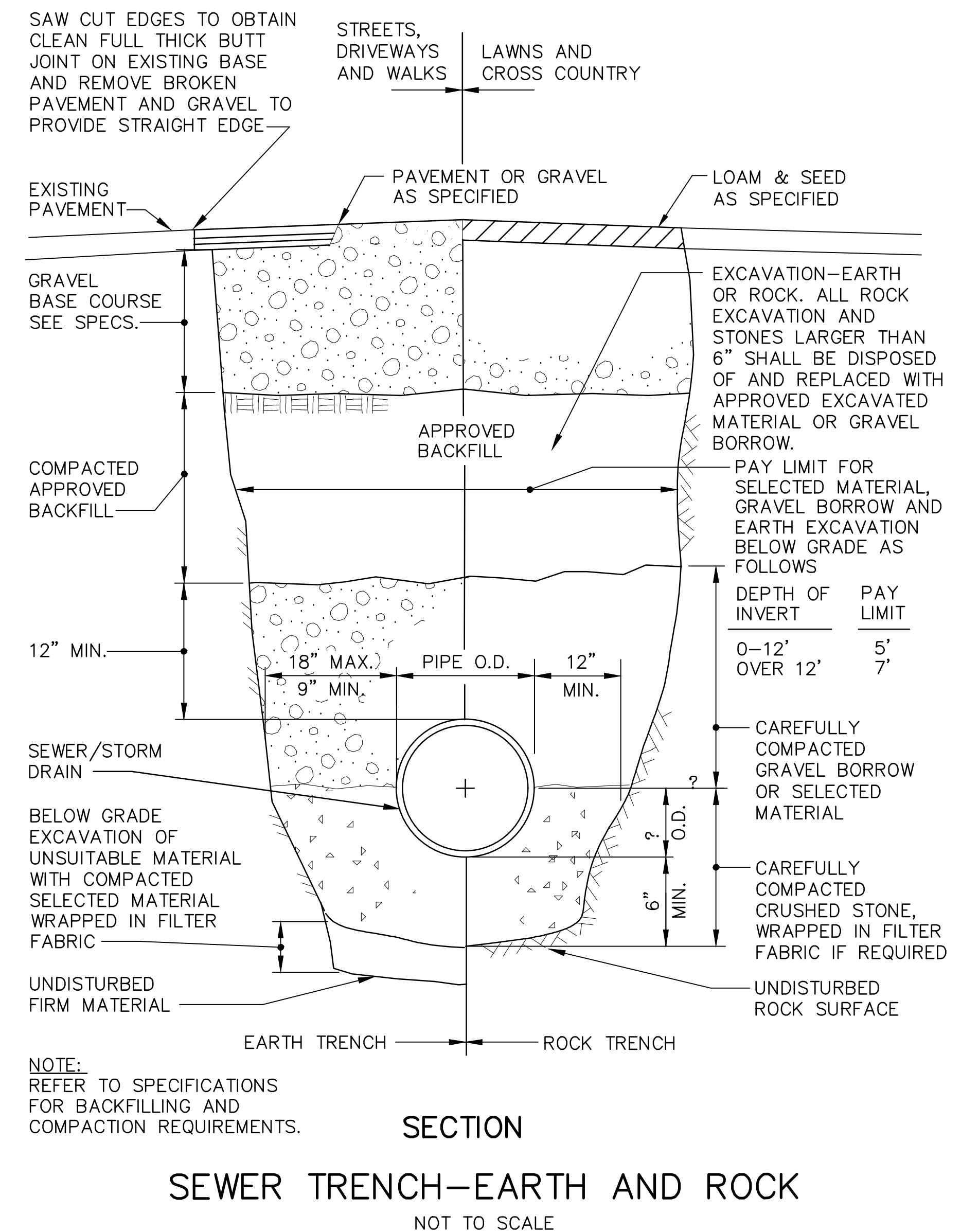
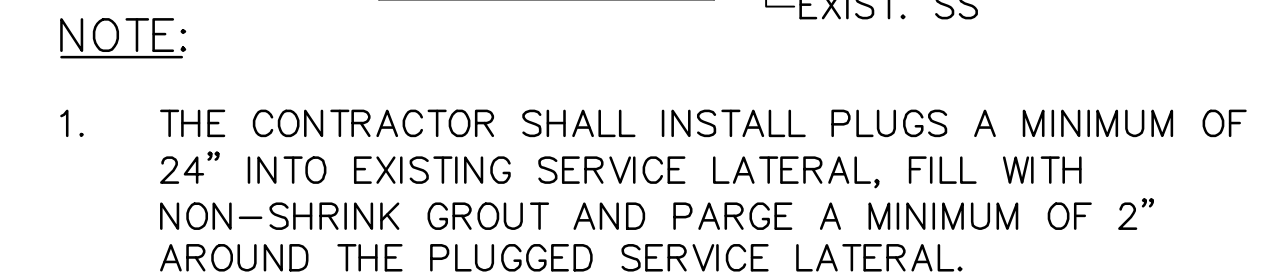
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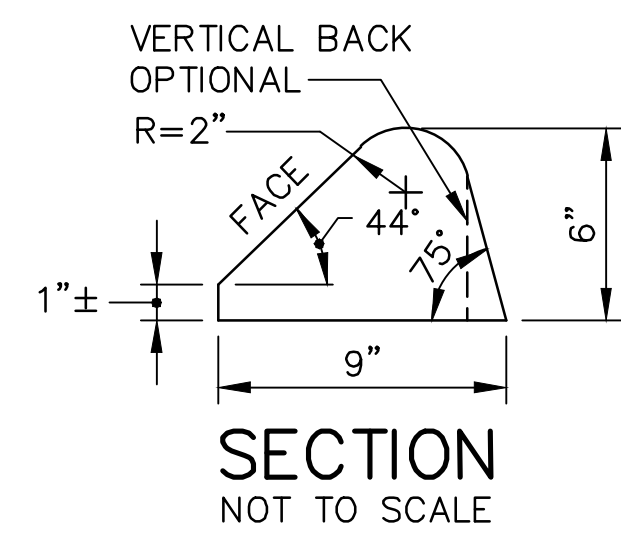
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Client/Project
TOWN OF BELMONT, MASSACHUSETTS
MWRA PROJECT NO. WRA-P11-04-3-1116
SEWER SYSTEM REHABILITATION
INFLOW/INFILTRATION REMOVAL
BELMONT, MASSACHUSETTS
BETTS ROAD

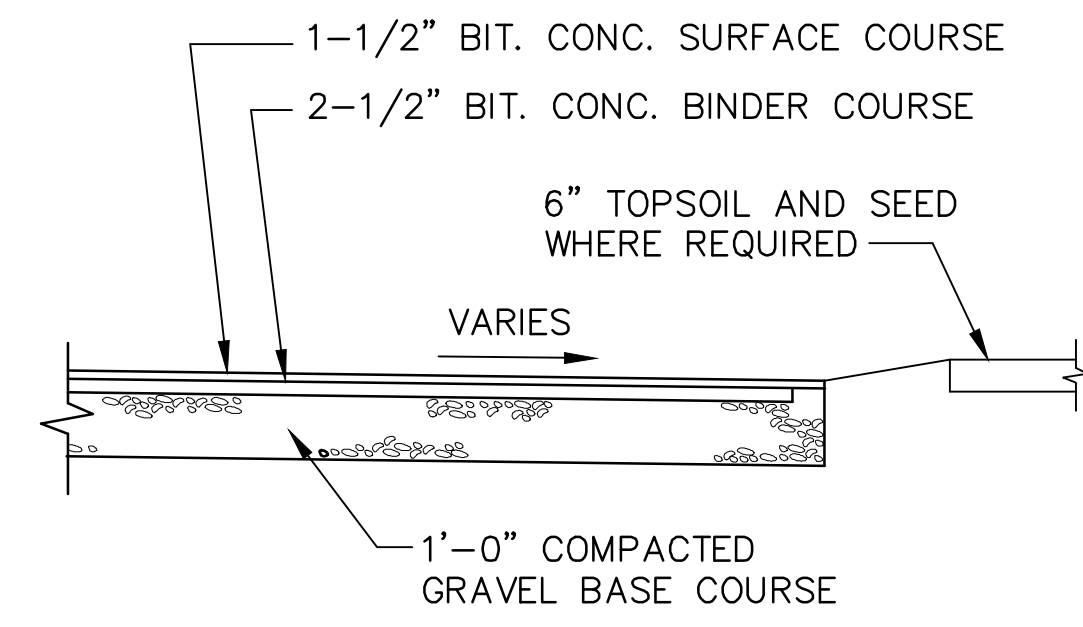


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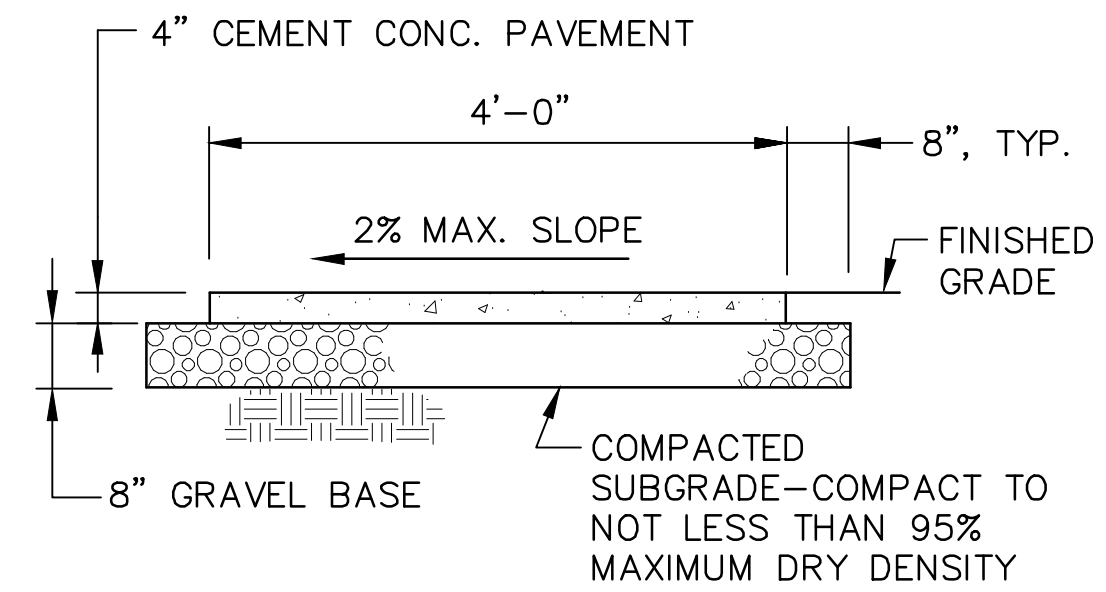




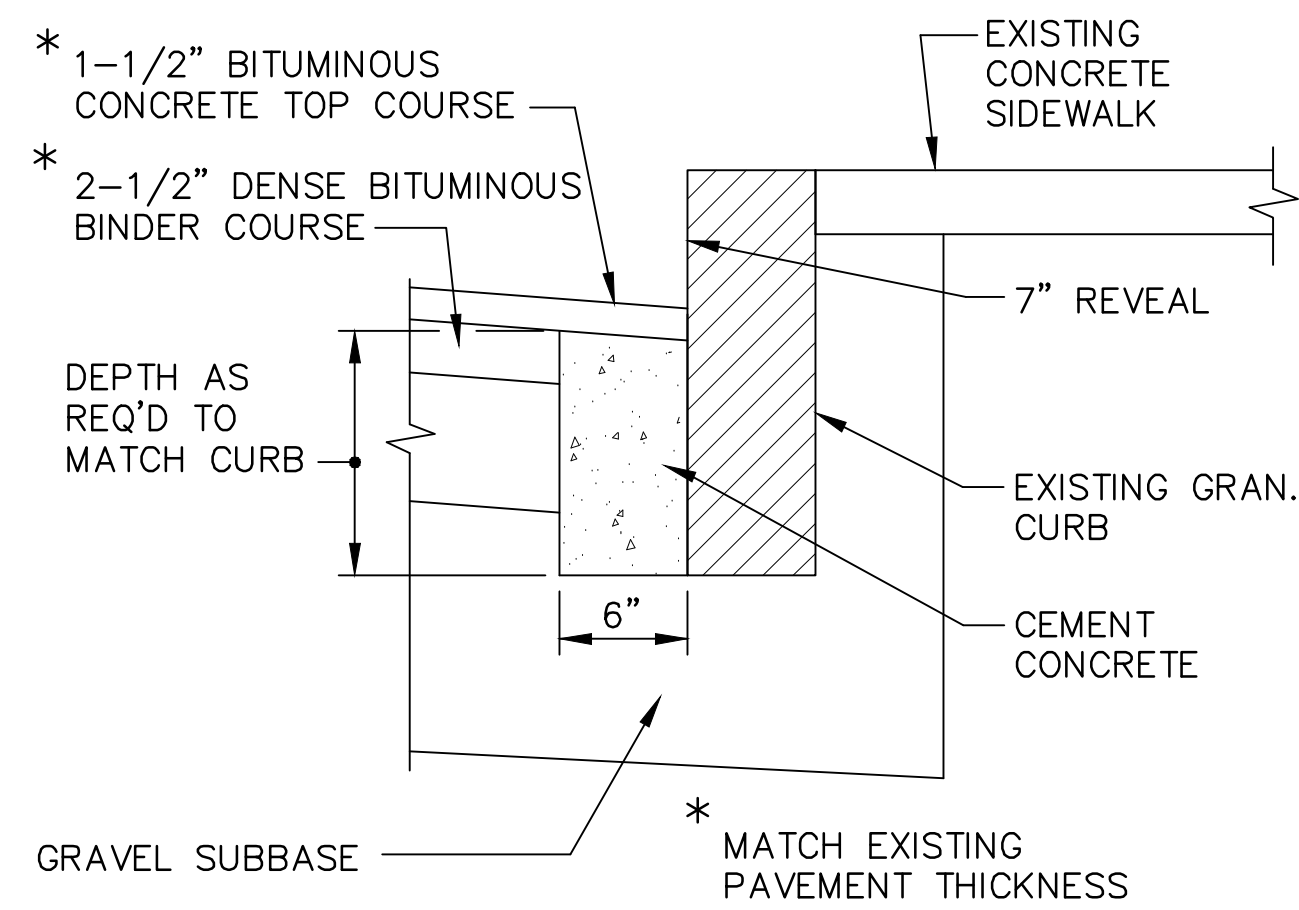
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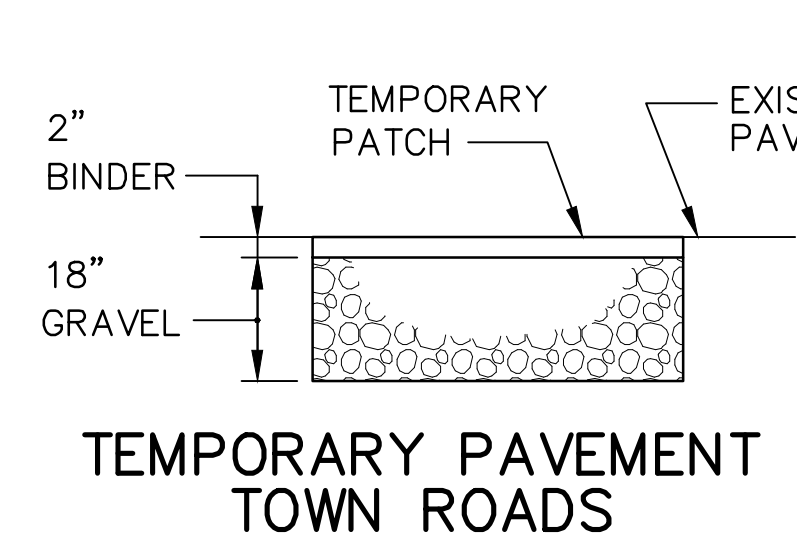
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TYPICAL CEMENT
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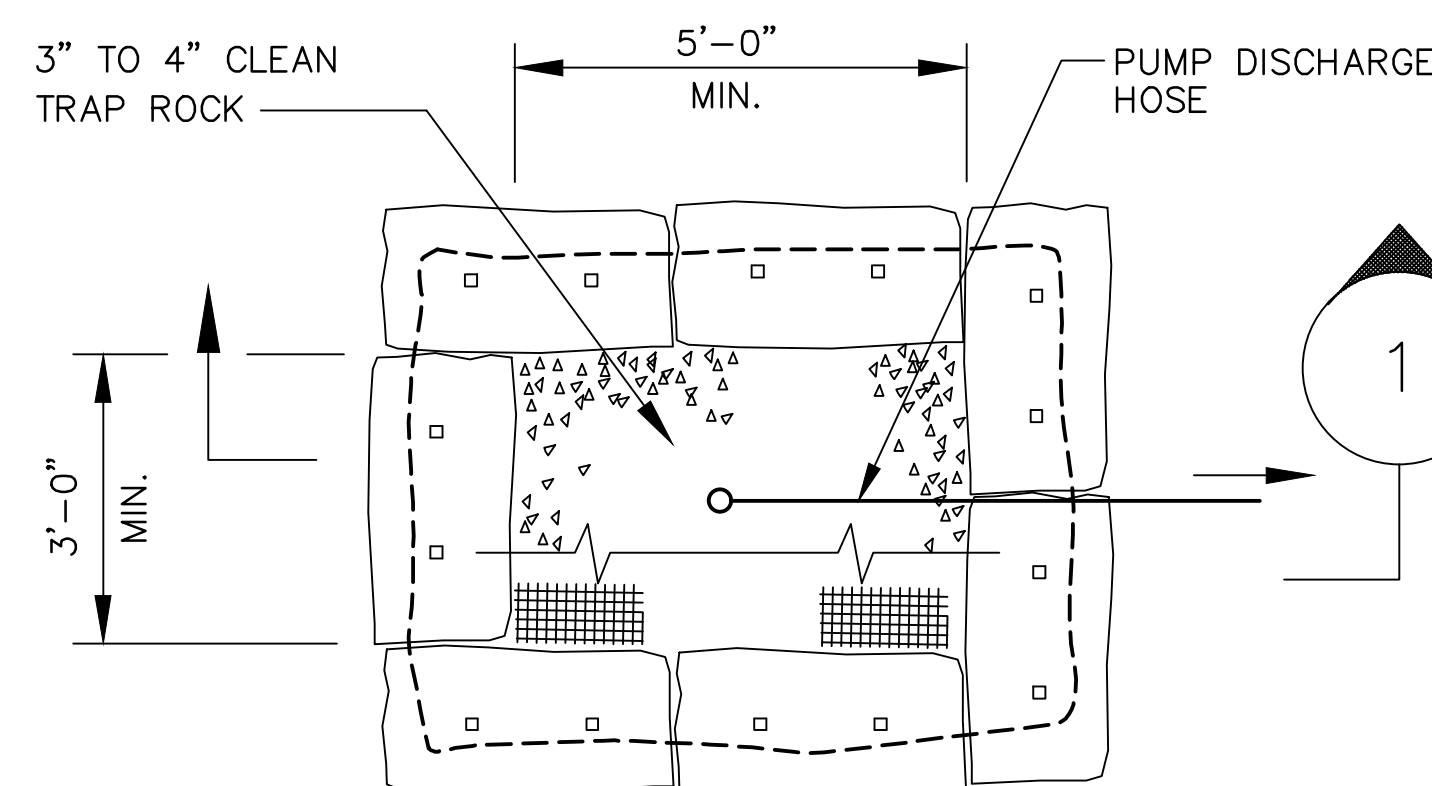


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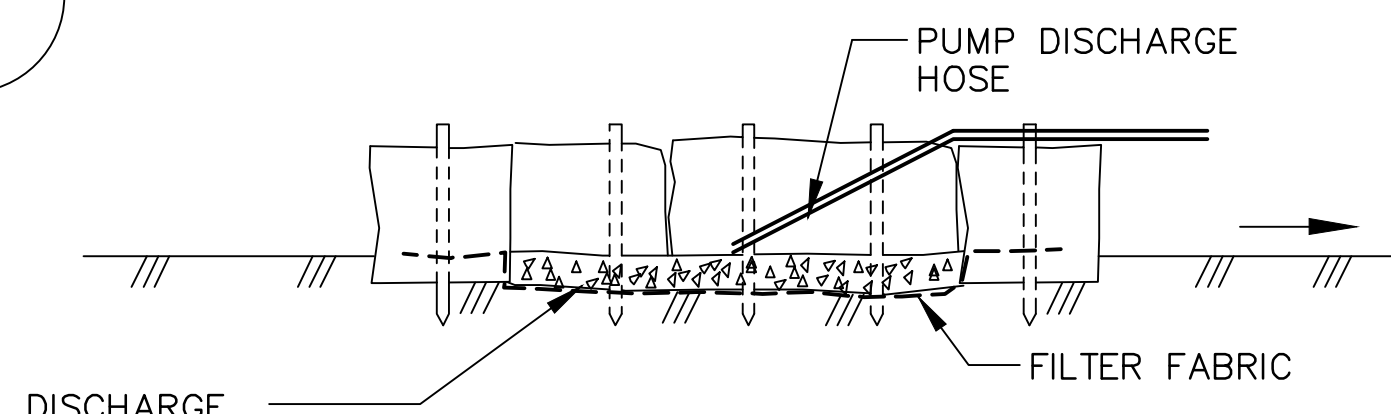


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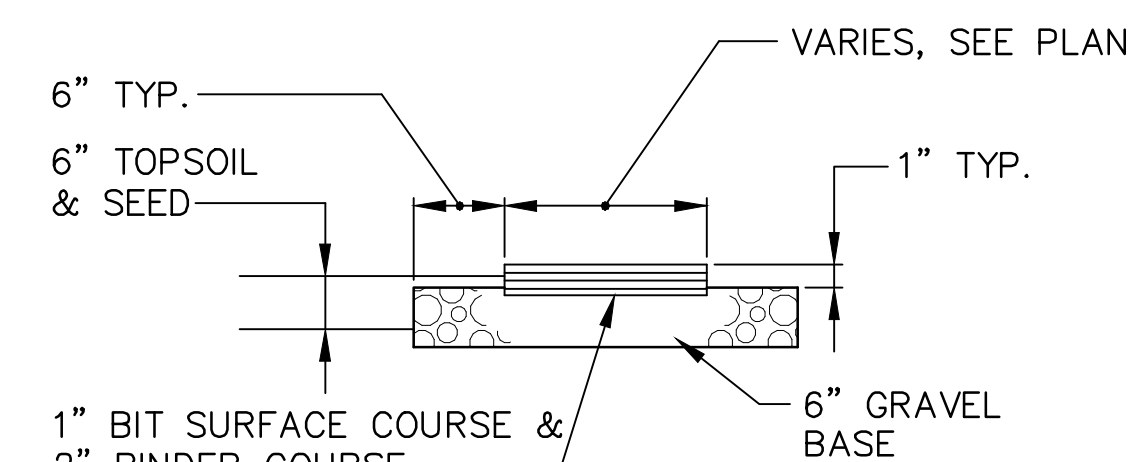
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PLAN



SECTION



BITUMINOUS WALK
NOT TO SCALE

Attachment 2

Sub-catchment Areas 1, 2, 8-6, 10-1

Tributary Areas

Sub-catchment Area 1 - Tributary Sampling

Sampling Parameter	Unit	Threshold Value			Sampling Location, Sampling Date, and Measured Value												
			Sample No.	OF-1					1-5	1-1	1-2	1-3	1-4		1-4A		
			Date	11/8/2016	6/23/2017	7/18/2017	11/9/2020	12/16/2020	12/16/2020	6/23/2017	6/23/2017	6/23/2017	7/18/2017	12/16/2020	7/18/2017	12/16/2020	
			MH #	CB01D012	CB01D012	CB01D012	CB01D012	CB01D012	01D032	03D038	03D038	03D038	03D048	03D048	03D048	03D048	
			Location Description						Park Rd and Grove St from North	Fairview Ave @ Lewis Rd	Payson @ Fairview from Fairview	Payson @ Fairview from Payson	Flow from Fairview Ave from at Van Ness Rd	Flow from Fairview Ave from at Van Ness Rd	Fairview and Van Ness Rd from easement	Fairview and Van Ness Rd from easement	
				9 Oxford Circle	9 Oxford Circle	9 Oxford Circle	9 Oxford Circle	9 Oxford Circle									
E. Coli	MPN/100mL	235			100	1,900	600	<100	<100	100	19,000	ND	ND	ND	300	7,000	12,300
Ammonia (NH ₃)	mg/L	0.5			0	0.12	0.12	0	0	0	0.35	0	0.25	0.3	0	1	1
Surfactants	ppm	0.25			0.1	0.1	0.1	N.T.	N.T.	N.T.	0.15	0.5	0.1	0.2	N.T.	0.5	N.T.
Enterococcus	/100mL			50	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	

Most Recent Reporting Period
 ND Sampled - None Detected
 N.T. Not Tested
 NS Not Sampled - Very little flow or wet but no flow
 DRY System was dry

Sub-catchment Area 2 - Tributary Sampling																																											
Sampling Parameter	Unit	Threshold Value	Sample No.	Sampling Location, Sampling Date, and Measured Value																																							
				OF-2		2-09D003		2-09D003A	2-11		2-2	2-3		2-4		2-5		2-6		2-7		2-8	2-9		2-10		2-12	2-13		2-14		2-15	2-16	2-17	2-18	2-19	2-20	2-21	2-22				
				Date	11/8/2016	7/18/2017	11/10/2020	7/18/2017	11/19/2020	7/18/2017	10/19/2017	11/19/2020	7/18/2017	7/18/2017	11/19/2020	7/18/2017	11/19/2020	10/18/2017	11/19/2020	10/18/2017	11/19/2020	10/18/2017	11/19/2020	10/19/2017	10/19/2017	10/19/2017	8/12/2019	10/19/2017	8/12/2019	10/20/2017	8/12/2019	11/19/2020	8/12/2019	11/19/2020	8/12/2019	8/12/2019	8/12/2019	8/12/2019	8/12/2019	8/12/2019	11/19/2020	11/19/2020	
MH #	11D010	11D010	11D010	09D003	09D003	09D003	09D003	09D003	09D003	09D070		Dalton @ Livermore (from West - 54 Livermore direction	Dalton @ Livermore (from West - 54 Livermore direction	Dalton @ Livermore (from East - 50 Livermore direction	Dalton @ Livermore (from East - 50 Livermore direction	Dalton from Shaw (from West 42 Shaw Direction)	Dalton from Shaw (from West 42 Shaw Direction)	Dalton from Shaw (from East 215 Dalton Direction)	Dalton from Shaw (from East 215 Dalton Direction)	Livermore from Shaw	Livermore from Shaw	Hillside at School from Hillside	Dalton from Grosvenor	Dalton from Grosvenor	Grosvenor from Sargent	Grosvenor from Sargent	Livermore at Hartley from between 70 and 64 Livermore (easement)	Sharpe/Dalton from Washington St between 248 and 245 Washington	Sharpe/Dalton from Washington St between 248 and 245 Washington	Washington from Sharpe	Washington from Sharpe	School at Washington near 198 Washington	Combined Jackson and Washington	Sargent from Grosvenor (from East - 4 Grosvenor Direction)	Woods from Bacon (from West - 30 Bacon Direction)	Audrey from Bacon (from East - 22 Bacon Direction)	Grosvenor from Dalton (from South 112 Dalton)	Elm at Dalton from Elm west	Betts at Audrey from Audrey				
E. Coli	MPN/100mL	235			5,550	6,800	15,200	19,600	4,600	5,500	>20,000	2,000	>20,000	>20,000	<100	3,900	28,100	16,450	1,500	1,200	1,300	5,000	200	100	13,200	1,300	1,400	2,600	300	<100	<100	400	100	<100	300	900	600	<100	4,300	<100	800		
Ammonia (NH ₄)	mg/L	0.5			0.25	3	3	2	3	5.5	6+	3	3	4	3	0.75	3	N.T.	N.T.	N.T.	N.T.	N.T.	0	1	3	N.T.	0.3	N.T.	0.1	N.T.	N.T.	1300	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	0	N.T.		
Surfactants	ppm	0.25			0.25	0.5	N.T.	0.2	N.T.		N/A	N.T.	0.1	0.6	N.T.	0.1	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N/A	N/A	N.T.	N/A	N.T.	N/A	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	
Enterococcus	MPN/100mL				1,150	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.

Most Recent Reporting Period

ND

Sampled - None Detected

N.T.

Not Tested

NS

Not Sampled - Very little flow or wet but no flow

DRY

System was dry

Sub-catchment 8-6 - Tributary Sampling																																	
Sampling Parameter	Unit	Threshold Value		Sampling Location, Sampling Date, and Measured Value																													
			Sample No.	OF 8-6					8-6-1		8-6-2	8-6-3	8-6-4	8-6-5		8-6-6		8-6-7	8-6-8	8-6-9	8-6-10	8-6-11	8-6-12	8-6-13	8-6-14	8-6-15	8-6-16	8-6-17	8-6-18	8-6-19	8-6-20	8-6-21	8-6-22
			Date	11/8/2016	7/27/2017	11/9/2018	11/9/2020	11/20/2020	7/27/2017	11/9/2018	7/27/2017	7/27/2017	7/27/2017	10/5/2017	11/20/2020	10/5/2017	11/20/2020	10/5/2017	10/5/2017	10/5/2017	10/5/2017	10/17/2017	10/17/2017	11/10/2017	11/10/2017	11/10/2017	11/10/2017	11/10/2017	11/10/2017	11/10/2017	11/9/2018	11/9/2018	11/9/2018
			MH #	CB 30D067	CB 30D067	CB 30D067	CB 30D067	CB 30D067	14D026	14D026	14D061	14D003	14D003	26D025	26D025	26D025	26D025	14D068	12D004	16D003	14D054	14D064	14D016	14D067	12D089	12D075	12D067	12D062	12D068	14D055	13D035	14D027	14D062
			Location Description	Pearson and Gorden	Pearson and Gorden	Pearson and Gorden	Pearson and Gorden	Pearson and Gorden	Bartlett at 57-59 from Alma direction	Bartlett at 57-59 from Alma direction	Behind houses on Bartlett Ave in field	Wilson from 307 trapelo (near Flett)	From Wilson near Flett	Creeley @ Leslie flow from Creeley	Creeley @ Leslie flow from Creeley	Creeley @ Leslie flow from easement	Creeley @ Leslie flow from easement	Maple near Bartlett. Possible unknown underdrain	Creeley @ Gilbert from 78/80 Gilbert	Upstream pipe of CB on Gilbert	Trapelo Rd from Upstream pipe parallel ro roadway (near Flett)	Trapelo Rd from Upstream pipe	From Flett at Wilson	Flett near Trapelo from Trapelo	Trapelo at Slade. Upstream pipe	Trapelo near Williston. Upstream pipe	Trapelo at Williston from upstream pipe on Trapelo	Trapelo @ Common	Trapelo @ Common	Flow from Jeanette at Bartlett	22 Alma	flow from Vincent at Bartlett	Trapelo Rd from Downstream pipe near TD Bank
E. Coli	MPN/100mL	235		1,550	14,400	1,200	10,600	1,300	12,750	<100	800	300	16,800	ND	<100	>20,000	5,000	>20,000	100	ND	ND	350	200	100	9,100	100	ND	ND	ND	<100	<100	<100	4,300
Ammonia (NH ₃)	mg/L	0.5		0.1	0.2	N.T.	0.25	0	0	0	0.25	0	0.5	0.35	0	2	0	0.6	0.15	0.1	0	0.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N.T.	N.T.	N.T.	N.T.
Surfactants	ppm	0.25		0.25	N.M.	N.T.	N.T.	N.T.	N.M.	N.T.	N.M.	N.M.	N.M.	N.T.	N.T.	N.T.	N.T.	0	N.T.	N.T.	N/A	0.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N.T.	N.T.	N.T.	N.T.
Enterococcus	/100mL			150	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.

Most Recent Reporting Period

ND

Sampled - None Detected

N.T.

Not Tested

NS

Not Sampled - Very little flow or wet but no flow

DRY

System was dry

Sub-catchment 10-1 - Tributary Sampling

Sampling Parameter	Unit	Threshold Value		Sampling Location, Sampling Date, and Measured Value									
			Sample No.	10-1			10-1-1		10-1-2		10-1-3	10-1-4	10-1-5
			Date	11/8/2016	7/27/2017	11/10/2020	7/27/2017	12/16/2020	7/27/2017	12/16/2020	12/16/2020	12/16/2020	12/16/2020
			MH #	Open Culvert	Open Culvert	Open Culvert	48D036	48D036	34D087	34D087	54D025	48D024	Open Culvert
			Location Description	Clafin St north of Alexander Ave	Clafin St north of Alexander Ave	Clafin St north of Alexander Ave	Clifton and Pleasant	Clifton and Pleasant	Clafin St and Alexander Ave from Clafin (South)	Clafin St and Alexander Ave from Clafin (South)	Belmont Hill School Athletic Center Parking Lot from Marsh St	85 Clifton St from East (Garfield Rd)	Winn's Brook at Hickory Ln and Clifton St
E. Coli	MPN/100mL	235		1,250	ND	7,900	500	2,100	100	10,600	<100	2,600	1,500
Ammonia (NH ₃)	mg/L	0.5		0	0	0.25	0.5	0	N.T.	2	0	0	0
Surfactants	ppm	0.25		0.25	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.
Enterococcus	/100mL			450	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.	N.T.

Most Recent Reporting Period

ND Sampled - None Detected

N.T. Not Tested

NS Not Sampled - Very little flow or wet but no flow

DRY System was dry