

Stormwater Management Plan 2017 Annual Report

Town of Belchertown
Belchertown, Massachusetts

April 2017



78 Interstate Drive
West Springfield, MA 01089

Table of Contents

Stormwater Management Plan 2017 Annual Report Town of Belchertown

1	Introduction.....	1
2	Public Education and Outreach.....	1
2.1	School Programs.....	1
2.2	Educational Materials Distributed	1
2.3	Citizen Groups.....	2
2.4	Modifications to Plan	3
2.5	Activities Schedule for Next Year.....	3
3	Public Participation	4
3.1	School Programs.....	4
3.2	Boy and Girl Scouts of America.....	4
3.3	Community Activities.....	4
3.4	Stormwater Management Committee.....	5
3.5	Public Meetings.....	5
3.6	Citizen Groups.....	6
3.7	Modifications to the SWMP.....	6
3.8	Activities Planned for Next Year	6
4	Illicit Discharge Detection and Elimination	7
4.1	Activities Conducted	7
4.2	Modifications to the SWMP.....	7
4.3	Activities Planned for Next Year	7
5	Construction Site Runoff Controls	8
5.1	Activities Conducted	8
5.2	Modifications to the SWMP.....	8
5.3	Activities Planned for Next Year	9
6	Post-Construction Stormwater Management	10
6.1	Activities Conducted	10
6.2	Modifications to the SWMP.....	10
6.3	Activities Planned Next Year	10
7	Pollution Prevention/Good Housekeeping	11
7.1	Employee Training.....	11
7.2	Street Sweeping	11

Table of Contents

Stormwater Management Plan 2017 Annual Report Town of Belchertown

7.3	Catch Basin Cleaning	11
7.4	Stormwater BMP Inspection and Maintenance	12
7.5	Deicer Material Storage	12
7.6	Preventative Maintenance	12
7.7	Transfer Station	12
7.8	Modification to the SWMP	13
7.9	Activities Planned Next Year	13

Appendices

End of Report

A	Revised Stormwater Management Plan Summary
B	Stormwater Public Education and Outreach Materials
C	Stormwater Public Participation/Involvement Materials
D	Field Screening Data Sheets
E	Construction Site Control Materials
F	Stormwater Training Materials
G	Street Sweeping & Catch Basin Cleaning Logs
H	Detention Pond Cleaning List
I	SPCC Facility Inspection Reports
J	Transfer Station and Hazard Waste Collection Materials

General Information

Stormwater Management Plan 2017 Annual Report Town of Belchertown

Municipality/Organization: Town of Belchertown

EPA NPDES Permit Number: MA041002

Annual Report Number and Reporting Period: Report #14: May 1, 2016 through April 30, 2017

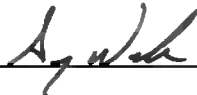
Contact Person: Steven J. Williams
Director, Department of Public Works
(413) 323-0415
swilliams@belchertown.org

Self Assessment:

The Town of Belchertown has completed the required self-assessment and has determined that the municipality is in compliance with all permit conditions.

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: 

Printed Name: STEVEN J. WILLIAMS

Title: PUBLIC WORKS DIRECTOR

Date: April 27th, 2017

1 Introduction

The Town of Belchertown developed a Stormwater Management Plan (SWMP) to comply with the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4 General Permit)* issued jointly by the United States Environmental Protection Agency (USEPA) and the Massachusetts Department of Environmental Protection (MA DEP) (effective May 1, 2003, expiring in 2017). The Town was granted coverage under this permit (MAR041002) on September 12, 2003. The Phase II regulated area in Belchertown consists of an approximately 1.8-square mile area located in the southwest portion of the Town. The General Permit requires the Town to prepare an Annual Report. This document constitutes the Town's Annual Report and summarizes the activities conducted to satisfy the permit requirements, modifications to the plan, and activities scheduled for the upcoming year. A copy of the modified SWMP Summary is included as *Appendix A*.

2 Public Education and Outreach

2.1 School Programs

As described in the SWMP, the Belchertown public school system provides numerous environmental educational programs in its curriculum. These programs will continue to be an integral part of the science curriculum and foster an appreciation for and a sense of responsibility for the environment. All schools participate in recycling programs. During the Year 9 permit year the schools changed over to a single stream recycling program. Overall, approximately 2,600 students received environmental-related education as a regular part of the school curriculum.

In Year 14, the Science Department continued to conduct classes and experiments at the Foley Field/Lake Wallace property.

The community also continues to develop the Lake Wallace Project, which would create a natural outdoor environment that: offers students a unique learning opportunity outside of the classroom; allows the incorporation of real-life teaching strategies into the curriculum, creates a safe haven that is accessible to the community for varied leisure and recreational uses; and maintains a natural resource which is aesthetically pleasing and that becomes a “jewel” of the community.

2.2 Educational Materials Distributed

Copies of the SWMP have been distributed to the public schools and the Town library as an educational resource. The SWMP also identified numerous educational resources for students and teachers. A stormwater link was created on the Town's website which includes links to a copy of the SWMP and annual reports. Additionally, a stormwater flyer was developed in 2007 to inform citizens and the development community about the Town's Stormwater Bylaw and low impact development (LID) practices. The flyer continued to be distributed in 2016 and is available on the Town website (a copy was provided with the 2007 annual report).

The Conservation Commission distributed a flyer that describes wetlands protection in Belchertown. The flyer includes details regarding impacts of lawn chemicals on wetlands when conveyed by stormwater (a copy was included in the 2010 annual report). The Conservation Commission distributed a second brochure on wetland protection during Year 9 stormwater (a copy was included in the 2011 annual report). In Year 14 (as in Year 10, 12 and 13), the Town posted an advertisement in *The Sentinel* newspaper on wetlands. The same advertisement was also linked to the Town's website as of February 7, 2014 (see *Appendix B* for a copy). Wetland education also appeared on the local cable channel, Channel 191(5) BCTV.

As described in *Section 6*, the Town adopted a Stormwater and LID Bylaw and associated regulations in January 2008. A checklist and flowchart were prepared to assist citizens and developers in determining whether the new bylaw applies to their project. This flow chart has been available throughout permit year 10. Copies of these documents were included in the 2009 annual report.

The Town also worked with Pioneer Valley Planning Commission to complete a LID Guidance Document in June 2008 that is currently available to local land use boards, municipal staff, the development community, and the public. A copy of this document was included in the 2009 annual report. The documents are also available on the Town website (link provided to Pioneer Valley Planning Commission page).

The Town also participates in the Connecticut River Stormwater Committee. This Committee worked to create additional stormwater messaging targeting dog owners as well as messaging aimed at increasing the general awareness of stormwater related issues by the general public. Door hangers were designed to be modified for use in each member community to elevate the visibility and increase understanding about stormwater among residents and businesses (see *Appendix C* for additional info).

Educational material promoting recycling was also disseminated to Belchertown residents with transfer station stickers. This campaign also appeared in *The Sentinel* newspaper (see *Appendix B* for a copy).

2.3 Citizen Groups

The following local citizen groups and organizations have been identified in the SWMP that provide public education resources on stormwater quality issues or could provide a public outreach avenue in developing stormwater awareness and developing partnerships with the public:

- Connecticut River Watershed Council
- Pioneer Valley Planning Commission
- Tri-Lakes Association
- Belchertown Land Trust

These groups continue to provide and/or have the capacity to provide public education resources on stormwater quality issues and continue to exist as support for future stormwater education programs in Belchertown.

In Year 8, the Pioneer Valley Planning Commission began revising the regional land use plan, Valley Vision. The plan was adopted in Year 13 and continued in Year 14. The Pioneer Valley Planning Commission reviews major projects for compliance with this document.

2.4 Modifications to Plan

No changes to the Public Education and Outreach Components of the SWMP are proposed at this time.

2.5 Activities Schedule for Next Year

The current MS4 General Permit expired at the end of Year 5. All MS4s in Massachusetts are now covered under an administratively extended version of the prior general permit (MAR041002) until the new permit becomes effective on July 1, 2017. Belchertown will implement requirements of the new permit, including modifications to this SWMP according to the timelines and dates required in the new 2016 MA-MS4 permit.

3 Public Participation

3.1 School Programs

Students in the Belchertown public schools are encouraged to volunteer in environmental activities over the summer vacation, in addition to after-school activities. Some of these ongoing programs include:

- An annual science fair open to the public
- Arbor Day ceremonies
- A trail cleanup event coordinated by the Science Department

3.2 Boy and Girl Scouts of America

Boys and girls may be involved in the Scout programs from ages 5 to 17. Scouts are involved in various community service programs and are available to assist with implementation of the Town's stormwater management program.

3.3 Community Activities

The Town of Belchertown Conservation Commission has been working to protect lands within the Town. In Year 13, The Commission applied for and was awarded a \$127,160 grant through the Local Acquisitions for Natural Diversity, (LAND) Grant program of the Mass. Executive Office of Energy and Environmental Affairs. The conservation goal for this property is to protect a large tract of contiguous forestland as a town forest. This 45 acre property, located along a very busy Route 9 in Belchertown contains wildlife habitat, scenic waterfalls and connectivity between the Mt. Holyoke Range and the Quabbin Reservoir. This property is also adjacent to about 350 acres of already conserved land, including Holland Glen Conservation Area, Wentworth Conservation Area, and several hundred acres owned by Cows Land Company, which are under Chapter 61. The Commission and DPW were also awarded a \$42,000 319 Non-Point Pollutant Discharge Grant through the Massachusetts Department of Environmental Protection, Bureau of Water Resources. Currently there is direct stormwater discharge and runoff flowing into Lake Arcadia. The proposed work is to provide treatment of stormwater from pipes and direct surface runoff that discharge directly into the lake. Currently there are two catch basins and a series of overland flows that discharge directly into the lake. The work at Lake Arcadia is located on Federal Street along the southwest shore near the intersection of Metacomet Street. A 604B Water Quality grant was awarded to the Town in 2012 to investigate water quality issues and identify any potential stormwater runoff issues surrounding the lakes area. This one location was identified as an area of great concern. Construction is anticipated to begin in the Spring of 2017. The Belchertown Conservation Commission and DPW are currently working with PVPC to address the annual and long-range management strategies needed to meet the water quality and other agreed-upon goals for this lake. This pollution prevention work and project will be especially beneficial to all 3 lakes (see *Appendix C* for additional information).

In Year 14, the Conservation Commission has been involved in numerous conservation area stewardship projects, collaborating with both private and public organizations, as well as individuals. The Wentworth

Conservation Area, Reed Conservation Area and Jabish Brook Conservation Area have all had trail work completed and additional signage was posted.

On April 22, 2016, the Department of Public Works (DPW) sponsored an Earth Day trash collection. The DPW provided town recyclable orange trash bags to residents wishing to partake in the collection of roadside trash. A total of 300 small trash bags were given out to 16 participants who collected trash in various locations throughout the town. All trash was disposed of at the towns' Transfer Station (see *Appendix C* for additional information and newspaper advertisements).

3.4 Stormwater Management Committee

In 2003, the Town established a Stormwater Management Committee to develop and implement the SWMP. The Committee consists of the following Town employees, board members, and an interested citizen:

- Gary Brougham, Town Administrator
- Steven Williams, DPW Director
- LeeAnne Connolly, Conservation Commission Administrator
- Judy Metcalf, Direction of Public Health, Quabbin Health District
- Doug Albertson, Town Planner
- Paul Adzima, Building Inspector
- Ted Bock, Fire Chief
- John Whelihan, Board of Assessors
- Patti Gambarini, Pioneer Valley Planning Commission
- Citizen Representative - currently vacant (searching for a new member)

Members of the committee met during Year 14 on October 21, 2016, January 12, 2017, and February 16, 2017 to discuss various aspects of the implementation of the newly released 2016 MA-MS4 Permit. Topics of these meetings included Stormwater and IDDE Bylaws, associated regulations, and the Town's program on the whole (see *Appendix C* for meeting minutes). The Town received its first application under the Stormwater bylaw in Year 5 and continued to receive applications (31 applications in Year 14).

3.5 Public Meetings

The SWMP and Phase II Stormwater Program were presented at a Board of Selectmen's meeting on January 29, 2003. Notice of the meeting was published in a local newspaper approximately one week prior to the meeting. The presentation was taped and aired on the local public access television station. This and previous annual reports are made available to the public on the Town of Belchertown website.

The Stormwater Management Committee met on October 21, 2016, January 12, 2017, and February 16, 2017 to discuss various aspects of the implementation of the newly released 2016 MA-MS4 Permit. The Committee plans to continue to meet in 2017 and 2018 as the new permit becomes effective to help coordinate the implementation of the various additional requirements included in the new MS4 permit.



The Belchertown Conservation Commission held sixty-four (64) hearings under the Wetlands Protection Act; thirty-seven (37) of these were Requests for Determination, twenty-five (25) were Notices of Intent, one (1) for Abbreviated Notices for Resource Area Delineation and two (2) for amended Orders of Conditions. The Commission issued nine (9) Emergency Certificates for the protection of public health and safety.

Additionally, the Town has been working with the Connecticut River Stormwater Coalition to create an IDDE bylaw. A draft of the bylaw was presented at an advertised public meeting on April 26, 2017. The bylaw is scheduled to be voted on at Town Meeting in May of 2017. The advertisement placed in *The Sentinel* newspaper, an informational handout explaining the importance of the IDDE bylaw, and a copy of the amended IDDE bylaw can all be found in *Appendix C*.

In Year 8, the Town of Belchertown was designated a “Green Community” under the Massachusetts Department of Energy Resources program. The goals of the program include maximize energy efficiency in public buildings, including schools, city halls, and public works and public safety buildings; generate clean energy from renewable sources; and manage rising energy costs. The Highway Departments efforts towards saving energy have not only met the required 20% goal in decreased consumption but exceeded it submitting a 21 % decrease in permit Year 12 (the fifth and final year of reporting). During Year 13, Belchertown was awarded for its achievement as only one of eight cities/towns to have achieved this requirement having reached its reduction goals each and every year of the programs five year benchmark. Hence in March 2015, the Department of Public Works was able to apply for and receive a Green Community Competitive Grant through the Department of Energy Resources (DOER). On June 30, 2015 the Department was awarded \$53,022 for an electronic fuel management system, new exterior storm windows for the Town’s Freedom and Recreation Centers, and funds for a new boiler for the Old Town Hall. All of these Green Community grants have been fulfilled (see *Appendix C* for additional information).

3.6 Citizen Groups

In Year 14 the Town continued to work with several citizen groups including the Tri-Lakes Association.

3.7 Modifications to the SWMP

No changes to the Public Participation components of the SWMP are proposed at this time.

3.8 Activities Planned for Next Year

The current MS4 General Permit expired at the end of Year 5. All MS4s in Massachusetts are now covered under an administratively extended version of the prior general permit (MAR041002) until the new permit becomes effective on July 1, 2017. Belchertown will implement requirements of the new permit, including modifications to this SWMP according to the timelines and dates required in the new 2016 MA-MS4 permit.

4 Illicit Discharge Detection and Elimination

4.1 Activities Conducted

A preliminary storm sewer outfall map showing stormwater outfalls within the Phase II regulated area has been prepared. The preliminary outfall map was prepared from the town's Geographic Information System (GIS) data, which includes storm drainage layers, as well as an initial outfall inventory performed by DPW staff during March 2003. In Year 14, DPW staff in conjunction with hired consultants worked to update the Town's storm sewer outfall mapping to include outfalls within the revised 'Urbanized Area' generated by the 2010 Census (work was completed at the end of the reporting period for Year 13 but is included here because information was not available when the report was being prepared in Year 13). Approximately 500 structures were inventoried within the revised Urbanized Area including approximately forty-eight (48 outfalls), their associated catch basins, and manholes. Copies of the ORI field data sheets are included in *Appendix D*.

Dry weather screenings of twenty-five (25) outfalls for detection of illicit discharges were performed on September 8, 2015. Outfalls were inspected using an outfall reconnaissance inventory (ORI) field sheet. One (1) of the outfalls was discharging at the time of inspection. Copies of the ORI field data sheets were included in the Year 13 report.

A regulatory review was completed relative to illicit discharge detection and elimination in Belchertown. A new IDDE bylaw has been drafted and will be voted on at Town Meeting in May of 2017. Although a bylaw does not exist in Belchertown that specifically prohibits illicit discharges, regulatory mechanisms that address non-stormwater discharges are in place to meet this requirement. These include the revised Stormwater Management Standards that were incorporated into the Massachusetts Wetlands Protection Act. These standards, which are administered and enforced by the Conservation Commission, specifically prohibit all non-stormwater discharges (with limited exceptions) to wetlands and watercourses or to stormwater management systems which discharge to wetlands and watercourses. Additionally, the Belchertown Board of Health regulations also address non-stormwater discharges relative to protection of public health and the environment.

4.2 Modifications to the SWMP

No changes to the Illicit Discharge Detection and Elimination component of the SWMP are proposed at this time.

4.3 Activities Planned for Next Year

The current MS4 General Permit expired at the end of Year 5. All MS4s in Massachusetts are now covered under an administratively extended version of the prior general permit (MAR041002) until the new permit becomes effective on July 1, 2017. Belchertown will implement requirements of the new permit, including modifications to this SWMP according to the timelines and dates required in the new 2016 MA-MS4 permit. As previously mentioned, the Connecticut River Stormwater Coalition has reviewed the Town's bylaws and regulations for compliance with the existing and new MS4 Permits. A

new IDDE Bylaw will be presented at Town meeting in May 2017. A copy of the draft bylaw can be found in *Appendix C*.

5 Construction Site Runoff Controls

5.1 Activities Conducted

The Commission reviewed and commented on all septic system installation permits, site plan reviews, subdivision applications, ANR plans, and Chapter 61, 61A and 61B withdrawal requests that occurred in the Town in Year 14. In addition, the Commission also reviewed the applications for all forest cutting plans and the Yearly Operational Plan for the vegetation management for the Massachusetts Electric Company and the New England Central Railroad Company.

The Town of Belchertown has adopted a Stormwater Bylaw that regulates construction and post-construction stormwater runoff for new development and redevelopment projects. The bylaw provides a clear set of stormwater management goals, standards, and design criteria to minimize the adverse impacts of stormwater runoff from land development projects. The bylaw also promotes LID and sustainable design practices. Copies of the existing bylaw, associated regulations, and permit application materials were included with prior annual reports. In Year 8, the Town began the process of revising the Stormwater Management Regulations (a copy of the proposed amendments to the regulations was provided in the 2011 annual report). The Connecticut River Stormwater Coalition has reviewed the Town's bylaws and regulations for compliance with the existing and new MS4 Permits in Year 14.

The Stormwater Bylaw addresses construction site runoff and erosion and sediment controls, including inspections and enforcement. Starting in July of 2009, the Conservation Commission administrator, under the guidance of the conservation commission, was assigned as the Stormwater Authority for the Town. Projects subject to the new bylaw will be documented by the Conservation Commission (the Stormwater Authority) and by Reviewing Boards. There were 31 stormwater permit applications in Year 14. The Department of Public Works continued to also review the Stormwater Management applications annually (see *Appendix E* for additional documentation).

In Year 14, the Conservation Commission also conducted numerous site visits to monitor ongoing projects throughout the year including subdivisions currently under construction, ANR lots and Stormwater site visits. In addition, the Commission has dealt with several outstanding enforcement issues and has been concentrating their efforts to bring these projects back into compliance (see *Appendix E* for additional documentation). The Commission reviewed the Environmental Notification Form for the Belchertown State School redevelopment project and is currently working with the project manager and the adjoining Lampson Brook Farm to provide protection, passive recreational access, environmental education and agricultural opportunities for this large undeveloped area. The Commission is also working with the Planning Board and the Recreation Department to create a handicapped accessible trail around Lake Wallace.

5.2 Modifications to the SWMP

At this time, no changes to the Construction Site Runoff components of the SWMP are proposed.

5.3 Activities Planned for Next Year

The current MS4 General Permit expired at the end of Year 5. All MS4s in Massachusetts are now covered under an administratively extended version of the prior general permit (MAR041002) until the new permit becomes effective on July 1, 2017. Belchertown will implement requirements of the new permit, including modifications to this SWMP according to the timelines and dates required in the new 2016 MA-MS4 permit.

The Connecticut River Stormwater Coalition has reviewed the Town's bylaws and regulations for compliance with the existing and new MS4 Permits. Proposed changes to the Town's Stormwater Bylaw will be presented at Town meeting in May, 2017, as they pertain to this minimum control measure.

6 Post-Construction Stormwater Management

6.1 Activities Conducted

As described in *Section 5.1*, a number of the new development and redevelopment projects that were constructed in Belchertown during the previous year included post-construction stormwater management controls to satisfy the performance standards in the Wetlands Protection Act and 401 Water Quality regulations and the *Massachusetts Stormwater Handbook*.

Specific information on the number of projects and the types of post-construction stormwater management measures was not tracked this year. Activities conducted and their method of tracking will largely be determined as stormwater management permit applications are received.

The Stormwater Bylaw addresses post-construction stormwater management and erosion and sediment controls, including inspections and enforcement. Projects subject to the bylaw will be documented by the Conservation Commission (the Stormwater Authority) and by Reviewing Boards. See *Section 5.1* for more information on permit applications and approvals. The Connecticut River Stormwater Coalition has reviewed the Town's bylaws and regulations for compliance with the existing and new MS4 Permits in Year 14.

6.2 Modifications to the SWMP

At this time, no changes to the Post-Construction Stormwater Management component of the SWMP are proposed.

6.3 Activities Planned Next Year

The current MS4 General Permit expired at the end of Year 5. All MS4s in Massachusetts are now covered under an administratively extended version of the prior general permit (MAR041002) until the new permit becomes effective on July 1, 2017. Belchertown will implement requirements of the new permit, including modifications to this SWMP according to the timelines and dates required in the new 2016 MA-MS4 permit.

Proposed changes to the Town's Stormwater Bylaw will be presented at Town meeting in May, 2017, as they pertain to this minimum control measure.

7 Pollution Prevention/Good Housekeeping

There are no municipal facilities located within Belchertown's Phase II regulated area (2000 Census). (The Town is aware of municipal facilities that are within the revised 'Urbanized Area' (2010 Census) which will be identified through the Town's planned re-mapping process.) Therefore, the focus of this minimum control measure is to ensure that municipal operation and maintenance activities associated with the infrastructure (e.g., roads and storm drainage system) within the regulated area are performed in a manner to reduce and prevent the discharge of pollutants to stormwater. Activities at other municipally-owned facilities are also addressed in this annual report as they relate to the requirements of this minimum measure.

7.1 Employee Training

Twenty-two Public Works staff (representing administrative, cemetery, highway, and water staff) received environmental-related training this year. The Belchertown Safety Committee also organized departmental training in topics including: Cold Weather Safety, 3 Point Contact, Electrical Safety, Eye Hazard, and Bloodborne Pathogens.

Stormwater training for DPW and other Town employees was conducted on April 4, 2017. The training was conducted in conjunction with annual training required by the EPA industrial stormwater permit program for the highway garage and wastewater treatment plant. The training included education on goals/objectives of the Phase II program, pollution prevention for public works activities, waste management, and good housekeeping. A copy of the employee attendance log for this and other highway trainings are included in *Appendix F*.

7.2 Street Sweeping

All of the streets within the regulated area were swept at least once during the reporting year. A street sweeping log has been developed by the Town to record the names of the streets swept and the amount of street sweepings recovered. A copy of this log is included in *Appendix G*. All of the roads in Belchertown were swept by the Town using a Town-owned sweeper (2005 Elgin Pelican) and Hi-Way Safety Rental. Approximately 903 yards of material were recovered throughout the Town. A majority of the roads that were not swept by the Town are privately-owned or State-owned. The DPW continues to follow a program for managing and disposing of street sweepings consistent with the Massachusetts solid waste regulations and applicable DEP guidance.

7.3 Catch Basin Cleaning

Appendix G includes a cleaning report listing the streets where catch basins were cleaned in Year 14. This was the fourth year funds were appropriated for three weeks of basin cleaning (attempting to get basins on a four year cleaning rotation). In 2016, 100 hours were spent cleaning approximately 282 Town basins at a cost to the community of approximately \$24,000 (not including disposal costs). The Belchertown DPW inspected a representative cross-section of the catch basins within the regulated area to confirm proper cleaning. Approximately 132 tons of catch basin spoils were collected in Year 14 with a disposal cost of approximately \$18,800.



7.4 Stormwater BMP Inspection and Maintenance

All of the facilities (45) were inspected in Year 14. Two additional detention basins were included and maintained in Year 14 because two new streets (Eugene Drive and Rimrock Street) were accepted by the Town. Brush and other vegetation within Town-owned detention basins were cut as needed (see cleaning log in *Appendix H*).

Two stormwater management facilities were accepted by the Town in Year 14.

7.5 Deicer Material Storage

Salt is stored at the DPW maintenance garage inside two dedicated salt storage buildings, constructed in 2004 and 2012. Approximately 2,075 tons of salt and 1,160 yards of sand were used in the winter of 2016-2017. Liquid deicers are no longer used in Belchertown – salt is pretreated instead.

7.6 Preventative Maintenance

DPW staff conducts weekly inspections of the waste oil collection area at the highway garage. Facility inspections, nine, related to the garage's Spill Prevention, Control, and Countermeasure (SPCC) plan were also completed in Year 14 (see *Appendix I* for inspection reports). Routine maintenance of the Town's fleet of equipment and vehicles is also performed at the highway garage.

The Department also completed the tenth year of a ten-year inflow and infiltration mitigation plan that was adopted to identify areas, which are allowing groundwater to enter the collection system. During 2016, activities included visual inspections of trouble areas, video inspections, and a cleaning of approximately 9,500 feet of collection system. Also, the Town completed a Collection System Operation and Maintenance Plan as an informative guide to help minimize sewer service interruptions and establish procedures so the Town can perform collection system maintenance more cost effectively.

Other sewer maintenance included completion of the entire South Main Street and Mill Valley Road sewer system replacement during the Route 181 Redesign and Construction Project. In addition the WWTP personnel assisted the DPW on rebuilding of 9 sewer structures, completed the replacement of a distressed section of the Jackson Street sewer main, and cleaned over 1,000 feet of storm sewer culverts as well.

Lastly, the WWTP was one of three facilities in Massachusetts that was recognized by EPA and the DEP for an excellence in Operations and Maintenance. Additional information about the award is contained in *Appendix C*.

7.7 Transfer Station

The Transfer Station and Recycling Center accepts household trash, recyclables, yard waste, waste motor oil, tires, appliances and bulky items such as furniture and mattresses. In 2016, approximately 646 tons

of general recyclables, 72 tons of scrap metal, 4 tons of textiles/clothing, 19 tons of electronics/computers, 1,900 gallons of waste oil, and 4 tons of tires were collected.

In Year 14, Belchertown publicized hazardous waste collection events in neighboring communities (see *Appendix J* for supporting documents).

7.8 Modification to the SWMP

At this time, no changes to the Pollution Prevention / Good Housekeeping components of the SWMP are proposed.

7.9 Activities Planned Next Year

The current MS4 General Permit expired at the end of Year 5. All MS4s in Massachusetts are now covered under an administratively extended version of the prior general permit (MAR041002) until the new permit becomes effective on July 1, 2017. Belchertown will implement requirements of the new permit, including modifications to this SWMP according to the timelines and dates required in the new 2016 MA-MS4 permit.

Appendix A

Revised Stormwater Management Plan Summary

STORMWATER MANAGEMENT PLAN SUMMARY TOWN OF BELCHERTOWN

BMP ID	Minimum Control Measure Best Management Practice (BMP) Description	Permit Year	Measurable Goal	Responsible Party
1	Public Education and Outreach			
1.1	Continue existing school educational programs.	1-14	The number of students receiving stormwater education as a regular part of the school curriculum. The number of programs offered.	Stormwater Committee, School Department
1.2	Provide schools with a copy of the education resources sections of the Plan. Make copies of the stormwater management plan available in the Town library.	1	Distributed plan copies to the schools. Distributed plan copies to the Town library.	Stormwater Committee
1.3	Create a stormwater link on the Town's website, including an electronic version of the stormwater management plan.	2	Created a stormwater link on the Town's website.	Stormwater Committee, MIS Department
1.4	Prepare a general stormwater overview and summary of the Phase II program for distribution as a newspaper flyer, or cable access television announcement. Continue to add materials to the Town's stormwater website.	3	The number of materials created and distributed or the number of stormwater-related articles published. Materials added to Town website.	Stormwater Committee, School Department
1.5	Distribute outreach materials on septic system maintenance, illicit discharges, proper lawn care, yard waste and pet waste disposal, or other issues identified by the Town within the regulated area.	14	The number of materials created and distributed to Town residents.	Stormwater Committee, Board of Health, DPW
1.6	Add a new link to the existing Board of Health website with guidance or recommendations on proper septic system maintenance.	14	Provided septic system maintenance guidance materials on Board of Health website.	Stormwater Committee, Board of Health, MIS Department
2	Public Participation/Involvement			
2.1	Form a Stormwater Committee to assist in developing the Phase II stormwater management plan and to coordinate implementation activities.	1	Formed a stormwater committee.	Stormwater Committee
2.2	Make the stormwater management plan available for public review and advertise/hold a public meeting.	1	Made plan available for public review and held public meeting in accordance with state public notice requirements.	Stormwater Committee
2.3	Continue existing school environmental outreach programs.	1-14	The number of students involved in environmental outreach programs. The number of programs offered.	Stormwater Committee, School Department
2.4	Expand Stormwater Committee to include interested citizens and other Town board members. The committee could assist the Town with recruiting and directing resources to implement recommended measures.	4	The number of additional stormwater committee members recruited.	Stormwater Committee
3	Illicit Discharge Detection and Elimination			
3.1	Create a storm sewer outfall map showing stormwater outfalls within the Phase II regulated area.	1	Created a storm sewer outfall map.	Stormwater Committee, DPW, MIS Department

3.2	Finalize storm outfall map and conduct dry weather outfall screening within regulated area.	3	Finalized outfall map and conducted dry weather screening of outfalls. Number of outfalls screened.	Stormwater Committee, DPW, Board of Health
3.3	Inspect outfalls with potential illicit discharges (as identified from initial dry weather screening), conduct outfall sampling, and track sources of illicit discharges.	3-14	Conducted source tracking of stormwater outfalls. Identified sources of illicit discharges.	Stormwater Committee, DPW, Board of Health
3.4	Eliminate a certain number or percentage of illicit discharges whose sources are identified.	3-14	Eliminated a certain number or percentage of illicit discharges whose sources were identified.	Stormwater Committee, DPW, Board of Health
3.5	Review model illicit discharge by-law to assess its applicability and feasibility for adoption in Belchertown. Modify existing by-laws to address the illicit discharge regulatory mechanism requirement.	4-5	Reviewed, drafted, and adopted illicit discharge by-law.	Stormwater Committee, DPW, Board of Health
3.6	Educational materials developed for minimum control measure 1 (Public Education and Outreach) to address illicit discharge detection and elimination.	3-14	Disseminated educational materials (e.g. newspaper flyer) on illicit discharge detection and elimination (see BMP 1.6) to the public.	Stormwater Committee, DPW, Board of Health
3.7	Update the storm sewer outfall map as needed (e.g., new census mapping).	3-14	Update the storm sewer map as needed	Stormwater Committee, DPW, MIS Department
4	Construction Site Runoff Control			
4.1	Review existing MADEP or other similar model by-law to assess its applicability and feasibility for adoption in Belchertown.	4	Reviewed model by-law. Held public meeting.	Stormwater Committee, Building Inspector, Planning Board
4.2	Draft and adopt a by-law with public input (draft language and legal review, conduct informational meetings as necessary, submit to warrant, schedule for vote at Town Meeting).	4-5	Drafted and adopted by-law.	Stormwater Committee, Building Inspector, Planning Board
4.3	Provide training for Town staff responsible for reviewing site plans to determine compliance with the newly adopted by-law. NO LONGER APPLICABLE, THE TOWN HIRES CONSULTANTS TO COMPLETE REVIEWS.	N/A	Conducted training for Town staff. NO LONGER APPLICABLE.	Stormwater Committee, Building Inspector, Planning Board
4.4	Develop methods and materials to provide for public inquiry and comments for construction projects, and procedures to respond to public inquiry. Develop site inspection procedures.	5	Developed procedures for public inquiry and associated response. Developed site inspection procedures.	Stormwater Committee, Building Inspector, Planning Board
5	Post-Construction Runoff Control			
5.1	Review existing MADEP or other similar model by-law to assess its applicability and feasibility for adoption in Belchertown.	4	Reviewed model by-law. Held public meeting.	Stormwater Committee, Building Inspector, Planning Board, Conservation Commission
5.2	Draft and adopt a by-law with public input (draft language and legal review, conduct informational meetings as necessary, submit to warrant, schedule for vote at Town Meeting).	4-5	Drafted and adopted by-law.	Stormwater Committee, Building Inspector, Planning Board, Conservation Commission

5.3	Provide training for Town staff responsible for reviewing site plans to determine compliance with the newly adopted post-construction runoff control by-law. NO LONGER APPLICABLE, THE TOWN HIRES CONSULTANTS TO COMPLETE REVIEWS.	N/A	Conducted training for Town staff. NO LONGER APPLICABLE.	Stormwater Committee, Building Inspector, Planning Board, Conservation Commission
5.4	Develop procedures for public inquiry and comments for post-construction stormwater BMPs, and procedures to respond to public inquiries. Develop periodic inspection procedures.	5	Developed procedures for public inquiry and associated response. Developed inspection procedures.	Stormwater Committee, Building Inspector, Planning Board, Conservation Commission
6	Pollution Prevention/Good Housekeeping			
6.1	Expand annual stormwater training program for appropriate Town employees to include street sweeping, stormwater BMP and drainage system maintenance including catch basin cleaning, winter road and lot maintenance, and solid/hazardous waste management.	1	Developed expanded stormwater training program.	Stormwater Committee, DPW
6.2	Develop record keeping procedures for street sweeping, catch basin cleaning, deicer application and usage, and stormwater BMP inspections and maintenance within the regulated area.	2	Developed record keeping procedures.	Stormwater Committee, DPW
6.3	Conduct training for appropriate Town employees.	1-14	Conducted training. The number of employees trained.	Stormwater Committee, DPW
6.4	Sweep streets within the regulated area, as necessary, on a rotating basis.	1-14	Conducted street sweeping within regulated area. The quantity of debris collected from street sweeping.	DPW
6.5	Establish inspection and maintenance schedules for storm drainage structures and stormwater BMPs within the Phase II regulated area.	3	Established inspection and maintenance schedules.	Stormwater Committee, DPW

Appendix B

Stormwater Public Education and Outreach Materials

WHAT YOU NEED TO KNOW ABOUT WETLANDS PROTECTION IN BELCHERTOWN

What are Wetlands?

“Wetland resource areas” include the commonly known cattail marsh, wet meadows, red maple swamps and open water pond, also rivers that generally flow throughout the year, 200-foot riverfront areas which border rivers or streams on both sides, intermittent streams on both sides, intermittent streams that dry up during part of the year, associated banks, low-lying flood plains and vernal/ephemeral pools. These areas (except riverfront areas) are surrounded by “buffer zones” -100ft. wide protective zones that protect wetlands from human impacts.



Why are they important?

Wetland resource areas provide critical habitat to wildlife and help maintain the aesthetic beauty of our town. They also provide priceless yet “free” services including:



- Drinking water purification
- Groundwater recharge
- Flood control and storage
- Pollution prevention
- Wildlife Habitat



Wetlands Do's and Don'ts

Do's: Mowing an existing lawn, working in an existing garden, pruning/maintaining existing landscaping, planting native vegetation, hiking, horseback riding, passive recreation.

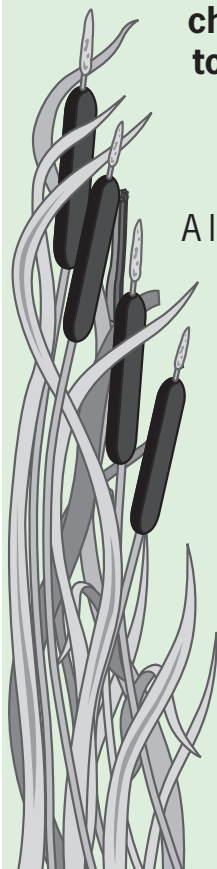
Don'ts: Dumping yard waste, leaves, grass, manure, any work within 100ft of a vernal pool/ephemeral pool, dumping dirt or other fill, draining/pumping water to or from a wetland, pond or stream, building or removing dams.

The Conservation Commission strongly recommends that you avoid using chemicals anywhere on your property due to the potential hazards that they pose to your drinking water, your children and your pets.

A large percentage of Belchertown homeowners have wetland resource areas on or near their property.

If you plan to do any work in a wetland, within 100ft. of a wetland, or within 200ft. of a stream or river, such as: tree or vegetation removal or clearing, grading, excavation or paving, landscaping, construction, etc. or ANY other activity that might alter wetlands or their buffer zones, you must contact the Belchertown Conservation Commission.

THANK YOU FOR HELPING TO PROTECT
BELCHERTOWN'S NATURAL RESOURCES



BELCHERTOWN TRASH BAG FEE INCREASE

EFFECTIVE OCTOBER 1, 2016
the cost of Belchertown's
large orange recyclable trash bags
WILL INCREASE ONE DOLLAR
from \$19.00 to
\$20.00 per bundle of ten bags.

Small bags currently
sell for \$13.00 per bundle
of ten bags.



THE "YES AND NO" OF WHAT CAN GO IN THE RECYCLING BOXES



YES	NO			
<u>Aluminum</u> <i>Empty and rinse.</i> ➤ cans ➤ aluminum foil ➤ pie pans, aluminum trays	siding scrap metal foil-wrapped beverage pouches (Capri Sun) pots & pans utensils tools			
<u>Steel (tin) cans</u> <i>Empty and rinse. Labels do not need to be removed.</i> ➤ food and beverage cans (metal lids OK) ➤ pet food, soup cans (metal lids OK) ➤ EMPTY aerosol spray cans (food, laundry, beauty)	hangers scrap metal paint cans pots & pans utensils tools	toys appliances pipes fuel tanks car parts	aerosol spray cans that contained hazardous products: spray paint, insecticides, etc.	
<u>Glass</u> <i>Empty and rinse.</i> <i>Labels do not need to be removed. Keep lids on.</i> ➤ food and beverage bottles and jars	ceramics baking dishes dishware drinking glasses broken glass	cookware (Pyrex) coffee mugs medicine bottles plate glass mirrors	light bulbs fluorescent lights eye glasses vases holiday lights	windows glass art wine corks canning jars
<u>Plastics</u> <i>Empty and rinse. Keep caps on.</i> <i>ONLY containers smaller than 2.5 gallons are recyclable.</i> ➤ food containers: margarine, yogurt, cooking oil, condiments, peanut butter ➤ beverage bottles and jugs: soda, water, juice, milk ➤ detergent bottles, dish soap bottles ➤ personal care bottles: shampoo, soap, etc. ➤ clear plastic clamshells (no black or Styrofoam)	plastic bags plastic wrap/ cling wrap Styrofoam (polystyrene) cups/ take-out containers cups, plates, utensils, straws cookie trays black plastic liners from food packaging compostable plastics cellophane food bags (e.g., candy bars, cookies, pasta) frozen food bags/pouches	meat trays egg cartons medicine & pill bottles “packing” peanuts packaging of any kind: foam, blister pack laundry baskets toys flower pots 5-gallon pails; buckets VCR tapes, CDs, cases tarps	containers that contained motor oil, anti-freeze, pesticides, pool chemicals or other hazardous substances curbside/other plastic bins dry cleaner/garment bags indoor/outdoor/patio furniture swimming pools hoses; PVC piping or tubing containers bigger than 2.5 gallons Nalgene water bottles holiday lights	
<u>Cartons</u> <i>Empty, rinse, & flatten. Throw away straws.</i> <i>Recycle with containers, not with paper.</i> ➤ milk and juice cartons (plastic spout OK) ➤ soymilk, soup and drink boxes (remove straws)	foil-wrapped pouches (Capri Sun) frozen juice cartons frozen food packaging plastic straws			
<u>Paper</u> <i>Clean paper only. Flatten boxes.</i> <i>“Windows” in envelopes, staples, paper clips, tape all OK</i> ➤ newspaper, inserts, magazines, junk mail ➤ white, colored, glossy, and construction paper ➤ shredded paper—put in paper bag ➤ corrugated cardboard, clean pizza boxes (no grease or food) ➤ boxboard (for example, cereal boxes) ➤ gift wrap, gift bags, cards, gift tissue paper (no metallic inks, foil, wire, glitter) ➤ paperback books and phonebooks	soda, beer cartons paper cups paper plates egg cartons frozen juice cartons take-out containers	butter, margarine boxes paper towels, napkins tissues Tyvek or padded envelopes hardcover books stickers & sticker sheeting	glossy boxes that show white strands when torn (frozen food boxes) blueprints dirtied paper (pet waste, paint) copy paper packaging	

Appendix C

Stormwater Public Participation/Involvement Materials

Department of Public Works



Parallel to last year, the Farmer's Almanac predicted a harsh bitter cold winter for the 2015-2016 season with anticipated large snowfall amounts and consistent nor'easter temperatures for January and February. Although the weather remained antipodes to their predictions for snowfall, we did encounter a few winter mentionables which began on New Year's Eve. Sleet mixed with freezing rain left icy and glazed over road conditions which kept our crews on the move conducting an array of winter plowing procedures. Much to our relief, we remained unscathed as Belchertown dodged a major nor-easter donned "SnowZilla" on January 23 which crippled the entire mid-west and portions of the northeast dropping as much as 42" of snow in some areas. February and March picked-up slightly as we encountered minor snow scuffs and freezing rain events that barely made it into the record books. However, April showers came in the form of snow. Although we were well into springtime we encountered a winter anomaly that took us all by surprise the early morning of April 3 and continued through April 4 dropping 9 inches of snow over a seven hour span. It was a grueling day for our entire crew and private contractors who were called upon to assist clearing roads due to the antagonistic snowfall. As with every year, we remain grateful to the towns' private contractors who are always ready to assist on a moment's notice.

Overall, the cold season left us with a winter snow drought with accumulations totaling a mere 28.5 inches as compared to previous years shown below.

Year	# of Snow Events	Inches/Snowfall
2014	25	75.25"
2015	28	82.00"
2016	15	28.50"

The Department of Public Works additionally handles several aspects of other town projects; those of which we will outline in this report.

GREEN COMMUNITIES – The Department of Public Works has now completed its seventh year of reporting since the towns Green Communities designation in May, 2010. We successfully submitted our Annual Green Community Report on November 18, 2016 to the Department of Environmental Resources (DOER). As expected, due to the one of the coldest winters we've seen in years, (FY'16) our town buildings heating fuel costs were heavily expended producing less than favorable energy savings to report. In addition, the reporting guidelines continue to become stricter with each passing year in that reporting is now required to be categorized under weather normalization patterns which can offset data according to costs relative to electricity/kilowatt usage and temperature comparisons from year to year. Despite the changes incurred upon us we continue to monitor every aspect of energy savings regarding the towns' buildings, vehicles and equipment; always keeping a green approach wherever it can be applied.

Green Communities Competitive Grant Program – Just one year later, our PetroVend Fuel Management System and Software Program, New Harvey Exterior Storm Windows for both the towns Recreation and Freedom Center Buildings as well as a New Viessman Boiler with Riello Burner for the Old Town Hall have all been proven successful and produce actual energy savings equating to reduced costs for the Town.

SIEMENS – Belchertown residents voted unanimously (Yr. 2011) to have the town enter into a financing agreement in the amount of \$3,312,000.00 to fund energy management services for town-owned buildings under an Energy Savings Performance Contract with Siemens Engineering. The Department of Public Works has been a key player working with and negotiating projects with Siemens Building Technologies Inc., an independent energy auditing company. The company's reporting of an Investment Grade Audit which began in late 2010 is now complete. Belchertown's municipal buildings and schools such as the Lawrence Memorial Hall, EMS Building, Recreation Center, Freedom Hall, Police Department, Wastewater Treatment Plant, Chestnut Hill Community School, Tadgell Elementary School and Senior Center have all profited from this program by receiving an array of various new installs and/or upgrades such as boilers, lighting, new building envelopes consisting of insulation and weather-stripping, roofing, exhaust fans, vending machine miser(s), lighting controls, smart thermostats, drives, exterior lighting, walk-in cooler/freezer controls and roofing to name a few. As of July 15, 2016, the total cost for the completion of these services totaled \$3,019,807, coming in under the expected financing amount as stated earlier.

COMMUNITY PRESERVATION GRANTS- CPA - This year the DPW received grant funding for the rehabilitation of Parsons Field & Stonewall located on Jabish Street in the amount of \$310,000.00 which will allow for much needed repairs and the addition of a parking area. In addition, the recreation area will now become ADA accessible with the addition of a parking area, compliant bathroom facilities and a staircase with guided handrails down to the lower field. The Department conducted the bid opening on December 6, 2016, hosted by Roy Brown Associates, with the awarding bid going to contractor H.M. Nunes & Sons Construction, Inc. from Ludlow, Ma. Work is expected to commence early Spring, 2017.

ROADWAYS & RECONSTRUCTION - In March of 2016, in keeping with Mass DOT's final approved contract for the Route 181 Reconstruction and Roadway Project, approved contractors Ludlow Construction continued work along the route and began paving at the northerly end of the Belchertown – Palmer town line. The projects baseline schedule of work to be performed consisted of installing Verizon new utility poles, aerial services and anchors, installation of sidewalks, guardrails, Gabion and stone wall work. By June 1, 2016, the project was underway and in full operation. To date, the completed work has made significant enhancements and appearance to Route 181 citing increase in overall site distance and ease of traffic flow. Together, the Department of Public Works Director, Steve Williams and onsite MassDOT Engineer, Todd Moylan has addressed numerous concerns and questions residents had along the way. As of this report, the project is now moving into its final stages with expected project completion slated for Spring of 2017.

STORMWATER MANAGEMENT- The Department of Public Works continues to review all Stormwater Management applications throughout the year, thus completing 38 applications in 2016. The Department's Annual Stormwater Training for all divisions was held on April 6, 2016 and led by Jennifer Cavanaugh, project engineer from Fuss & O'Neil, who prepares the final documentation of the Departments activity for the year and in order to maintain compliance.

EARTH DAY - The Department celebrated its annual Earth Day event on Friday, April 22, 2016 by offering town recyclable orange trash bags for residents wishing to partake in the collection of roadside trash. A total of 300 small trash bags were given out to 16 participants, including the Girl Scouts/Troops of Belchertown. All trash was disposed of at the towns' Transfer Station. The Department wishes to thank all

town residents who participated in this years Earth Day event and appreciates your efforts towards keeping Belchertown clean.

SAFETY - Our Safety Committee was active this past year as well. They organized departmental training in several topics including: Work Zone /Traffic Safety, CPR, Confined Space, Lockout/Tag out, Fall Protection, and OSHA 10. They also completed a walk through of the DPW buildings to insure safe work practices and improvements were being implemented.

NEW VEHICLES & EQUIPMENT

2016 Freightliner 108SD Dump Truck w/Wing

TRADED VEHICLES

1995 Cat 4 x 4 Backhoe

1995 Ford L8000

1994 LeeBoy 8000BH Paver

HIGHWAY DIVISION - This division took advantage of “El-Nino” to the fullest extent. Due to the unusual spring-like temperatures, non-frozen ground conditions and lack of snowfall crews were able to conduct continuous work throughout all four seasons. Reparations to roads, potholes, roadside maintenance, culvert pipe replacement and drainage issues took center stage due to the minor and intermittent snow removal operations. In addition, 11 mailbox repairs and/or replacements were tended to due to winter season damage.

During the week of March 14-18, 2016, the DPW completed the demolition of the Old Highway Garage located at 41 Jabish Street due to its state of dilapidation and total disrepair. The building in its entirety was leveled in just a few hours due to the expertise of our crew and private contractors who gratefully provided their assistance.

This division additionally conducts an array of numerous and time consuming activities that have become increasingly cumbersome as the years progress. Some of which include crack sealing, clearing of brush and vegetation from the roadsides, removing debris and sediment from detention basins, catch basin cleaning, street sweeping, sign installation, line painting and repairing equipment. Potholes were well tended to throughout the entire year; again as a result from this year’s winter’s hiatus.

Our roads remained well-traveled and maintained during all seasons of year 2016. During 2015-2016 snow season our average expenditure per inch of snow removed from the roadways was \$5,781.03 approximately 6.76% higher than 2014/2015 season (FY’15/ \$5415.18). The total cost for the season was \$163,314.00

The division was responsible for the preparations for all resurfacing/reclamation/overlay projects with bituminous concrete overlay and lane markings. The following streets received this much needed work.

<u>Street ~Resurfacing</u>	<u>Length/Ft.</u>	<u>Cost</u>
Bardwell Street	4550’	\$122,877

Barrett Street	2400'	\$16,368
BayPath Road	1650'	\$12,504
Brandywine Drive	1500'	\$25,474
East Street	4150'	\$61,547
Enoch Sanford Road	2700'	\$18,414
Rockrimmon Street	2400'	\$70,722
Springfield Road	1600'	\$24,612
Tucker Lane	935'	\$16,832
Warren Wright Road	5650'	\$165,250
Westwood Drive	1050'	\$16,199
Shaw Street	2515'	\$16,000
Blue Meadow Road	3168'	\$20,000
Juckett Hill Road	<u>1316'</u>	<u>\$ 9,000</u>
	35,584ft.	\$595,799

<u>Crack Seal</u>	<u>Length/Ft.</u>	<u>Cost</u>
East Walnut Street	1585'	\$1467
George Hannum Street	4900'	\$5031
Jackson Street	3300'	\$3406
Main Street	1267'	\$1572
North Main Street	3538'	\$4298
Park Street	<u>1200'</u>	<u>\$1362</u>
	15,790ft.	\$17,136

Totals: 20 Streets, 51,374ft. Cost: \$612,935.00 = 9.7 miles

PUBLIC WAY ACQUISITIONS - At Annual Town Meeting held on May 9, 2016 Belchertown residents voted to accept the following streets/subdivisions, as public ways. The addition of these roadways will be added to the town's street inventory list and contribute to the amount of Chapter 90 reimbursement funds for Belchertown.

- Crestview Drive – Off Barton Avenue
- Old Sawmill Road –aka: Hunters Ridge, Phases 1 & 2
- Oasis Drive at Stonegate Farm

EASEMENTS/ ORDER OF TAKING - In addition, this year the Department picked up the ball to acquire all easements associated with the public way acquisitions for Crestview Drive, Old Sawmill Road and Oasis Drive. This is an arduous and lengthy task that requires compounded legal abutters notifications, public hearings and final takings. The procurement of the roadway and/or drainage easement(s) will allow the DPW full access to these specific areas, whenever necessary.

WASTEWATER TREATMENT PLANT -This past year the Wastewater Treatment Plant received and treated approximately 112,130,000 gallons of wastewater; lower than what was received in 2015 which was 120,517,000 gallons. They also had twenty-four new service connections during the year, four were from within the Tri-Lakes Sewer System and twenty came from the Central Sewer System. This brings the total number of customers served to 1742 equivalent dwelling units and also the highest number of new sewer connections since 2006.

The Division staff kept busy working on some facility repairs and improvements to include two disk filter cloth upgrades, concrete and caulking repairs to three wastewater tanks, brick veneer repairs to 3 buildings and recoating of over 100 feet of facility sludge and secondary ductile iron piping.

The Division also completed a permit required Collections System Operations and Maintenance Plan. This O&M Plan's was developed as an informative guide to help minimize sewer service interruptions and establish procedures so the town can perform collection system maintenance more cost effectively. For example, during 2016 activities included visual inspections of trouble areas, video inspections, and a cleaning of approximately 9500 feet of collection system. And also completed, was the installation of three trenchless sewer liner cast in place pipe repairs on two crushed sewer sections which were identified from past robotic sewer inspections.

Another requirement of the Collection System O. &M. Plan is to educate the collection system users on the importance of reducing the collection system's clean water Inflow and Infiltration. As many of the sewer system users are aware, in the past nine years the Town has been working on locating and repairing some of the sewer system defects. This next spring the Division will be taking part in a DEP required Inflow and Infiltration Study which will include data for flow monitoring, rain fall and ground water infiltration. The intent of this requirement is to identify any I&I on a system wide approach by comparing data from several segments of our collection system.

Other sewer maintenance included was the completion of the new South Main Street and Mill Valley Road sewer system. This sewer line and infrastructure replacement was done in conjunction with the Route 181 Redesign and Construction Project.

On a final note, our Wastewater Treatment Plant was one of three facilities in Massachusetts that were recently recognized by the DEP for an excellence in Operations and Maintenance. This award could not have been achieved without the overall efforts from all of the Facility Staff and their willingness to regard this facility as their own.

TRANSFER STATION - In October, 2016 the Department welcomed new Transfer Station Supervisor, Elmer "Chuck" Dodge who has restored and continued to maintain the Stations cleanliness and daily functions. All aspects of the towns' waste disposal activities are monitored and in adherence to the Transfer Station Rules & Regulations. Violators consisting of non-permitted users and failure to use the town's orange recyclable trash bags are recognized with the assistance of the stations onsite surveillance system and those identified as not adhering to the towns' set regulations are promptly notified. The annual Transfer Station Rules & Regulations can be found on the DPW/Town website located at www.belchertown.org. DPW link/page.

Our residential number of household Transfer Station users totaled **1643** (FY'16) which continues to vary slightly from year to year for those who participate in our disposal/recycling program. The following quantities of solid waste and recyclables were generated during year 2016.

<i>Recyclable</i>	<i>Per Unit(s)</i>	<i>Year 2015</i>	<i>Year 2016</i>
Paper & Cardboard (co-mingled)	Tons	573.2	646.23
Waste Oil (gals)	Single	1500	1900
Tires (single)	Tons	5.67s/513t	510s/4.39t
Solid Waste (tons)	Tons	720.55	728.9
Electronics (tons)	Tons	14.95	18.67
Scrap Steel (tons)	Tons	58.98	72.01
Textile (tons)	Tons	3.93	3.68
Hazardous Material (NEDT)	Pounds	724lbs.	522lbs.

In addition, the Department was able to maintain pricing now entering into its eighth year in a row (FY' 09) for a Transfer Station Permit Sticker fee set at \$100.00 per year and discounted for senior citizens age 65+ at \$80.00. However, effective October 1, 2016 prices were increased slightly per bundle for large bags from \$19.00 per bundle of 10 to \$20.00 per bundle of 10 (up \$1.00 per bundle), and small bags per bundle of 10 remained at \$13.00. Bags may be purchased at a variety of in-town stores, DPW, Finnerty House and at the Transfer Station.

The Department additionally applied for and received \$3250 from the MassDEP "Sustainable Materials Recovery Program" in which payments are provided to municipalities who maximize reuse, recycling and waste reduction. Whereas municipalities receive payments according to the number of criteria points earned in the program, the Department earned a total of ten points through its "Pay as You Throw Program", yard waste drop off, bulky items collected and reciprocal Hazardous Waste Collection Events. In turn, this funding will be designated towards the purchase of recycling costs/ materials for the town.

In addition and as part of the MassDEP Grant award we re-implemented a revised "Buy Recycle Policy" that was approved by the Board of Selectmen (Orig. Jan.25.1998, Rev. May 2.2016), to all Lawrence Memorial Hall Offices and Finnerty House. This policy is to ensure that whenever practicable, all purchasing of paper products contain a minimum of 30% recyclable content. This policy is designed to ultimately minimize waste, preserve the environment and promote recycling. In addition, each municipal office was provided with an additional blue recyclable plastic bin to exercise internal paper waste.

CEMTERY DIVISION: In 2016, the Department conducted a total of 35 burials consisting of 15 earthen burials and 20 cremations. In addition, 19 Deeds were issued for 12 lots and 2 lots were transferred back to the town for re-sale. Other routine activities included archiving burials, issuing deeds, conducting lot sales, mapping, grounds maintenance, lot layouts, snow staking and pinning of cemetery burial rows, and headstone repair. The Belchertown Cemetery Division continues to archive all deceased on a continual basis with cemetery Burial Certificates dating as far back to year 1795; all of which are currently housed in fire-proof file cabinets for the preservation of these important documents for years to come. In addition, this division successfully aids anyone conducting a genealogical research with requests coming in from as far as California and Wisconsin. This division is also responsible for the processing and receiving of military markers sent from the Department of Veterans Affairs for our deceased military veterans.

BUILDINGS GROUNDS AND MAINTENANCE: The Buildings, Grounds and Maintenance Division was extremely busy during 2016 caring for all town buildings, 200+ acres of grounds/open space to include recreational and school fields, conservation trails, nine cemeteries, athletic fields and town properties. Most of their time was spent performing routine maintenance activities including snow removal, painting,

equipment repair, mowing, field preparations, leaf raking and the installation of seasonal decorations. They also completed an impressive list of projects, all of which were time consuming, required knowledge of, and geared towards decreasing energy costs to the town as well as preparing for future harsh weather events as those experienced this past year. Below is a list, to name a few, of the projects this division conducted.

- Demolished Old Animal Control Building
- Built a new Animal Control Building - tripling the size of the facility, quadrupling the amount of storage with full facility's consisting of: a bathroom, grooming station, laundry, garage, office and quarantine area.
- Demolished the Chestnut Hill Community School Playground due to extensive safety concerns.
- Conducted removal of brush cutting and overgrown along Jabish Street hill side of Parsons Field for stonewall work to begin.
- Cleaned out old Highway garage and assisted with demolition.
- Assisted with the annual setup and removal of the Belchertown Fair components.
- Conducted annual repairs to the Town Common which consisted of grading, loaming, and seeding to re-establish the turf..
- Repaired Baseball fields at High School and Jabish School.
- Conducted the seeding and fertilization of all Recreation and School fields.
- Annual maintenance and mowing of town owned buildings and cemeteries.
- Maintained and reported on all 48 retention ponds throughout town ways.

This Division also assisted with town wide annual roadside mowing and brush cutting activities. Nearly all of the roads were mowed and approximately two miles of roadsides were cleared of excess brush to increase sight distance and to provide space for snow storage.

TREE AND VEGETATION CONTROL: On November 24, 2015, Belchertown Tree Warden Steve Williams received grant funding in the amount of \$8000 to conduct a "Tree Risk Assessment Inventory" for the Town of Belchertown. This grant was awarded by the Department of Conservation and Recreation (DCR) and Energy and Environmental Affairs (EOEA) to be utilized towards tree stewardship, community based inventory and urban forest management.

As with every year, the Towns Tree Warden attends the Massachusetts Tree Warden & Foresters Association Annual Conference in order to receive recertification and accreditation to conduct work in the field. In year 2016, the Tree Warden supervised the removal of 99 trees consisting of the following varieties: 15 oak, 8 ash, 9 pine, 63 maples, 1 hemlock, 1 birch and 2 spruces. All of these trees were diseased, damaged, or deceased publicly owned street trees ranging in size from eight inches to four feet in diameter. In addition, numerous on-site visits were conducted in order to determine various reports of tree damage caused by weather damage, rot, or infestation.

CONCLUDING STATEMENT

In closing, I would like to express my gratitude and thanks to each of our employees (listed below), for another year of hard work and long list of accomplishments.

Dylan Bachand, WWTP Laborer/ Maintenance Division Laborer
Christopher Besancon, Maintenance Division Laborer
Heather Blanchard-WWTP Operator I
Max Bock, Buildings Maintenance & Grounds, Supervisor
Darin Braese, Highway Division Operator I/II

Ed Burton, Highway Division, Foreman
Terry Chevalier, DPW Laborer
David Clegg, Buildings, Maintenance & Grounds, Foreman
Steven Cole, WWTP Operator I
Melissa Cook, Maintenance Division Laborer
Rollin Dewitt, WWTP Operation's Supervisor
Elmer Dodge, Transfer Station Supervisor
Darren Gallagher, Transfer Station Laborer
John Grossman, Maintenance Division/ DPW Laborer
Anthony Hurtado, Transfer Station Laborer/ WWTP Laborer
Karl Jensen, Maintenance Custodian
Christopher Johnson, Maintenance Division Laborer
Frederick Kirchner, Maintenance Division Laborer
Denis Lessard, Highway Division Operator II
Christopher Laurenzo, Highway Division Supervisor
Donna Lusignan, Administrative Assistant to the Director
Sean Madden, Maintenance Division/DPW Laborer
David Martel, Highway Division Mechanic
Joshua Miller, Transfer Station Attendant
John Panzetti-DPW Highway Division Operator I
Leo Peet, Highway Division Operator
Lenny Russell, Transfer Station Supervisor
Stephen Sikes, Highway Division Mechanic
Scot Swistak, Highway Division Operator II
Samantha Taylor, Maintenance Custodian
David Wanczyk, WWTP Operator I

Seasonal/Part-time Employees

Lawrence Belbin – Highway Division
Kenneth Sheret-Highway Division
Marc Chmura-Maintenance Division
Dylan Dupont – Maintenance Division
Nicholas Leduc– Maintenance Division
Derek Gariepy –Maintenance Division
Frederick Kirchner- Maintenance Division

Respectfully submitted,
Steven J. Williams, Director of Public Works

.



CONSERVATION COMMISSION

Lawrence Memorial Hall
2 Jabish Street, Post Office Box 670
Belchertown, Massachusetts 01007-0670
(413) 323-0405

Conservation Commission Annual Report For 2016

The Belchertown Conservation Commission held sixty-four hearings under the Wetlands Protection Act; thirty-seven were Requests for Determination, twenty-five were Notices of Intent, one for Abbreviated Notices for Resource Area Delineation and two for amended Orders of Conditions. The Commission issued nine Emergency Certificates for the protection of public health and safety; the majority of the emergencies were for single-family homes with wells that had gone dry as a result of the severe drought. The Commission also reviewed and commented on all septic system installation permits, site plan reviews, subdivision applications, ANR plans, and Chapter 61, 61A and 61B withdrawal requests. In addition, the Commission also reviewed the applications for all forest cutting plans and the Yearly Operational Plan for the vegetation management for the Massachusetts Electric Company, National Grid and the New England Central Railroad Company.

The Conservation Commission administrator, under the guidance of the Conservation Commission, is the Stormwater Authority for the Town. This responsibility is for the enforcement and permitting process for the Belchertown Stormwater Bylaw and regulations which went into effect in January, 2008. For the year 2016, there were thirty-eight applications submitted for review. These regulations serve to protect public health, environment, and general welfare by establishing requirements and procedures to control the adverse impacts of stormwater runoff from new development and redevelopment.

The Commission has conducted numerous site visits to monitor ongoing projects throughout the year including housing lots, subdivisions currently under construction, ANR lots and Stormwater site visits. In addition, the Commission has dealt with several outstanding enforcement issues and has been concentrating their efforts to bring these projects back into compliance. The Commission reviewed the Environmental Notification Form for the Belchertown State School redevelopment project and is currently working with the project manager and the adjoining Lampson Brook Farm to provide protection, passive recreational access, environmental education and agricultural opportunities for this large undeveloped area. The Commission is also working with the Planning Board and the Recreation Department to create a handicapped accessible trail around Lake Wallace.

The Commission was awarded a \$127,160 grant through the Local Acquisitions for Natural Diversity, (LAND) Grant program of the Mass. Executive Office of Energy and Environmental Affairs. This 45 acre property, located along a very busy Route 9 in Belchertown contains wildlife habitat, scenic waterfalls and connectivity between the Mt. Holyoke Range and the Quabbin Reservoir. This property is also adjacent to about 350 acres of already conserved land, including Holland Glen Conservation Area, Wentworth Conservation Area, and several hundred acres owned by Cowls Land Company, which are under Chapter 61. The closing date for this property is expected to be in early 2017. The Commission

and DPW were also awarded a \$42,000 319 Non-Point Pollutant Discharge Grant through the Massachusetts Department of Environmental Protection, Bureau of Water Resources. Currently there is direct stormwater discharge and runoff flowing into Lake Arcadia. Currently there are two catch basins and a series of overland flows that discharge directly into the lake. The work at Lake Arcadia is located on Federal Street along the southwest shore near the intersection of Metacomet Street and is anticipated to begin in the Spring of 2017. The Belchertown Conservation Commission, the Belchertown Lake Committee, Tri-Lakes Association and DPW are currently working together to address the annual and long-range management strategies needed to meet the water quality and other agreed-upon goals for these lakes.

The Conservation Commission has been involved in numerous conservation area stewardship projects, collaborating with both private and public organizations, as well as individuals. The Wentworth Conservation Area finally had the walking bridge repaired and the Reed Conservation Area had a flow device installed so that we could live in harmony with the resident beaver family. New trails have been blazed on the Reed Conservation Area as well as an updated trail map. The Conservation Commission would like to thank all volunteers and the Belchertown Department of Public Works for all their assistance with the stewardship and maintenance of our conservation areas.

The Conservation office is in the process of reorganizing and updating our web page. The 2013-2020 Open Space and Recreation Plan, (OSRP) will continue to qualify Belchertown for numerous State grant opportunities. The 2013-2020 Open Space and Recreation goals and objectives for 2013-2020 will continue to incorporate this data reflecting community concerns for the Town and provide Belchertown with the resources and recreational management guidelines and strategies for the next seven years.

The Commission is anxious to begin new projects for the year 2017-2018 and feels confident that the environment is favorable within the local community to protect and maintain valuable resource areas and open space within the Town. Collaborative efforts by Town departments, Land Trusts, State agencies, private individuals and private landowners only strengthen the chances for successful open space protection within the community.

Respectfully submitted;

David Haines, Chairman
Jon Clements, Vice-Chairman
Joseph Babineau, Commissioner
Edward Knight, Commissioner
John Henry, Commissioner
Michael Cavatorta, Commissioner
Nicholas Burns, Commissioner
Linda Leduc, Associate Commissioner
LeeAnne Connolly, Administrator
and
Michele Nowak, Department Clerk

Town of Belchertown, DPW Winter Storm Report -Year 2017

2016-2017		Winter Storms		
October, 2016				
10.27.2016	Snow/Rain	Spot Treat	2.5"	2.5
November, 2016				
11.25.2016	Sleet	Spot Treat	0"	0
December , 2017				
12.5.2016	Snow	Treat	2"	2
12.12.2016	Snow/Rain	Sand/Salt/Contractors	4"	4
12.17.2016	Snow/Rain	Sand/Salt/Contractors	8"	8
12.24.2016	Rain	Treat	0"	0
12.26.2016	Rain	Treat	0"	0
12.29.2016	Snow	Plow w/Contractors, Treat	3"	3
12.31.2016	Rain/Sleet	Treat	0.25"	0.25
January, 2017				
1.3.2017	Rain	Treat	0"	0
1.4.2017	Rain/Snow	Treat	0.25"	0.25
1.6.2017	Snow	Treat/Plow	1"	1
1.7.2017	Snow	Treat, Plow w/Contractors	3"	3
1.10.2017	Rain	Treat	0"	0
1.17.2017	Rain/Sleet	Treat	0.25"	0.25
1.23.2017	Rain/Sleet	Treat	2.0"	2
1.31.2017	Snow	Treat/Plow	2.5"	2.5
February, 2017				
2.7.2017	Snow/Sleet/Rain	Treat	0.5"	0.5
2.9.2017	Snow	Treat/Plow w/contractors	16"	16
2.11.2017	Snow	Treat/Plow w/contractors	2.0"	2
2.12.2017	Snow	Treat/Plow w/contractors	5.5"	5.5
March, 2017				
3.4.2017	Snow	Treat	1/4"	0.25
3.10.2017	Snow	Treat	1"	1
3.14.2017	Blizzard	Treat/Plow c/contractors	17"	17
April, 2017				
4.1.2017	Sleet	Treat	2"	2"
Total Events:		Total Accumulation:		73"

Salt: Cargill \$ 165,033.08 / \$79.54 = Sodium Chloride per ton, Treated
Sand: Haluchs \$ 13,338.00 / \$11.50 per yd = \$ cost per cu.yd.

2074.84 Tons
1159.82 cy

SNOW REMOVAL

Year	Cost	#Storms	\$/Storms	Inches	\$/Inch	% Increase
2004-2005	\$289,075.00	25	\$11,563	94.5	3,059.00	10%
2005-2006	\$227,436.00	15	\$15,162	59.5	3,822.00	25%
2006-2007	\$161,432.00	20	\$8,072.00	31	5,207.00	27%
2007-2008	\$345,000.00	23	\$15,000	60	5,750.00	19%
2008-2009	\$353,011.86	24	\$14,709.00	69.5	5,079.00	-12%
2009-2010	\$199,000.00	18	\$11,056.00	41	4,854.00	-4.40%
2010-2011	\$363,024.03	23	15,784.00	96.5	3,762.00	-22.50%
2011-2012	\$134,403.97	11	12,218.54	29.5	4,556.00	21.10%
2012-2013	\$230,277.90	21	10,969.61	58.5	3,475.00	-23.73%
2013-2014	\$309,624.80	25	\$12,384.99	75.25	4,144.62	19.3%
2014-2015	\$444,045.00	28	15,858.75	82	5,415.18	30.67%
2015-2016	\$163,314.00	15	10,887.60	28.25	5,781.03	6.76%
2016-2017	\$307,515.99	25	\$12,300.64	73"	\$4,212.55	-27%

LAKES COMMITTEE

The Belchertown Lakes Committee is responsible for the protection of the public health, environment and the general welfare of the lakes within the Town. For the year 2016, the Committee has met 10 times and has been working with the Tri-Lakes Association, Town departments and local residents to meet recreational, habitat, aesthetic, water quality and other agreed-upon goals for the Town's waterbodies. Belchertown can be very proud of our accomplishments regarding lake stewardship efforts for all 3 lakes over the last 5 to 10 years. Data has shown a continued increase in water quality, a decline in nutrient over-loading and nuisance vegetation.

During the summer season of 2016 Lake Holland was treated with fluridone (Sonar ®) to manage dense populations of *Cabomba caroliniana* and *Myriophyllum heterophyllum*. The initial application took place on June 7, 2016 under the supervision of Aquatic Ecosystem Research's inspector. The herbicide treatment was implemented by Solitude Lake Management at a cost of \$12,950 plus monitoring reports, vegetation assessment and recommendations from limnologist, Marc June-Wells, his company Aquatic Ecosystem Research, (AER). This type of application acts as a reset to the plant community, which was necessary for the future management of Holland Pond because the populations of both species were dominating the plant community in a manner that did not allow for more subtle management techniques. By resetting the plant community, the Tri Lakes Association and Belchertown Lake Committee will be able to undertake a more targeted, integrated plant management program to ensure that ecosystem health and recreational value are maintained over the long term. AER has submitted their report to the Lakes Committee making their recommendations for 2017 for all three lakes.

The Commission, PVPC and DPW were awarded a \$42,000 319 Non-Point Pollutant Discharge Grant through the Massachusetts Department of Environmental Protection, Bureau of Water Resources. Currently there is direct stormwater discharge and runoff flowing into Lake Arcadia. Currently there are two catch basins and a series of overland flows that discharge directly into the lake. This work is scheduled to begin in the Spring of 2017. The Belchertown Lake Committee is currently working with AER to conduct a quantitative plant survey and develop a long term integrated management program for all three lakes to address the annual and long-range management strategies needed to meet the water quality and other agreed-upon goals.

To keep the lakes in good condition, the Town of Belchertown is already pursuing implementation of all stormwater BMP recommendations coming out of the 604b grant funded study. The Director of Public Works is in conversation with the State Access Board about improvements to the boat ramp area, located on Poole Rd. on Lake Metacomet and the Town will begin work to manage the stormwater BMPs at Lake Arcadia this Spring.

The Committee is anxious to begin new projects for the year 2016 and feels confident that the environment is favorable, within the local community, to protect these valuable resource areas within the Town.

Respectfully submitted,

LeeAnne Connolly, Chairman
Bonnie Strickland, Vice Chairman
Kathi Smith, Clerk
Jennica Gallagher
Cathy LeBlond

Town of Belchertown

**Illicit Connections and Discharges To
The Municipal Storm Drainage System Bylaw**

or Bylaw Governing Discharges to the Municipal Storm Drain System

PROPOSED DRAFT 3/13/17

SECTION 1. PURPOSE.....	2
SECTION 2. DEFINITIONS	2
SECTION 3. APPLICABILITY	4
SECTION 4. AUTHORITY	4
SECTION 5. RESPONSIBILITY FOR ADMINISTRATION	5
SECTION 6. REGULATIONS	5
SECTION 7. PROHIBITED ACTIVITIES	5
SECTION 8. EMERGENCY SUSPENSION OF STORM DRAINAGE SYSTEM ACCESS.....	6
SECTION 9. NOTIFICATION OF SPILLS.....	7
SECTION 10. ENFORCEMENT	7
SECTION 11. SEVERABILITY	9
SECTION 12. TRANSITIONAL PROVISIONS.....	9

SECTION 1. PURPOSE

The purpose of this bylaw is to regulate illicit connections and discharges to the storm drainage system, which is necessary for the protection of the Town of Belchertown's water bodies, wetlands, and groundwater, and to safeguard the public health, safety, welfare and the environment.

The objectives of this bylaw are:

- (1) To prevent pollutants from entering the municipal separate storm sewer system;
- (2) To prohibit illicit connections and unauthorized discharges to the stormwater system;
- (3) To require the removal of all such illicit connections;
- (4) To comply with state and federal statutes and regulations relating to stormwater discharges;
- (5) To establish the legal authority to ensure compliance with the provisions of this bylaw through inspection, monitoring, and enforcement.

Increased and contaminated stormwater runoff are major causes of:

- (1) Impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands and groundwater;
- (2) Contamination of drinking water supplies;
- (3) Alteration or destruction of aquatic and wildlife habitat; and
- (4) Local flooding.

SECTION 2. DEFINITIONS

For the purposes of this bylaw, the following shall mean:

Authorized Enforcement Agency: The Director of the Department of Public Works or designated representative, its employees or agents designated to enforce this bylaw.

Best Management Practice (BMP): An activity, procedure, restraint, or structural improvement that helps to reduce the quantity or improve the quality of stormwater runoff.

Clean Water Act: The Federal Water Pollution Control Act (33 U.S.C. § 1251 *et seq.*) as hereafter amended.

Discharge of Pollutants: The addition from any source of any pollutant or combination of pollutants into the municipal storm drainage system or into the waters of the United States or Commonwealth from any source.

Grandfathered: Exempt from new legislation, restrictions, or requirements.

Groundwater: All water beneath the surface of the ground.

Illegal Discharge: Any direct or indirect non-stormwater discharge to the municipal storm drainage system, except as specifically exempted in Section 7 of this bylaw. The term does not include a discharge in compliance with an NPDES Storm Water Discharge Permit or resulting from fire fighting activities exempted pursuant to Section 7 of this bylaw.

Illicit Connection: Any surface or subsurface drain or conveyance, which allows an illegal discharge into the municipal storm drainage system. Illicit connections include conveyances which allow a non-stormwater discharge to the municipal storm drainage system, including: sewage, process wastewater or wash water and any connections from indoor drainages sinks, or toilets, regardless of whether said connection was previously allowed, permitted, or approved before the effective date of this bylaw.

Impervious Surface: Any material or structure on or above the ground that prevents water from infiltrating the underlying soil.

Municipal separate storm sewer system (MS4) or municipal storm drainage system: The system of conveyances designed or used for collecting or conveying stormwater, including any road with a drainage system, street, gutter, curb, inlet, piped storm drain, pumping facility, retention or detention basin, natural or man-made or altered drainage channel, reservoir, and other drainage structure that together comprise the storm drainage system owned or operated by the Town of Belchertown.

National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit: A permit issued by United States Environmental Protection Agency or jointly with the State that authorizes the discharge of pollutants to waters of the United States.

Non-Stormwater Discharge: Any discharge to the municipal storm drain system not composed entirely of stormwater.

Person: Any individual, partnership, association, firm, company, trust, corporation, and, any agency, authority, department or political subdivision of the Commonwealth or the federal government, to the extent permitted bylaw, and any officer, employee, or agent of such person.

Pollutant: Any element or property of sewage, agricultural, industrial or commercial waste, runoff, leachate, heated effluent, or other matter whether originating at a point or nonpoint source, that is or may be introduced into any sewage treatment works or waters of the Commonwealth. Pollutants shall include:

- a. paints, varnishes, and solvents;
- b. oil and other automotive fluids;
- c. liquid and solid wastes and yard wastes;
- d. refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordnances, accumulations and floatables;
- e. pesticides, herbicides, and fertilizers;
- f. hazardous materials and wastes; sewage, fecal coliform and pathogens;

- g. dissolved and particulate metals;
- h. animal wastes;
- i. rock; sand; salt, soils;
- j. construction wastes and residues;
- k. and noxious or offensive matter of any kind.

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any material, intermediate product, finished product, or waste product.

Recharge: The process by which groundwater is replenished by precipitation through the percolation of runoff and surface water through the soil.

Stormwater: Runoff from precipitation or snow melt.

Toxic or Hazardous Material or Waste: Any material, which because of its quantity, concentration, chemical, corrosive, flammable, reactive, toxic, infectious or radioactive characteristics, either separately or in combination with any substance or substances, constitutes a present or potential threat to human health, safety, welfare, or to the environment. Toxic or hazardous materials include any synthetic organic chemical, petroleum product, heavy metal, radioactive or infectious waste, acid and alkali, and any substance defined as Toxic or Hazardous under M.G.L. Ch.21C and Ch.21E, and the regulations at 310 CMR 30.000 and 310 CMR 40.0000.

Watercourses: A natural or man-made channel through which water flows or a stream of water, including a river, brook or underground stream.

Waters of the Commonwealth: all waters within the jurisdiction of the Commonwealth, including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, coastal waters, and groundwater.

Wastewater: any sanitary waste, sludge, or septic tank or cesspool overflow, and water that during manufacturing, cleaning or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct or waste product.

SECTION 3. APPLICABILITY

This bylaw shall apply to all flows entering the storm drainage system in Town of Belchertown.

SECTION 4. AUTHORITY

This bylaw is adopted under the authority granted by the Home Rule Amendment of the Massachusetts Constitution and the Home Rule Procedures Act, and pursuant to the regulations of the federal Clean Water Act found at 40 CFR 122.34.

SECTION 5. RESPONSIBILITY FOR ADMINISTRATION

The Director of the Department of Public Works or designated representative shall administer, implement and enforce this bylaw. Any powers granted to or duties imposed upon the Director of the Department of Public Works may be delegated in writing by the Director of the Department of Public Works to employees or agents of the Department of Public Works.

SECTION 6. REGULATIONS

The Director of the Department of Public Works may promulgate rules and regulations to effectuate the purposes of this bylaw. Failure by the Director of the Department of Public Works to promulgate such rules and regulations shall not have the effect of suspending or invalidating this bylaw.

SECTION 7. PROHIBITED ACTIVITIES

1. Illegal Discharges

No person shall dump, discharge, cause or allow to be discharged any pollutant or non-stormwater discharge into any storm drainage system, watercourse, or into the waters of the Commonwealth. Non-emergency pumping performed by the Fire Department must utilize appropriate best management practices (BMPs) and follow hazardous materials disposal guidelines to prevent contamination of the municipal storm drainage system with hazardous materials. If hazardous materials are observed within the flooded area from the activities noted above, or are suspected to be contained therein, a qualified hazmat technician and applicable state and local agencies must be consulted. These agencies will be responsible for implementing the BMPs to the contamination of nearby water ways and the municipal storm drainage system.

2. Illicit Connections

No person shall construct, use, allow, maintain or continue any illicit connection to the municipal storm drainage system, regardless of whether the connection was permissible under applicable law, regulation or custom at the time of connection with no grandfathering permitted.

3. Obstruction of Municipal Storm Drainage System

No person shall obstruct or interfere with the normal flow of stormwater into or out of the storm drainage system without prior approval from the Director of the Department of Public Works or designated representative.

4. Exemptions

This section shall not apply to any of the following non-stormwater discharges or flows provided that the source is not a significant contributor of a pollutant to the storm drainage system.

- a. Waterline flushing

- b. Emergency pumping performed by the Fire Department
- c. Discharges from landscape irrigation or lawn watering
- d. Diverted stream flows
- e. Rising groundwater
- f. Uncontaminated groundwater infiltration as defined in 40 CFR 35.2005(20), or uncontaminated pumped groundwater
- g. Uncontaminated pumped groundwater
- h. Flows from potable water sources
- i. Irrigation water, springs
- j. Water from crawl space pumps
- k. Water from individual residential car washing
- l. Natural flows from riparian habitats and wetlands
- m. Discharges from de-chlorinated swimming pool water (less than one part per million chlorine) provided it is allowed to stand for one week prior to draining and the pool is drained in such a way as not to cause a nuisance;
- n. Discharges during street sweeping and other storm drainage system maintenance;
- o. Discharges or flows resulting from fire fighting activities;
- p. Dye testing, provided notification is given to the Director of the Department of Public Works or designated representative prior to the time of the test;
- q. Non-stormwater discharges permitted under an NPDES permit, waiver, or waste discharge order administered under the authority of the United States Environmental Protection Agency, provided that the discharge is in full compliance with the requirements of the permit, waiver, or order and applicable laws and regulations;
- r. Discharges for which advanced written approval is received from the Director of the Department of Public Works or designated representative if necessary to protect public health, safety, welfare or the environment.

SECTION 8. EMERGENCY SUSPENSION OF STORM DRAINAGE SYSTEM ACCESS

The Director of the Department of Public Works or designated representative may suspend storm drainage system access to any person or property without prior written notice when such suspension is necessary to stop an actual or threatened illegal discharge that presents or may present imminent risk of harm to the public health, safety, welfare or the environment. In the event any person fails to comply with an emergency suspension order, the Director of the

Department of Public Works or designated representative may take all reasonable steps to prevent or minimize harm to the public health, safety, welfare or the environment.

SECTION 9. NOTIFICATION OF SPILLS

Notwithstanding any other requirements of local, state or federal law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials at that facility operation which is resulting or may result in illegal discharge of pollutants that person shall take all necessary steps to ensure containment, and cleanup of the release. In the event of a release of oil or hazardous materials, the person shall immediately notify the municipal fire and police departments, the Director of the Department of Public Works or designated representative, and the Massachusetts Department of Environmental Protection (if release is reportable as defined by 310 CMR 40.00). In the event of a release of non-hazardous material, said person shall notify the Director of the Department of Public Works or designated representative no later than the next business day. Written confirmation of all telephone, facsimile or in person notifications shall be provided to the Director of the Department of Public Works or designated representative within three business days thereafter. If the discharge of prohibited materials is from a commercial or industrial facility, the facility owner or operator of the facility shall retain on-site a written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

SECTION 10. ENFORCEMENT

1. The Director of the Department of Public Works or an authorized agent of the Department of Public Works shall enforce this bylaw, and the regulations promulgated thereunder, as well as the terms and conditions of all permits, notices, and orders, and may pursue all civil and criminal remedies for such violations.

2. Orders

The Director of the Department of Public Works or designated representative may issue a written order to enforce the provisions of this bylaw or the regulations thereunder, which include, but are not limited to:

- a. Elimination of illicit connections or discharges to the storm drainage system;
- b. Termination of access to the storm drainage system;
- c. Performance of monitoring, analyses, and reporting;
- d. Cessation of unlawful discharges, practices, or operations;
- e. Remediation of contamination in connection therewith.

If the Director of the Department of Public Works or designated representative determines that abatement or remediation of contamination is required, the order shall set forth a deadline for completion of the abatement or remediation. Said order shall further advise that, should the violator or property owner fail to abate or perform remediation within the specified deadline, the Town of Belchertown may, at its option, undertake such work and expenses thereof shall be charged to the violator or property owner.

Within thirty (30) days after completing all measures necessary to abate the violation or to perform remediation, the violator and the property owner will be notified of the costs incurred by the Town of Belchertown including administrative costs. The violator or property owner

may file a written protest objecting to the amount or basis of costs with the Board of Selectmen within thirty (30) days of receipt of the notification of the costs incurred. If the amount due is not received by the expiration of the time in which to file a protest or within thirty (30) days following a decision of the Board of Selectmen or designated representative affirming or reducing the costs, or from a final decision of a court of competent jurisdiction, the costs shall become a special assessment against the property owner and shall constitute a lien on the owner's property for the amount of said costs. Interest shall begin to accrue on any unpaid costs at the statutory rate provided in M.G.L. Ch. 59, §57 after the thirty-first day at which the costs first become due.

3. Equitable Remedy

If anyone violates the provisions of this bylaw, regulations, permit, notice, or order issued thereunder, the Director of the Department of Public Works or designated representative may seek injunctive relief in a court of competent jurisdiction to restrain the person from activities which would create further violations or compelling the person to abate or remediate the violation.

4. Non-Criminal Disposition

As an alternative to criminal prosecution or civil action, the Town of Belchertown may elect to utilize the non-criminal disposition procedure set forth in M.G.L. Chapter 40, §21D. The Director of the Department of Public Works or designated representative shall be the enforcing person. The penalty for the 1st violation shall be up to \$100. The penalty for the 2nd violation shall be \$200. The penalty for the 3rd and subsequent violations shall be \$300. Each day or part thereof that such violation occurs or continues shall constitute a separate offense.

5. Right-of-Entry

To the extent permitted by state law, or if authorized by the owner or other party in control of the property, the Director of the Department of Public Works or designated representative, its agents, officers, and employees may enter upon privately owned property for the purpose of performing their duties under this bylaw and regulations and may make or cause to be made such examinations, surveys or sampling as the Director of the Department of Public Works or designated representative deems reasonably necessary.

6. Appeals

The decisions or orders of the Director of the Department of Public Works shall be final. Further relief shall be to a court of competent jurisdiction.

7. Remedies Not Exclusive

The remedies listed in this bylaw are not exclusive of any other remedies available under any applicable federal, state or local law.

SECTION 11. SEVERABILITY

If any provision, paragraph, sentence, or clause, of this bylaw shall be held invalid for any reason, all other provisions shall continue in full force and effect.

SECTION 12. TRANSITIONAL PROVISIONS

Property owners shall have 120 days from the effective date of the bylaw to comply with its provisions provided good cause is shown for the failure to comply with the bylaw during that period unless local, state, or federal agencies deem that immediate actions are warranted



Municipal Separate Storm Sewer System (MS4) Bylaw Town of Belchertown, Massachusetts

PURPOSE OF THIS BYLAW

The purpose of this bylaw is to regulate illicit connections and illicit discharges to the storm drainage system. The bylaw is to protect the Town of Belchertown's water bodies, wetlands, and groundwater, to safeguard the public health, safety, welfare and the environment and to comply with state and federal statutes and regulations relating to stormwater discharges.

1. BACKGROUND

The U.S. Environmental Protection Agency (EPA) issued the revised Massachusetts Small Municipal Separate Storm Sewer systems (MS4) General permit in April, 2016. The new permit has a similar structure to the original 2003 permit, but it significantly increases stormwater management requirements and mandates specific compliance timeframes. The new permit will become effective July 1, 2017.

2. WHAT YOU SHOULD KNOW

Municipal storm drain systems are a major source of pollutants to waters of the Commonwealth. Federal and state laws and regulations require municipalities with storm drain systems to manage and control stormwater discharges. Over 200 Massachusetts towns discharge stormwater under U.S. EPA's NPDES Municipal Separate Storm Sewer Systems permit (the MS4 Permit). This 5-year permit, jointly issued by EPA and MassDEP, requires towns to meet six minimum control measures:

- Pollution Prevention/Good Housekeeping for Municipal Operation
- An Illicit Discharge Detection and Elimination (DDE)
- Construction Site Runoff Control
- Post Construction Runoff Control
- Public Education and Outreach
- Public Participation and involvement

3. WHAT IS AN ILLEGAL DISCHARGE?

An Illegal Discharge is any direct or indirect non-stormwater discharge to the municipal storm drainage system, except as specifically exempted in Section 7 of the proposed bylaw. The term does not include a discharge in compliance with an NPDES Storm Water Discharge Permit or resulting from firefighting activities also exempted pursuant to Section 7 of the proposed bylaw.

4. WHAT IS AN ILLICIT CONNECTION?

An Illicit Connection is any surface or subsurface drain or conveyance, which allows an illegal discharge into the municipal storm drainage system. Illicit connections include conveyances which allow a non-stormwater discharge to the municipal storm drainage system, including: sewage, process wastewater or wash water and any connections from indoor drainages, sinks, or toilets, regardless of whether said connection was previously allowed, permitted, or approved before the effective date of this bylaw.

INSPECTIONS

The Director of the Department of Public Works or designated representative, its agents, officers and employees may enter upon privately owned property for the purpose of performing their duties.

ENFORCEMENT

The Department of Public Works or an authorized agent of the Department of the Public Works shall enforce this bylaw and the regulations promulgated thereunder, and may pursue all civil and criminal remedies for such violations.



Steven J. Williams
Director

Office of
DEPARTMENT OF PUBLIC WORKS
290 Jackson Street, P.O. Box 306
Belchertown, Massachusetts 01007-0306
Telephone: (413) 323-0415

**TOWN OF BELCHERTOWN PROPOSED BY-LAW
GOVERNING DISCHARGES TO THE MUNICIPAL
STORM DRAIN SYSTEM**

The public is invited to attend a public hearing to be held by Steven J. Williams, Director of the Department of Public Works, in the Selectmen's Meeting Room, First Floor, Lawrence Memorial Hall, 2 Jabish Street, Belchertown, on Wednesday, April 26, 2017 at 7:00pm to offer comments on a proposed Bylaw to regulate discharges to the Town's storm drainage system. The Bylaw is seen as necessary for the protection of the Town of Belchertown's storm drainage system and local water bodies, wetlands and groundwater and to safeguard the public health, safety, welfare and the environment.

The Director of the Department of Public Works will make a determination as to whether this Bylaw shall apply to all flows entering the storm drainage system in the Town of Belchertown so as to prepare for consideration at the next Town Meeting scheduled for Monday, May 8, 2017.

This proposed Bylaw would be adopted under the authority granted by the Home Rule Amendment of the Massachusetts Constitution and the Home Rule Procedures Act, and pursuant to the regulations of the Federal Clean Water Act found at 40 CFR 122.34, and under the representation of The Director of the Department of Public Works who may promulgate rules and regulations to effectuate the purposes of this bylaw.

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TOWN OF BELCHERTOWN
Steven J. Williams, Director
Department of Public Works

Connecticut River Stormwater Committee
Annual Report
April 1, 2016 to March 31, 2017

The Connecticut River Stormwater Committee

The Connecticut River Stormwater Committee is an intergovernmental compact, now grown to include 17 municipalities, that is organized to collaborate in meeting NPDES MS4 permit requirements for stormwater education and outreach (Minimum Control Measure #1). Facilitated and staffed by the Pioneer Valley Planning Commission, the Committee also works together to meet other permit compliance activities where appropriate and needed. Member communities are shown in Table 1 below.

Table 1: Connecticut River Stormwater Committee Member Communities

Member Community	Committee Representatives and Departments
Agawam	Tracey DeMaio, Department of Public Works
Belchertown*	Steve Williams, Department of Public Works
Chicopee	Quinn Lonczak, Department of Public Works
East Longmeadow*	Robert Peirent, Department of Public Works
Easthampton	Dan Murphy, Department of Public Works
Granby	Dave Derosiers, Highway Department
Hadley*	Marlo Warner, Department of Public Works
Holyoke	Michael McManus, Department of Public Works
Longmeadow	Mario Mazza, Department of Public Works
Ludlow	Jim Goodreau, Department of Public Works
Northampton	Doug McDonald, Department of Public Works
Southwick	Randall Brown and Richard Grannells, Department of Public Works
South Hadley	Melissa LaBonte, Department of Public Works
Springfield	Kevin Chaffee, Planning/Conservation
West Springfield	Jim Czach, Department of Public Works
Westfield	Casey Berube, Department of Public Works
Wilbraham*	Tonya Basch, Department of Public Works

* Member that joined Committee this year.

Education and Outreach over the Past Year

With the rigors of the new MS4 permit requirements, the Stormwater Committee has been in a transition phase, where it has continued education and outreach under the requirements of the 2003 permit, but is also taking important steps in preparing for forthcoming requirements that begin July 1, 2017. In some cases, the work of preparing for the forthcoming permit has served to provide education and outreach under the 2003 permit.

The narrative below summarizes the work of the Connecticut River Stormwater Committee during the 2016-2017 reporting year, which includes the following:

1. Reached out to dog owners on pet waste disposal practices
2. Expanded understanding about stormwater issues and permit compliance
3. Promoted Soak up the Rain stormwater education campaign
4. Defined program of effective stormwater messaging for the next five-year permit term
5. Continued planning for website education in the Pioneer Valley
6. Collaborated with Massachusetts state-wide coalition of stormwater coalitions
7. Designed and constructed demonstration rain garden at the Renaissance School in Springfield
8. Led project in Chicopee, Ludlow, and Springfield to reduce urban flows into Chicopee River
9. Led urban tree planting project in Chicopee, Holyoke, and Springfield
10. Led project in Holyoke to reduce urban flows into Day Brook

In addition to these public education and outreach activities described in fuller detail below, members of the Stormwater Committee have joined PVPC in other MS4 permit related activities, including:

- Collaborating in understanding new permit requirements through dialogue with MassDEP and U.S. EPA and through use of Committee time to review and dialogue about specific sections of the permit together. These conversations are helping members understand how they might most effectively proceed in permit compliance as individual permittees on certain elements, but also in collaboration with others for important cost savings on other elements.
- Reviewing and updating municipal land use code to comply with new MS4 permit requirements. This is occurring through both fee for service in one community and through a Massachusetts Department of Administration and Finance's Efficiency and Regionalization grant and match from District Local Technical Assistance for another nine communities.
- Preparing for Illicit Discharge Detection and Elimination and Good Housekeeping trainings for municipal staff with funding from the Massachusetts Department of Administration and Finance's Efficiency and Regionalization grant. The trainings, to be conducted this coming year, will be videotaped to enable future trainings to occur as required and needed with new staff.
- Collaborated on defining needs for integrating stormwater system mapping with data collection requirements through funding from the Massachusetts District Local Technical Assistance program. A consultant has been hired to provide this integration so that data collection (outfall screening and sampling, manhole inspections, catch basin cleaning, etc.) can occur easily in the field and then uploaded to reference with geographically specific locations within Arc GIS mapping of the storm system for analysis in defining priority catchments and annual reporting to EPA.

1. Reached out to dog owners on pet waste disposal practices

Based on the bacteria messaging research completed last year, the Committee began this year to finalize an outreach program to dog owners on proper management of pet waste. Work this year focused on working with Town Clerks/Dog Licensing Officers in each member community to distribute a survey with three questions that will enable targeting of the program in each community. This survey is being distributed through Town Clerks/Dog Licensing Officers, starting in January 2017, via a glossy flyer that accompanies dog licenses. The flyer includes a link to the electronic survey and dog owners are incentivized to take the survey with a small prize that promotes better pet waste management practices.



Tell us what you see and think about pet waste in your community!

Take a 4-question survey and get a prize from your local dog licensing officer.*

Go to:

<https://www.surveymonkey.com/r/2017PVPetWaste>

Thank you!
Connecticut River Stormwater Committee

* while supplies last

Photos (clockwise from top): kc935.com, thedogtrainingsecret.com, thisdogslife.co



Above is an image of the glossy flyer distributed by Town Clerks/Dog Licensing Officers in member communities in issuing dog licenses. It provides a link to the electronic survey and offer of a prize for taking the survey.

At right is an image of the prize offered to those completing the survey.



The survey contains four simple questions:

- In what Town do you license your dog?
- What are specific locations or types of place sin your tonw/city where you notice accumulation of or problems with pet waste? (Town/City Parks-please specify below, along rivers/streams in town- please specify below, along streets and sidewalks- please specify below)
- What do you believe most likely happens to pet waste left on the ground in these problem areas? (decomposes into the ground, washes into streams and rivers, cleaned up by municipal officials/landowners, others)
- Which graphic/message below is most likely to encourage people to pick up their dogs' waste? (rank from 1 to 5, with 1 being most likely)

Once dog licensing is complete in member communities (there is a some variation on procedure and timetable from one municipality to another), survey results will be compiled. These results will help in providing an important base line in measuring the effectiveness of the 5-year education and outreach program to come. The Committee will likely be looking to two metrics: how much change there is in knowledge about what happens to pet waste left on the ground and the degree to which specific known problem pet waste locations within municipalities improve. The program will go hand-in-hand with a

review and update of pet waste ordinances that will be referenced in educational materials during the new permit term.

2. Expanded understanding about stormwater issues and permit compliance

With renewed need for building understanding about stormwater issues and winning support for permit compliance budgets, the Committee undertook three activities this year to promote greater awareness in the region.

Door hanger for use in neighborhoods to highlight stormwater work

When public works or highway crews are out maintaining, fixing, or upgrading the municipal stormwater system, the work typically goes unseen. The only visible evidence to residents and businesses may be some traffic flow inconvenience around a manhole or along a trench. To highlight this “invisible” work, the Committee designed door hangers that can be used when crews are working in a given neighborhood. This idea is borrowed from Chicopee, where the simple act of using doorhangers played a vital role in helping people to understand the value of stormwater work and the need to establish dedicated funding for their program.



Door hangers, image shown above, were designed to be modified for use in each member community to elevate the visibility and increase understanding about stormwater among residents and businesses.

Understanding about stormwater and permit requirements among other local officials

For the Committee, PVPC prepared a powerpoint presentation that outlines the major requirements of the new stormwater permit and the water quality elements specific to the region. PVPC staff presented this material in May to the Valley Development Council, a group of municipal planners in Hampshire and Hampden Counties (as well as representatives of the home builders, real estate and housing communities) that meet quarterly to discuss issues and share ideas on planning and smart growth. The presentation is available to all Stormwater Committee members as they work with colleagues and constituents to move forward on discussions about stormwater issues. MassDEP Stormwater Coordinator Fred Civian has offered his assistance to Committee members in promoting understanding about permit compliance and to date has joined PVPC staff in visiting with municipal officials in Hadley.

3. Promoted "Soak up the Rain" stormwater education campaign

The Connecticut River Stormwater Committee continued to develop and promote the "Pioneer Valley Soak up the Rain" education campaign (a local version of the EPA's New England campaign). The campaign, a call to action for property owners to reduce stormwater runoff through strategies that soak up the rain, involves two outreach efforts for the Connecticut River:

Pioneer Valley Soak up the Rain Website www.pvpc.org/soakuptherain/

The Stormwater Committee continues to maintain the Pioneer Valley Soak up the Rain website, which promotes a range of practices, including tree plantings, rain gardens, permeable pavements, dry wells, and green roofs. An occasional blog that includes photos and video provides examples from the region. Property owners throughout the Pioneer Valley are also invited to submit projects that they know of to feature on the website. A "Cool resources" heading provides connection to the latest information and a "resources" menu item links to a library of informational resources. In the past year, the website had 24,164 hits with 17,115 of these hits resulting in information requests being sent to the user.

Soak up the Rain signs for rain gardens and porous paving projects

Soak up the Rain signs for rain gardens and porous paving continue to be available for municipal use and distribution to residential and commercial property owners to highlight local projects. Sign messages currently focus on "Keeping our Rivers Clean." A variation of the sign design is underway for specific use around local lakes in the region, "Keeping our Lake Clean."

4. Defined program of effective stormwater education messaging for the next five-year permit term

The Committee carefully reviewed all stormwater education and outreach requirements in the forthcoming permit and created a table that it has shared widely within the region and across the state through the state-wide coalition. Drawing on this understanding of requirements and several other resources, including research PVPC conducted last year on stormwater education messaging and a survey of Committee members on specific local issues, PVPC staff prepared a program for effective stormwater education messaging for the next five-year permit term. This plan is currently in draft form and will be finalized by Committee members in the coming months and integrated as appropriate with Notice of Intent and Stormwater Management Program Plans in each member community.

5. Continued planning for website education and outreach for the Pioneer Valley

Given the various websites/pages the Stormwater Committee communities have been using to promote work under the 2003 permit, including Think Blue and Greenscapes, and the expanded education and requirements of the forthcoming permit, PVPC has been working to retool and update web materials. This began with a newly proposed website framework under "Think Blue: Clean Water Begins with You," that attends to the various stormwater issues and audiences under the new permit. It will bring together education and outreach materials together with metrics for understanding the effectiveness of messages and movement away from behavior and practices that negatively impact the health of the Connecticut River. PVPC is currently working with its webmaster to determine how this website can be accommodated under the Commission's current website framework.

6. Collaborated with Massachusetts state-wide coalition of stormwater coalitions

On behalf of the Connecticut River Stormwater Committee, two municipal Committee representatives and PVPC staff have been attending quarterly meetings of the state-wide stormwater coalition to identify and advance efficiencies that could be achieved through state-wide collaboration on certain MS4 permit compliance activities. PVPC staff is also participating in one of the subcommittees organized to give careful examination to education and outreach compliance activities and best possibilities for state-wide collaboration. The state-wide coalition through the Central Massachusetts Regional Planning Commission has a MassDEP grant to develop some tools and resources for permit compliance.

The following three projects, while specific to certain municipalities, are expanding awareness regionally about stormwater. They also serve to build capacity and know-how in planning, design, and construction of better stormwater management practices. Each project has its own outreach and education component.

7. Designed and constructed regional demonstration rain garden at Renaissance School, Springfield

PVPC staff continued work with the Regenerative Design Group to design and construct a 4th regional demonstration rain garden. The new rain garden at the Renaissance School captures flow from a rooftop at the school's entrance. The rain garden soaks up storm flow that previously entered a catch basin tied to a pipe that empties into Abbey



Brook. Abbey Brook is impacted significantly by urban storm flows which enter the brook at high volumes and velocities whenever it rains.

Sited near the main entrance to the Renaissance School, the rain garden is highly visible. Above image shows the rain garden under construction. Image below shows students asking questions of Landscape Architect and rain garden designer Tom Benjamin.



8. Led project in Chicopee, Ludlow, and Springfield to reduce urban flows to the Chicopee River

PVPC staff collaborated with the Connecticut River Watershed Council and the Chicopee River Watershed Association to evaluate the degree to which urban storm flows are contributing to the bacteria impairment in the Chicopee River. A water quality sampling program during the summer of 2016 involved 10 volunteers who collected samples from local tributaries and storm outfalls on the mainstem during 3 dry and 3 wet weather events. Follow up entailed source tracking at locations showing high bacteria during wet weather. Those results are now in turn leading to preliminary stormwater management facility design in two locations, a park plagued by geese in Chicopee and a small mixed use neighborhood in Ludlow.

9. Led urban tree planting project in Chicopee, Holyoke, and Springfield

PVPC is leading an effort to promote urban tree planting in the region's 3 major cities in partnership with the US Forest Service, Massachusetts Executive Office of Energy and Environmental Affairs, the Valley Opportunity Council, Nuestras Raices, ReGreen Springfield, Conway School of Design, Mass DCR, and the Cities of Chicopee, Holyoke, Springfield. Aimed at reducing stormwater flows to combined sewer areas and promoting greater climate resilience, the project involves an integrated community outreach process involving multiple neighborhood workshops and workshops for public works officials. Once completed, the project will provide the following major deliverables:

- installation of 2,200 trees on local streets and yards
- final engineering design for a green streets in each municipality
- model stormwater tree rebate ordinance

The project is made possible thanks to a \$239,000 grant award to PVPC from the US Forest Service under the State and Private Forestry FY15 Northeastern Area Landscape Scale Restoration Program.

10. Led project in Holyoke to reduce urban flows into Day Brook

Through an EPA Urban Small Waters Grant PVPC is developing a green infrastructure plan for Day Brook in Holyoke, which flows from west to east, remaining above-ground from Anniversary Hill Park and Community Field before being conveyed underground beneath the City and routed through the Waste Water Treatment Plant. During large precipitation events, Day Brook's volume contributes to Combined Sewer Overflows into the Connecticut River.

Conceptual design work of this project will recommend ways to reduce inflow into Day Brook through green infrastructure stormwater facilities. The project also aims to increase awareness of this "secret stream" running unseen through the urban landscape. This fall the project began with an arts and science project at Sullivan School located close to the upper reaches of Day Brook. PVPC's partner in this project, Enchanted Circle Theater Group, led a six-week lesson series that taught third and fifth graders about stormwater and CSOs, and resulted in a mural and walk that relates the story of Day Brook in Holyoke. Both the mural and storywalk will be installed in public parks along the path of Day Brook in the summer. Meanwhile, geology students at Holyoke Community College assisted PVPC in conducting percolation tests at several publicly owned sites along the path of Day Brook to determine whether they would be suitable sites for green infrastructure stormwater installations. The City of Holyoke provided equipment and staff to aid in the perc tests, and also conducted GIS mapping of the Day Brook watershed. Next steps include holding two public workshops in the spring and summer (including unveiling the mural), a family-oriented workshop on stormwater at Beaudoin Village, and later in 2017, the development of the conceptual designs and plans.



Steven J. Williams
Director

Office of
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Telephone: (413) 323-0415

Donna Lusignan
Administrative Assistant

ANNUAL STORMWATER COMMITTEE MEETING
MINUTES OF MARCH 4, 2016

Committee Members Present:

Board of Health-Judy Metcalf
Conservation Administrator, LeeAnne Connolly
Town Planner, Doug Albertson,
DPW Director, Steve Williams (minutes)

10:00AM -Areas of Discussion:

1. Update on EPA MS4 Permits:
 - Expected within weeks
 - Regulated area is expanding to the north to encompass town center to Lakes area. Also, existing area is changing (reduction). Will forward when EPA issues.
 - May schedule another meeting.
2. Current steps to prepare:
 - Mapping – DPW and Fuss & O'Neil have been updating Towns' GIS to include new areas.
 - 319 Grant- DPW received \$70,000 grant to update two catch basins and one point source discharge in the area of Federal Street and Metacomet Street.
3. Training Scheduled for April, 16, 2016
 - Fuss & O'Neill will be conducting training at the DPW Highway Garage on April 6, 2016, @ 10:00AM.
4. Other Business:
 - Highway Department has been moving toward less sand usage during winter storms. Current mix is 1:1 ratio, with 250lbs of salt being applied per lane mile. Has been working well.

11:00AM –Meeting Closed
(Transcribed: dl)



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STORMWATER COMMITTEE MEETING / MS4
MINUTES OF Friday, October 21, 2016

STWM Committee Members Present:

Steve Williams, DPW Director (minutes)
Gary Brougham, Town Administrator
LeeAnne Connolly, Conservation Administrator
Paul Adzima, Building Inspector
Doug Albertson, Town Planner
Judy Metcalf, Board of Health Administrator
Patti Gambarini, Pioneer Valley Planning Commission

9:30AM – Meeting called to order

Discussion:

S. Williams presented an overview of the new MS4 Permit Requirements and presented everyone with a handout provided by Fuss & O'Neill, Inc. *The new MS4 Permitting becomes effective July 1, 2017.* Financial impacts will be realized for FY'18.

1. Topics of Discussion:

- Expanded mapping –ongoing
- Illicit Discharge Detention & Elimination –Staffing
- Outfall Evaluation –Staffing
- Education to Outreach –Nutrients & Pesticides
- Good Housekeeping
- Regulations with regards to new construction, redevelopment, municipal projects (Stormwater Treatment).

2. Stormwater Treatment:

- Patti is reviewing town regulations. Compliance should carry from Stormwater Regulations, Stormwater By-Law, Zoning, Subdivisions, etc.
- As-Built information is lacking (Patti to review).
- Permits under EPA: 1 acre or above, Town 10,000Ft². Committee feels this should be changed to EPA standard.

3. Next Steps

- Consider Stormwater Authority/Tax
- Continue review of regulations
- Create Illicit Discharge By-Law
- Budgets
- Review applicability (under 43,560)
- Next meeting one month (+/-)

4. Areas to be reviewed by Patti Gambarini:

- By-Law

5. Other Areas to be reviewed:

- Zoning
 1. Subdivision
 2. Residential
 3. Business/Site Plan
- Board of Health Regulations
- Conservation Commission Regulations

6. Tax: Forward Model By-Law/Plan from Town of Agawam

7. IDDE: Forward Model By-Law

8. Other Issues

- Inspections and follow-up with reporting from developers and Construction sites-need to review
- Town meeting- will need revisions this year and IDDE By-Law

Meeting Adjourned: 12:00PM
(Transcribed: dl)



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STORMWATER COMMITTEE MEETING MINUTES OF JANUARY 12, 2017

Committee Members Present:

Board of Health –Judy Metcalf
Conservation Administrator – LeeAnne Connolly
Town Planner –Doug Albertson
Building Inspector –Paul Adzima
Patty Gambrarini, PVPC
Gary Brougham, Town Administrator
DPW Director –Steve Williams (minutes)

Meeting Opened: 10:00AM – Areas of Discussion:

S. Williams presented an update to Committee members on the following:

Mapping: is completed (outfalls)

- a. Next step – catchments
- b. Integration to Town GIS

Fuss & O'Neill, Inc.: Working on NOI, SWMP, IDDE Plan

- a. Discussion regarding Notice of Intent
- b. Stormwater Management Plan
- c. Illicit Discharge, Detention & Elimination Plan

PVPC Task: IDDE Bylaw Model for Town
Review & Update:

- a. Stormwater Bylaw
- b. Zoning Bylaws
- c. Subdivision Bylaws
- d. Wetlands Bylaw

Connecticut River Stormwater Committee:

- 1. Join at reduced rate, ½ year
- 2. Will provide educational materials for town use

*** Committee agreed to join**

UPDATE: Patty Gambarini: Priorities for By-Law/Regulation Review:

- DPW: 1st Prepare IDDE Bylaw, needs TM Approval
- Conservation : 2nd Stormwater Regulations. What level?
- Planning: 3rd Zoning Bylaw
- Planning: 4th Subdivision Bylaw
- Conservation: 5th Wetlands Bylaw

* IDDE Bylaw should go to Town Manager this year. Other changes may go in Year 2018.
Compliance is two years for permit, effective date –July, 2017

UPDATE: Patty Gambarini: Connecticut River Stormwater Committee

- Forms in 2007
- Education & Outreach Requirements
- Grant Request
- GIS Mapping & Sampling
- Workshops

General Discussion: Stormwater Utility

- Not to tax – It is a fee similar to water/sewer
- Must be equitable
- Patty is working with Town of Agawam
- GIS Mapping must be legally defensible
- City of Northampton had an “Advisory Committee”
- Eligible for 319 Grant (Planning) ~approx. \$80K available with 40% Match
- Also eligible for a 604B Grant, but is limited to \$50K. LeeAnne will review.

*Need to review enabling legislation to determine what is allowed for Committees to collect stormwater fees. John Whelihan and Steve Williams will report back to committee on this matter.

OTHER:

Connecticut River Stormwater Committee-
Steve Williams to attend on February 6th, 2017 @ 10:00AM

Next Committee Meeting: February 16, 2017 @ 10:00AM

Topics to Discuss:

- IDDE
- Regulations-Review & Update
- Stormwater Funding
- Update from Patty Gambarini

12:00pm: Meeting Adjourned: All in Favor

(Transcribed by: dl)



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STORMWATER COMMITTEE MEETING MINUTES OF February 16, 2017

Committee Members Present:

Board of Health –Judy Metcalf
Conservation Administrator – LeeAnne Connolly
Town Planner –Doug Albertson
Building Inspector –Paul Adzima
Patty Gambarini, PVPC
Fire Dept. - Ted Bock
Board of Assessors – John Whelihan
DPW Director –Steve Williams (minutes)

Meeting Opened: 10:00AM

S. Williams presented an update to Committee members on the following:

UPDATE:

- CAI is currently updating town wide GIS with Stormwater Mapping Data collected by Fuss & O'Neill, Inc.
- Fuss & O'Neill, Inc. working on Year 2016 report.
 1. Annual Stormwater Training for DPW employees is scheduled for April 4, 2017 at 11AM.
- PVPC has provided marked- up copies of the Stormwater Bylaw & Requirements. Also provided a Draft IDDE Bylaw.
 1. DPW will address IDDE at Town Meeting. Conservation Commission will have to present SW- Bylaw and approve changes to regulations.

STORMWATER UTILITIES:

- Authority is under MGL CH. 40 similar to water/sewer. Also, need authorization to establish an Enterprise Account. We will need Town Managers approval. Gary Brougham is consulting with Town Council.

MS4Program:

- Requires the filing of a Notice of Intent (NOI) within 90 days of effective date. This will be the basis of the stormwater plan which Fuss & O'Neill, Inc. will be doing. Template from the Connecticut River Stormwater Committee is being distributed for your review. Assignment of task(s) will be the subject of further meetings.

DISCUSSION:

- IDDE:
 - 1 DPW will bring to Town Manager.
 - 2 Patty's Draft is almost ready with minor changes.
 - 3 Town Council should review Final Draft.

NEXT MEETING DATE:

- Monday, March 13, 2017 at 10:00AM

ADJOURNMENT: 12:00pm ~ All in Favor

(Transcribed by: dl)

Belchertown DPW~ Review of Stormwater Permit Applications -Year 2016									
STWM Permit		Ass. Map/Lot	Applicant	Location		Routing Slip Approval/Denied			
2016-01		Map 273, Lot 15.15	LaFleur & Sons, Inc.	18 South Washington St.		1.7.2016	A		
2016-02		Map 269, Lot 110.00	Belchertown Renewables	271 Franklin St.		1.7.2016	A		
2016-03		Map 240, Lot 55.07	JP Builders/J. Pirog	Emily Lane		1.7.2016	A		
2016-04		Map 268, Lot 29(2)	Koczor, Applicant	Lot 2, So. Washington St.		1.15.2016	A		
2016-05		Map 104, Lot 5	Arcadia Construction	Lot 39, #8 Old Farm Road		2.11.2016	A		
2016-06		Map 268, Lot 24	Denis Mikhayilchenko	Lot CC, No. Washington St.		2.11.2016	A		
2016-07		Map 2698, Lot 22	Denis Mikhayilchenko	Lot EE, No. Washington St.		2.11.2016	A		
2016-08		Map268, Lot 24(Z)	Bell Property, LLC Andre Korchevsky, owner	Lot Z, Bardwell Street		2.24.2016	A		
2016-09		Map 248, Lot #3.050	Moltenbry Builders, LLC	Sabin Street		2.24.2016	A		
2016-10		Map 268, Lot # 5A	Martin & Susan Denette	lots 28.06 & 28.07 , Bardwell		3.16.2016	A		
2016-11		Map 273, Lot 15.14	LeFleur & Son, Inc.	Lot 19, So. Washington St.		3.23.2016	A		
2016-12		Map 244, Lot #9 & F	William & Sarah Shea	Lot # 156, Old Sawmill Rd.		3.31.2016	A		
2016-13		Map 281, Lot 41.04	G & H Development, LLC	Lot D, Railroad Street		4.21.2016	A		
2016-14		Map 268, Lot 29.00	J.P. Builders, Inc.	Lot 1, South Washington St.		4.14.2016	A		

2016-15		Map 240, Lot 55.00	J.P. Builders, Inc.	Lot 1, Emily Lane	4.14.2016	A	
2016-16		Map 280, Lot 5.03	Riverbend II Properties, LLC	Lot C, South Washington St.	4.28.2016	A	
2016-17		Map 106, Lot 5	Jeffrey & Virginia Oldenberg	Lot 5, Bay Road	4.28.2016	A	
2016-18		Map 244, Lot 156	Paul Alexanderson & Kim Reiner, App.	Lot 156.00 Old Sawmill Ext.	5.3.2016	A	
2016-19		Map 268, Lot	Michael & Diane McDonald	Lot 3, South Washington St.	5.31.2016	A	
2016-20		Map 268, Lot 29.01	Michael Roy	Lot A, Bardwell St.	5.31.2016	A	
2016-21		Map 244, Lot 55.01	Mark Jackson	Lot 3, Sargent Street	6.6.2016	A	
2016-22		Map 268, Lot 52	Howard Weston	Lot B, No. Liberty Street	6.14.2016	A	
2016-23		Map 280, Lot 5.04	Michael Gomes	Lot 5E, So. Washington St.	6.14.2016	A	
2016-24		Map 268, Lot 29.08	Gary Decoteau	Sublot 8, Bardwell St.	6.21.2016	A	
2016-25		Map 280, Lot 9.00	Mark Raymond	Lot A, So. Washington St.	7.19.2016	A	
2016-26		Map 280, Lot 4.00	Whisperwood Realty Trust	Lot 4A, 4B, 4C So. Washington St	7.19.2016	A	
2016-27		Map 256, Lot 21.00	Leon & Regina Berneche	Lot 187, No. Washington St.	7.19.2016	A	
2016-28		Map 238, Lot 188.00	Richard Lemlin/CARWASH	5 George Hannum Rd.	7.27.2016	A	
2016-29		Map 250-Lot 49.00	Jame Demers	Lot 2C (Rev.) No. Washington	8.19.2016	A	
2016-30		Map 248, Lot 20.10	Verizon Wireless	#134 Aldrich Street	8.19.2016	NA	
2016-31		Map 251, Lot 70.05	J.P. Builders, Inc.	Lot 4A State Street	9.12.2016	A	



CELEBRATE EARTH DAY APRIL 22, 2016

TRASH COLLECTION

The Town of Belchertown, Department of Public Works will be providing town recyclable trash bags to anyone wishing to collect curbside trash on Earth Day, Friday, April 22, 2016. Trash bags may be obtained at the DPW, 290 Jackson Street, Highway Garage location, April 20-21, 2016. All trash collected must be brought to the Transfer Station for disposal by Friday, April 22, 2016 or contact the DPW office to arrange for pickup.

Thanks to all participants for your efforts towards
keeping our town clean!

The Sentinel Newspaper Ad-Run: Week of 4.14.2016 -4.21.2016
Posted for “free” in the Calendar Section

Volunteers celebrate 'Earth Day'



BELCHERTOWN – Volunteers spread out last Friday, Earth Day, to help clean the town roadsides and trails of litter, trash and debris.

Once again the Belchertown Public Works Department issued bright orange trash bags to local groups and individuals to be used in this effort.

This year a local Girl Scout Troop went to the Quabbin Trails to clean up. Not only does this improve the visual aesthetics of the area it also helps protect natural resources - especially drinking water from contamination. As a result, this becomes one more aspect of the Public Works Storm Water Report compliance measures.

DPW Director Steve Williams said they were very thankful for the volunteers' assistance.

"The community support we get is always gratefully appreciated," he said. "We don't have the resources to get all of this done without their help."

Turley Publications photo submitted

Filled trash bags line Sargent Street following a clean-up on Earth Day.

Friday, April 22

EARTH DAY TRASH COLLECTION:

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**CELEBRATE EARTH DAY
APRIL 22, 2016**

TRASH COLLECTION

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Thanks to all participants for your efforts towards keeping our town clean!



CELEBRATE EARTH DAY APRIL 22, 2016

TRASH COLLECTION

The Town of Belchertown, Department of Public Works will be providing town recyclable trash bags to anyone wishing to collect roadside trash on Earth Day, Friday, April 22, 2016. Trash bags may be obtained at the DPW, 290 Jackson Street, Highway Garage location on April 20-21, 2016. All trash collected must be brought to the Transfer Station for disposal by Friday, April 22, 2016.

The Department wishes to thank participants for their efforts towards keeping our town clean!

Name/Address	Collection Location/Route	# Bags
Andrew Allen ²⁵ Allen Rd	Allen Rd.	20
Emma Allen ³⁵ Allen Rd	Old Endfield	20
Mary Petrin	227 S. Liberty	10
Michele Horvath	SARGENT ST.	20
Louise Butler	Chauncy Walker	20
Nora Austin	Shea Ave	20
Jeff Zawadzki	Old Endfield	20
Paula	Amherst Rd	10
Angela ^{305 Franklin St.}	Rt 181	20
Mark Brownell	M. Sears Cold Springs	20
Bitounguil ^{route}	Qualicum trail	30
Ilgel Butle	Rt 21	20
Diane Cram	BAY Rd	20
Sarah Lubeck	East St.	20
Christine Dudek	800 Franklin St	10
Beth Adams	96 Allen St.	20

Town of Belchertown

Municipal Energy Efficiency



CASE STUDY

BACKGROUND

Several years ago, Belchertown, located in western Massachusetts bordering the Quabbin Reservoir, was struggling to meet budgets due to rising energy costs for municipal facilities. When the Green Communities program began, the town saw an opportunity to receive support for energy efficiency projects that would help to control operating costs. The Pioneer Valley Planning Commission (PVPC) assisted Belchertown and other towns in the region with the program application, which required the community to establish an energy use baseline and develop a five year plan to reduce energy use by 20 percent.

In the spring of 2010, Belchertown was one of the first Green Communities designated by DOER. The Department of Public Works (DPW) Director and his Administrative Assistant have coordinated participation in the program, in cooperation with the Facilities Director for the School Department, which accounts for the majority of the town's energy consumption.

ACTIONS

Belchertown has reduced its energy consumption through wide ranging improvements to its aging town facilities.

Municipal bonds – Belchertown issued municipal bonds to fund implementation of energy efficiency measures.

Contract with an energy service company – With assistance from PVPC, Belchertown selected and hired an energy service company (ESCO). The ESCO identified and implemented most of the energy efficiency measures described below, guaranteeing annual energy savings levels over the 20 year contract period. Each year, the ESCO will verify the savings achieved and reimburse the town if the guaranteed levels are not met.

Energy audits – The ESCO began their work by auditing all town buildings and developing a proposal of recommended energy efficiency measures.

Energy efficiency measures

Belchertown has implemented energy efficiency measures in every major town facility. These were funded through a combination of municipal funds, Green Communities grants from DOER, Mass Save® rebates, and federal grants through the 2009 American Recovery and Reinvestment Act. While most measures were implemented by the ESCO, the town has recently put a Green Communities grant toward additional work that wasn't part of the ESCO contract.

- **Interior lighting upgrades and controls** – Belchertown has upgraded to energy-efficient lighting in many buildings, including the Town Hall and schools. In several areas, occupancy sensors have been installed to automatically turn lighting on and off based on occupancy.
- **Exterior lighting upgrades** – The town has upgraded lighting outside the wastewater treatment plant to energy efficient LED technology.
- **Weatherization** – Belchertown has done weatherization work, such as air sealing, in most town buildings.
- **Storm windows** – New exterior storm windows were installed to reduce heat loss in two buildings.
- **Water efficiency** – Belchertown has installed efficient plumbing fixtures in schools to reduce use of water and fuel for water heating.

AT A GLANCE:

- Population: 14,700
- Size: 55 square miles
- Reduction of municipal energy consumption: 21%
- Annual energy cost savings: \$300,000

LEARN MORE:

- <http://belchertown.org>



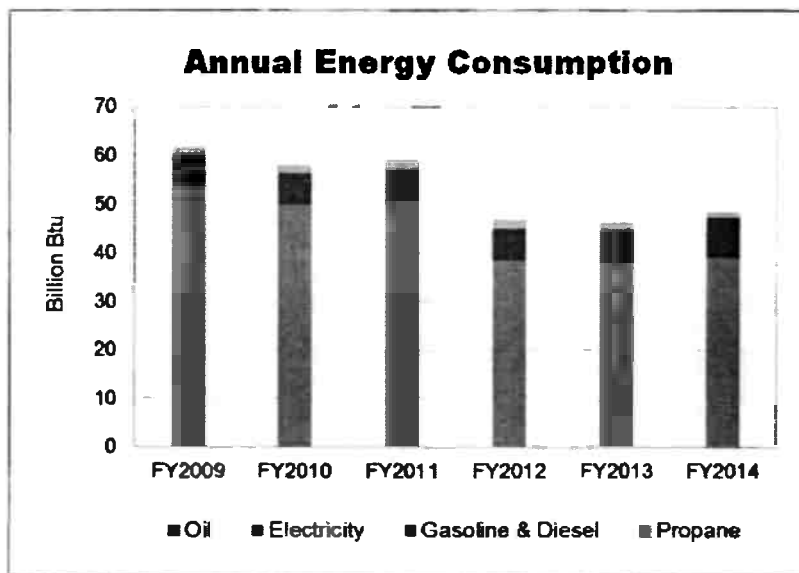
Employees record vehicle mileage when refueling, as part of Belchertown's vehicle fuel management program

- **HVAC upgrades and controls** – Several measures have been implemented to reduce electricity and oil use in heating, ventilation and air conditioning (HVAC) systems, including:
 - Installation of new, efficient natural gas boilers in place of outdated oil boilers in several buildings, including Town Hall and some schools
 - Installation of an energy management system to provide centralized control, scheduling and monitoring of HVAC systems in several buildings, including Town Hall and most of the town's schools
 - Replacement of several basic thermostats with smart thermostats that are programmed to set back heating or cooling based on the occupancy schedule and can be accessed remotely to make adjustments
 - Installation of a heat recovery loop at a school to make use of waste heat rather than rejecting it through the cooling tower
 - Installation of variable frequency drives to adjust the speed of the motors driving fans and pumps to match output requirements
 - Upgrades to high efficiency motors
- **Refrigeration controls** – Automated control systems were installed to improve the operating efficiency of walk-in coolers in the school and senior center kitchens.
- **Vending machine controls** – In the Town Hall, police station and schools, Belchertown installed controllers that optimize energy use by putting vending machines into a low power mode when the area is not occupied.
- **Wastewater treatment plant improvements** – Variable frequency drives were installed to adjust motor speeds to match output requirements.
- **Vehicle fuel management** – In 2015, Belchertown began a pilot program that combines technology and behavior to attempt to reduce gasoline and diesel fuel use by the town's vehicle fleet. A new electronic fuel management system installed at the DPW facility requires staff to insert a vehicle-specific key and type in the vehicle's current mileage when refueling. The system then tracks miles driven and fuel use for each vehicle. Reports are sent to each department detailing their efficiency and reminding them of ways to improve performance, such as checking tire pressure and reducing idling.

RESULTS

Belchertown was one of the first communities to achieve the Green Communities program's energy reduction goal, reducing municipal energy consumption by 21 percent from 2009 to 2014. The town has reduced its annual energy costs by approximately \$300,000 to date.

Previously, several facilities had outdated equipment that had become unreliable or difficult to maintain, such as the oil boiler that was original to the 1920s Town Hall, and the town struggled with funding to make needed improvements. Green Communities grants and utility incentives have helped Belchertown to modernize its facilities, while investing in energy efficient equipment that will reduce operating costs for years to come.



RECOMMENDATIONS

Take advantage of assistance available from organizations such as regional planning agencies. Support from PVPC has been critical to Belchertown's success in reducing its energy consumption. PVPC has assisted throughout the process, including developing the energy reduction plan, completing the Green Communities program application, and hiring the ESCO and managing their contract.

Consider hiring an ESCO and owner's agent if municipal staff availability and expertise is very limited. Belchertown was able to have so many energy efficiency measures implemented in a short period by hiring an ESCO to do much of the work. Using a third party owner's agent, funded through a grant from DOER, facilitated the procurement process for the ESCO.



Steven J. Williams
Director

Office of
DEPARTMENT OF PUBLIC WORKS
290 Jackson Street, P.O. Box 306
Belchertown, Massachusetts 01007-0306
Telephone: (413) 323-0415

November 21, 2016

Mass Department of Energy Resources (DOER)
100 Cambridge Street, Suite 1020
Boston, MA 02114
Attn: Mr. James Barry, Regional Coordinator

RE: GCCG-2015 – One Year Report for:
Installation of Harvey Exterior Storm Windows/Freedom Ctr.

Dear Mr. Barry,

It was one year ago and through the benefit of the Green Communities Competitive Grant Program (2015) that we were awarded \$12,274.09 for the installation of 76 new Harvey Exterior Storm Windows. One year later, we are happy to report its expected savings from reduced energy costs have come to fruition.

The Harvey Low-E windows are purposed to retain considerable heat-loss with an energy efficiency savings that provide a 50% cold air exfiltration vs. infiltration and reduced Greenhouse Gas Emissions realized through the eGRID (Emissions & Generation Resource Integrated) database conversion used for emissions reductions for energy savings programs.

In addition, the Harvey windows were custom fit to the exact dimensions of the existing window openings which provide the best insulating and infiltration rates of any storm window and are additionally equipped with half screens consisting of fiberglass mesh for channeling the outside air into the buildings.

The Department of Public Works has tracked and calculated the windows' energy performance from both electrical and fuel usage since their installation on October 14-15, 2015; please refer to attachment: **"BEL-AR4C New Harvey Windows Install –Actual Savings –Freedom Ctr."**, which depicts actual one-year savings.

The Belchertown Department of Public Works concludes the newly installed Harvey Storm Exterior Windows were the best choice towards decreased energy use for Belchertown's Freedom Center. We will continue to monitor their performance and efficiency over the upcoming years..

Sincerely,

Steven J. Williams, Director
Department of Public Works

SJW/dl

ATTACHMENT







Steven J. Williams
Director

Office of
DEPARTMENT OF PUBLIC WORKS
290 Jackson Street, P.O. Box 306
Belchertown, Massachusetts 01007-0306
Telephone: (413) 323-0415

November 21, 2016

Mass Department of Energy Resources (DOER)
100 Cambridge Street, Suite 1020
Boston, MA 02114
Attn: Mr. James Barry, Regional Coordinator

RE: GCCG-2015-16 Harvey Exterior Storm Windows/ Recreation Dept.

Dear Mr. Barry,

It was one year ago and through the benefit of the Green Communities Competitive Grant Program (2015) that we were awarded \$11,373.97 for the installation of 70 new Harvey Exterior Storm Windows for Belchertown's Recreation Department, located at 66 State Street. One year later, we are happy to report its expected savings from reduced energy costs have come to fruition.

The Harvey Low-E windows are purposed to retain considerable heat-loss with an energy efficiency savings that provide a 50% cold air exfiltration vs. infiltration and reduced Greenhouse Gas Emissions realized through the eGRID (Emissions & Generation Resource Integrated) database conversion used for emissions reductions for energy savings programs.

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The Department of Public Works has tracked and calculated the windows' performance from both the electrical and fuel usage since their installation on October 14-15, 2015; please refer to attachment **"BEL-AR4D New Ext. Harvey Window Install -Actual Savings -Rec.Bldg"**, which depicts actual one-year savings.

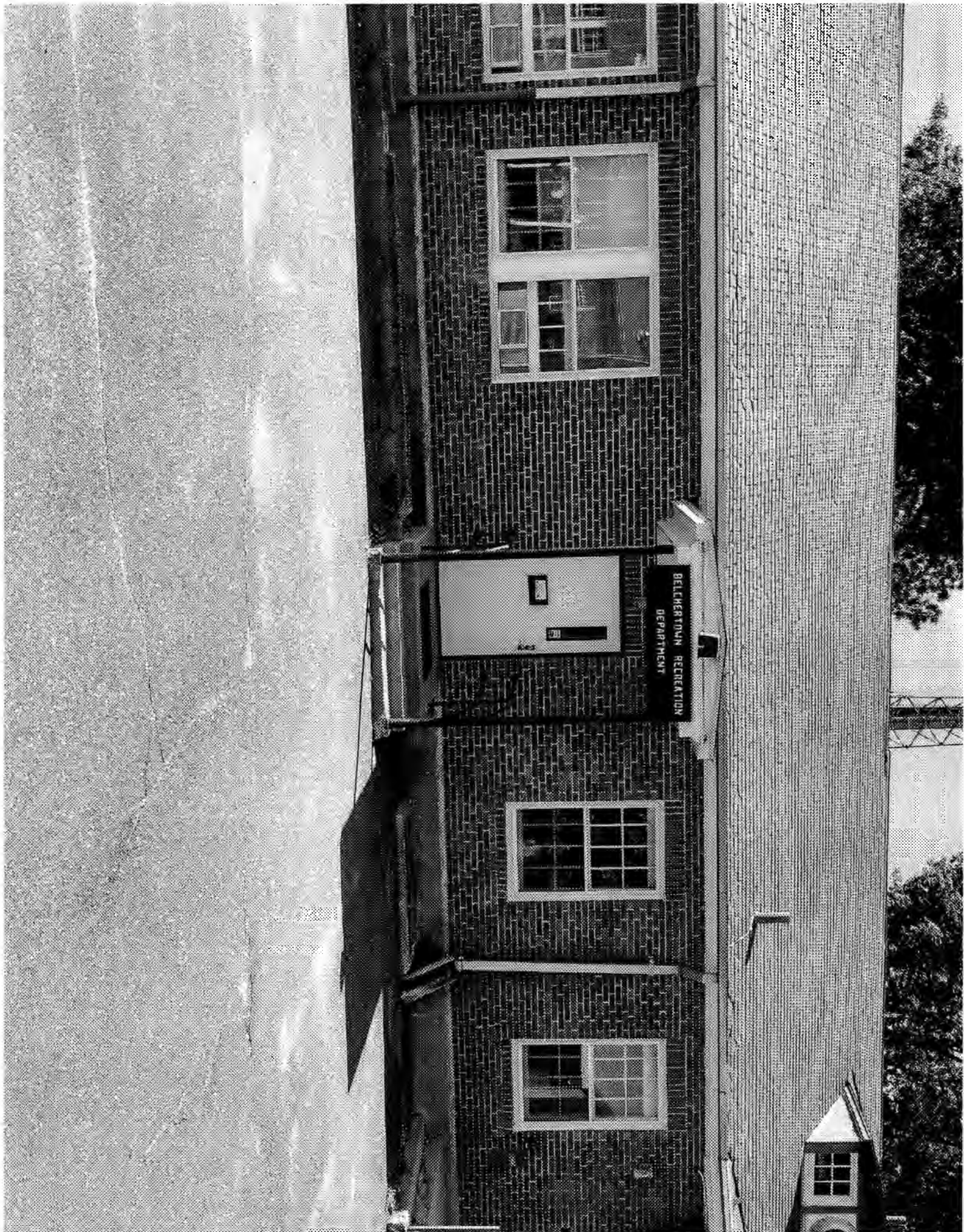
Sincerely,


Steven J. Williams, Director
Department of Public Works

SJW/dl

ATTACHMENT







Steven J. Williams
Director

Office of
DEPARTMENT OF PUBLIC WORKS
290 Jackson Street, P.O. Box 306
Belchertown, Massachusetts 01007-0306
Telephone: (413) 323-0415

November 21, 2016

Mass Department of Energy Resources (DOER)
100 Cambridge Street, Suite 102
Boston, MA 02114

RE: GCCG-2016 Annual Report- PetroVend Fuel Management System & Behavioral-Based Program

Dear Ms. Pfister and Mr. Barry,

The Department of Public Works was awarded \$17,706.20 through the benefit of the GCCG (2015) for the installation of a new PetroVend Fueling System and Software Program. We are pleased to report actual reduced fuel consumption while educating our municipal drivers through a monthly reporting system. In distinct opposition to our previous antiquated fuel system, our new PetroVend system allows us many capabilities tailored to fit our immediate and long-term needs, some of which are listed here below:

- Report Generation provides multi-faceted ready reports for internal use, municipal budgeting, inter-office reporting and Mass. State requirements.
- Vehicle Odometer Readings are catalogued to exact mileage
- Vehicle Inventory information to memorialize "Make, Model Year, Vin #.
- Encoded Fuel Key provides department and vehicle identification and user activity at the pump

Additionally, we have addressed the educational and/or behavioral aspect of the systems program by providing each user with an encoded chip fuel key that catalogs their fuel consumption (Gas/Diesel). In turn, a monthly spreadsheet is sent to each department to view its fueling activity. We have also provided twelve monthly tips on "Ways to Improve Your Fuel Economy"; utilized towards further reduction of fuel consumption and vehicle performance.

PetroVend Questionnaire

A "PetroVend Questionnaire" was created seeking feedback from its municipal departments. The results indicate that users are more attentive to the program, find it "user-friendly" and have acclimated towards sharing the educational monthly data with internal department users.

PetroVend PowerPoint Presentation

The collection of all this data was then formatted into a "PetroVend PowerPoint Presentation" which catalogs the entire process from installation to current date. This presentation is available for both the Department of Energy Resources(DOER) and/or for those designees within the Green Communities Program who may be seeking further energy savings for their fueling programs through utilization of this type of technology. N:\Green Communities\GCCG -Fuel and Boiler Year One Reporting\PetroVend Fuel Management-Presentation.pptx

Sincerely,



Steven J. Williams, Director
Department of Public Works

SJW/dml

PETROVEND HYBRID FUEL MANAGEMENT SYSTEM & SOFTWARE PROGRAM

**A BEHAVIORAL STUDY ON THE BENEFITS OF
IMPLEMENTATION, USAGE AND MONITORING
MUNICIPAL VEHICLE(S) FLEET.**

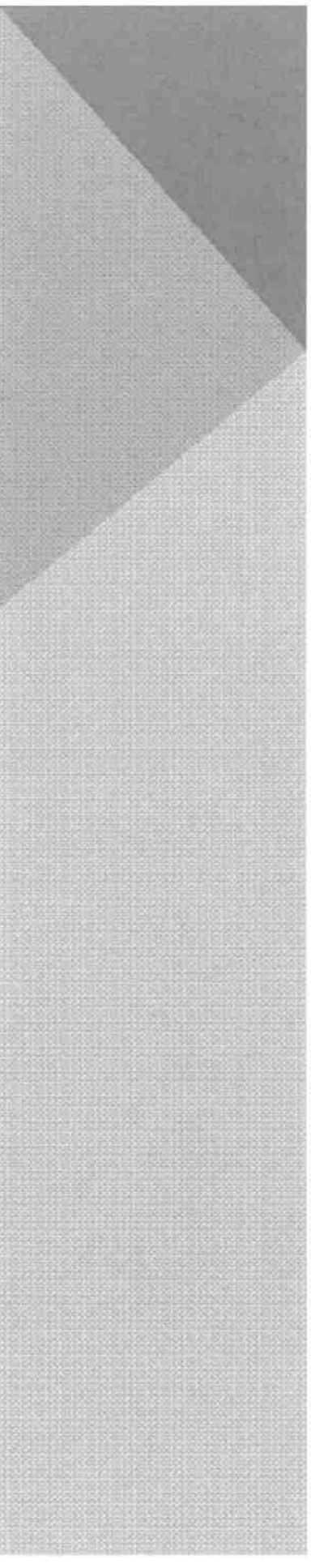
**TOWN OF BELCHERTOWN, DEPARTMENT OF PUBLIC WORKS
2015- GREEN COMMUNITY COMPETITIVE GRANT
INSTALLED ON: SEPTEMBER 9, 2015**

**INSTRUCTIONS: GO TO "SLIDE SHOW" (TOP OF TOOLBAR)
THEN, GO TO "FROM BEGINNING" (LEFT SIDE OF TOOLBAR)
THIS SLIDE PRESENTATION HAS BEEN AUTOMATICALLY TIMED, OR
YOU CAN PRESS "ENTER" TO MOVE BETWEEN SLIDES.**

HISTORY

The Town of Belchertown's' Department of Public Works, having reached its 20+ percent energy reduction target for five years as a participant in the Green Communities Program, has a goal of achieving further energy savings reduction from fuel consumption generated from the Town of Belchertown's municipal fleet/vehicles via the replacement of an electronic fuel management system and software program. This programs purpose is based on the reduction of vehicle energy use, designed for better mileage reasonability to assure accurate mileage entry which culminates into projected savings from fuel consumption.

To date, the Department of Public Works has had the responsibility of maintaining monthly fuel reporting for all town-owned municipal vehicles throughout several divisions. Our current program provides approximately 100+ electronic fuel keys programmed and dispensed to all town vehicles and equipment. Internal reporting is utilized on a monthly basis and has provided the necessary data for Green Community Annual Reporting since FY'09 hence supporting Belchertown's' five year energy reduction plan through its continued adherence to the program.



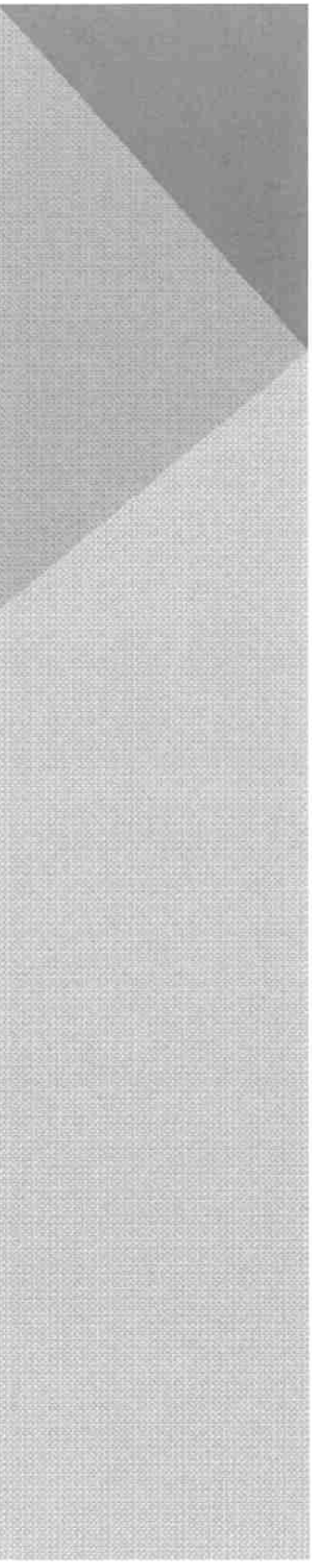
**TOWN OF BELCHERTOWN, DEPT. OF PUBLIC WORKS
PETROVEND FUEL MANAGEMENT SYSTEM**

HOW IT WORKS

The PetroVend Hybrid Fuel Control & Software Management System works in direct correlation with an Automatic Fueling Control System (AFC). Its main function amongst others, is to control and monitor fueling access to fuel dispensing equipment using the latest in technology. This systems' specific design correlates with the Reliance G5200/G6200 Series mechanical fuel dispenser for low viscosity, petroleum fuels; diesel including biodiesel blends up to 20% and kerosene; gasoline including standard blends.

This operation is performed using only a card/key system and display that provides fuel controls for two individual fueling hoses controlled through the use of one electronic card/key. This system prevents the card/key user from dispensing the wrong product where there are two hoses/two products in play. Once the key has been inserted, the system searches through its memory and determines whether the key is valid and for which fuel hose the user is authorized to use. Once validity is confirmed, the user turns on the authorized hose and dispenses the product (gas/diesel).

The amount of product dispensed by the user is accumulated into the memory of the programmed key and in turn uploaded into the Phoenix Premier Windows Software Program which reconciles with existing Veeder-root tank gauge system(s) and provides accurate reporting containing an abundance of information specific to the key user and department vehicle.



**TOWN OF BELCHERTOWN, DEPT. OF PUBLIC WORKS
PETROVEND FUEL MANAGEMENT SYSTEM**

GOALS & BENEFITS

The Belchertown DPW anticipates it will, through its chosen vendor, provide the necessary access and means for the implementation of the new system, the installation of the fuel island terminal at the Department of Public Works Highway Garage Division and its necessary training program(s) with onsite Phoenix and DPW management overseeing the system, its components, software programming and in-house manageability.

The installation of this advanced system provides the technologies that reduce vehicle fuel consumption via educational and operational in-house and outreach programs. Other attributes of the system include:

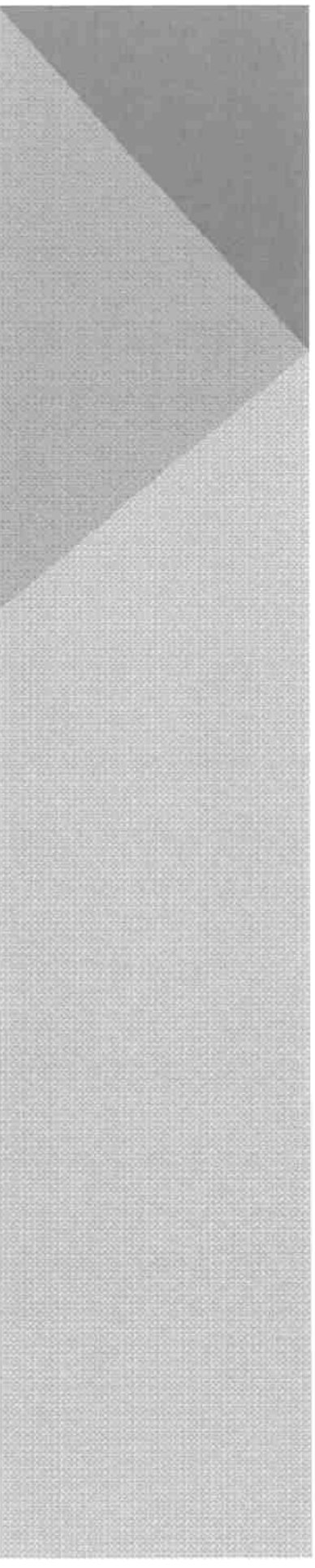
- Efficient fuel readings resulting in accurate reconciliation reporting, anytime
 - Better mileage reasonability to assure accurate mileage entry
- A new lock-down feature which allows management to cap the amount of fuel drawn at the pump in order to prevent over-usage, theft or transferring of keys
 - Eliminates office journal printing for transaction logging; saves paper
- Veeder-root compatible and configured to work with existing network connection(s), via Ethernet Port, which eliminates the need for a stand-alone PC.
- Adds the ability to network internal data/compilations, and reconciliations to various offices of local and state government, at any given time.

GRANT OPPORTUNITIES

In addition, the availability exists to connect with MASSDOT's contract under COMPASS # MDOTFCS105, Section 3.00 – Acquisition Method which states;

“Any other Agency of Massachusetts or Municipalities may contract under this RFR, but MUST execute a separate contract that meets their own legal and business requirements.”

This program also qualifies for work in conjunction with MASSDOT's Office of Energy, Technology & Management (Energy Office) who “promotes the use of renewable and energy conservation measures through the coordination and the development of specific projects that will lead to the reduction of energy costs and Green House Gas emissions within the Commonwealths transportation sector”.



ANTICIPATED IMPACT

THE PURCHASE OF THIS PROGRAM ALLOWS US TO CONTINUE A DECISIVE MONITORING PROGRAM OF FUEL USAGE/DISPENSING FOR THE TOWN OF BELCHERTOWN. THE INSTALLATION OF THIS MODERN TECHNOLOGICAL PROGRAM COULD REALIZE FURTHER REDUCTIONS EQUATING A "NET -PRICE PER GALLON" OF GAS/DIESEL CONSUMED
DATE OF INSTALLATION : SEPTEMBER 9, 2015

Year	Gas/Gallons	Diesel/Gallons
2014-2015 (9/2014-9/2015) Installation: 9.9.2015	38,016	20,670
2015-2016 (9/2015-9/2016)	37,360	18,624
Total Reduction:	-656	-2046

FUELING PUMP STATION DESIGNED AND INSTALLED FOR EASE OF ACCESS



BUDGET

DUE TO MUNICIPAL BUDGETING, THE IMPLEMENTATION OF THIS PROGRAM WAS NOT FEASIBLE WITHOUT THE GREEN COMMUNITIES COMPETITIVE GRANT (GCCG-FY'15).

THE FOLLOWING OUTLINES TOTAL SYSTEM COSTS, AS QUOTED BELOW.

PetroVend Hybrid Fuel Control & Management System \$17,706.20

Breakdown:

▪ K800 Hybrid Internal System including software	\$3853.80
▪ K800 - HFTT-2 Hybrid Fuel Island	\$3351.80
▪ Pocket Weather shield	\$ 76.50
▪ 100 Chip keys (@ \$.5.40 ea.)	\$ 540.00
▪ Standard Encoding for Chip Keys by OPW (per)	\$ 180.00
▪ Chip Key Reasonability	\$ 944.10
▪ Phoenix Premier for Windows Software	\$4590.00
▪ TCP/IP connectivity card for tank monitoring	\$ 720.00
▪ Installation: Including Estimated Labor & Materials & Training	\$3450.00

PERMITTING & APPROVALS

Onsite existing electrical wiring and conduits provide adequacy for usage of the installation of the PetroVend System.

If necessary, a cat5 may be needed to connect the fuel pump (Ethernet port).

This can be done via an IT Computer Division.

There are no other local, state or federal permits required for this project.



BEHAVIORAL BASED-PROGRAMMING-(EDUCATION, OUTREACH AND OPERATIONAL CHANGES

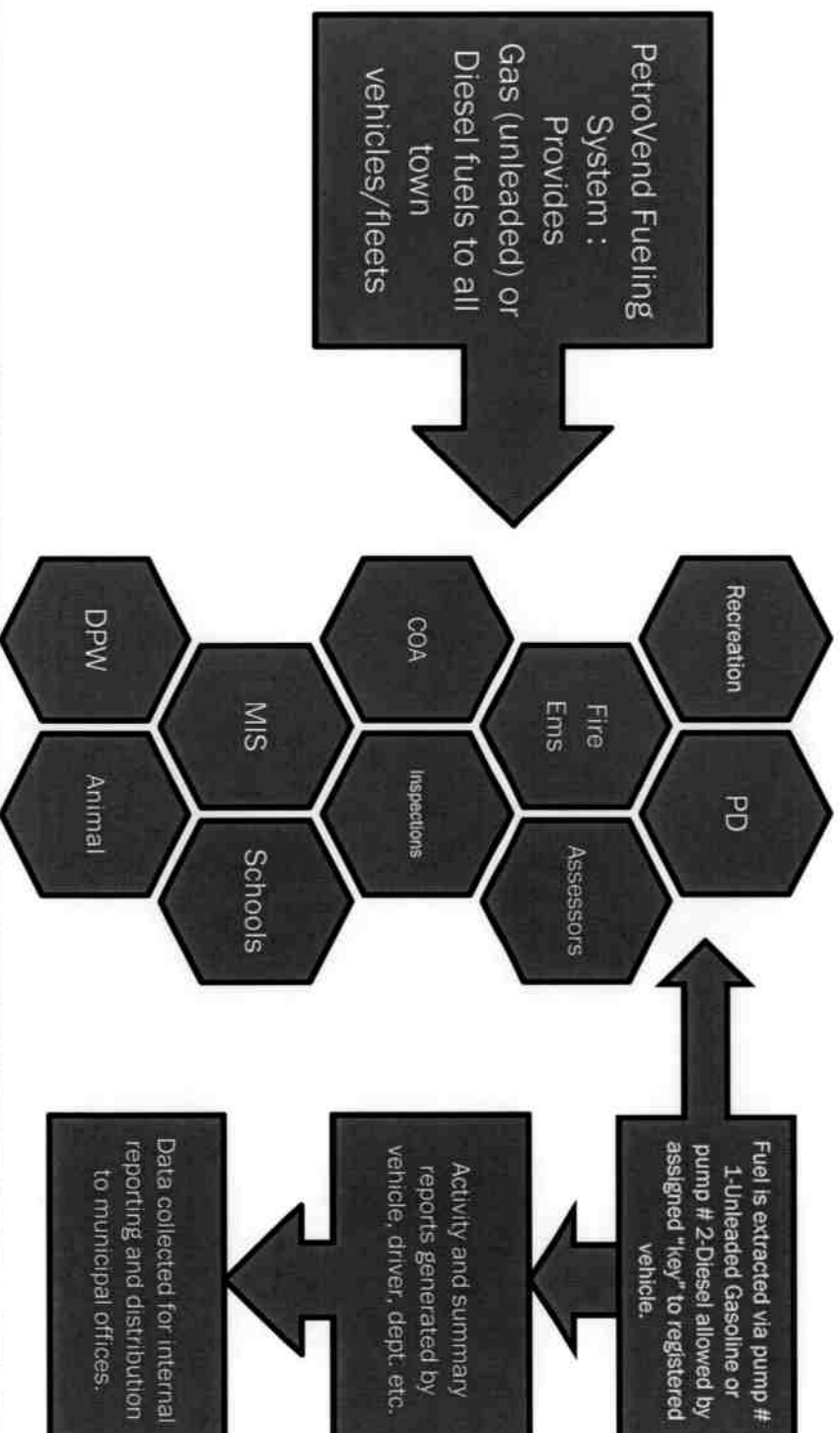
We propose the implementation of a behavioral-based program designed for awareness and to provide the educational data that would support this program. Each town entity (designee) who retains and operates a town/fleet vehicle would be provided with an ongoing monthly/annual report via email. Each report would depict their departments fuel consumption based on the data received and tracked by the PetroVend Software Program. Each entity would be able to see which vehicles are proven more efficient than others and identify any over fueling or errors with keys and/or key holders. We would additionally provide any impacts/feedback focused on energy savings that could result from better utilization of fuel intake/output, encourage fuel efficiency measures to include less idling time, speed control, inside cabin power generation and emergency lighting to name a few.

This programs' focus concentrates more on how to conserve fuel which will have a direct impact on energy savings. Vehicle consumption reporting will remain an ongoing program with the anticipation that the use of this newly implemented system in combination with our proposed behavioral program will reach a marginal quantifiable goal.

In closing, we additionally suggest this program could be used as a pilot (test or trial) program for both the Department of Energy Resources (DOER) and/or for those designated Green Communities cities/towns who may be seeking further energy savings for their fueling programs through the utilization of this type of technology.



FUELING PROCESS AT THE PUMP



TOWN OF BELCHERTOWN - PETROVEND FUEL PROGRAM QUESTIONNAIRE - 1 YR REPORT -2016

Please answer all questions based on a scale of 1-5: 1 = Easy 5 = Hardest				
	Question # 1	Question # 2	Question #3	Question #4
	Please indicate your overall experience when fueling at the DPW PetroVend pumping Station(s) ? (gas/diesel)	Has the DPW monthly fuel reports proven beneficial for your Division? If yes, please indicate how they are being used?	Do you adhere to and inform users of the educational "monthly tips" provided in your monthly report?	Please indicate your overall experience when fueling at the DPW "PetroVend" pumping station(s) -(gas/diesel)
Police	1	Yes. Helps track sector usage	Yes. They are shared with department Members	"EASY, RELIABLE, ALWAYS ACCESSIBLE"
EMS	1	Reports provide quick, reliable information to identify vehicle use and maintenance.	Yes. The tips are sensible and easy for all to incorporate into daily driving habits.	"No issues, easily accessed."
Fire	1	Yes. The reports make it easy to track fuel consumption and make practical and feasible changes	Yes. The tips are essential and reinforce safe and practical driving and maintenance techniques.	"Practical and accessible."
COA	1	Yes. Able to track fuel usage. Although, we have no control over pre-designated daily routes.	We pass on tips to our drivers.	"No problem once drivers became familiar with the procedure."
MIS	1	Yes	Yes	"Easy enough..."
Recreation	1	Yes. Able to track fuel usage with ease	Yes. Information passed along to all drivers	"Easy to use; no problems"
Schools	1	Yes. A great way to track for budgeting purposes	Yes. Info is shared with employee who drives vehicle.	An "Easy" Operation
Assessors	2	Yes. Able to review monthly mileage	Yes. However, many "tips" refer to a "fleet" of vehicles	"Easy access. Key works fine."
Inspections	1	Yes. More awareness of fuel consumption as result of this report	Yes. I look forward to their insight on how to save fuel.	"Easy access, kind, courteous and extremely helpful assistance, if needed. " ~System is "User Friendly"
Animal Control	1	No	Yes	Easy

(SAMPLE)

JANUARY, 2016 - Monthly Tip # 5- "Fill Your Tank Early in the Morning –or Late at Night"

Fuel is dispensed by volume. If you fill your tank when it is coolest outside-early in the morning or late at night, and avoid the heat of the day –the fuel will be more dense. As a result, you will get more gas for the same amount of money.

"WAYS TO IMPROVE YOUR FUEL ECONOMY"

12 MONTHLY TIPS REPORTING

*** EACH MONTH EVERY DIVISION RECEIVES THE FOLLOWING RECOMMENDATIONS WITH THEIR FUEL REPORT.**

(IMPLEMENTED -9/2015 -1/2016 - PAGE 1 OF 2)

SEPTEMBER, 2015 - Monthly Tip # 1- "Drive at a Constant Moderate Speed"-Edmunds.com found that the best way to improve fuel efficiency was to accelerate slowly and to brake over a longer distance. Aside from purchasing a new vehicle, "this is the single most effective step you can take to reduce your costs" According to fueleconomy.gov. ("As a rule of thumb, you can assume that each 5 mph you drive over 60 mph is like paying an additional \$0.20 per gallon of gas.")

OCTOBER, 2015 - Monthly Tip # 2 - "Check Tire Pressure"-A little bit of vehicle maintenance can go a long way in improving gas mileage. According to the U.S. Department of Energy, 1.25 billion gallons of gasoline, approximately 1% of total consumption, are wasted each year in underinflated tires. Tires can lose about 2 pounds per square inch (psi) per month. Each tire that is underinflated by 10 psi reduces fuel economy by about 3.3%. Four tires that are underinflated by 10 psi, then, would reduce a vehicle's fuel economy by a substantial 10% at an added cost of .31 cents per gallon. Follow the guidelines in your vehicle's owner's manual (these recommendations also appear on a sticker inside the driver's side door jamb) -and not what is stamped onto the tire itself. Overinflated tires are not efficient either, so keep your tires balanced and in alignment.

NOVEMBER, 2015 - Monthly Tip # 3 - "Turn Off the Car"-Idling gets zero miles per gallon and collectively consumes several billion gallons of fuel per year, according to the U.S. Department of Energy. Vehicles should be turned off if the expected wait will be longer than 30 seconds, since an idling vehicle can burn as much as one gallon of gas each hour. Turning the car off can save about 5 cents per minute. Starting your vehicle does use a burst of fuel, but not as much as allowing the engine to idle too long.

DECEMBER, 2015- Monthly Tip # 4 - "Go Easy on the Pedals"-Speeding, braking and rapid acceleration waste gas. Depending on the type of vehicle, poor driving habits can negatively affect fuel economy between 5% and 33%. Based on the current national average of \$3.12 per gallon (for regular gasoline), driving sensibly, and not like a race car driver, can lead to an equivalent gas savings of between 16 cents and \$1.03 per gallon.

JANUARY, 2016- Monthly Tip # 5- "Fill Your Tank Early in the Morning -or Late at Night"-Fuel is dispensed by volume. If you fill your tank when it is coolest outside-early in the morning or late at night, and avoid the heat of the day -the fuel will be more dense. As a result, you will get more gas for the same amount of money.

FEBRUARY, 20156- Monthly Tip # 6 - "Purchase a Fuel-Efficient Car"-The best way to save money on gas is to drive a fuel-efficient car. It's probably impractical to replace your current car for something that costs less to run, but if you're in the market for a new vehicle, keep fuel economy in mind. Consumer Reports Magazine has several lists of fuel-efficient vehicles:

A list of the most fuel-efficient cars they've tested

A list of fuel-efficient SUV's

A list of cars that combine fuel efficiency and performance

(There is a calculator from fueleconomy.gov which allows you to compare the cost difference between two vehicles based on their MPG).

**"WAYS TO IMPROVE YOUR FUEL ECONOMY"
MONTHLY TIPS REPORTING**

*** EACH MONTH EVERY DIVISION RECEIVES THE FOLLOWING RECOMMENDATIONS WITH THEIR FUEL REPORT.**

(CONTINUED: 2/2016-8/2016 -PAGE 2 OF 2)

MARCH, 2016 - Monthly Tip # 7: "Slow Down"- Gas mileage decreases above 60 miles per hour. According to fuelconomy.gov for every five miles per hour that exceeds 60mph, drivers pay an equivalent of about 24 cents more for each gallon of gas. While each vehicle has its own optimal speed for fuel efficiency, speeding can result in 7% to 23% reduced fuel economy. Driving at slower speeds can save .21 to .71 cents per gallon.

APRIL, 2016 -Monthly Tip # 8: "Don't top off your tank & Be sure your gas cap is tight"-Trust the auto-shut-off. Overfilling can lead to wasted gas. Improperly seated gas caps allow 147 million gallons of fuel to vaporize every year in the United States.

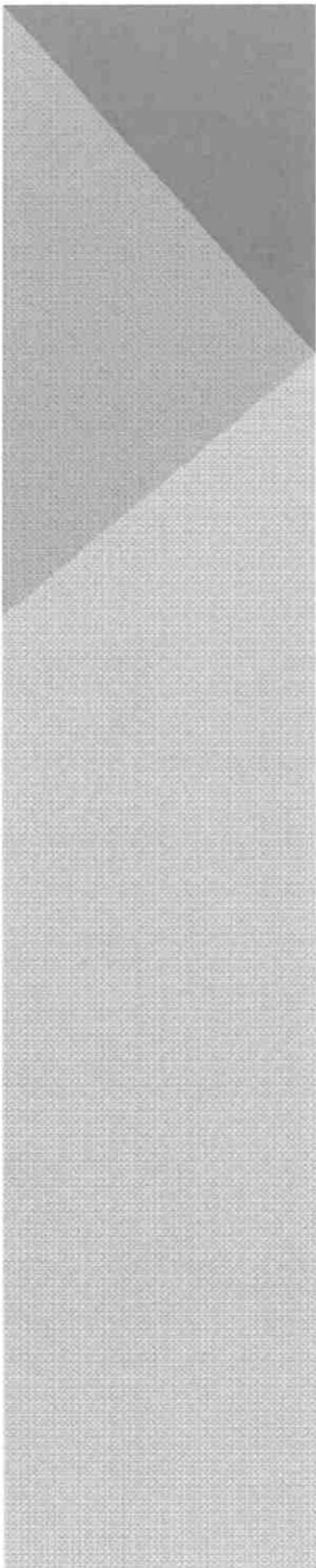
MAY, 2016 -Monthly Tip # 9: "Keep Your Cool"-Most people claim that it makes more sense to use air conditioning on the highway, and to roll- down the windows in city traffic. It's commonly claimed that either method is going to reduce your fuel economy by about 10%.

June, 2016 - Monthly Tip # 10: "Keep Your Vehicle Well-Maintained"-A car in poor running condition will use more gas than one that has been tuned up. A dirty air filter can reduce gas mileage up to 20%. Spark plugs in poor condition can reduce gas mileage up to 12%.

July, 2016 - Monthly Tip # 11: "Check Alignment"-Misaligned tires drag instead of roll freely. Improper alignment can reduce fuel efficiency by as much as 10%-about .31 cents per gallon. In addition, the tires can wear out more quickly. Tires that are out of balance (symptom: vibration in the steering wheel) can cause uneven tire wear, which can result in lower gas mileage. Tires should be balanced and rotated according to the vehicle's owner's manual to improve tire performance and fuel economy.

August, 2016 - Monthly Tip # 12: "Good for the Environment"-Proactive steps can be taken to improve fuel efficiency by paying attention to and changing gas-guzzling habits, and following a vehicle's maintenance schedule. Improved gas mileage is good for your car and good for the environment!

STAND ALONE PEDESTAL WITH PLASTIC RAIN SHIELD





Steven J. Williams
Director

Office of
DEPARTMENT OF PUBLIC WORKS
290 Jackson Street, P.O. Box 306
Belchertown, Massachusetts 01007-0306
Telephone: (413) 323-0415

November 21, 2016

Mass Department of Energy Resources (DOER)
100 Cambridge Street, Suite 1020
Boston, MA 02114
Attn: Mr. James Barry, Regional Coordinator

RE: GCCG-2015-16- Viessman Boiler Installation at Old Town Hall

Dear Mr. Barry,

It was one year ago and through the benefit of the Green Communities Competitive Grant Program (2015) that we were awarded \$9983.00 for the installation of a new Viessman Boiler for Belchertown's Old Town Hall, located at 28 Park Street. One year later, we are happy to report its expected savings from reduced energy costs have come to fruition.

The boiler has proven its Energy Star rating that provides a more efficient heat source with annual fuel utilization efficiency (AFUE) rating of 86.9% which is of the highest provided according to #2 oil fire standards.

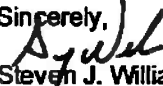
Average Savings::Old Town Hall Boiler, Belchertown/ *Sized to better match the buildings demands.

Old System	H.B. Smith	1971	239,000BTU	2.25 Gal. per/min. w/Carlin Burner	83%
New System	Viessman	2015	172,000BTU*	1.10 al. per/min. w/Riello Burner	87%

In addition, the Department of Public Works has tracked and calculated the boilers performance by means of monitoring the buildings electrical usage (Kilowatts) and fuel usage (oil) since installation on September 2, 2015; please refer to attachment **"BEL-AR4E New Viessman Boiler Install -Actual Savings -Old Town Hall"**

The Belchertown Department of Public Works concludes Viessmans reliability and sustainability are of the best components towards decreased energy use and reduced fuel costs for the Town of Belchertown. We will continue to monitor its performance and track its efficiency over the upcoming years.

Sincerely,


Steven J. Williams, Director
Department of Public Works

SJW/dl

ATTACHMENT





Belchertown earns EPA award for operations at municipal wastewater plant



By **Jim Russell** | **Special to The Republican**
on January 11, 2017 at 4:57 PM

BELCHERTOWN — The federal Environmental Protection Agency recently awarded the town an award for outstanding operations at the municipal wastewater treatment facility.

In a letter made public at Monday's **Board of Selectmen** meeting, the EPA praised treatment plant Superintendent Rollin DeWitt and his staff.

The EPA letter, signed by agency manager Mark Spinale, is dated Dec. 23 and was addressed to Belchertown Town Administrator Gary Brougham. Spinale invited DeWitt to an awards luncheon at the Boston Marriott/Copley Place Hotel on Jan. 25.

The Spinale letter says the Belchertown facility was nominated by the Massachusetts Department of Environmental Protection.

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WaterWorld.

WASTEWATER TREATMENT PLANTS, OPERATOR IN EASTERN US RECOGNIZED BY EPA



EPA Region 1 serves Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and 10 Tribal Nations. Photo: EPA Region 1.

BOSTON, FEBRUARY 16, 2017 -- The EPA Regional Wastewater Awards Program recognizes personnel in the wastewater field who have provided invaluable public service managing and operating wastewater treatment facilities. Recently, the Regional Wastewater

Treatment Plant Excellence Award winners in New Hampshire, Rhode Island and Massachusetts were announced. Six facilities in New England were acknowledged for exemplary performance during 2016.

Massachusetts

The Belchertown, Mass. Wastewater Treatment Facility, led by Roland DeWitt, Operations Superintendent.

The Athol, Mass. Wastewater Treatment Plant, led by Robert Sexton, Chief Operator.

The Great Barrington, Mass. Wastewater Treatment Facility, led by Timothy Drumm, Superintendent.

Rhode Island

The Quonset Development Corp. Wastewater Treatment Facility in North Kingstown, R.I., led by Dennis Colberg, Superintendent.

The South Kingstown R.I. Wastewater Treatment Plant, led by Kathy Perez, Superintendent and John Mackenzie.

New Hampshire

The Seabrook, N.H. Wastewater Treatment Facility, led by Philippe Maltais, Superintendent and Dustin Price, Chief Operator.

In addition, Dustin Price, a resident of Berwick Maine and the Chief Operator of the Seabrook, N.H. Wastewater Treatment Plant, was honored by EPA with a "2016 Regional Wastewater Treatment Plant Operator of the Year Excellence Award."

"The professionals operating wastewater treatment plants play a very important role in keeping our communities and environment healthy by protecting water quality. We are proud to acknowledge this staff's outstanding contributions to help protect public health and water quality and to give them the credit they deserve," said Deborah Szaro, acting regional administrator of EPA's New England Office.

More information: <https://www.epa.gov/aboutepa/about-office-water#wastewater>





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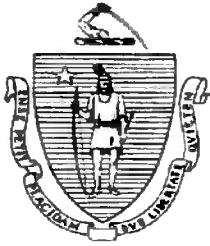
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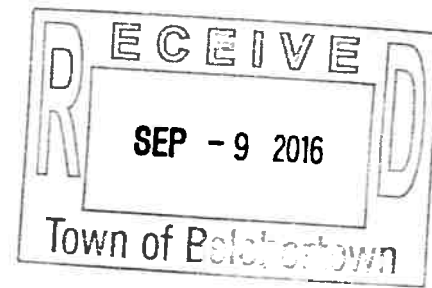
"The professionals operating wastewater treatment plants play a very important role in keeping our communities and environment healthy by protecting water quality. We are proud to acknowledge this staff's outstanding contributions to help protect public health and water quality and to give them the credit they deserve," said Deborah Szaro, acting regional administrator of EPA's New England Office.

More information: <https://www.epa.gov/aboutepa/about-office-water#wastewater>





OFFICE OF THE GOVERNOR
COMMONWEALTH OF MASSACHUSETTS
STATE HOUSE • BOSTON, MA 02133
(617) 725-4000



CHARLES D. BAKER
GOVERNOR

KARYN E. POLITO
LIEUTENANT GOVERNOR

September 7, 2016

Dear Mr. Gary L. Brougham,

Congratulations! I am pleased to notify you that the Town of Belchertown has been awarded a Recycling Dividends Program grant of \$3,250 through the Sustainable Materials Recovery Program. I want to thank you for your commitment to reducing waste and increasing recycling for the benefit of our communities and the environment.

Enclosed you will find further instructions from the Department of Environmental Protection on next steps. Please feel free to contact Tina Klein if you have any questions.

Governor Charles D. Baker

Lt. Governor Karyn E. Polito

xc: Julie
Steve
Bots



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

September 7, 2016

Mr. Gary L. Brougham
Town Administrator
Town of Belchertown
P.O. Box 670
Belchertown, MA 01007

Dear Mr. Brougham,

Congratulations! It is my pleasure to inform you that the Massachusetts Department of Environmental Protection (MassDEP) has awarded the Town of Belchertown Recycling Dividends funds and Small-Scale Initiative funds under the Sustainable Materials Recovery Program. The Town of Belchertown has earned 10 points and will receive \$3,250.

Please note, awards for the following grant categories are being evaluated (Mattress Recycling Initiative, SMART/PAYT, Curbside Recycling/Food Waste Carts, Drop-off Equipment, School Recycling Assistance, Waste Reduction Enforcement Coordinator, Waste Reduction Projects, Organics Capacity Projects) and will be announced separately.

The Sustainable Materials Recovery Program (SMRP) was created under 310 CMR 19.300-303 and the Green Communities Act, which directs a portion of the proceeds from the sale of Waste Energy Certificates to recycling programs approved by MassDEP. The Recycling Dividends Program (RDP) provides payments to municipalities that have implemented specific programs and policies proven to maximize reuse, recycling and waste reduction. Municipalities receive payments according to the number of criteria points their program earns. Eligibility criteria will ramp up over time, leveraging increasingly greater diversion results and lower solid waste disposal.

The key dates and deadlines specific to your award are summarized in the enclosed Checklist. The detailed terms and conditions are specified in the RDP Contract which has been mailed to the Recycling Contact of record for your municipality, copied below. The Recycling Contact will facilitate getting this document signed by an Authorized Signatory and will return it to MassDEP. Once received, the RDP Payment will be remitted to your municipality. Should you have any questions, please call Tina Klein at 617-292-5704.

Thank you for your commitment to advancing recycling and waste reduction in Massachusetts. Together our efforts will reduce greenhouse gas emissions, conserve natural resources and save energy, while also supporting jobs and reducing disposal costs for waste generators and municipalities.

Sincerely,

Martin Suuberg
Commissioner

cc: Steve J. Williams, Director of Public Works

Appendix D

Field Screening Data Sheets



Steven J. Williams
Director

Office of
DEPARTMENT OF PUBLIC WORKS
290 Jackson Street, P.O. Box 306
Belchertown, Massachusetts 01007-0306
Telephone: (413) 323-0415

Donna Lusignan
Administrative Assistant

Outfall Reconnaissance Inventory Summary Report Year 2016

The 2016 Outfall Reconnaissance Inventory was conducted between 04/19/2016 and 04/25/2016. Staff from the Department of Public Works, with assistance from Fuss & O'Neill, inspected all outfalls that are contained within the boundaries of the urbanized area delineated in the 2010 census (MS4 Regulated Area within Belchertown.) Individual O.R.I reports for each outfall are included.

During the inspection process, GPS data at outfall locations was collected to account for the expanded regulated area from the 2000 census.

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>101 A</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>2:10</u>	
Investigators: <u>PJC</u>		Form completed by: <u>P. CHAMBERLAIN</u>	
Temperature (°F): <u>55</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>101 A</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☒ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☒ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: <u>30"</u>	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	Ft, In	Tape measure	
	Measured length	Ft, In	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			1 - Faint	2 - Easily detected	3 - Noticeable from a distance
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Green ☐ Orange ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Floatables ☐ Excessive Algae ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

10/17/14

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 101 A	
Today's date: 4/19/16		Time (Military): 2:10	
Investigators: PSC		Form completed by: P. CHANEY	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 101 A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☒ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 30" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
	PARAMETER	RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	_____ "	Ft, In	Tape measure
	Measured length	_____ "	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Temperature		°F	Thermometer
	pH		pH Units	Test strip/Probe
	Ammonia		mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK If Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Odor	☐	☐ Sewage ☐ Sulfide ☐ Rancid/sour ☐ Petroleum/gas ☐ Other:		☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Excessive Algae ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

10/1/14

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 101 B	
Today's date: 4/19/16		Time (Military): 2:20	
Investigators: PSC		Form completed by: P. CHANETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 101 B	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☒ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☒ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: 18"	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	Ft, In	Tape measure	
	Measured length	Ft, In	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

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INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
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Color	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
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Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☒ Other: <u>SILT</u>	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Floatables ☐ Excessive Algae ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

10/18

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 101 B	
Today's date: 4/19/16		Time (Military): 2:20	
Investigators: PSC		Form completed by: P. CHAVETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 101 B	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☒ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☒ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: 18"	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Temperature		°F	Thermometer
	pH		pH Units	Test strip/Probe
	Ammonia		mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Sulfide ☐ Other:	☐ 1 - Paint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Orange ☐ Green ☐ Gray ☐ Yellow ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables - Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: <u>SILT</u>	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Floatables ☐ Excessive Algae ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

- Sample for the lab? ☐ Yes ☐ No
- If yes, collected from: ☐ Flow ☐ Pool
- Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

10/16

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>102 A</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>1:50</u>	
Investigators: <u>PSC</u>		Form completed by: <u>P. CHANETTE</u>	
Temperature (°F): <u>55</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>102 A</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: <u>12"</u> In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	Ft, In	Tape measure	
	Measured length	Ft, In	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Sulfide ☐ Rancid/sour ☐ Petroleum/gas ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☒ Other: <u>SILT</u>	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Suds ☐ Colors ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

102 A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 102 A	
Today's date: 4/19/16		Time (Military): 1:50	
Investigators: PSC		Form completed by: P. CHANETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 102 A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 12" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Green ☐ Orange ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☐ Excessive ☒ Other: <u>Suds</u>	
Abnormal Vegetation	☐	☐ Inhibited ☐ Colors ☐ Floatables ☐ Excessive Algae ☐ Oil Sheen ☐ Other:	
Poor pool quality	☐	☐ Odors ☐ Suds ☐ Brown ☐ Orange ☐ Green ☐ Other:	
Pipe benthic growth	☐		

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

102 A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>102 B</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>1:40</u>	
Investigators: <u>PJ</u>		Form completed by: <u>P. CHARETTE</u>	
Temperature (°F): <u>55</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: <u>102 B</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: <u>10"</u> In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	Ft, In	Tape measure	
	Measured length	Ft, In	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Sulfide ☐ Other:	☐ Petroleum/gas	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Green ☐ Orange ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☒	☐ Excessive ☒ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

1028

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>102 B</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>1:40</u>	
Investigators: <u>PJ</u>		Form completed by: <u>P. CHANETTE</u>	
Temperature (°F): <u>55</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>102 B</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: <u>10"</u> In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	Ft, In	Tape measure	
	Measured length	Ft, In	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight, origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Only ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☒	☐ Excessive ☒ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

102B

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>102C</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>2:00</u>	
Investigators: <u>PSC</u>		Form completed by: <u>P. CHAMETTE</u>	
Temperature (°F): <u>55</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: <u>102C</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☒ Other: <u>TRAWSSITE</u>	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: <u>12</u> In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream (applicable when collecting samples)				
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Sulfide ☐ Rancid/sour ☐ Other:	☐ 1 - Paint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Paint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☒	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	ROCKS BUILT UP @ OUTFALL TO PREVENT SCOUR
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Floatables ☐ Excessive Algae ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

- Sample for the lab? ☐ Yes ☐ No
- If yes, collected from: ☐ Flow ☐ Pool
- Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

102C

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>102C</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>2:00</u>	
Investigators: <u>PJC</u>		Form completed by: <u>P. CHAMETTE</u>	
Temperature (°F): <u>55</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>102C</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☒ Other: <u>TRAWSSITE</u>	☒ Circular ☒ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____ ☐ Other: _____	Diameter/Dimensions: <u>12</u>	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	_____ "	Ft, In	Tape measure
	Measured length	_____ "	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight, origin not obvious	☐ 2 - Some, indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☒	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	ROCKS BUILT UP @ OUTFALL TO PREVENT SCOUR
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

102C

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 103A	
Today's date: 4/25/16		Time (Military): 11:30	
Investigators: P&L		Form completed by: P. CHAMETTE	
Temperature (°F): 50	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 103A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☒ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 8" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECKED Present	DESCRIPTION	RELATIVE SEVERITY INDEX (0-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECKED Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 103 B	
Today's date: 12/25/16		Time (Military): 11:20	
Investigators: PC		Form completed by: P. CHANETTE	
Temperature (°F): 50	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 103B	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☒ Other: TRANSITE	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 10" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☒ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECKED Present	DESCRIPTION	RELATIVE SEVERITY INDEX (0-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECKED Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

103 B

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 104A	
Today's date: 4/25/16		Time (Military): 10:00	
Investigators: PJZ		Form completed by: P. CHAUETTE	
Temperature (°F): 50	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 104A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☒ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 12 In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECKED Present	DESCRIPTION				RELATIVE SEVERITY INDEX (0-3)		
		☐ Sewage ☐ Sulfide	☐ Rancid/sour ☐ Other:	☐ Petroleum/gas	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance	
Odor	☐	☐ Clear ☐ Green	☐ Brown ☐ Orange	☐ Gray ☐ Red	☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity				☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen)	☐ Suds ☐ Other:			☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECKED If Present	DESCRIPTION				COMMENTS
		☐ Spalling, Cracking or Chipping ☐ Corrosion	☐ Oily ☐ Flow Line	☐ Paint	☐ Peeling Paint	
Outfall Damage	☐					
Deposits/Stains	☒	☐ Excessive	☐ Inhibited	☒ Other: <u>slut</u>		
Abnormal Vegetation	☐	☐ Odors ☐ Suds	☐ Colors ☐ Excessive Algae	☐ Floatables ☐ Oil Sheen	☐ Other:	
Poor pool quality	☐	☐ Brown	☐ Orange	☐ Green	☐ Other:	
Pipe benthic growth	☐					

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Ilicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

104A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 104B	
Today's date: 4/25/16		Time (Military): 10:20	
Investigators: PJC		Form completed by: P. CHALETTE	
Temperature (°F): 50	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 104B	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☒ Other: TRANSITE	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 12" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☒ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK IF PRESENT	DESCRIPTION				RELATIVE SEVERITY INDEX (0-3)		
		Sewage ☐ Rancid/sour ☐ Sulfide ☐ Other:	Petroleum/gas ☐ Brown ☐ Gray ☐ Yellow ☐ Red ☐ Other:	1 - Faint sample bottle	2 - Easily detected sample bottle	3 - Noticeable from a distance		
Odor	☐	☐ Clear ☐ Green	☐ Petroleum/gas ☐ Brown ☐ Gray ☐ Yellow ☐ Red ☐ Other:	☐ 1 - Faint sample bottle	☐ 2 - Easily detected sample bottle	☐ 3 - Noticeable from a distance		
Color	☐	☐ Clear ☐ Green	☐ Brown ☐ Gray ☐ Yellow ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow		
Turbidity	☐	See severity		☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque		
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:	☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)		

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK IF PRESENT	DESCRIPTION				COMMENTS
		Spalling, Cracking or Chipping Corrosion	Flow Line	Paint	Peeling Paint	
Outfall Damage	☒	☒	☐	☐	☐	BUCK & CEMENT CLOSED BY LAND OWNER
Deposits/Stains	☒	☐	☐	☐	☐	
Abnormal Vegetation	☐	☐	☐	☐	☐	
Poor pool quality	☐	☐	☐	☐	☐	
Pipe benthic growth	☐	☐	☐	☐	☐	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

104B

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 105A	
Today's date: 4/19/16		Time (Military): 1:00	
Investigators: RJC		Form completed by: P. CHANETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 105A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☒ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 30" In Water: ☐ No ☒ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☒ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	____', ____"	Tape measure	
	Measured length	____', ____"	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☒	☒ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

105A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 105A	
Today's date: 4/19/16		Time (Military): 1:00	
Investigators: PSC		Form completed by: P. CHANETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 105A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☒ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 30" In Water: ☐ No ☒ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☒ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	_____'	Ft, In	Tape measure
	Measured length	_____'	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Sulfide ☐ Petroleum/gas ☐ Other:			
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Green ☐ Orange ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☒	☒ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

105A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 105B	
Today's date: 4/19/16		Time (Military): 1:10	
Investigators: PSC		Form completed by: P. CHANETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 105B	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ Steel ☐ HDPE ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 10" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	Ft, In	Tape measure	
	Measured length	Ft, In	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Sulfide ☐ Rancid/sour ☐ Petroleum/gas ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight, origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Suds ☐ Colors ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

- Sample for the lab? ☐ Yes ☐ No
- If yes, collected from: ☐ Flow ☐ Pool
- Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

105B

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 105B	
Today's date: 4/19/16		Time (Military): 1:10	
Investigators: POC		Form completed by: P. CHANETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 105B	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 10" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Green ☐ Orange ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight, origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion	☐ Peeling Paint
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Excessive Algae	☐ Oil Sheen ☐ Other:
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

165B

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>105C</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>1:30</u>	
Investigators: <u>PJC</u>		Form completed by:	
Temperature (°F): <u>55</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>105C</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): <u>ROTTEN / RUSTED</u>			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ PVC ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____ <u>ROTTEN / RUSTED</u> In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			1 - Faint	2 - Easily detected	3 - Noticeable from a distance
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐	☐	☐
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐	☐	☐
Turbidity	☐	See severity	☐	☐	☐
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐	☐	☐

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☒	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☒ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☒	☒ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

105C

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 105C	
Today's date: 4/19/16		Time (Military): 1:30	
Investigators: PJC		Form completed by:	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 105C	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): ROTTEN / RUSTED			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☒ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____ ROTTEN / RUSTED	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	_____ "	Ft, In	Tape measure
	Measured length	_____ "	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK IF Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK IF Present	DESCRIPTION	COMMENTS
Outfall Damage	☒	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☒ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☒	☒ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 105D	
Today's date: 4/25/16		Time (Military): 14:00	
Investigators: PR		Form completed by: P. CHANETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 105D	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☒ Other: TRANSITE	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 12" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☒ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	Ft, In	Tape measure	
	Measured length	Ft, In	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint ☐ 2 - Easily detected ☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle ☐ 2 - Clearly visible in sample bottle ☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious ☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen) ☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☒ Other: <u>SILT</u>	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

105D

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 105	
Today's date: 4/25/16		Time (Military): 13:40	
Investigators: PR		Form completed by: P. CHAMBERLAIN	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 105	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☒ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☒ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: 12"	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	____', ____"	Tape measure	
	Measured length	____', ____"	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECKED PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables - Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECKED PRESENT	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☒ Other:	SILT & BRUSH OVERGROWN
Abnormal Vegetation	☒	☒ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

105E

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 105 G	
Today's date: 4/25/16		Time (Military): 14:30	
Investigators: PJR		Form completed by: P. CHANETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 105 G	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☒ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☒ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: 24"	In Water: ☐ No ☒ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	Ft, In	Tape measure	
	Measured length	Ft, In	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECKIF Present	DESCRIPTION	RELATIVE SEVERITY INDEX (R-SI)
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint ☐ 2 - Easily detected ☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle ☐ 2 - Clearly visible in sample bottle ☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables - Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious ☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen) ☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECKIF Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☒ Other: SLUR	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Ilicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

1056

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>106 A</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>12:30</u>	
Investigators: <u>PJC</u>		Form completed by: <u>P. CHALETTE</u>	
Temperature (°F): <u>50</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>106 A</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): <u>EMPTIES INTO METACOM LAKE</u>			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☒ Other: <u>TRANSITE</u>	☒ Circular ☒ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____ ☐ Other: _____	Diameter/Dimensions: _____	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	____' ____"	Tape measure	
	Measured length	____' ____"	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☒	☒ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

106A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>106 A</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>12:30</u>	
Investigators: <u>PJC</u>		Form completed by: <u>P. CHANETTE</u>	
Temperature (°F): <u>50</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>106 A</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): <u>EMPTIES INTO METACOM LAKE</u>			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☒ Other: <u>TRANSITE</u>	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____ In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____" ____"	Ft, In	Tape measure
	Measured length	____" ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Green ☐ Orange ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight, origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☒	☒ Spalling, Cracking or Chipping ☐ Corrosion	Peeling Paint
Deposits/Stains	☐	☐ Only ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Excessive Algae ☐ Floutables ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

106A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 106 B	
Today's date: 4/25/16		Time (Military): 13:20	
Investigators: PJL		Form completed by: P. CHANETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 106 B	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☒ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☒ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____ ?	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☒ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECKED Present	DESCRIPTION				RELATIVE SEVERITY INDEX (0-3)		
		☐ Sewage ☐ Sulfide	☐ Rancid/sour ☐ Other:	☐ Petroleum/gas	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance	
Odor	☐	☐ Clear ☐ Green	☐ Brown ☐ Orange	☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow	
Turbidity	☐	See severity			☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque	
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen)	☐ Suds ☐ Other:		☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)	

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECKED Present	DESCRIPTION				COMMENTS
		☐ Spalling, Cracking or Chipping ☐ Corrosion	☐ Oily ☐ Flow Line ☐ Paint	☐ Peeling Paint	☐ Other:	
Outfall Damage	☐					
Deposits/Stains	☒					SILTED ROW DUNE / LEAVES
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited				
Poor pool quality	☐	☐ Odors ☐ Suds	☐ Colors ☐ Excessive Algae	☐ Floatables ☐ Oil Sheen ☐ Other:		
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:				

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

106B

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 106 C	
Today's date: 4/25/16		Time (Military): 1:05	
Investigators: PJC		Form completed by: P. CHANETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 106 C	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☐ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☐ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____ ? In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☒ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX (RSI)
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint ☐ 2 - Easily detected ☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle ☐ 2 - Clearly visible in sample bottle ☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious ☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen) ☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Outfall Damage	☒	☐ Spalling, Cracking or Chipping ☐ Corrosion	CONCRETE OVER W/ DEBRIS/ROCKS
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

106C

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 108 A	
Today's date: 4/25/16		Time (Military): 12:40	
Investigators: PJC		Form completed by: P. CHANETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 108 A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☒ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: 24"	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☒ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECKED Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECKED Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

108A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>205 A</u>	
Today's date: <u>4/20/16</u>		Time (Military): <u>1:40</u>	
Investigators: <u>PJC</u>		Form completed by: <u>P. CHARETTE</u>	
Temperature (°F): <u>53</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: <u>205 A</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☒ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: <u>12"</u> In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	Ft, In	Tape measure	
	Measured length	Ft, In	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION		RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Sulfide	☐ Rancid/sour ☐ Other:	☐ Petroleum/gas	☐ 1 - Faint	☐ 2 - Easily detected ☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Green	☐ Brown ☐ Orange	☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle ☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐		See severity		☐ 1 - Slight cloudiness ☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen)	☐ Suds ☐ Other:		☐ 1 - Few/slight; origin not obvious ☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion	☐ Peeling Paint
Deposits/Stains	☐	☐ Oily ☐ Flow Line	☐ Paint ☐ Other:
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Excessive Algae	☐ Floatables ☐ Oil Sheen ☐ Other:
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green	☐ Other:

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

- Sample for the lab? ☐ Yes ☐ No
- If yes, collected from: ☐ Flow ☐ Pool
- Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

205A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>205 A</u>	
Today's date: <u>4/20/16</u>		Time (Military): <u>1:40</u>	
Investigators: <u>PJC</u>		Form completed by: <u>P. CHARETE</u>	
Temperature (°F): <u>53</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>205 A</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☒ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: <u>12"</u> In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			1 - Faint	2 - Easily detected	3 - Noticeable from a distance
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Sulfide ☐ Other:	☐	☐	☐
Color	☐	☐ Clear ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐	☐	☐
Turbidity	☐	See severity	☐	☐	☐
Floatables -Does Not Include Trash!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐	☐	☐

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS	
			1 - Few/slight, origin not obvious	2 - Some; indications of origin (e.g., possible suds or oil sheen)
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion	☐	☐
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	☐	☐
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	☐	☐
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	☐	☐
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	☐	☐

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

- Sample for the lab? ☐ Yes ☐ No
- If yes, collected from: ☐ Flow ☐ Pool
- Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

205A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>205 B</u>	
Today's date: <u>4/20/16</u>		Time (Military): <u>2:00</u>	
Investigators: <u>PSC</u>		Form completed by: <u>P. CHALETTE</u>	
Temperature (°F): <u>53</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: <u>205 B</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☒ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: <u>12"</u> In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Sulfide ☐ Rancid/sour ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight, origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion	☐ Peeling Paint
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Suds ☐ Colors ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

205B

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>205 B</u>	
Today's date: <u>4/20/16</u>		Time (Military): <u>2:00</u>	
Investigators: <u>PJC</u>		Form completed by: <u>P. CHALETTE</u>	
Temperature (°F): <u>53</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: <u>205 B</u>	
Land Use in Drainage Area (Check all that apply): ☐ Industrial ☐ Open Space ☐ Ultra-Urban Residential ☐ Institutional ☒ Suburban Residential Other: _____ ☐ Commercial Known Industries: _____			
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☒ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: <u>12"</u> In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	<u> </u> ['] <u> </u> ["]	Ft, In	Tape measure
	Measured length	<u> </u> ['] <u> </u> ["]	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion	☐ Peeling Paint
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Excessive	☐ Other:
Abnormal Vegetation	☐	☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	☐ Other:
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green	☐ Other:

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

205B

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>205C</u>	
Today's date: <u>4/20/16</u>		Time (Military): <u>2:10</u>	
Investigators: <u>PSC</u>		Form completed by: <u>P. CHARIETTE</u>	
Temperature (°F): <u>53</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>205C</u>	
Land Use in Drainage Area (Check all that apply): ☐ Industrial ☐ Ultra-Urban Residential ☒ Suburban Residential ☐ Commercial ☐ Open Space ☐ Institutional Other: _____ Known Industries: _____			
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ? ☐ Other: _____	☒ Circular ☒ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____ ?	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☒ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Sulfide ☐ Rancid/sour ☐ Petroleum/gas ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☒	☒ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Floatables ☐ Excessive Algae ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

205c

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>205C</u>	
Today's date: <u>4/20/16</u>		Time (Military): <u>2:10</u>	
Investigators: <u>PSC</u>		Form completed by: <u>P. CHAUETTE</u>	
Temperature (°F): <u>53</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>205C</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ? ☐ Other: _____	☒ Circular ☒ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____ ?	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☒ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK IF Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible acids or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, acids, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK IF Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☒	☒ Excessive ☐ Inhibited ☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Poor pool quality	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	
Pipe benthic growth	☐		

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

- Sample for the lab? ☐ Yes ☐ No
- If yes, collected from: ☐ Flow ☐ Pool
- Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

205c

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>226 A</u>	
Today's date: <u>4/20/16</u>		Time (Military): <u>2:25</u>	
Investigators: <u>PSC</u>		Form completed by: <u>P. CHARLETTE</u>	
Temperature (°F): <u>53</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>226 A</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: <u>?</u> In Water: ☐ No ☒ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☒ Trickle ☐ Moderate ☐ Substantial <u>HEAVY SILT / LEAVES</u>			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	____', ____"	Tape measure	
	Measured length	____', ____"	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Sulfide ☐ Rancid/sour ☐ Petroleum/gas ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☒ Other: SALT	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

226A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>226 A</u>	
Today's date: <u>4/20/16</u>		Time (Military): <u>2.25</u>	
Investigators: <u>PSC</u>		Form completed by: <u>P. CHARLITE</u>	
Temperature (°F): <u>53</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>226 A</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: <u>?</u> In Water: ☐ No ☒ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples):			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☒ Trickle ☐ Moderate ☐ Substantial <u>HEAVY SILT / LEAVES</u>			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	Ft, In	Tape measure	
	Measured length	Ft, In	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Sulfide ☐ Rancid/sour ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☒ Other: SALT	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

- Sample for the lab? ☐ Yes ☐ No
- If yes, collected from: ☐ Flow ☐ Pool
- Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

226A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 228 A	
Today's date: 4/26/16		Time (Military): 9:50	
Investigators: PJC		Form completed by: P. CHANETTE	
Temperature (°F): 48	Rainfall (in.): Last 24 hours: 0.5 Last 48 hours: 0.5		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 228 A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☐ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: ?	☐ Circular ☐ Elliptical ☐ Box ☐ Other: ?	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____ ? In Water: ☐ No ☐ Partially ☒ Fully With Sediment: ☐ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	Ft, In	Tape measure	
	Measured length	Ft, In	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECKED Present	DESCRIPTION	1 - Faint	2 - Easily detected	3 - Noticeable from a distance
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐	☐	☐
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐	☐	☐
Turbidity	☐	See severity	☐	☐	☐
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐	☐	☐

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECKED Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☒ Other: <u>Slut</u>	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

228A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: Z28 B	
Today's date: 4/26/16		Time (Military): 10:10	
Investigators: PSZ		Form completed by: P. CHANETTE	
Temperature (°F): 40		Rainfall (in.): Last 24 hours: 0.5 Last 48 hours: 0.5	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: Z28 B	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☐ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED	
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: Z	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____ Z	In Water: ☐ No ☐ Partially ☒ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____		
☐ In-Stream	(applicable when collecting samples)				
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>				
Flow Description (If present)	☐ Trickle ☒ Moderate ☐ Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY (1-3)
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint ☐ 2 - Easily detected ☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle ☐ 2 - Clearly visible in sample bottle ☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious ☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen) ☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☒ Other: SILT/LEAVES	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

228B

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 229A	
Today's date: 4/26/16		Time (Military): 10:45	
Investigators: PJL		Form completed by: P. CHANETTE	
Temperature (°F): 40	Rainfall (in.): Last 24 hours: 0.5 Last 48 hours: 0.5		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 229A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial ☐ Ultra-Urban Residential ☒ Suburban Residential ☐ Commercial		☐ Open Space ☐ Institutional Other: _____ Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ Steel ☐ HDPE ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 15 In Water: ☐ No ☒ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(apply only when collecting samples)			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☒ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint ☐ 2 - Easily detected ☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle ☐ 2 - Clearly visible in sample bottle ☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight, origin not obvious ☐ 2 - Some, indications of origin (e.g., possible suds or oil sheen) ☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Outfall Damage	☒	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☒ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No ☐ OBM ☐ Caulk dam If Yes, type:

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

229A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 229 B	
Today's date: 4/26/16		Time (Military): 10:55	
Investigators: PSL		Form completed by: P. CHAVETTE	
Temperature (°F): 40	Rainfall (in.): Last 24 hours: 0.5 Last 48 hours: 0.5		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 229 B	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☒ Other: TRANSITE	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 15" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☒ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECKED Present	DESCRIPTION	RELATIVE SEVERITY INDEX (RSI)
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint ☐ 2 - Easily detected ☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle ☐ 2 - Clearly visible in sample bottle ☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight, origin not obvious ☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen) ☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECKED Present	DESCRIPTION	COMMENTS
Outfall Damage	☒	☒ Spalling, Cracking or Chipping ☐ Corrosion	☐ Peeling Paint
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

22913

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 238 A	
Today's date: 4/25/16		Time (Military): 12:20	
Investigators: RJL		Form completed by: P. CHARETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 238 A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☒ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☒ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: 24"	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK IF Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK IF Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☐ Excessive ☐ Inhibited	Other: SUTED HALF WAY
Abnormal Vegetation	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Poor pool quality	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	
Pipe benthic growth	☐		

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

238A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 240 A	
Today's date: 4/26/15		Time (Military): 11:35	
Investigators: PCC		Form completed by: P. CHANETTE	
Temperature (°F): 40	Rainfall (in.): Last 24 hours: 0.5 Last 48 hours: 0.5		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 240A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☒ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 15" In Water: ☐ No ☒ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☒ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	
	Flow width	____' ____"	Ft, In	
	Measured length	____' ____"	Ft, In	
	Time of travel		S	
Temperature			°F	
pH			pH Units	
Ammonia			mg/L	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK IT Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK IT Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

240A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 243 A	
Today's date: 4/19/16		Time (Military): 9:30	
Investigators: PJR		Form completed by: P. CHAUETTE	
Temperature (°F): 50	Rainfall (in.): Last 24 hours: _____ Last 48 hours: _____		
Latitude: _____	Longitude: _____	GPS Unit: _____	GPS LMK #: _____
Camera: _____		Photo #: 243 A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☐ Suburban Residential		Other: _____	
☒ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☐ Closed Pipe	☒ RCP ☐ CMP	☒ Circular	Diameter/Dimensions: _____ _____	In Water: ☐ No ☒ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
	☐ PVC ☐ HDPE	☐ Elliptical		
	☐ Steel	☐ Box	☐ Double	
	☐ Other: _____	☐ Other: _____	☐ Triple	
			☐ Other: _____	
☐ Open drainage	☐ Concrete	☐ Trapezoid	Depth: _____	
	☐ Earthen	☐ Parabolic	Top Width: _____	
	☐ rip-rap	☐ Other: _____	Bottom Width: _____	
	☐ Other: _____			
☐ In-Stream (applicable when collecting samples)				
Flow Present?	☐ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial STANDING WATER			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	Ft, In	Tape measure	
	Measured length	Ft, In	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

293A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>243 A</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>9:30</u>	
Investigators: <u>PJL</u>		Form completed by: <u>P. CHARLETTE</u>	
Temperature (°F): <u>50</u>	Rainfall (in.): Last 24 hours: _____ Last 48 hours: _____		
Latitude: _____	Longitude: _____	GPS Unit: _____	GPS LMK #: _____
Camera: _____		Photo #s: <u>243 A</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☐ Suburban Residential		Other: _____	
☒ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☐ Closed Pipe	☒ RCP ☐ CMP	☒ Circular	Diameter/Dimensions: _____	In Water: ☐ No ☒ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
	☐ PVC ☐ HDPE	☐ Elliptical		
☐ Open drainage	☐ Steel	☐ Box	Depth: _____ Top Width: _____ Bottom Width: _____	
	☐ Other: _____	☐ Other: _____		
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial <u>STANDING WATER</u>			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	Ft, In	Tape measure	
	Measured length	Ft, In	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Sulfide ☐ Rancid/sour ☐ Petroleum/gas ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight, origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

243A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 243 B	
Today's date: 4/19/16		Time (Military): 9:15	
Investigators: PC		Form completed by: PAUL CHARNETT	
Temperature (°F): 50	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 243 B	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☐ Suburban Residential		Other: _____	
☒ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): CANNOT SEE PIPE ONLY HEADWALL VISIBLE			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☐ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☐ Circular ☐ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____ _____	In Water: ☐ No ☐ Partially ☒ Fully With Sediment: ☐ No ☐ Partially ☒ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial STANDING WATER			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____', ____"	Ft, In	Tape measure
	Measured length	____', ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION		RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Sulfide	☐ Rancid/sour ☐ Petroleum/gas ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Green	☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity		☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen)	☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion	☐ Peeling Paint
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Suds ☐ Colors ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

243B

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>243 B</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>9:15</u>	
Investigators: <u>PC</u>		Form completed by: <u>PAUL CHANETTE</u>	
Temperature (°F): <u>50</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>243 B</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☐ Suburban Residential		Other: _____	
☒ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): <u>CANNOT SEE PIPE ONLY HEADWALL VISIBLE</u>			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☐ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☐ Circular ☐ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____	In Water: ☐ No ☐ Partially ☒ Fully With Sediment: ☐ No ☐ Partially ☒ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial <u>STANDING WATER</u>			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	_____ "	Ft, In	Tape measure
	Measured length	_____ "	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight, origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oil ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

243B

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>243C</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>9:00</u>	
Investigators: <u>PSC</u>		Form completed by: <u>P. CHARETTE</u>	
Temperature (°F): <u>50</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: <u>243C</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☒ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): <u>UNABLE TO SEE PIPE, OVERGROWN VEGETATION & SILT</u>			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☐ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☐ Circular ☐ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____ <u>UNABLE TO SEE PIPE</u>	In Water: ☐ No ☐ Partially ☒ Fully With Sediment: ☐ No ☐ Partially ☒ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream (applicable when collecting samples)				
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial <u>STANDING WATER</u>			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Odor	☐	☐ Sewage ☐ Sulfide ☐ Rancid/sour ☐ Other:			
Color	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☒ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Suds ☐ Colors ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

243c

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>243C</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>9:00</u>	
Investigators: <u>PSC</u>		Form completed by: <u>P. CHARETTE</u>	
Temperature (°F): <u>50</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>243C</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☒ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): <u>UNABLE TO SEE PIPE, OVERGROWN VEGETATION & SILT</u>			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☐ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☐ Circular ☐ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____ <u>UNABLE TO SEE PIPE</u>	In Water: ☐ No ☐ Partially ☒ Fully With Sediment: ☐ No ☐ Partially ☒ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream (applicable when collecting samples)				
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (if present)	☐ Trickle ☐ Moderate ☐ Substantial <u>STANDING WATER</u>			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK IF Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK IF Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☒ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

243c

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 243 D	
Today's date: 4/25/16		Time (Military): 9:10	
Investigators: PJC		Form completed by: P. CHAUETTE	
Temperature (°F): 50	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 243 D	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☒ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 12" In Water: ☐ No ☒ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint ☐ 2 - Easily detected ☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle ☐ 2 - Clearly visible in sample bottle ☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables - Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious ☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen) ☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion	☐ Peeling Paint
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint	☐ Other:
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Suds ☐ Excessive Algae ☐ Other:	☐ Oil Sheen
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green	☐ Other:

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

243 D

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>243 F</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>9:45</u>	
Investigators: <u>PJC</u>		Form completed by: <u>PAUL CHANETTE</u>	
Temperature (°F): <u>50</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>243 F</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☐ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☒ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: <u>12"</u> In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☒ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Sulfide ☐ Rancid/sour ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Suds ☐ Colors ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

243F

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>243 F</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>9:45</u>	
Investigators: <u>PJC</u>		Form completed by: <u>PAUL CHANETTE</u>	
Temperature (°F): <u>50</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>243 F</u>	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☐ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☒ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: <u>12"</u> In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☒ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	<u> </u> ['] <u> </u> ["]	Ft, In	Tape measure
	Measured length	<u> </u> ['] <u> </u> ["]	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticable from a distance
Odor	☐	☐ Sewage ☐ Sulfide ☐ Rancid/sour ☐ Petroleum/gas. ☐ Other:	☐	☐	☐
Color	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Suds ☐ Colors ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

243F

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 244 A	
Today's date: 4/19/16		Time (Military): 10:18	
Investigators: PRC		Form completed by: P. CHANETTE	
Temperature (°F): 50	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 244 A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): COULD NOT SEE / SILT / BURIED			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☐ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ? ☐ Other: _____	☐ Circular ☐ Elliptical ☐ Box ? ☐ Other: _____	☐ Single ☐ Double ☐ Triple ? ☐ Other: _____	Diameter/Dimensions: _____ In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☒ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____', ____"	Ft, In	Tape measure
	Measured length	____', ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK IF Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK IF Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

- Sample for the lab? ☐ Yes ☐ No
- If yes, collected from: ☐ Flow ☐ Pool
- Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

244A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 244 A	
Today's date: 4/19/16		Time (Military): 10:18	
Investigators: PJR		Form completed by: P. CHANETTE	
Temperature (°F): 50	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 244 A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): COULD NOT SEE / SILT / BURIED			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED	
☐ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ? ☐ Other: _____	☐ Circular ☐ Elliptical ☐ Box ? ☐ Other: _____	☐ Single ☐ Double ☐ Triple ? ☐ Other: _____	Diameter/Dimensions: _____ ? ?	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☒ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____		
☐ In-Stream	(applicable when collecting samples)				
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>				
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK IF Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐	☐	☐
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Green ☐ Orange ☐ Red ☐ Yellow ☐ Other:	☐	☐	☐
Turbidity	☐	See severity	☐	☐	☐
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐	☐	☐

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK IF Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

- Sample for the lab? ☐ Yes ☐ No
- If yes, collected from: ☐ Flow ☐ Pool
- Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

244A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 244 B	
Today's date: 4/19/16		Time (Military): 10:15	
Investigators: PR		Form completed by:	
Temperature (°F): 50	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 244 B	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 15" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☒ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight, origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

244B

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 244 B	
Today's date: 4/19/16		Time (Military): 10:15	
Investigators: PR		Form completed by:	
Temperature (°F): 50	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 244 B	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial ☐ Ultra-Urban Residential ☒ Suburban Residential ☐ Commercial		☐ Open Space ☐ Institutional Other: _____ Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 15" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples):			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☒ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	Ft, In	Tape measure	
	Measured length	Ft, In	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight, origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

244B

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 244C	
Today's date: 4/19/16		Time (Military): 10:10	
Investigators: RJC		Form completed by: P. CHARETTE	
Temperature (°F): 50	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 244C	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): ROTTED / RUSTED / COLLAPSED			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED	
☐ Closed Pipe	☐ RCP ☐ PVC ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: ? ROTTED RUSTED COLLAPSED	In Water: ☐ No ☒ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____		
☐ In-Stream	(applicable when collecting samples)				
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>				
Flow Description (If present)	☒ Trickle ☐ Moderate ☐ Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	____', ____"	Tape measure	
	Measured length	____', ____"	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐	☐	☐
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐	☐	☐
Turbidity	☐	See severity	☐	☐	☐
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐	☐	☐

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

2416

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: <u>244C</u>	
Today's date: <u>4/19/16</u>		Time (Military): <u>10:10</u>	
Investigators: <u>RJC</u>		Form completed by: <u>P. CHARETTE</u>	
Temperature (°F): <u>50</u>	Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>244C</u>	
Land Use in Drainage Area (Check all that apply): ☐ Industrial ☐ Ultra-Urban Residential ☒ Suburban Residential ☐ Commercial ☐ Open Space ☐ Institutional Other: _____ Known Industries: _____			
Notes (e.g., origin of outfall, if known): <u>ROTTED / RUSTED / COLLAPSED</u>			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED	
☐ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: <u>2</u> <u>ROTTED</u> <u>RUSTED</u> <u>COLLAPSED</u>	In Water: ☐ No ☒ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____		
☐ In-Stream	(applicable when collecting samples)				
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>				
Flow Description (If present)	☒ Trickle ☐ Moderate ☐ Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____" ____"	Ft, In	Tape measure
	Measured length	____" ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Odor	☐	☐ Sewage ☐ Sulfide ☐ Rancid/sour ☐ Petroleum/gas ☐ Other:	☐	☐	☐
Color	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐	☐	☐
Turbidity	☐	See severity	☐	☐	☐
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐	☐	☐

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No

If Yes, type: ☐ ODM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

2410

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 244 D	
Today's date: 4/19/16		Time (Military): 10:25	
Investigators: PSC		Form completed by: P. CHARNETTE	
Temperature (°F): 50	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 244 D	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial ☐ Ultra-Urban Residential ☒ Suburban Residential ☐ Commercial		☐ Open Space ☐ Institutional Other: _____ Known Industries: _____	
Notes (e.g., origin of outfall, if known): OVERGROWN COULD NOT SEE			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED	
☐ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ? ☐ Other: _____	☐ Circular ☐ Elliptical ? ☐ Box ? ☐ Other: _____	☐ Single ☐ Double ? ☐ Triple ? ☐ Other: _____	Diameter/Dimensions: _____ ?	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☒ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____		
☐ In-Stream	(applicable when collecting samples)				
Flow Present?	☐ Yes ☐ No <i>If No, Skip to Section 5</i>				
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			1 - Faint	2 - Easily detected	3 - Noticeable from a distance
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Sulfide ☐ Other:	☐	☐	☐
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Green ☐ Orange ☐ Red ☐ Yellow ☐ Other:	☐	☐	☐
Turbidity	☐	See severity	☐	☐	☐
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐	☐	☐

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Floatables ☐ Excessive Algae ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

2440

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 244 D	
Today's date: 4/19/16		Time (Military): 10:25	
Investigators: PJC		Form completed by: P. CHAKETIK	
Temperature (°F): 50	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 244 D	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial ☐ Ultra-Urban Residential ☒ Suburban Residential ☐ Commercial		☐ Open Space ☐ Institutional Other: _____ Known Industries: _____	
Notes (e.g., origin of outfall, if known): OVERGROWN COULD NOT SEE			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☐ Closed Pipe	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel Z ☐ Other: _____	☐ Circular ☐ Elliptical Z ☐ Box Z ☐ Other: _____	☐ Single ☐ Double Z ☐ Triple Z ☐ Other: _____	Diameter/Dimensions: _____ In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☒ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
☐ Flow #2	Flow depth	In	Tape measure	
	Flow width	Ft, In	Tape measure	
	Measured length	Ft, In	Tape measure	
	Time of travel	S	Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECK IF Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Odor	☐	☐ Sewage ☐ Sulfide ☐ Rancid/sour ☐ Petroleum/gas ☐ Other:			
Color	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight, origin not obvious	☐ 2 - Some, indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some, origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK IF Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Suds ☐ Colors ☐ Excessive Algae ☐ Floatables ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

2490

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 244 E	
Today's date: 4/27/16		Time (Military): 9:00	
Investigators: RC		Form completed by: P. CHANETTE	
Temperature (°F): 45	Rainfall (in.): Last 24 hours: 0.5 Last 48 hours: 0.5		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 244 E	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ PVC ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 12" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
	PARAMETER	RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Temperature		°F	Thermometer
	pH		pH Units	Test strip/Probe
	Ammonia		mg/L	Test strip

244E

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECKED PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX (0-3)
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint ☐ 2 - Easily detected ☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle ☐ 2 - Clearly visible in sample bottle ☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious ☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen) ☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECKED PRESENT	DESCRIPTION	COMMENTS
Outfall Damage	☒	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☒ Corrosion	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☒ Other: SLUT	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 244 F	
Today's date: 4/27/16		Time (Military): 9:20	
Investigators: PSC		Form completed by: P. CHANETTE	
Temperature (°F): 45	Rainfall (in.): Last 24 hours: 0.5 Last 48 hours: 0.5		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 244 F	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☒ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: 12"	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☒ No ☐ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (If No, Skip to Section 5)

INDICATOR	CHECKED Present	DESCRIPTION	RELATIVE SEVERITY INDEX (0-10)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Paint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECKED Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

244F

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 244 G	
Today's date: 4/27/16		Time (Military): 9:30	
Investigators: PSC		Form completed by: P. CHANETTE	
Temperature (°F): 45	Rainfall (in.): Last 24 hours: 0.5 Last 48 hours: 0.5		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 244 G	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 12" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Bottle	
	Time to fill			
☐ Flow #2	Flow depth		Tape measure	
	Flow width	____' ____"	Tape measure	
	Measured length	____' ____"	Tape measure	
	Time of travel		Stop watch	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECKED PRESENT		DESCRIPTION		RELATIVE SEVERITY INDEX (RSI)		
	☐	☐	☐	☐	☐	☐	☐
Odor	☐	☐	☐ Rancid/sour ☐ Sulfide ☐ Other:	☐ Petroleum/gas	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐	☐ Clear ☐ Green ☐ Brown ☐ Orange ☐ Gray ☐ Red ☐ Yellow ☐ Other:		☐ 1 - Faint colors in sample bottle ☐ 1 - Slight cloudiness	☐ 2 - Clearly visible in sample bottle ☐ 2 - Cloudy	☐ 3 - Clearly visible in outfall flow ☐ 3 - Opaque
Turbidity	☐	☐	See severity		☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)
Floatables - Does Not Include Trash!!	☐	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:	☐ Suds ☐ Other:			

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECKED PRESENT		DESCRIPTION		COMMENTS
	☐	☐	☐	☐	
Outfall Damage	☐	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion	☐ Peeling Paint	
Deposits/Stains	☒	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Excessive ☐ Inhibited	☒ Other: SILT / LEAVES	
Abnormal Vegetation	☐	☐	☐ Odors ☐ Colors ☐ Suds ☐ Excessive Algae	☐ Oil Sheen ☐ Other:	
Poor pool quality	☐	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:		
Pipe benthic growth	☐	☐			

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Ilicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

2446

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 20500	
Today's date: 4/27/16		Time (Military): 10500	
Investigators: PJL		Form completed by: P. CHARETTE	
Temperature (°F): 50	Rainfall (in.): Last 24 hours: 0.5 Last 48 hours: 0.5		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 20500	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☒ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: 18"	In Water: ☐ No ☒ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
	PARAMETER	RESULT	UNIT	EQUIPMENT
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
	Temperature		°F	Thermometer
	pH		pH Units	Test strip/Probe
	Ammonia		mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK IF Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Sulfide ☐ Petroleum/gas ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Green ☐ Orange ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK IF Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☒ Other: SLUR	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Suds ☐ Floatables ☐ Excessive Algae ☐ Oil Sheen ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 256D	
Today's date: 4/27/16		Time (Military): 10:30	
Investigators: PJC		Form completed by: P. CHANETTE	
Temperature (°F): 52	Rainfall (in.): Last 24 hours: 0.5" Last 48 hours: 0.5"		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 256D	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 12" ? In Water: ☐ No ☒ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECKED PRESENT	DESCRIPTION	RELATIVE SEVERITY (1-3)
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint ☐ 2 - Easily detected ☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle ☐ 2 - Clearly visible in sample bottle ☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables - Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious ☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen) ☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECKED PRESENT	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☒ Other: SLUT / USAGES	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

256D

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 268 B	
Today's date: 4/27/16		Time (Military): 11:30	
Investigators: POZ		Form completed by: P. CHARNETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0.5" Last 48 hours: 0.5"		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 268 B	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ PVC ☐ Steel ☐ Other: _____	☒ CMP ☐ HDPE ☐ Elliptical ☐ Box ☐ Other: _____	☒ Circular ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 12" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (if present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables - Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☒ Other: SILT / LEAVES	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

265B

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 268 B	
Today's date: 4/27/16		Time (Military): 11:30	
Investigators: POZ		Form completed by: P. CHANETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0.5" Last 48 hours: 0.5"		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 268 B	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ PVC ☐ Steel ☐ Other: _____	☒ CMP ☐ HDPE ☐ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 12" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (if present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables - Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☐ Excessive ☐ Inhibited	SLUT / LEAVES
Abnormal Vegetation	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Suds ☐ Excessive Algae ☐ Oil Sheen ☐ Other:	
Poor pool quality	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	
Pipe benthic growth	☐		

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

265B

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: Z68C	
Today's date: 4/27/16		Time (Military): 11:20	
Investigators: PJC		Form completed by: P. CHANETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0.5" Last 48 hours: 0.5"		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: Z68C	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☒ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 12" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☒ Yes ☐ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☒ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION				RELATIVE SEVERITY INDEX (RSI)		
Odor	☐	☐ Sewage ☐ Sulfide	☐ Rancid/sour ☐ Other:	☐ Petroleum/gas	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance	
Color	☐	☐ Clear ☐ Green	☐ Brown ☐ Orange	☐ Gray ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle ☐ 1 - Slight cloudiness	☐ 2 - Clearly visible in sample bottle ☐ 2 - Cloudy	☐ 3 - Clearly visible in outfall flow ☐ 3 - Opaque	
Turbidity	☐	See severity			☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)	
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen)	☐ Suds ☐ Other:					

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION				COMMENTS
Outfall Damage	☒	☐ Spalling, Cracking or Chipping ☒ Corrosion	☐ Flow Line	☐ Paint	☐ Peeling Paint	
Deposits/Stains	☒	☐ Oily ☐ Excessive	☐ Inhibited	☒ Other: LEAVES		
Abnormal Vegetation	☐	☐ Odors ☐ Suds	☐ Colors ☐ Excessive Algae	☐ Floatables ☐ Oil Sheen ☐ Other:		
Poor pool quality	☐	☐ Brown ☐ Orange	☐ Green	☐ Other:		
Pipe benthic growth	☐					

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 268A	
Today's date: 4/27/16		Time (Military): 11:40	
Investigators: POZ		Form completed by: P. CHANETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0.5" Last 48 hours: 0.5"		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 268A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☒ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 24" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	
	Flow width	____' ____"	Ft, In	
	Measured length	____' ____"	Ft, In	
	Time of travel		S	
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX (R.S.I.)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
Are physical indicators that are not related to flow present? ☐ Yes ☒ No (If No, Skip to Section 6)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion	Peeling Paint
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☐ Excessive ☐ Inhibited	Other: SILT / LEAVES
Abnormal Vegetation	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Suds ☐ Excessive Algae	Oil Sheen Other:
Poor pool quality	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	
Pipe benthic growth	☐		

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illlicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

208A

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 2-2-20	
Today's date: 4/27/16		Time (Military): 10:10:5	
Investigators:		Form completed by: P. CHAMETTE	
Temperature (°F):	Rainfall (in.): Last 24 hours: 0.5" Last 48 hours: 0.5"		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 2-2-20	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☐ RCP ☐ PVC ☐ Steel ☐ Other: _____	☒ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☒ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: 12" In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Sulfide ☐ Petroleum/gas ☐ Other:	☐ 1 - Faint	☐ 2 - Easily detected	☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Green ☐ Orange ☐ Red ☐ Yellow ☐ Other:	☐ 1 - Faint colors in sample bottle	☐ 2 - Clearly visible in sample bottle	☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Petroleum (oil sheen) ☐ Suds ☐ Other:	☐ 1 - Few/slight; origin not obvious	☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☒ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☐ Other: SLUT / LEAVES	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes ☐ No
2. If yes, collected from:	☐ Flow ☐ Pool
3. Intermittent flow trap set?	☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

268D

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID: 272 A	
Today's date: 4/27/16		Time (Military): 1:00	
Investigators: PJC		Form completed by: P. CHALETTE	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0.5" Last 48 hours: 0.5"		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 272 A	
Land Use in Drainage Area (Check all that apply):			
☐ Industrial		☐ Open Space	
☐ Ultra-Urban Residential		☐ Institutional	
☒ Suburban Residential		Other: _____	
☐ Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
☒ Closed Pipe	☒ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☒ Circular ☐ Single ☐ Elliptical ☐ Double ☐ Box ☐ Triple ☐ Other: _____	Diameter/Dimensions: 24"	In Water: ☒ No ☐ Partially ☐ Fully With Sediment: ☐ No ☒ Partially ☐ Fully
☐ Open drainage	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
☐ In-Stream	(applicable when collecting samples)			
Flow Present?	☐ Yes ☒ No <i>If No, Skip to Section 5</i>			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
 Are Any Physical Indicators Present in the flow? ☐ Yes ☒ No (If No, Skip to Section 5)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	RELATIVE SEVERITY INDEX (R.S.I.)
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 - Faint ☐ 2 - Easily detected ☐ 3 - Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 - Faint colors in sample bottle ☐ 2 - Clearly visible in sample bottle ☐ 3 - Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 - Slight cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 - Few/slight; origin not obvious ☐ 2 - Some; indications of origin (e.g., possible suds or oil sheen) ☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
 Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip to Section 6)

INDICATOR	CHECK IF PRESENT	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☒	☐ Oily ☐ Flow Line ☐ Paint ☒ Other: SILT	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab? ☐ Yes ☐ No

2. If yes, collected from: ☐ Flow ☐ Pool

3. Intermittent flow trap set? ☐ Yes ☐ No If Yes, type: ☐ OBM ☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

TUES 118 miles
WED 132 miles
THURS 159 miles

2



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MADPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83.

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

PRODUCED BY

CAI Technologies

11 Pleasant Street, Littleton, NH 03561
800.322.4340 - www.cai-tech.com

LEGEND

Urbanized Area Limits	Catch Basin Description	Sewer Structures	Storm Sewer Structures
Data Added from Markups	X'd or Not Found	Holding Tank	Catch Basin
Catch Basin Fuss and O'Neill	Leaching CB (Added from Markups)	Culvert	Culvert
Manhole Fuss and O'Neill	Leaching CB (within existing data)	Sewer Manhole	Drain Manhole
PipeEndNew			Pipe End
StormDrainSystem			Spillway
			Wier
			Retention Pond

FEET 100 50 0 100 200 300

SCALE:

METERS 25 12.5 0 25 50 75

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS

INDEX DIAGRAM

MAP NO.

101

0 DONE

TUES 113 miles
WED 132 miles
THURS 159 miles

2



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW
THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83
DATA SOURCE: TOWN OF BELCHERTOWN
DATE: MAY 2015

PRODUCED BY
CAI Technologies
11 Federal Street, 11th Floor, 01901
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LEGEND

Catch Basin	Sewer Structure	Storm Sewer Structure
Catch Basin with Inlet	Sewer Structure with Inlet	Storm Sewer Structure with Inlet
Catch Basin with Outlet	Sewer Structure with Outlet	Storm Sewer Structure with Outlet
Catch Basin with Inlet and Outlet	Sewer Structure with Inlet and Outlet	Storm Sewer Structure with Inlet and Outlet
Catch Basin with Inlet and Outlet and Inlet	Sewer Structure with Inlet and Outlet and Inlet	Storm Sewer Structure with Inlet and Outlet and Inlet

SCALE

FEET 0 50 100 200 300
METERS 0 12.5 25 50 75

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS
BELCHERTOWN
MASSACHUSETTS



MAP NO.
101

0 DONE



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

PRODUCED BY

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11 Pleasant Street, Littleton, NH 03581
800.322.4548 - www.cai-tech.com

LEGEND

Urbanized Area Limits	Catch Basin Description	Sewer Structures	Storm Sewer Structures	Pipe End
Data Added from Markups	X'd or Not Found	Holding Tank	Catch Basin	Spillway
Catch Basin Fuzz and Offset	Leaching CB (Added from Markups)	Sewer Manhole	Culvert	War
Manhole Fuzz and Offset	Leaching CB (Added from Markups)		Drain Manhole	
PipeEndNew	Leaching CB (Added from Markups)			
StormDrainSystem				

FEET 100 50 0 100 200 300

METERS 25 12.5 0 25 50 75

SCALE:

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS

INDEX DIAGRAM

MAP NO.

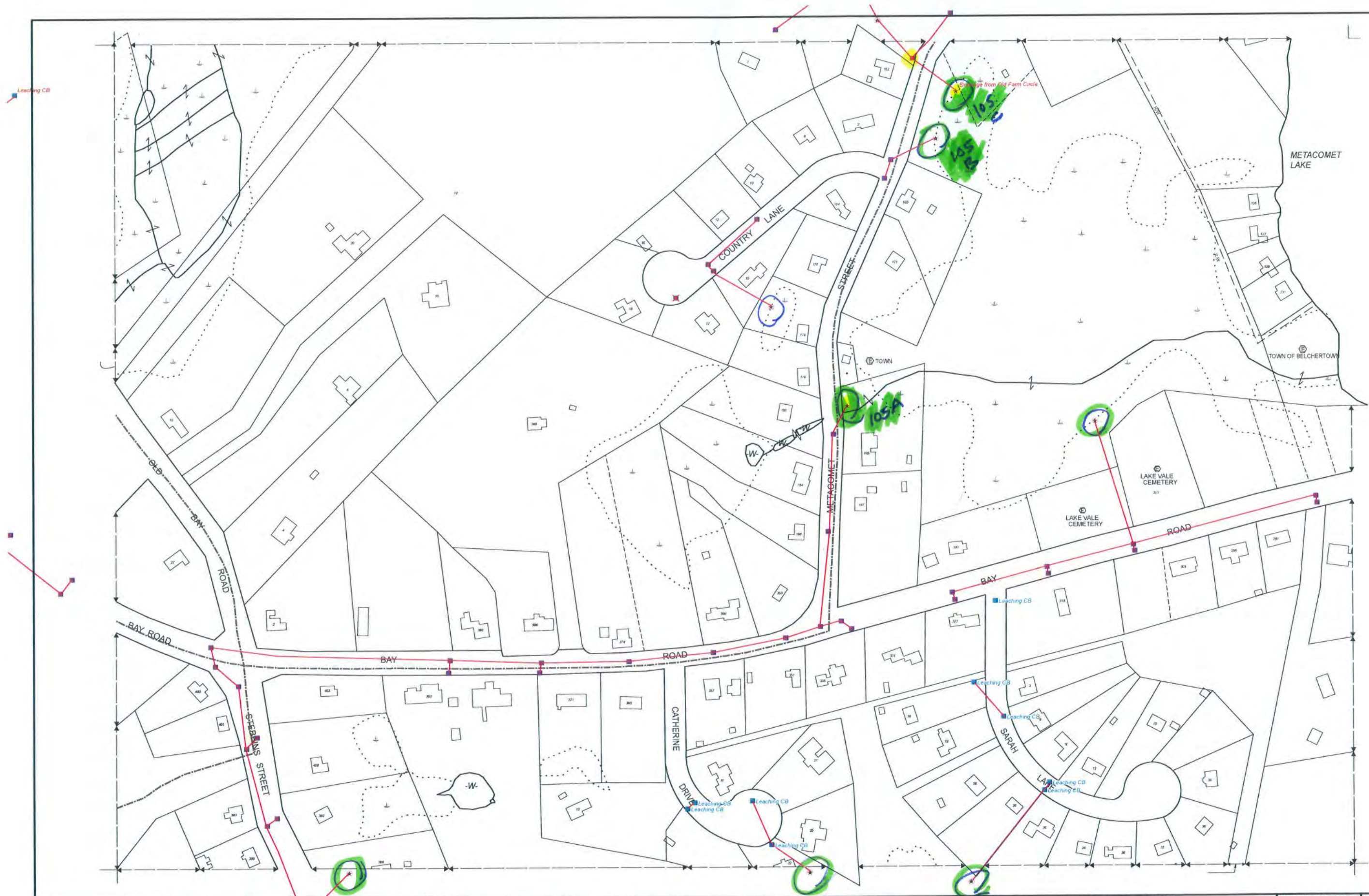
102

DONE



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA GPM. THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83. DATA SOURCE: TOWN OF BELCHERTOWN DATE: MAY 2015	PRODUCED BY CAI Technologies 11 Pleasant Street, Leominster, MA 01453 983.332.4543 - www.caitech.com	LEGEND <table border="0"> <tr> <td></td> <td>Unimproved Road</td> <td></td> <td>12 inch or less Sewer</td> <td></td> <td>18 inch or less Sewer</td> <td></td> <td>24 inch or less Sewer</td> <td></td> <td>30 inch or less Sewer</td> </tr> <tr> <td></td> <td>36 inch or less Sewer</td> <td></td> <td>42 inch or less Sewer</td> <td></td> <td>48 inch or less Sewer</td> <td></td> <td>54 inch or less Sewer</td> <td></td> <td>60 inch or less Sewer</td> </tr> </table> SEWER STRUCTURES <table border="0"> <tr> <td></td> <td>Manhole</td> <td></td> <td>Catch Basin</td> <td></td> <td>Inlet Structure</td> </tr> <tr> <td></td> <td>Storm Sewer Structure</td> <td></td> <td>Water Main Structure</td> <td></td> <td>Gas Main Structure</td> </tr> </table>		Unimproved Road		12 inch or less Sewer		18 inch or less Sewer		24 inch or less Sewer		30 inch or less Sewer		36 inch or less Sewer		42 inch or less Sewer		48 inch or less Sewer		54 inch or less Sewer		60 inch or less Sewer		Manhole		Catch Basin		Inlet Structure		Storm Sewer Structure		Water Main Structure		Gas Main Structure	SCALE 1" = 100' 0 50 100 150 200 250 300 0 12.5 25 37.5 50 62.5 75 FEET METERS REVISED TO: JANUARY 1, 2015	PUBLIC WORKS MAPS BELCHERTOWN MASSACHUSETTS	INDEX DIAGRAM	MAP NO. 102
	Unimproved Road		12 inch or less Sewer		18 inch or less Sewer		24 inch or less Sewer		30 inch or less Sewer																													
	36 inch or less Sewer		42 inch or less Sewer		48 inch or less Sewer		54 inch or less Sewer		60 inch or less Sewer																													
	Manhole		Catch Basin		Inlet Structure																																	
	Storm Sewer Structure		Water Main Structure		Gas Main Structure																																	

DONE



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MADPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83.

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

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LEGEND

Urbanized Area Limits	Catch Basin Description	Sewer Structures	Storm Sewer Structures
Data Added from Markups	X'd or Not Found	Holding Tank	Catch Basin
Catch Basin Fuses and O'Well	Leaching CB (Added from Markups)	Culvert	Drain Manhole
Marble Fuses and O'Well	Leaching CB (Added from Markups)	Sewer Manhole	Retention Pond
PipeEndNew	Leaching CB (Added from Markups)	Sewer Manhole	Retention Pond
StormDrainSystem	Leaching CB (Added from Markups)	Sewer Manhole	Retention Pond

SCALE:

FEET 100 50 0 100 200 300

METERS 25 12.5 0 25 50 75

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

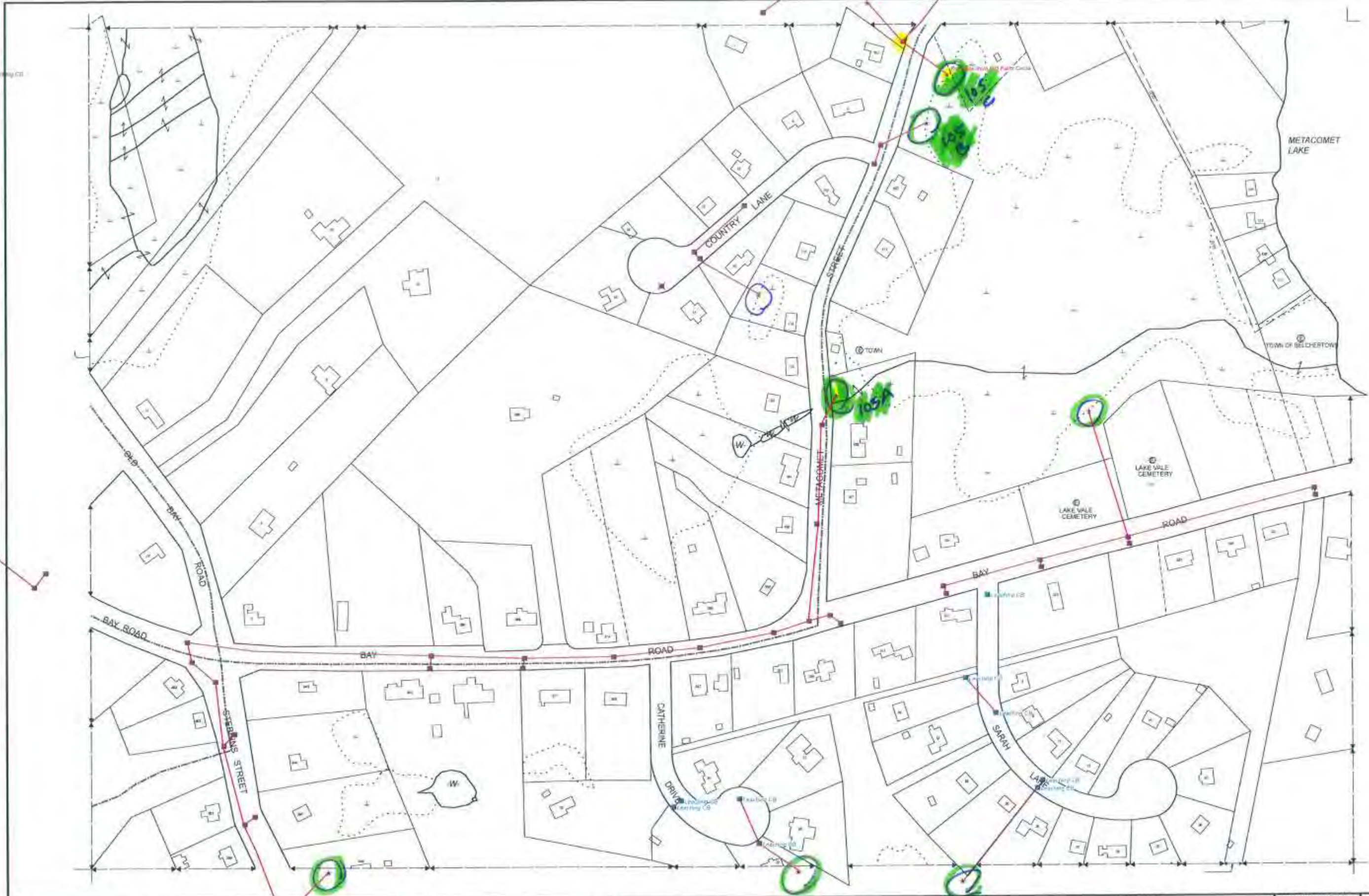
MASSACHUSETTS

INDEX DIAGRAM

MAP NO.

105

8 OUT



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MASS. PUBLIC WORKS MAPS.

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83.

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

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LEGEND

Sanitary Sewer	Storm Sewer	Catch Basin	Sewer Structure	Storm Sewer Structure	Pipe Line
Sanitary Sewer Manhole	Storm Sewer Manhole	Catch Basin Manhole	Sewer Structure Manhole	Storm Sewer Structure Manhole	Pipe Line Manhole

SCALE

0 50 100 150 200 250 300

FEET

0 15 30 45 60 75 90 105 120 135 150

METERS

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

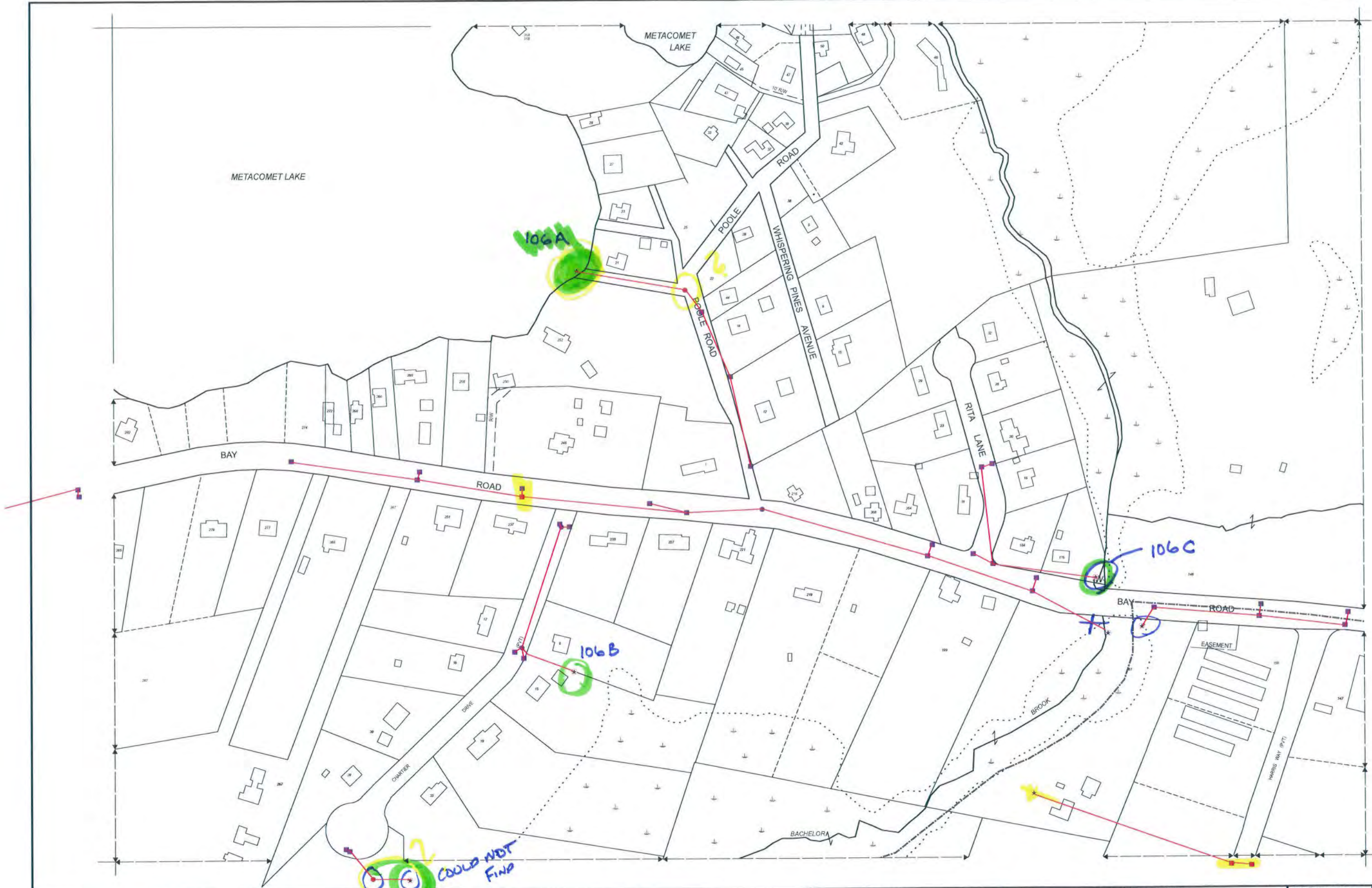
MASSACHUSETTS

INDEX DIAGRAM

MAP NO.

105

8 OUT



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83.

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

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LEGEND

Urbanized Area Limits	Catch Basin Description	Sewer Structures	Storm Sewer Structures
Data Added from Markups	X'd or Not Found	Holding Tank	Catch Basin
Catch Basin Fuse and O'Neill	Leaching CR (Added from Markups)	Culvert	Drain Manhole
Manhole Fuse and O'Neill	Leaching CR (Added from Markups)	Sewer Manhole	Pipe End
PipeEndNew	Leaching CR (Added from Markups)	Retention Pond	Spillway
SkyrmDrainSystem	Leaching CR (Added from Markups)		War

SCALE:

FEET: 0 50 100 150 200 250 300

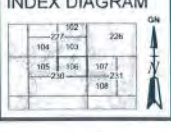
METERS: 0 12.5 25 50 75

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

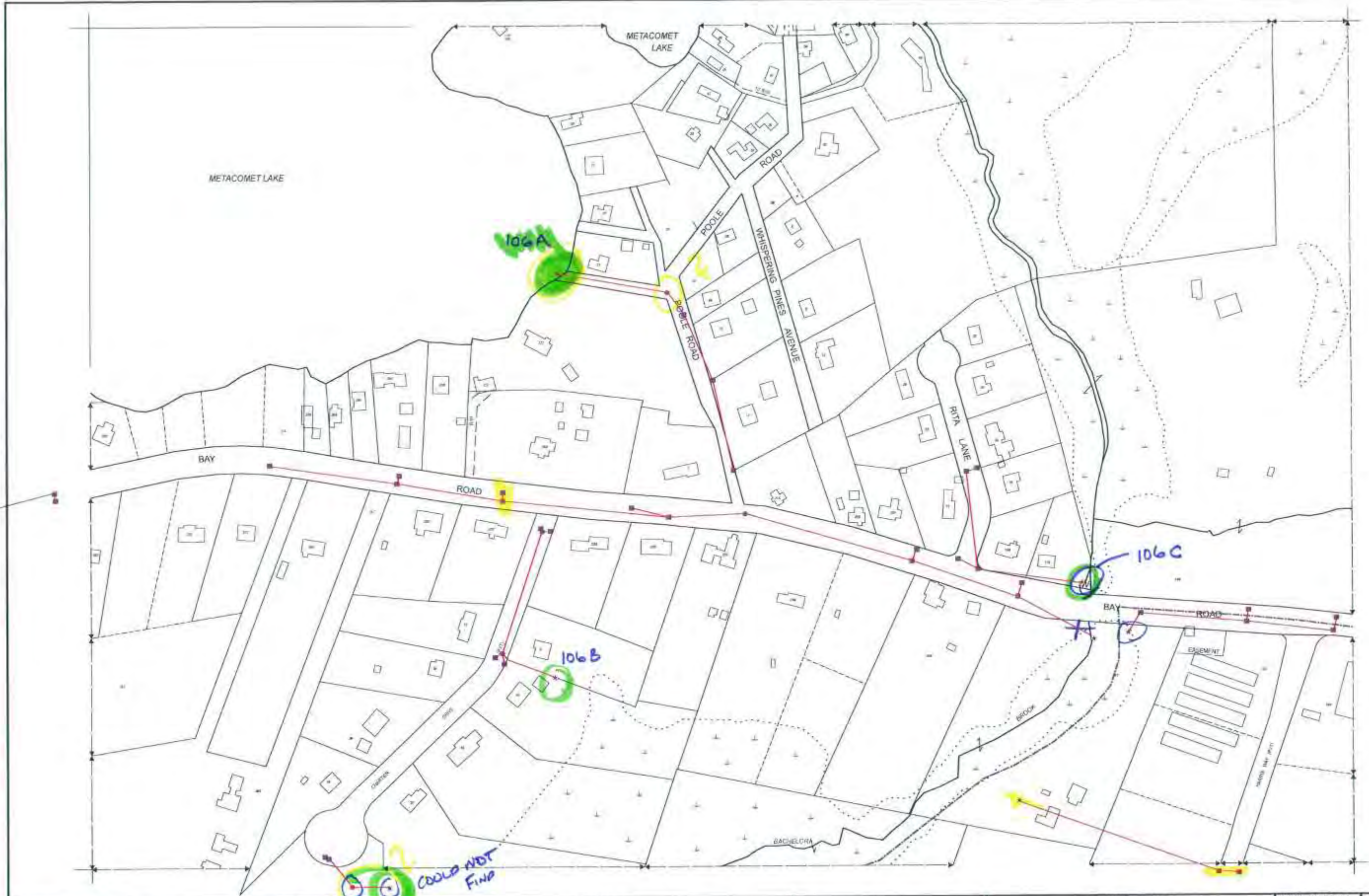
MASSACHUSETTS



MAP NO.

106

Z-OUT



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MASSACHUSETTS.

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM 7402 83.

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

PRODUCED BY

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LEGEND

Sewer Structure	Storm Structure	Catch Basin	Manhole	Pipe End
Sewer Line	Storm Line	Catch Basin Inlet	Manhole Inlet	Pipe Inlet
Sewer Valve	Storm Valve	Catch Basin Outlet	Manhole Outlet	Pipe Outlet
Sewer Manhole	Storm Manhole	Catch Basin Manhole	Manhole Manhole	Pipe Manhole

SCALE

0 50 100 150 200 250 300

FEET

0 10 20 30 40 50 60 70 80 90 100

METERS

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

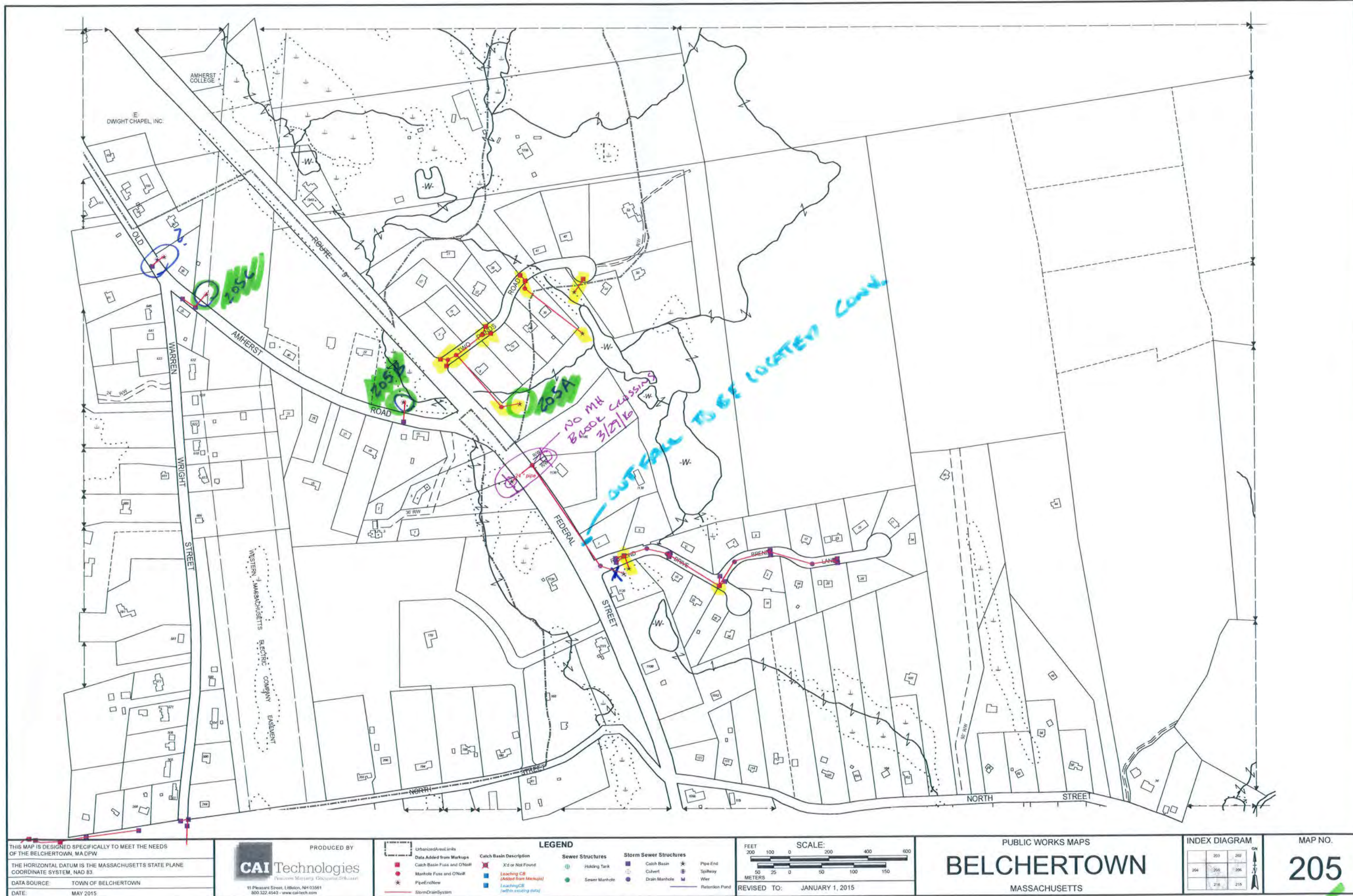
MASSACHUSETTS

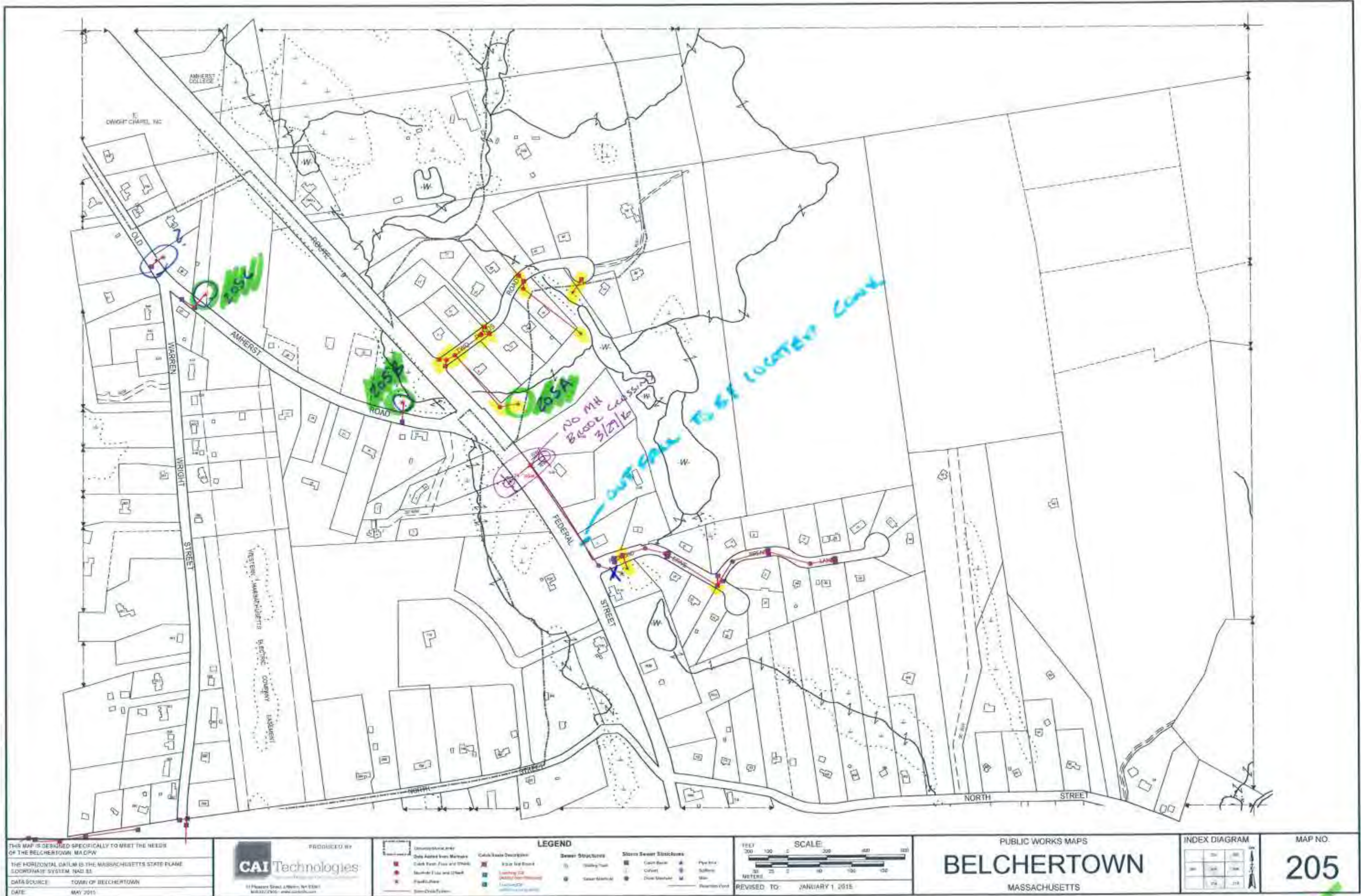
INDEX DIAGRAM

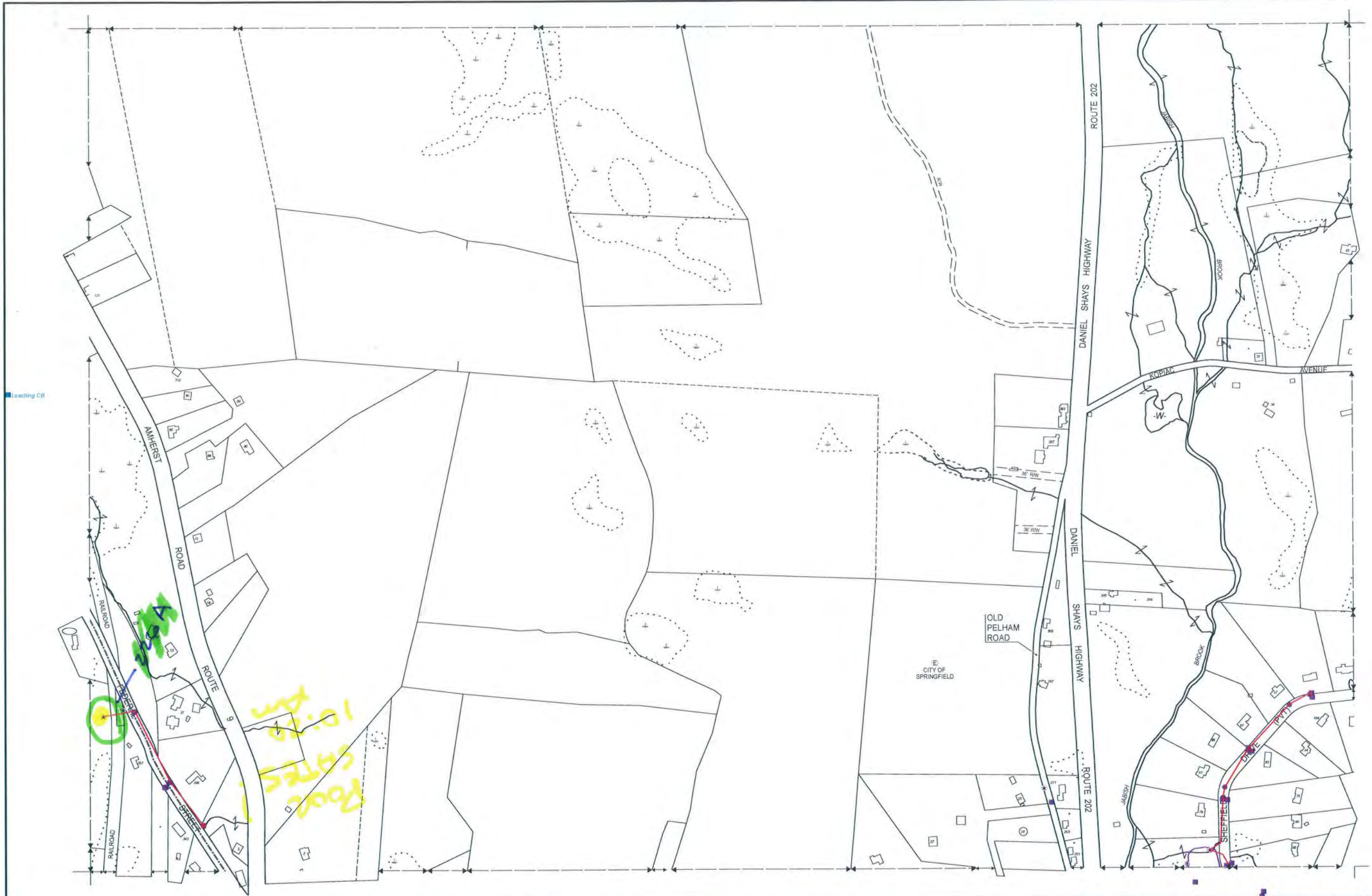
MAP NO.

106

Z-OUT







THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83.

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

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LEGEND

Urbanized Area Limits	Catch Basin Description	Sewer Structures	Storm Sewer Structures	Pipe End
Catch Basin Fuses and O'Neill	X'd or Not Found	Holding Tank	Catch Basin	Spillway
Manhole Fuses and O'Neill	Leaching CB (Added from Markups)	Sewer Manhole	Culvert	Wier
PipeEndNew	Leaching CB (Within existing data)		Drain Manhole	Retention Pond
Storm Drain System				

FEET 200 100 0 200 400 600

SCALE:

METERS 50 25 0 50 100 150

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS

INDEX DIAGRAM

218	219	220
219	220	221
220	221	222
221	222	223

MAP NO.

226

0 - DONE



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MASS. MAP NO. 226

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

PRODUCED BY

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LEGEND

Urban/Infrastructure	Catch Basin Description	Sewer Structures	Storm Sewer Structures	Other
• Data Added from MapInfo	• Catch Basin (Flow and Check)	• Catch Basin	• Catch Basin	• 15" to 24" Pipe
• Catch Basin (Flow and Check)	• Catch Basin (Flow and Check)	• Catch Basin	• Catch Basin	• 15" to 24" Pipe
• Catch Basin (Flow and Check)	• Catch Basin (Flow and Check)	• Catch Basin	• Catch Basin	• 15" to 24" Pipe
• Catch Basin (Flow and Check)	• Catch Basin (Flow and Check)	• Catch Basin	• Catch Basin	• 15" to 24" Pipe

SCALE

0 100 200 300 400 500

FEET

0 30 60 90 120 150

METERS

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

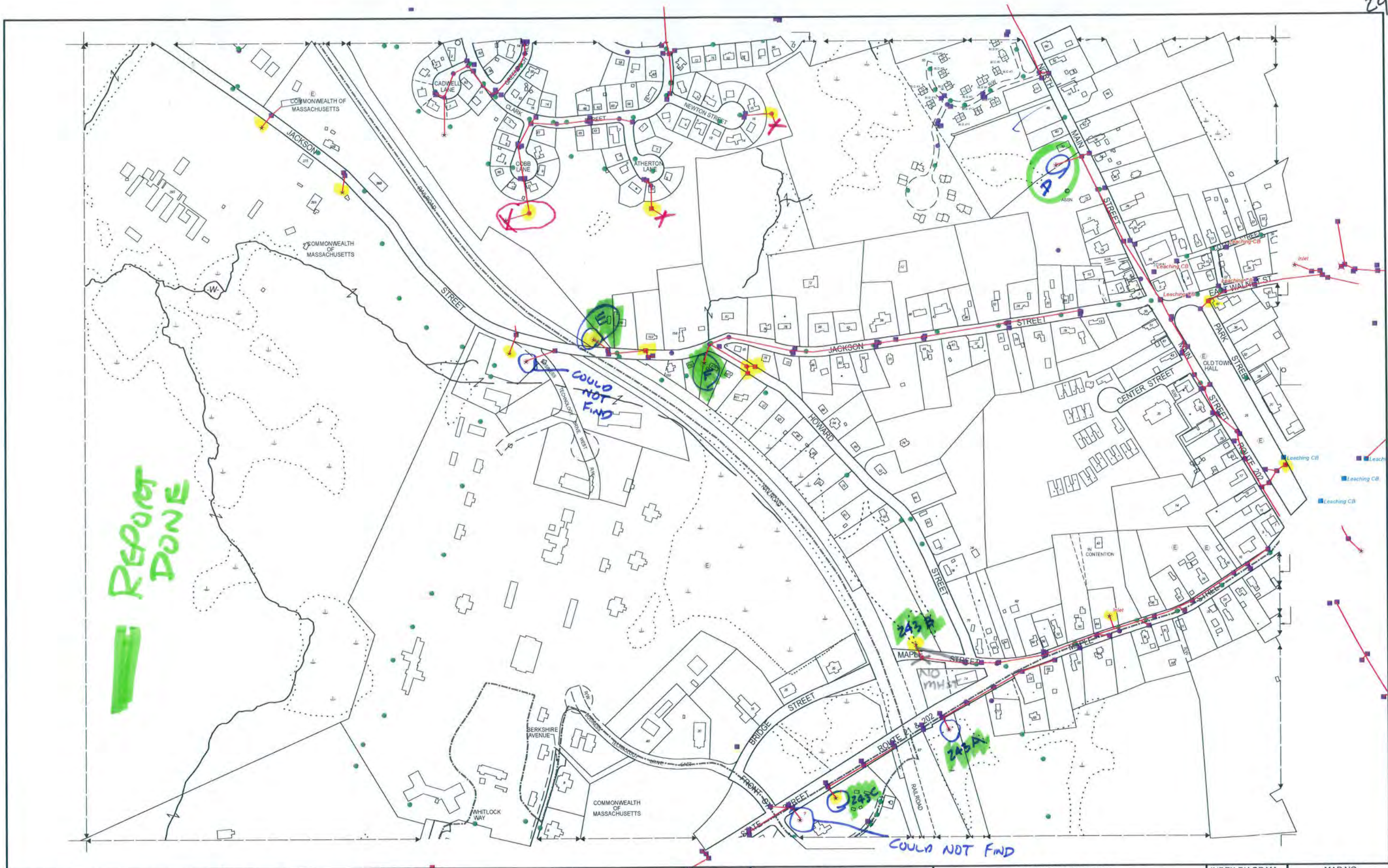
MASSACHUSETTS

INDEX DIAGRAM

MAP NO.

226

0 - DONE



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83.

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

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LEGEND

Urbanized Area Limits	Catch Basin Description	Sewer Structures	Storm Sewer Structures	Pipe End
Data Added from Markups	X'd or Not Found	Holding Tank	Catch Basin	Spillway
Catch Basin Fuse and O'Neill	Leaching CB (Added from Markups)	Sewer Manhole	Culvert	Weir
Manhole Fuse and O'Neill	Leaching CB (within existing data)	Storm Manhole	Drain Manhole	Retention Pond
Pipe/EndView				
Storm Drain System				

SCALE:

FEET: 200 100 0 200 400 600

METERS: 50 25 0 50 100 150

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

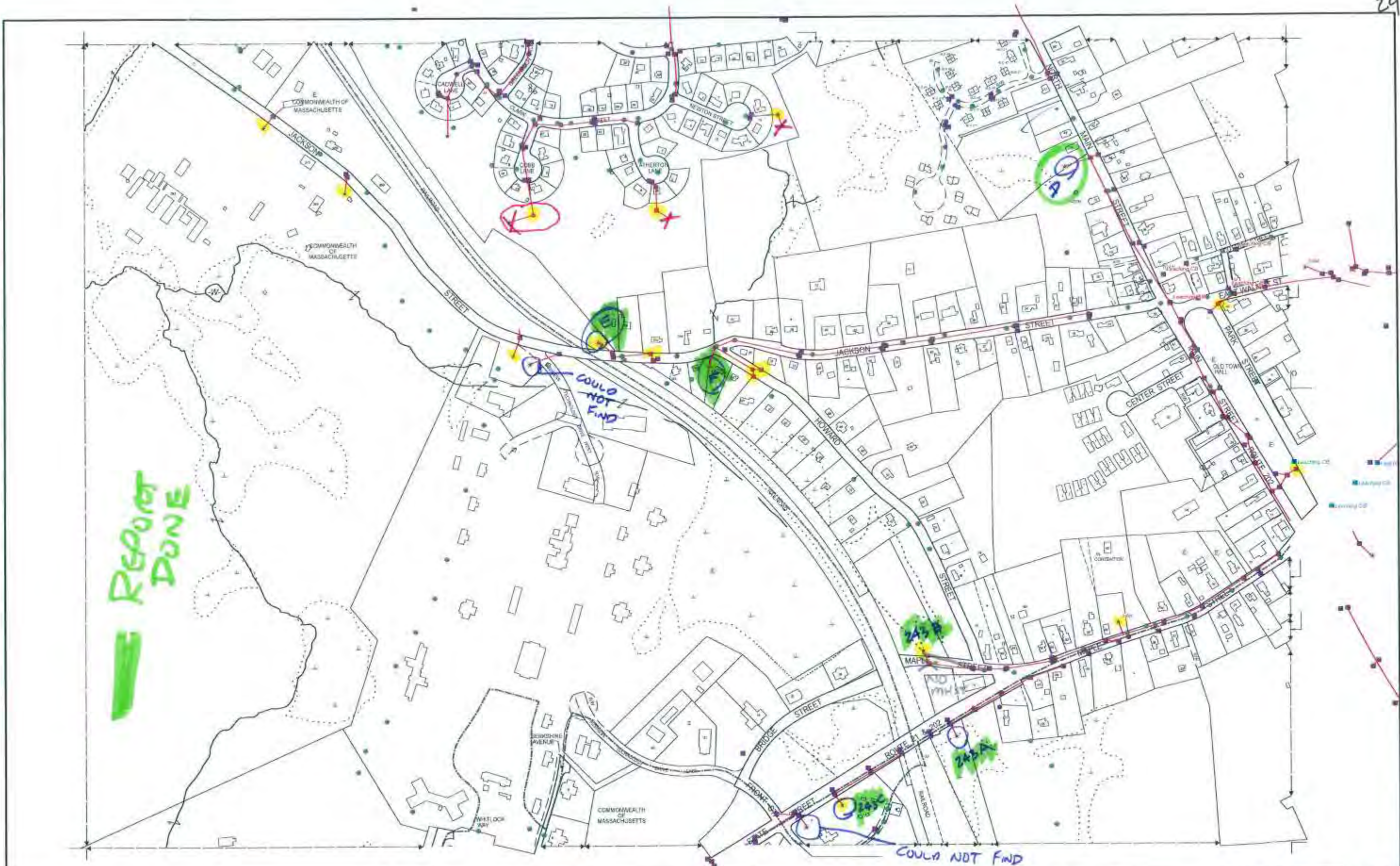
MASSACHUSETTS

INDEX DIAGRAM

239	238	237
242	241	244
241	240	243

MAP NO.

243



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MASSPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

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LEGEND

Catch Basin Flowlines	Sewer Structures	Street
Data Added from Mapbox	Catch Basin Flowlines	Street
Catch Basin Flowlines	Sewer Structures	Street
Catch Basin Flowlines	Sewer Structures	Street

SCALE

FEET: 0 100 200 300 400 500

METERS: 0 30 60 90 120 150

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

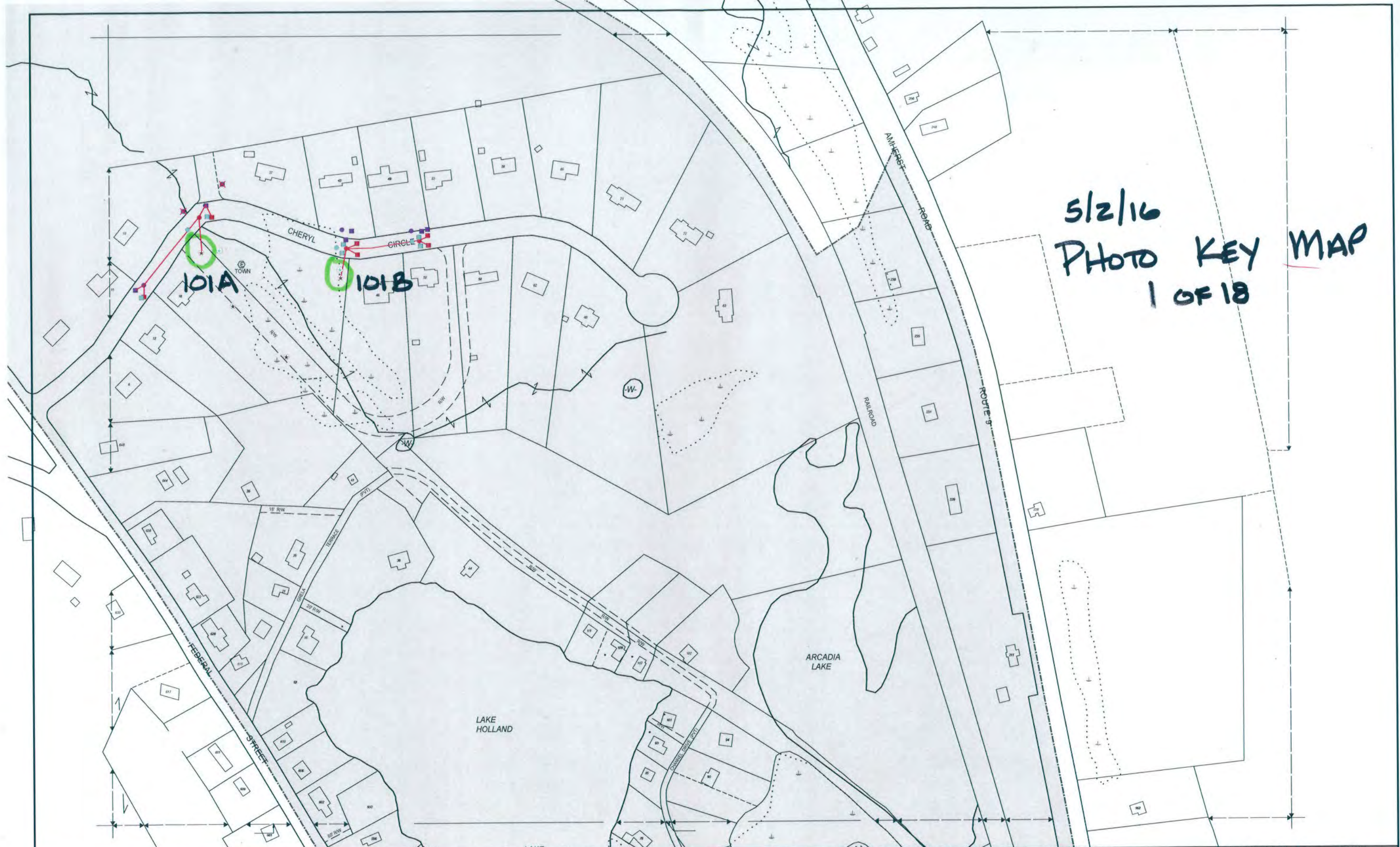
MASSACHUSETTS

INDEX DIAGRAM

1	2	3
4	5	6
7	8	9

MAP NO.

243



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83

DATA SOURCE: TOWN OF BELCHERTOWN

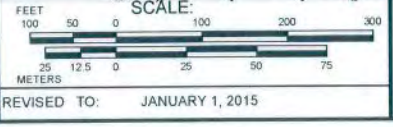
DATE: MAY 2015

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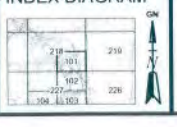
LEGEND		FieldData_20160401
Unsanitized Area	Catch Basin Description	Catch Basin
Data Added from Markups	X's or Not Found	Inlet
Catch Basin Puss and O'Neill	Leaching CB (Added from Markups)	Manhole
Manhole Puss and O'Neill	Leaching CB (within existing data)	Outfall
PipeEndNow		
StormDrainSystem		
	Storm Sewer Structures	
	Catch Basin	Pipe End
	Culvert	Spillway
	Drain Manhole	Wier
	Sewer Structures	Retention Pond
	Holding Tank	Sewer Manhole



PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS



MAP NO.

101



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN MA DPW
THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83
DATA SOURCE: TOWN OF BELCHERTOWN
DATE: MAY 2015

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LEGEND	
	Catch Basin
	Storm Sewer Structure
	Sewer Structure
	Catch Basin with Inlet
	Storm Sewer Structure with Inlet
	Sewer Structure with Inlet
	Catch Basin with Inlet and Manhole
	Storm Sewer Structure with Inlet and Manhole
	Sewer Structure with Inlet and Manhole
	Catch Basin with Inlet and Manhole and Storm Sewer Structure
	Storm Sewer Structure with Inlet and Manhole and Sewer Structure
	Catch Basin with Inlet and Manhole and Storm Sewer Structure and Sewer Structure

SCALE
1" = 100'
0 50 100 150 200 250 300
FEET
0 12.5 25 37.5 50 62.5 75
METERS
REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS
BELCHERTOWN
MASSACHUSETTS



MAP NO.
102



5/2/16
PHOTO KEY
MAP
3 OF 18

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LEGEND

Urbanized Area Limits

- Data Added from Markups
- Catch Basin Face and O'Neill
- Manhole Face and O'Neill
- Pipe End New
- Storm Drain System

Catch Basin Description

- X'd or Not Found
- Leaching CB (Added from Markups)
- Leaching CB (Within existing data)

Field Data 20160401

- Catch Basin
- Inlet
- Manhole
- Outfall

Storm Sewer Structures

- Catch Basin
- Culvert
- Drain Manhole
- Holding Tank

Sewer Structures

- Pipe End
- Spillway
- Wier
- Retention Pond
- Sewer Manhole

SCALE:

FEET: 0 50 100 150 200 250 300

METERS: 0 12.5 25 50 75

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS

INDEX DIAGRAM

MAP NO.

103

2



S/2/16
PHOTO KEY
MAP
3 OF 18

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LEGEND

Unimproved Area	Catch Basin Description	Field Data, 2010/2011	Storm Sewer Structures
2013 Aerial from Mapbox	1/4 in Red Flare	Catch Basin	Catch Basin
Catch Basin Flow and Offset	Catching CR (Hazardous Waste Removal)	1/4 in	1/4 in
Storm Sewer	1/4 in (Hazardous Waste Removal)	1/4 in	1/4 in
Storm Sewer	1/4 in (Hazardous Waste Removal)	1/4 in	1/4 in

SCALE

FEET 0 100 200 300

METERS 0 30 60 90

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS

INDEX DIAGRAM

MAP NO.

103

5/2/16
PHOTO
KEY MAP
4 OF 18



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83.

DATA SOURCE: TOWN OF BELCHERTOWN

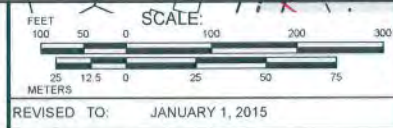
DATE: MAY 2015

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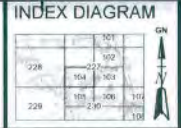
LEGEND	
	Urbanized Area/Line
	Data Added from Markups
	Catch Basin Pass and O'Neill
	Marked Pass and O'Neill
	Pipe End/Now
	Storm Drain System
Catch Basin Description	
	X'd or Not Found
	Leaching CB (Noted from Markups)
	Leaching CB (with existing data)
Field Data_20160401	
	Catch Basin
	Inlet
	Manhole
	Outfall
Storm Sewer Structures	
	Catch Basin
	Culvert
	Drain Manhole
	Holding Tank
Sewer Structures	
	Pipe End
	Sewer Manhole
	Retention Pond
	War



PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS



MAP NO.

104

5/2/16
PHOTO
KEY MAP
4 OF 18

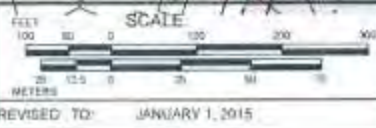


THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MASSACHUSETTS. THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE (COORDINATE SYSTEM 1400-83).
DATA SOURCE: TOWN OF BELCHERTOWN
DATE: MAY 2015

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LEGEND	LEGEND
- Proposed Road - Proposed Road - Proposed Road - Proposed Road - Proposed Road	- Proposed Road - Proposed Road - Proposed Road - Proposed Road - Proposed Road

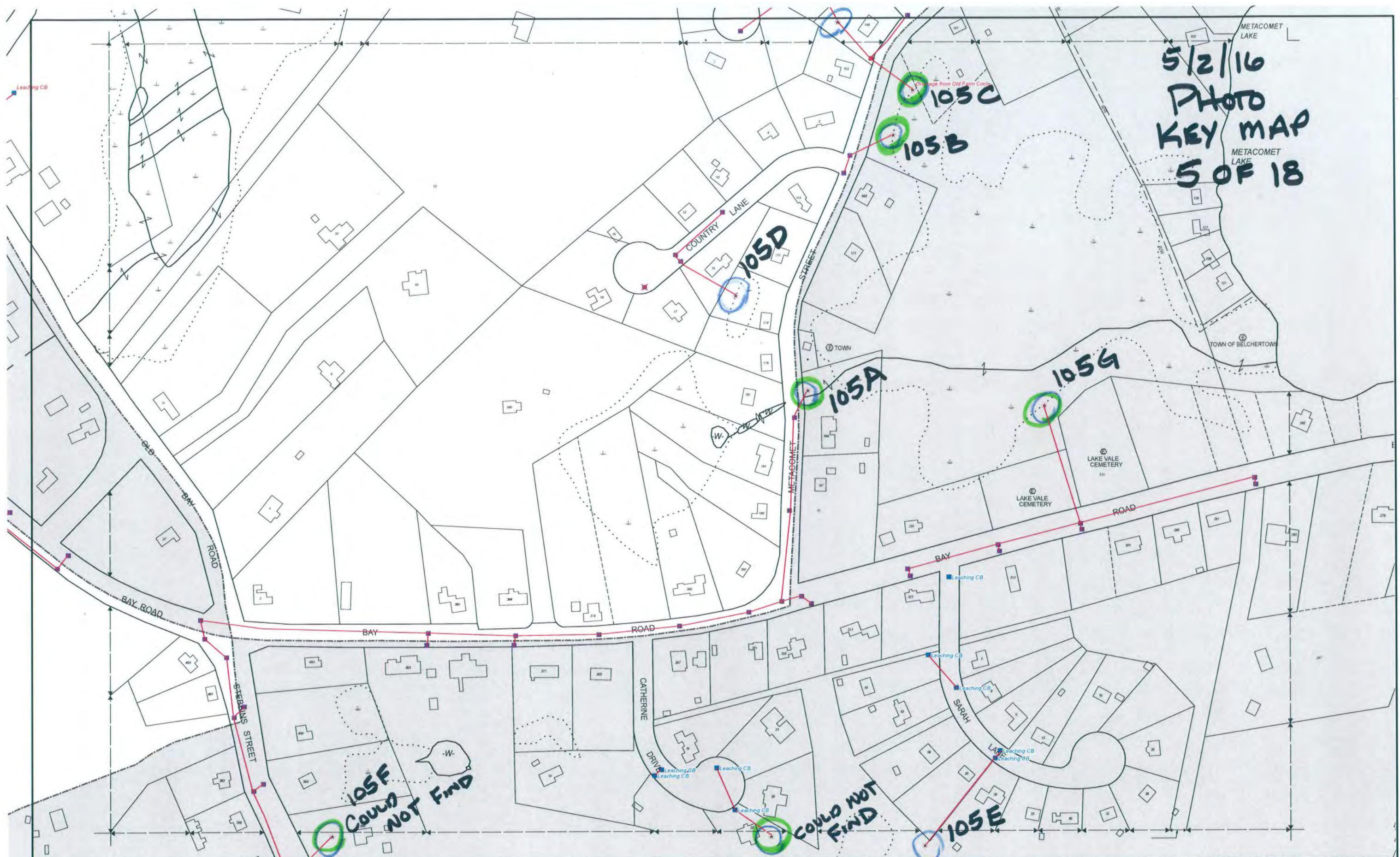
LEGEND	LEGEND
- Proposed Road - Proposed Road - Proposed Road - Proposed Road - Proposed Road	- Proposed Road - Proposed Road - Proposed Road - Proposed Road - Proposed Road



PUBLIC WORKS MAPS
BELCHERTOWN
MASSACHUSETTS



MAP NO.
104



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THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

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LEGEND

Urbanized Area, Inlets
Data Added from Markups
Catch Basin Fuses and Overflow
Manhole Fuses and Overflow
Pipe End New
Storm Drain System

Catch Basin Description

X'd or Not Found
Leaching CB (Added from Markups)
Leaching CB (within existing data)

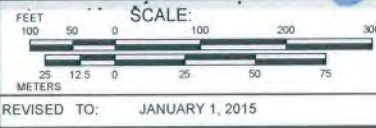
Field Data 20160401

Catch Basin
Inlet
Manhole
Outfall

Storm Sewer Structures

Catch Basin
Culvert
Drain Manhole
Sewer Structures
Holding Tank

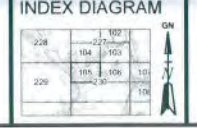
Pipe End
Sewer Manhole
Retention Pond
Sewer Manhole



PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS

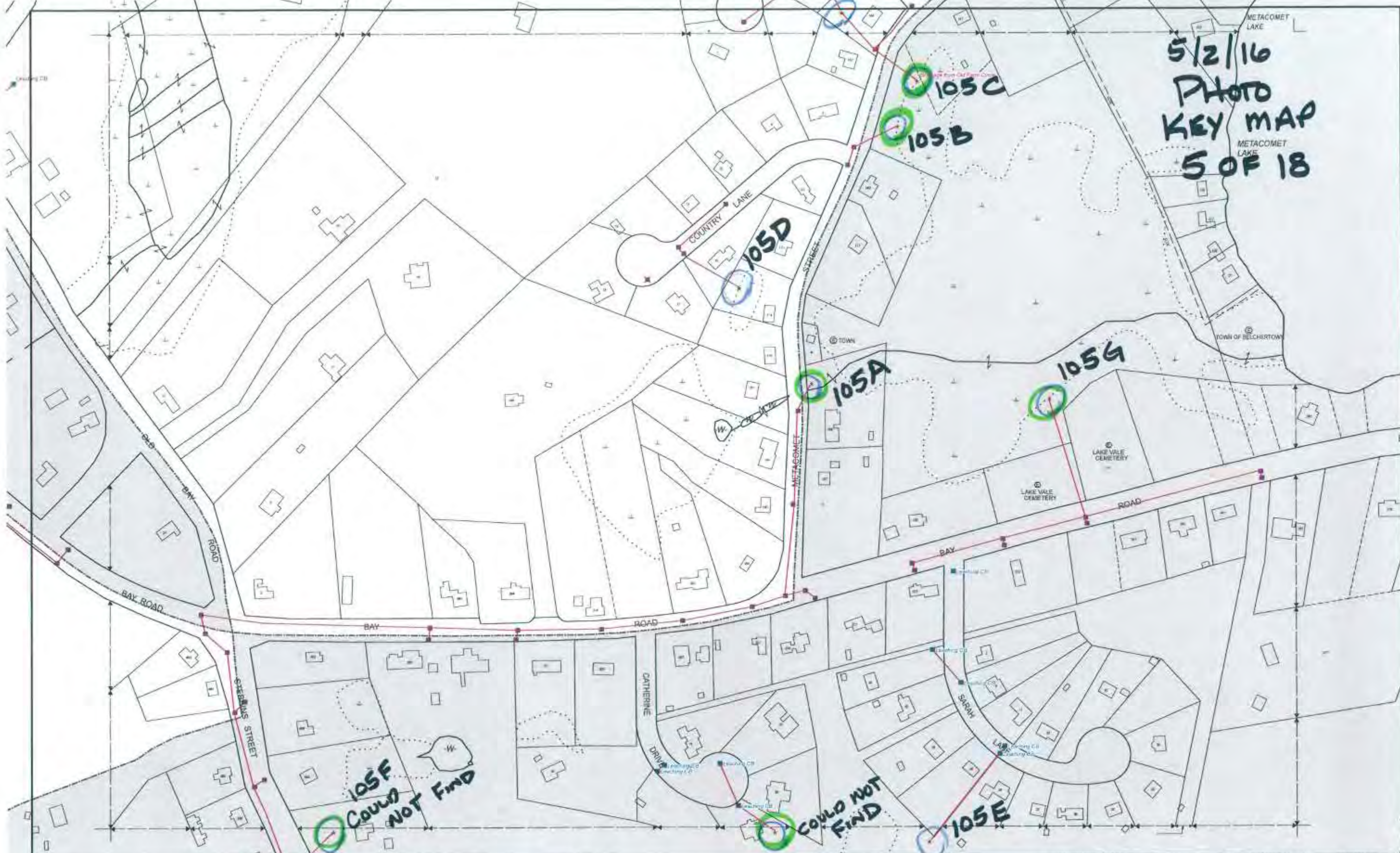


MAP NO.

105



5/2/16
 PHOTO
 KEY MAP
 5 OF 18



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 THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD 83.
 DATA SOURCE: TOWN OF BELCHERTOWN
 DATE: MAY 2015

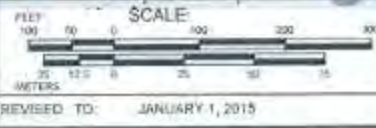
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 413.332.0413 / info@caitech.com

LEGEND

- Unimproved Land - Water - Public Street - Private Street - Storm Drain Right-of-Way	- Check Sewer Description - Sanitary Sewer - Sanitary Sewer - Sanitary Sewer - Sanitary Sewer	- Public Works - Public Works - Public Works - Public Works - Public Works
---	---	--

Storm Sewer Structures

- Catch Basin - Manhole - Storm Structure - Storm Structure - Storm Structure	- Flow Pipe - Flow Pipe - Flow Pipe - Flow Pipe - Flow Pipe
---	---

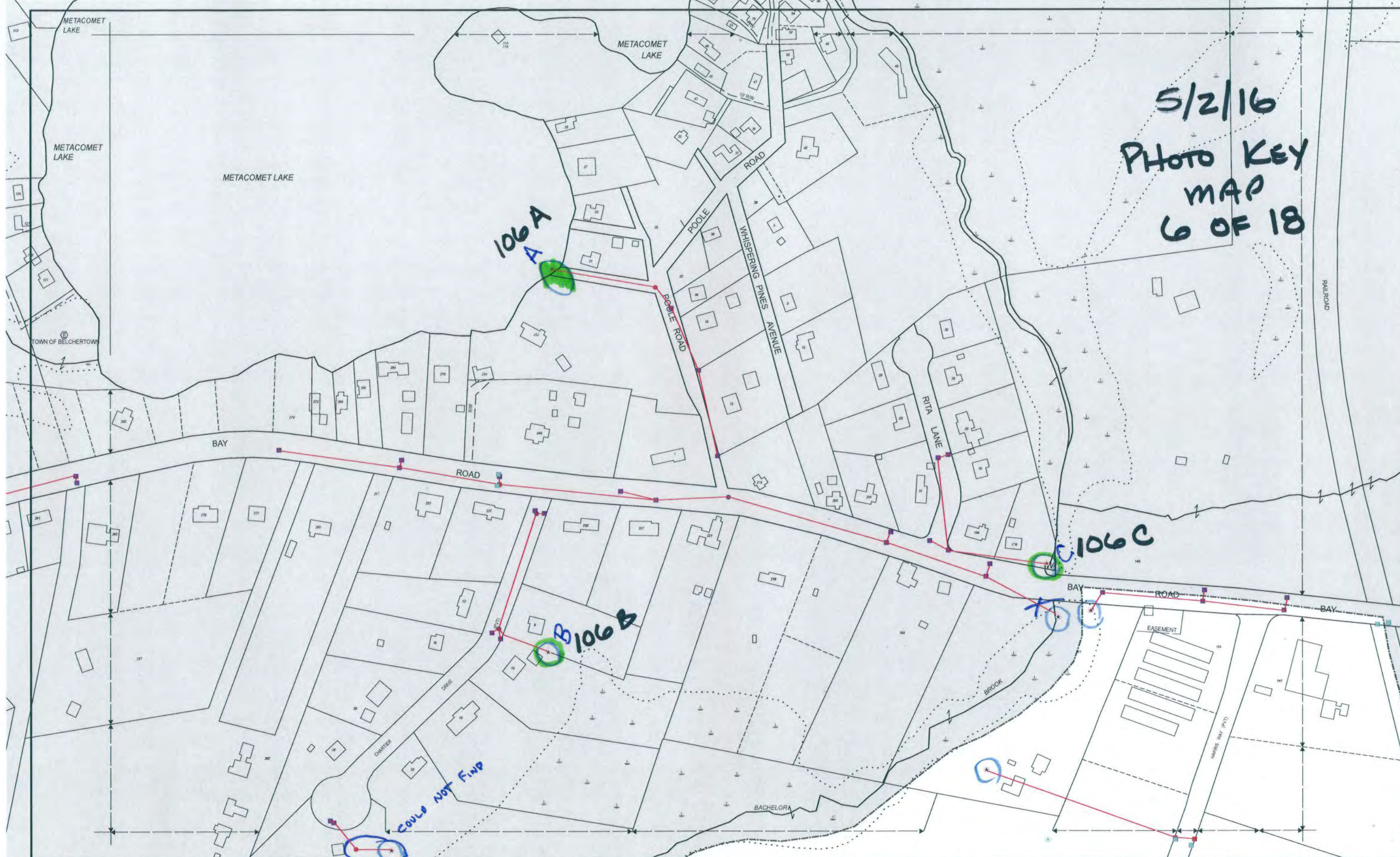


PUBLIC WORKS MAPS
BELCHERTOWN
 MASSACHUSETTS



MAP NO
105

6

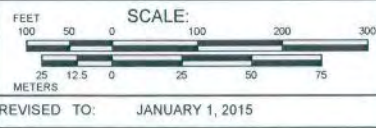


5/2/16
PHOTO KEY
MAP
6 OF 18

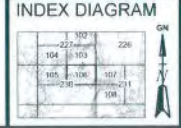
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THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83.
DATA SOURCE: TOWN OF BELCHERTOWN
DATE: MAY 2015

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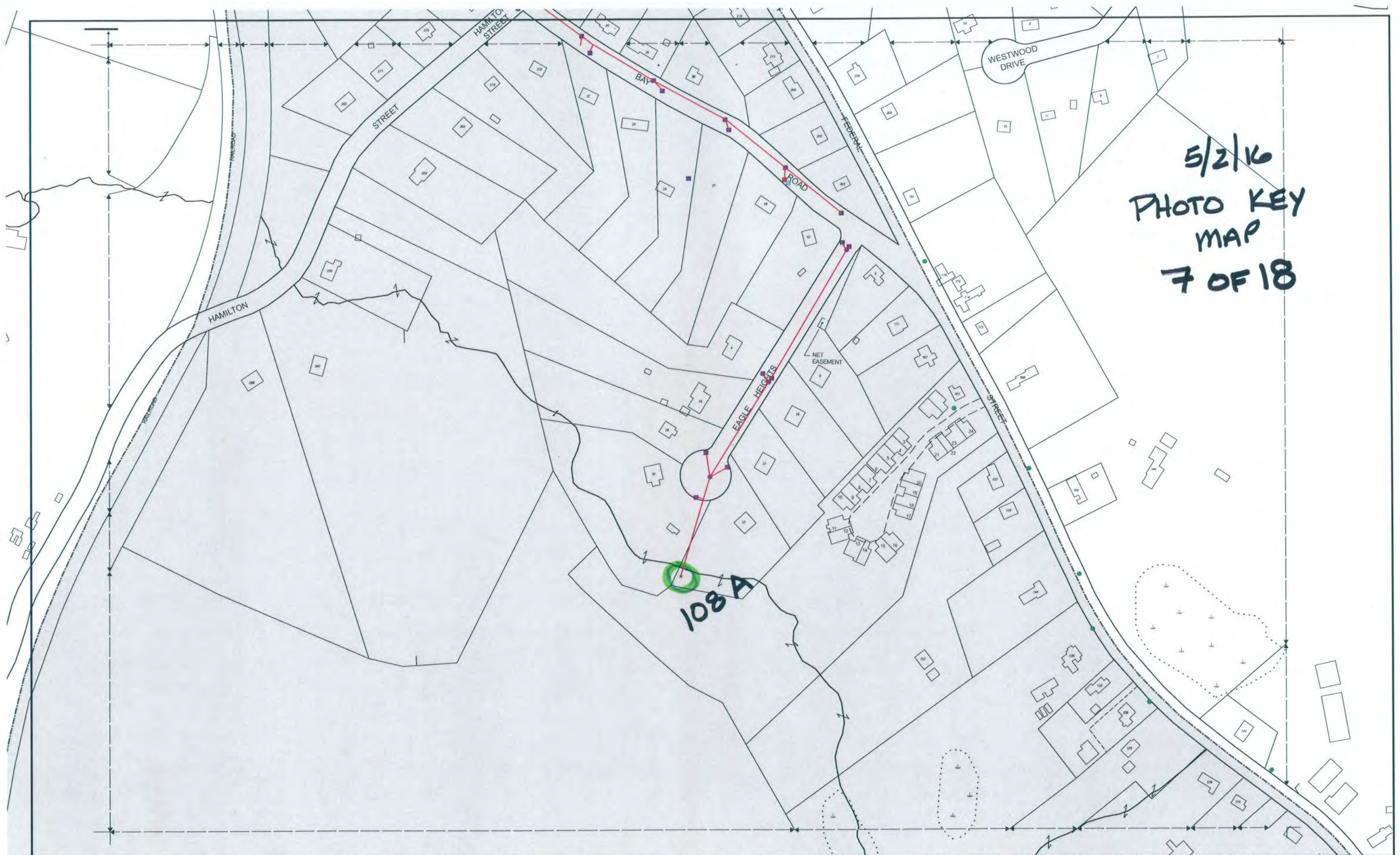
LEGEND	
Urbanized Area Limits	Catch Basin Description
Data Added from Markups	Field Data 20160401
Catch Basin Fuzz and O'Neill	Catch Basin
Manhole Fuzz and O'Neill	Inlet
Pipe End New	Manhole
Storm Drain System	Outfall
	Storm Sewer Structures
	Catch Basin
	Culvert
	Drain Manhole
	Sewer Structures
	Holding Tank
	Pipe End
	Spillway
	Weir
	Retention Pond
	Sewer Manhole



PUBLIC WORKS MAPS
BELCHERTOWN
MASSACHUSETTS



MAP NO.
106



5/2/16
PHOTO KEY
MAP
7 OF 18

THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83.

DATA SOURCE: TOWN OF BELCHERTOWN

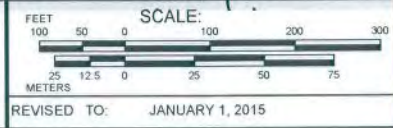
DATE: MAY 2015

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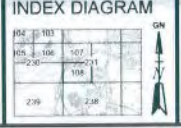
LEGEND		FieldData_20160401
Urbanized/Armed Inlets	Catch Basin Description	Catch Basin
Data Added from Markups	X'd or Not Found	Inlet
Catch Basin Flows and O'Neill	Leaching CB (Asker from Markups)	Manhole
Manhole Flows and O'Neill	LeachingCB (within existing data)	Outfall
PipeEndNew		
StormDrainSystem		
	Storm Sewer Structures	
	Catch Basin	Pipe End
	Culvert	Spillway
	Drain Manhole	Wier
	Retention Pond	
	Holding Tank	Sewer Manhole



PUBLIC WORKS MAPS

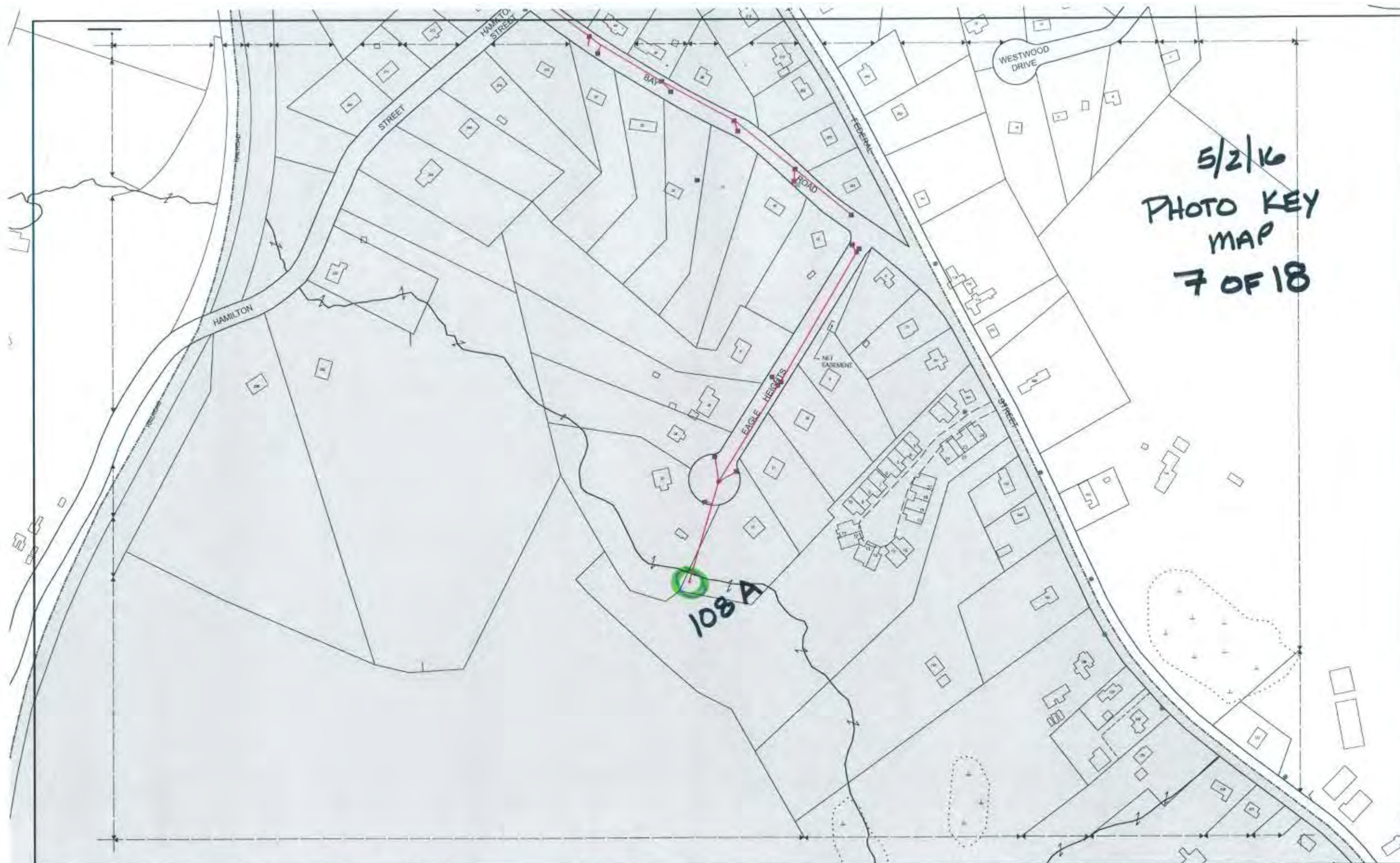
BELCHERTOWN

MASSACHUSETTS



MAP NO.

108



5/2/16
PHOTO KEY
MAP
7 OF 18

THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA CPW
THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83
DATA SOURCE: TOWN OF BELCHERTOWN
DATE: MAY 2015

PRODUCED BY
CAI Technologies
11 Pleasant Street, Suite 100, Belchertown, MA 01013
508.252.6540 - info@cai-tech.com

LEGEND
Catch Basin Description
Catch Basin (Inlet) (Blue)
Catch Basin (Outlet) (Red)
Catch Basin (Inlet/Outlet) (Green)
Catch Basin (Inlet/Outlet) (Yellow)
Catch Basin (Inlet/Outlet) (Orange)
Catch Basin (Inlet/Outlet) (Purple)
Catch Basin (Inlet/Outlet) (Brown)
Catch Basin (Inlet/Outlet) (Pink)
Catch Basin (Inlet/Outlet) (Gray)
Catch Basin (Inlet/Outlet) (White)

LEGEND
Storm Sewer Structures
Catch Basin (Blue)
Catch Basin (Red)
Catch Basin (Green)
Catch Basin (Yellow)
Catch Basin (Orange)
Catch Basin (Purple)
Catch Basin (Brown)
Catch Basin (Pink)
Catch Basin (Gray)
Catch Basin (White)
Catch Basin (Inlet) (Blue)
Catch Basin (Outlet) (Red)
Catch Basin (Inlet/Outlet) (Green)
Catch Basin (Inlet/Outlet) (Yellow)
Catch Basin (Inlet/Outlet) (Orange)
Catch Basin (Inlet/Outlet) (Purple)
Catch Basin (Inlet/Outlet) (Brown)
Catch Basin (Inlet/Outlet) (Pink)
Catch Basin (Inlet/Outlet) (Gray)
Catch Basin (Inlet/Outlet) (White)

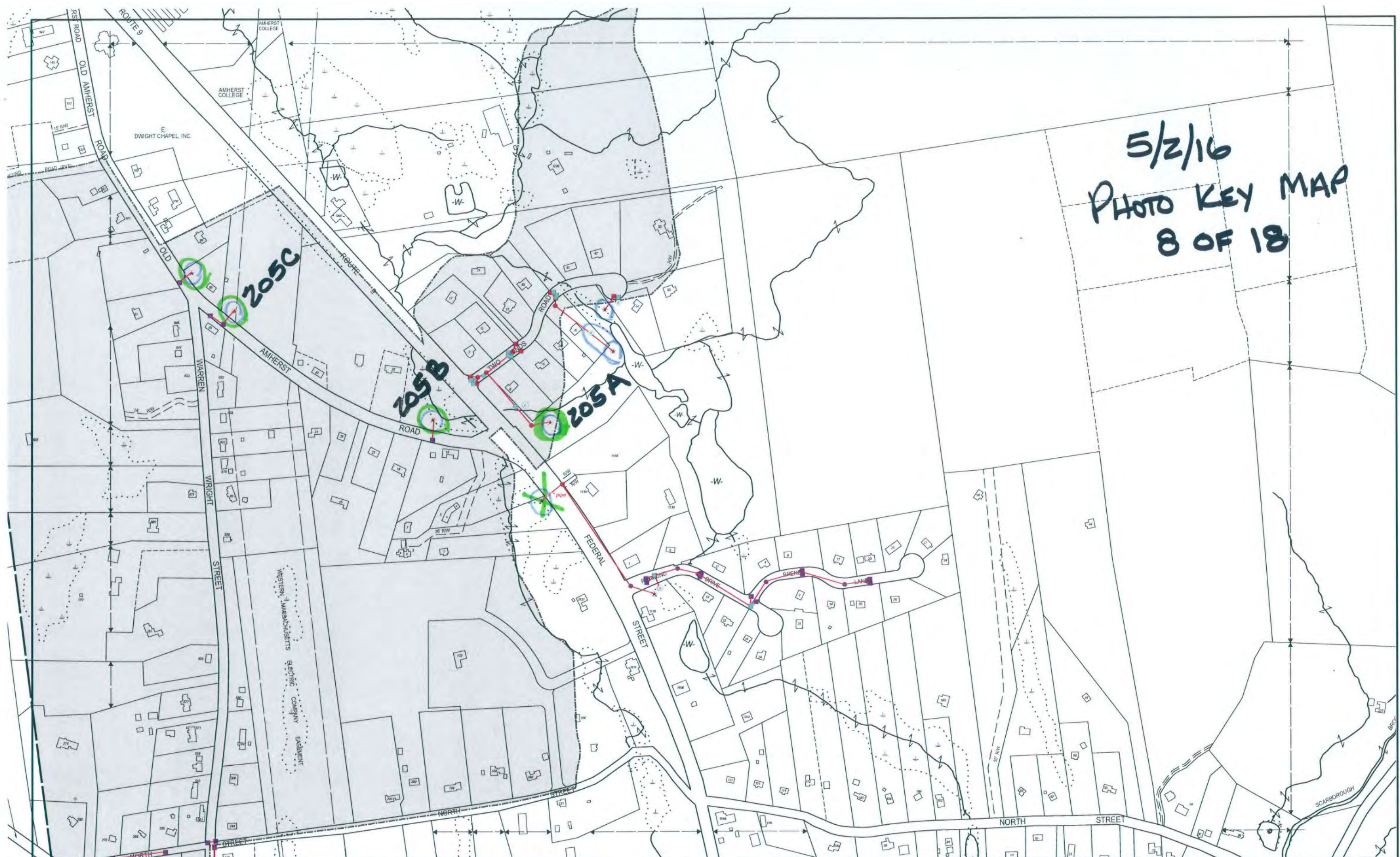
SCALE
FEET 0 100 200 300
METERS 0 30 60 90
REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS
BELCHERTOWN
MASSACHUSETTS

INDEX DIAGRAM
108

MAP NO.
108

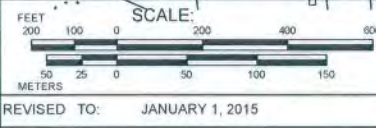
5/2/16
PHOTO KEY MAP
8 OF 18



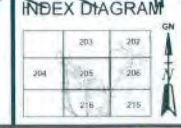
THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW
THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83
DATA SOURCE: TOWN OF BELCHERTOWN
DATE: MAY 2015

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- LEGEND**
- | | | | |
|------------------------------|------------------------------------|---------------------|------------------------|
| Urbanized Area Limits | Catch Basin Description | Field Data 20160401 | Storm Sewer Structures |
| Data Added from Markups | X's or Not Found | Catch Basin | Catch Basin |
| Catch Basin Fuses and Offset | Leaching CB (Added from Markups) | Inlet | Culvert |
| Manhole Fuses and Offset | Leaching CB (within existing data) | Manhole | Drain Manhole |
| Pipe End New | | Outlet | Wet |
| Storm Drain System | | | Retention Pond |
| | | | Holding Tank |
| | | | Sewer Manhole |
| | | | Pipe End |
| | | | Softway |
| | | | Wet |
| | | | Sewer Manhole |

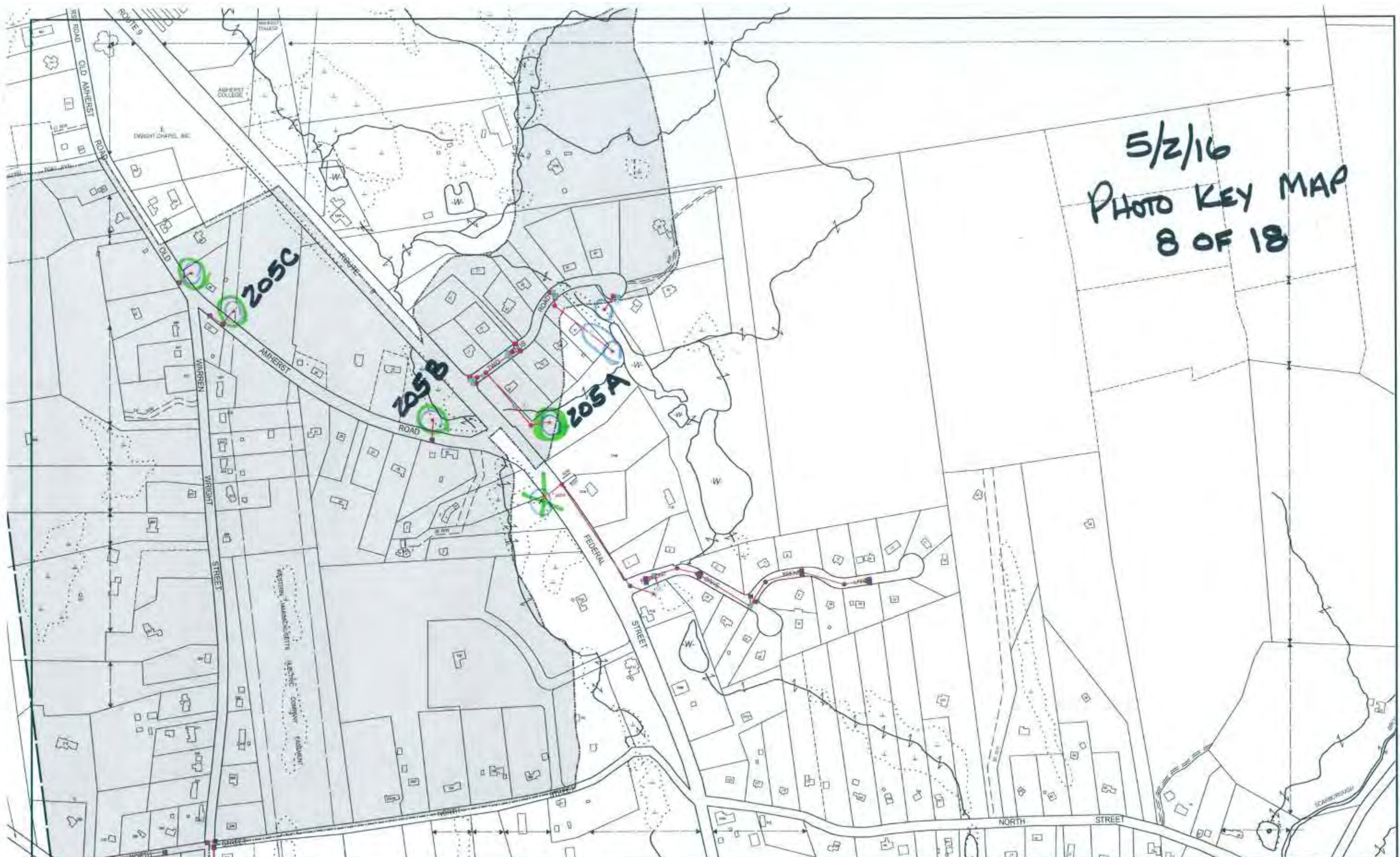


PUBLIC WORKS MAPS
BELCHERTOWN
MASSACHUSETTS



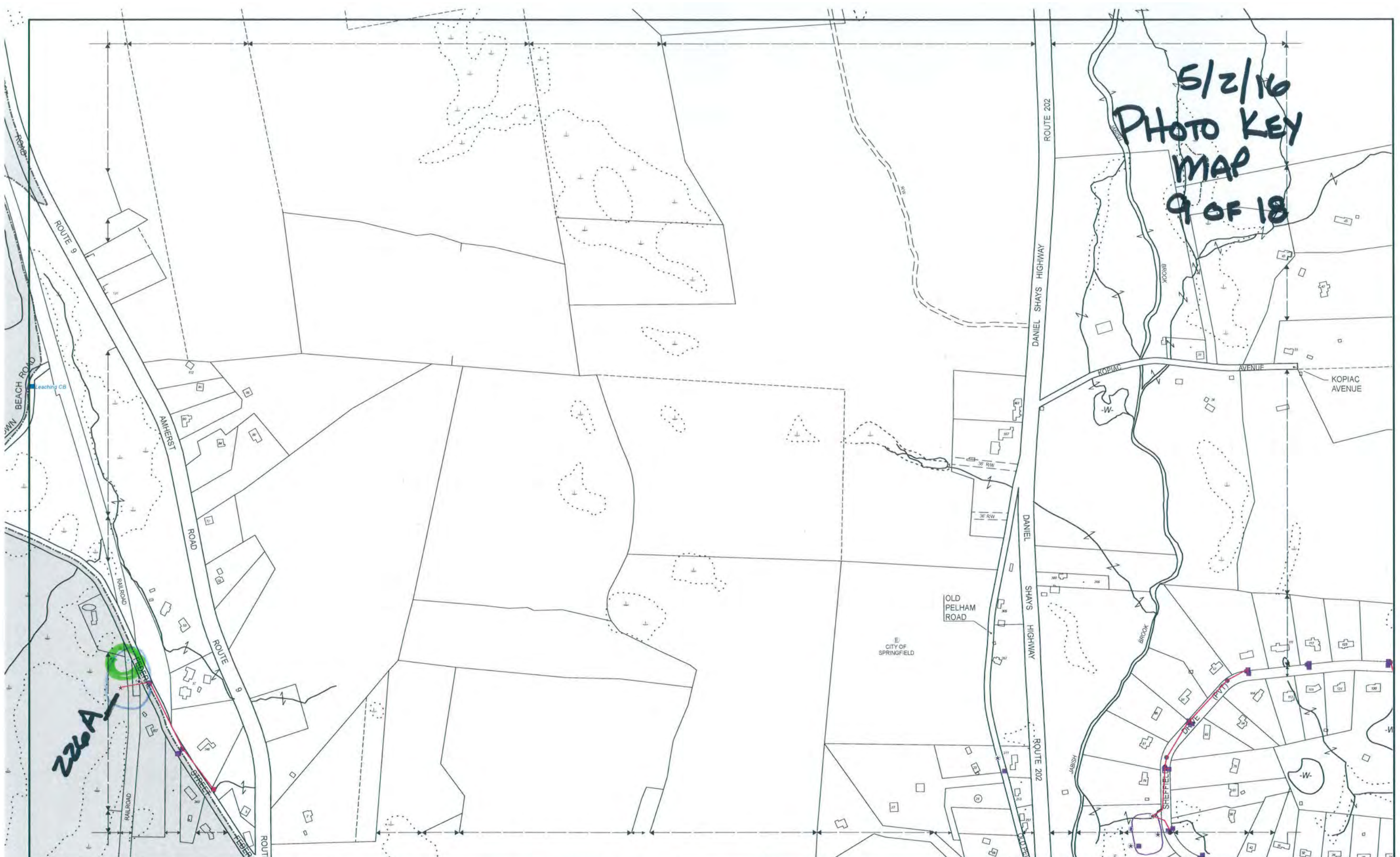
MAP NO.
205

5/2/16
 PHOTO KEY MAP
 8 OF 18



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83 DATA SOURCE: TOWN OF BELCHERTOWN DATE: MAY 2010	PRODUCED BY CAI Technologies 30 Pleasant Street, Uxbridge, MA 01569 401.332.4343 • www.caitech.com	LEGEND <table border="0"> <tr> <td></td> <td>Unknown Structure</td> <td></td> <td>Catch Basin Description</td> <td></td> <td>Firehydrant (Water)</td> </tr> <tr> <td></td> <td>Sewer Access from Structure</td> <td></td> <td>18" or 24" Round</td> <td></td> <td>Green Street</td> </tr> <tr> <td></td> <td>Catch Basin Access from Street</td> <td></td> <td>30" or 36" Round</td> <td></td> <td>Blue Street</td> </tr> <tr> <td></td> <td>Manhole Flag and Check</td> <td></td> <td>48" or 60" Round</td> <td></td> <td>Red Street</td> </tr> <tr> <td></td> <td>Firehydrant</td> <td></td> <td>72" or 96" Round</td> <td></td> <td>Yellow Street</td> </tr> <tr> <td></td> <td>Storm Drain System</td> <td></td> <td>108" or 144" Round</td> <td></td> <td>Grey Street</td> </tr> </table>		Unknown Structure		Catch Basin Description		Firehydrant (Water)		Sewer Access from Structure		18" or 24" Round		Green Street		Catch Basin Access from Street		30" or 36" Round		Blue Street		Manhole Flag and Check		48" or 60" Round		Red Street		Firehydrant		72" or 96" Round		Yellow Street		Storm Drain System		108" or 144" Round		Grey Street	Storm Sewer Structures <table border="0"> <tr> <td></td> <td>Catch Basin</td> <td></td> <td>Pipe Manhole</td> </tr> <tr> <td></td> <td>Catch Basin</td> <td></td> <td>Catch Basin</td> </tr> <tr> <td></td> <td>Catch Basin</td> <td></td> <td>Catch Basin</td> </tr> </table> Sewer Structures <table border="0"> <tr> <td></td> <td>Manhole</td> <td></td> <td>Manhole</td> </tr> <tr> <td></td> <td>Manhole</td> <td></td> <td>Manhole</td> </tr> </table>		Catch Basin		Pipe Manhole		Catch Basin		Catch Basin		Catch Basin		Catch Basin		Manhole		Manhole		Manhole		Manhole	SCALE 0 100 200 300 400 500 FEET 0 20 40 60 80 100 METERS REVISED TO: JANUARY 1, 2015	PUBLIC WORKS MAPS BELCHERTOWN MASSACHUSETTS	INDEX DIAGRAM <table border="1"> <tr> <td>204</td> <td>205</td> <td>206</td> </tr> <tr> <td>207</td> <td>208</td> <td>209</td> </tr> </table>	204	205	206	207	208	209	MAP NO 205
	Unknown Structure		Catch Basin Description		Firehydrant (Water)																																																																
	Sewer Access from Structure		18" or 24" Round		Green Street																																																																
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	Catch Basin		Pipe Manhole																																																																		
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	Catch Basin		Catch Basin																																																																		
	Manhole		Manhole																																																																		
	Manhole		Manhole																																																																		
204	205	206																																																																			
207	208	209																																																																			

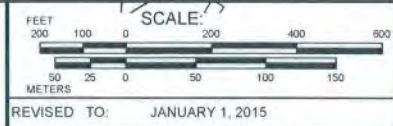
5/2/16
PHOTO KEY
MAP
9 OF 18



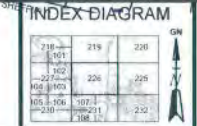
THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW
THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83.
DATA SOURCE: TOWN OF BELCHERTOWN
DATE: MAY 2015

PRODUCED BY
CAI Technologies
TOWN OF BELCHERTOWN
11 Pleasant Street, Littleton, NJ 03561
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LEGEND	
Urbanized Area/Inlets	Catch Basin
Catch Basin Foss and Offset	Inlet
Manhole Foss and Offset	Manhole
Pipe End New	Outfall
Storm Drain System	Holding Tank
Catch Basin Description: X or Not Found	Catch Basin Description: Leaching CB (Added from Markups)
Catch Basin Description: Leaching CB (Added from Markups)	Catch Basin Description: Leaching CB (Added from Markups)
Storm Sewer Structures: Catch Basin	Storm Sewer Structures: Culvert
Storm Sewer Structures: Drain Manhole	Storm Sewer Structures: Retention Pond
Storm Sewer Structures: Sewer Manhole	Storm Sewer Structures: Sewer Manhole



BELCHERTOWN
MASSACHUSETTS



MAP NO.
226

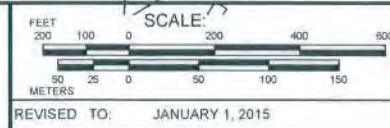
5/2/16
PHOTO KEY
MAP
9 OF 18



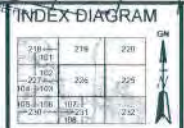
THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MADPW
THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83
DATA SOURCE: TOWN OF BELCHERTOWN
DATE: MAY 2015

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LEGEND		FieldData_20160401
Urbanized Area Limits	Catch Basin Description	Catch Basin
Data Added from Markups	X or Not Found	Inlet
Catch Basin Feet and Offset	Leaching CB (Added from Markup)	Manhole
Manhole Feet and Offset	Leaching CB (Section existing data)	Outfall
PipeEndNew		
Storm Drain System		
Storm Sewer Structures		
Catch Basin		
Culvert		
Chain Manhole		
Sewer Structures		
Retention Pond		
Sewer Manhole		

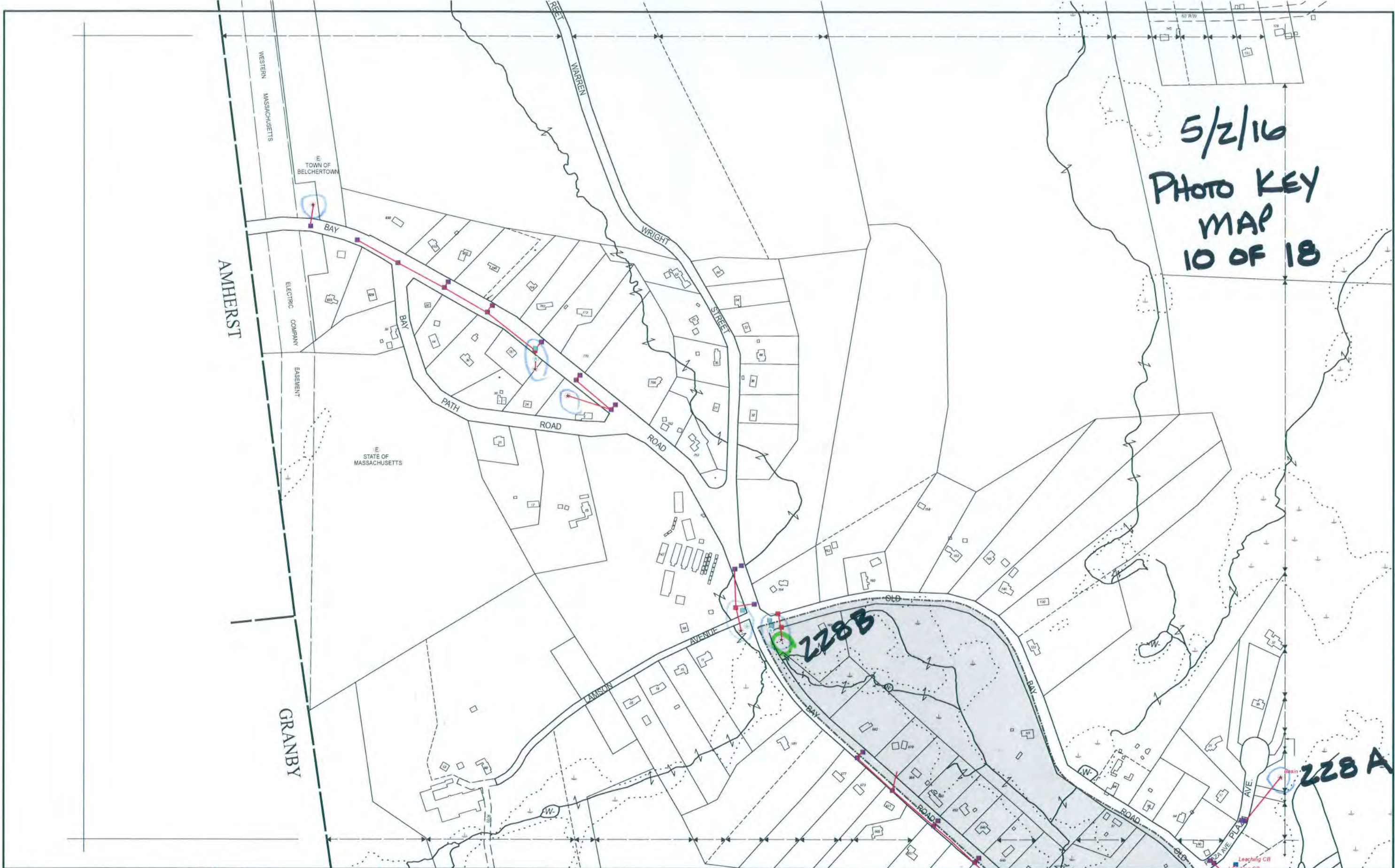


PUBLIC WORKS MAPS
BELCHERTOWN
MASSACHUSETTS



MAP NO.
226

5/2/16
PHOTO KEY
MAP
10 OF 18



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DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

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LEGEND

FieldData_20160401

Urbanized Area/Units	Catch Basin Description	Catch Basin	Catch Basin
Data Added from Markups	Leaching CB (Added from Markups)	Culvert	Drain Manhole
Manhole Fiss and O'Neill	Leaching CB (Added from Markups)	Inlet	Retention Pond
Pipe End New	Leaching CB (Added from Markups)	Manhole	Sewer Manhole
Storm Drain System	Leaching CB (Added from Markups)	Holding Tank	

SCALE:

FEET: 0 100 200 300 400 500 600

METERS: 0 25 50 100 150

REVISD TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS

INDEX DIAGRAM

MAP NO. **228**

5/2/16
PHOTO KEY
MAP
10 OF 18

AMHERST

GRANBY

228B

228A

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THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83

DATA SOURCE: TOWN OF BELCHERTOWN

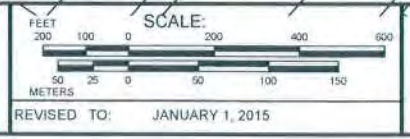
DATE: MAY 2015

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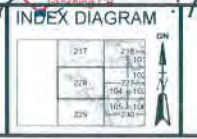
- LEGEND**
- Data Added from Markups**
- Urban/wood/road/leak
 - Catch Basin First and O'Neill
 - Manhole First and O'Neill
 - Pipe End/Note
 - Stone Drain System
- Catch Basin Description**
- K/S or Not Found
 - Leaching CB (Actual from Markups)
 - Leaching CB (yellow existing data)
- Field Data 20160401**
- Catch Basin
 - Inlet
 - Manhole
 - Outfall
- Storm Sewer Structures**
- Catch Basin
 - Culvert
 - Drain Manhole
 - Holding Tank
- Sewer Structures**
- Pipe End
 - Spillway
 - Wier
 - Retention Pond
 - Sewer Manhole



PUBLIC WORKS MAPS

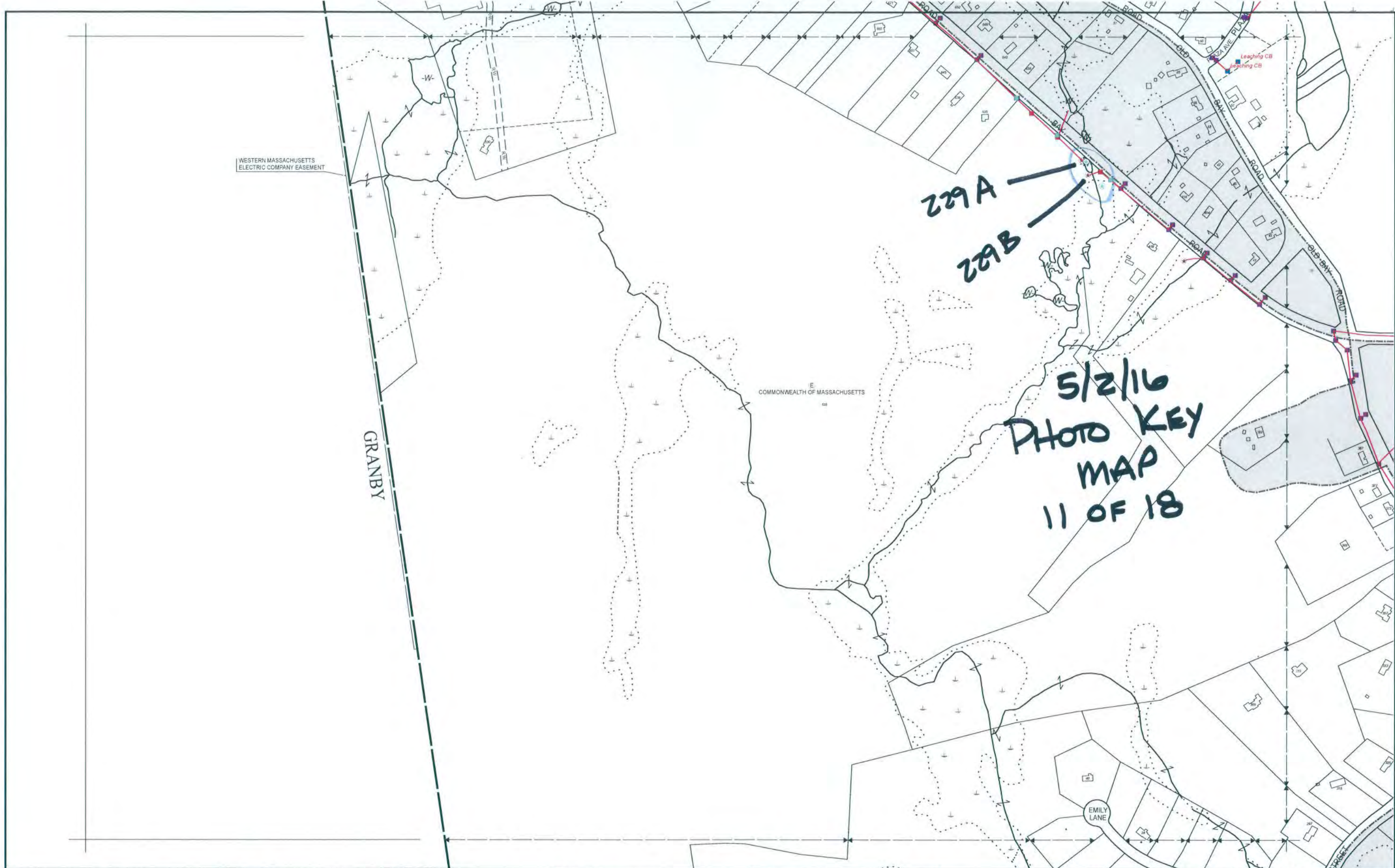
BELCHERTOWN

MASSACHUSETTS



MAP NO.

228



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83.

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

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LEGEND

Urban/Oficial Limits	Catch Basin Description	FieldData_20160401	Storm Sewer Structures	Pipe End
Data Added from Markups	X'd or Not Found	Catch Basin	Catch Basin	Pipe End
Catch Basin Puss and Q'Neill	Leaching CB (Added from Markups)	Inlet	Culvert	Spillway
Manhole Puss and Q'Neill	Leaching CB (with existing data)	Manhole	Drain Manhole	Wier
Pipe End New		Outfall	Sewer Structures	Retention Pond
Storm Drain System			Holding Tank	Sewer Manhole

SCALE:

FEET: 200 100 0 200 400 600

METERS: 50 25 0 50 100 150

REVISD TO: JANUARY 1, 2015

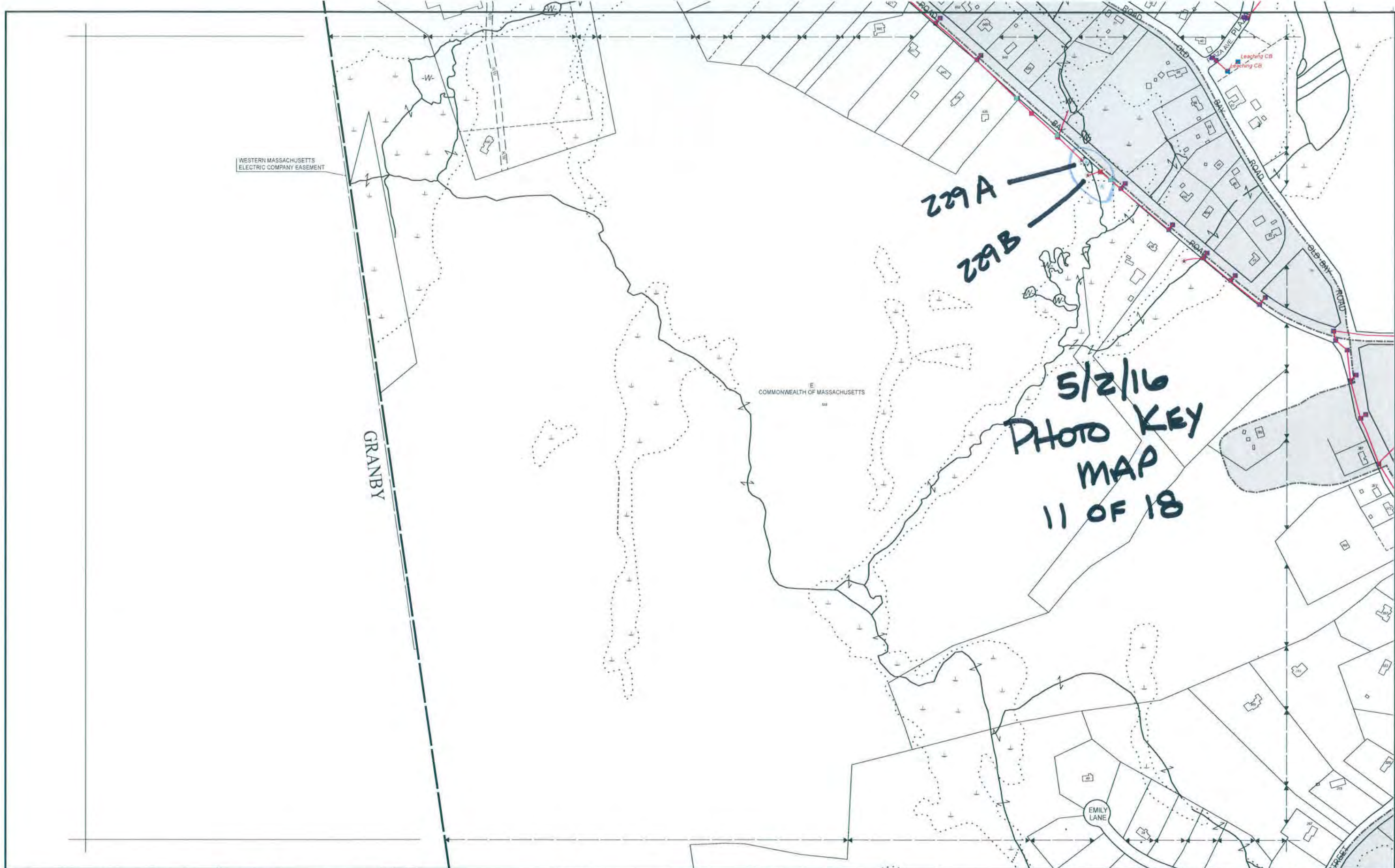
PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS

INDEX DIAGRAM

MAP NO. **229**



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83.

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

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The Smart Mapping Group

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LEGEND

Unimproved Limits	Data Added from Markups	Catch Basin Description	Field Data_20160401
Catch Basin Pits and Offset	X's or Not Found	Leaching CB (Added from Markups)	Catch Basin
Manhole Pits and Offset	Leaching CB (Added from Markups)	Inlet	Manhole
Pipe End View	Leaching CB (Added from Markups)	Outfall	
Storm Drain System			

Storm Sewer Structures

Catch Basin	Pipe End
Culvert	Spillway
Drain Manhole	Weir
Sewer Structures	Retention Pond
Holding Tank	Sewer Manhole

SCALE:

FEET: 0 100 200 400 600

METERS: 0 25 50 100 150

REVISD TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS

INDEX DIAGRAM

MAP NO.

229

5/2/16
PHOTO KEY
MAP
12 OF 18



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THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

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LEGEND

FieldData_20160401

Data Added from Markups	Catch Basin Description	FieldData_20160401	Storm Sewer Structures
Catch Basin Pits and O'Neil	X's or Not Found	Catch Basin	Catch Basin
Manhole Pits and O'Neil	Leaching CB (Added from Markups)	Inlet	Culvert
PipeEndView	Leaching CB (within existing data)	Manhole	Drain Manhole
StormDrainSystem		Outfall	Retention Pond

SCALE:

FEET: 0 100 200 400 600

METERS: 0 25 50 100 150

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS

INDEX DIAGRAM

236	237	238	239
240	241	242	243

MAP NO.

238

5/2/16
 PHOTO KEY
 MAP
 12 OF 18



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW.
 THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE
 COORDINATE SYSTEM, NAD 83
 DATA SOURCE: TOWN OF BELCHERTOWN
 DATE: MAY 2015

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CAI Technologies
 11 Pleasant Street, Suite 100, Belchertown, MA 01021
 408.502.2342 - www.caitools.com

LEGEND
 Data Added from Building
 Catch Basin Pits and Other
 Storm Water Collection
 Flooded Area
 Street Closures
 Catch Basin Structure
 12" or 18" Pipe
 24" or 36" Pipe
 48" or 60" Pipe
 72" or 84" Pipe
 96" or 108" Pipe
 120" or 132" Pipe
 144" or 156" Pipe
 168" or 180" Pipe
 192" or 204" Pipe
 216" or 228" Pipe
 240" or 252" Pipe
 264" or 276" Pipe
 288" or 294" Pipe
 312" or 318" Pipe
 336" or 342" Pipe
 360" or 366" Pipe
 384" or 390" Pipe
 408" or 414" Pipe
 432" or 438" Pipe
 456" or 462" Pipe
 480" or 486" Pipe
 504" or 510" Pipe
 528" or 534" Pipe
 552" or 558" Pipe
 576" or 582" Pipe
 600" or 606" Pipe
 624" or 630" Pipe
 648" or 654" Pipe
 672" or 678" Pipe
 696" or 702" Pipe
 720" or 726" Pipe
 744" or 750" Pipe
 768" or 774" Pipe
 792" or 798" Pipe
 816" or 822" Pipe
 840" or 846" Pipe
 864" or 870" Pipe
 888" or 894" Pipe
 912" or 918" Pipe
 936" or 942" Pipe
 960" or 966" Pipe
 984" or 990" Pipe
 1008" or 1014" Pipe
 1032" or 1038" Pipe
 1056" or 1062" Pipe
 1080" or 1086" Pipe
 1104" or 1110" Pipe
 1128" or 1134" Pipe
 1152" or 1158" Pipe
 1176" or 1182" Pipe
 1200" or 1206" Pipe
 1224" or 1230" Pipe
 1248" or 1254" Pipe
 1272" or 1278" Pipe
 1296" or 1302" Pipe
 1320" or 1326" Pipe
 1344" or 1350" Pipe
 1368" or 1374" Pipe
 1392" or 1398" Pipe
 1416" or 1422" Pipe
 1440" or 1446" Pipe
 1464" or 1470" Pipe
 1488" or 1494" Pipe
 1512" or 1518" Pipe
 1536" or 1542" Pipe
 1560" or 1566" Pipe
 1584" or 1590" Pipe
 1608" or 1614" Pipe
 1632" or 1638" Pipe
 1656" or 1662" Pipe
 1680" or 1686" Pipe
 1704" or 1710" Pipe
 1728" or 1734" Pipe
 1752" or 1758" Pipe
 1776" or 1782" Pipe
 1800" or 1806" Pipe
 1824" or 1830" Pipe
 1848" or 1854" Pipe
 1872" or 1878" Pipe
 1896" or 1902" Pipe
 1920" or 1926" Pipe
 1944" or 1950" Pipe
 1968" or 1974" Pipe
 1992" or 1998" Pipe
 2016" or 2022" Pipe
 2040" or 2046" Pipe
 2064" or 2070" Pipe
 2088" or 2094" Pipe
 2112" or 2118" Pipe
 2136" or 2142" Pipe
 2160" or 2166" Pipe
 2184" or 2190" Pipe
 2208" or 2214" Pipe
 2232" or 2238" Pipe
 2256" or 2262" Pipe
 2280" or 2286" Pipe
 2304" or 2310" Pipe
 2328" or 2334" Pipe
 2352" or 2358" Pipe
 2376" or 2382" Pipe
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 2424" or 2430" Pipe
 2448" or 2454" Pipe
 2472" or 2478" Pipe
 2496" or 2502" Pipe
 2520" or 2526" Pipe
 2544" or 2550" Pipe
 2568" or 2574" Pipe
 2592" or 2598" Pipe
 2616" or 2622" Pipe
 2640" or 2646" Pipe
 2664" or 2670" Pipe
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 15240" or 15246" Pipe
 15264" or 15270" Pipe
 15288" or 15294" Pipe
 15312" or 15318" Pipe
 15336" or 15342" Pipe
 15360" or 1536

5/2/16
PHOTO KEY
MAP
13 OF 18

GRANBY

240A

THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

PRODUCED BY

CAI Technologies
Professional Mapping & Geospatial Solutions

11 Pleasant Street, Littleton, NH 03561
800.322.4549 - www.cai-tech.com

LEGEND

FieldData_20160401

Catch Basin Description

- X or Not Found
- Leaching CB (detected from Markups)
- Leaching CB (within existing data)

Storm Sewer Structures

- Catch Basin
- Culvert
- Drain Manhole
- Sewer Structures
- Retention Pond
- Wet Well
- Wet Well
- Wet Well

Other/Additional Info

- Data Added from Markups
- Catch Basin Fuss and Offset
- Manhole Fuss and Offset
- PipeEndNew
- StormDrainSystem

Scale

FEET: 0 100 200 300 400 500 600

METERS: 0 25 50 100 150

SCALE: 1" = 100'

REVISED TO: JANUARY 1, 2015

BELCHERTOWN

MASSACHUSETTS

INDEX DIAGRAM

240

MAP NO.

240

2

5/2/16
 PHOTO KEY
 MAP
 13 OF 18

GRANBY

240A

THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW
 THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83
 DATA SOURCE: TOWN OF BELCHERTOWN
 DATE: MAY 2015

PRODUCED BY
CAI Technologies
 11 Pleasant Street, Suite 100, Belchertown, MA 01021
 408.733.2621 • www.caito.com

LEGEND

Utility Markings - Gas Added From Markers - Gas Main From and Other - Marking Existing Gas - Water Mains - Sanitary Sewer	Color Based Markings - Water Main - Sanitary Sewer - Storm Sewer	Function (2015/2016) - Check Valve - Valve - Manhole - Outlet	Storm Sewer Structures - Manhole - Structure - Storm Sewer	Scale FEET: 0 100 200 300 400 500 METERS: 0 25 50 75 100 150 REVISION: TO: JANUARY 1, 2015
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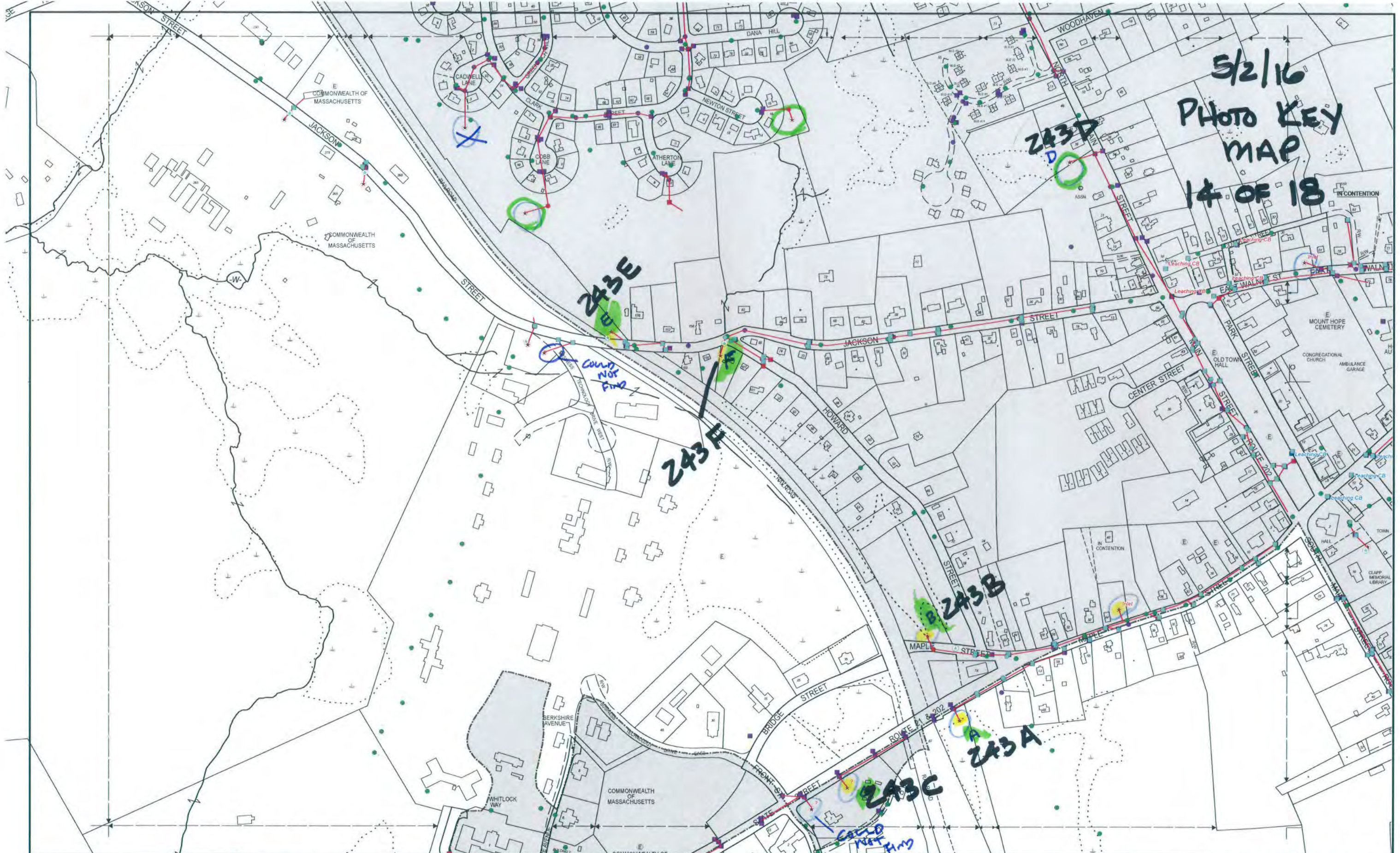
BELCHERTOWN
 MASSACHUSETTS



MAP NO.
240

2

5/2/16
PHOTO KEY
MAP
14 OF 18



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

PRODUCED BY

CAI Technologies

11 Pleasant Street, Littleton, NH 03561
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LEGEND

Urbanized Area	Catch Basin Description	Field Data	Storm Sewer Structures
Data Added from Markups	XU or Not Found	Field Data 20160401	Catch Basin
Catch Basin Fuse and O'Neill	Leaching CB (Added from Markups)	Catch Basin	Culvert
Manhole Fuse and O'Neill	Leaching CB (Added from Markups)	Inlet	Drain Manhole
PipeEndNew	Leaching CB (Added from Markups)	Manhole	Sewer Structures
StormDrainSystem	Leaching CB (Added from Markups)	Outlet	Flowing Tank
			Pipe End
			Spillway
			Wear
			Retention Pond
			Sewer Manhole

SCALE

FEET: 0 100 200 300 400 500 600

METERS: 0 25 50 100 150

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS

INDEX DIAGRAM

238	239	240
241	242	243
244	245	246

MAP NO.

243

5/2/16
 PHOTO KEY
 MAP
 14 OF 18

243E

243F

243B

243A

243C

THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA OPW.
 THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83.
 DATA SOURCE: TOWN OF BELCHERTOWN
 DATE: MAY 2015

PRODUCED BY
CAI Technologies
 15 Abbott Street, Suite 100, Weymouth, MA 02190
 781.932.4343 • www.caito.com

LEGEND

- Other Symbols - Blue Arrow from Storage - Black Arrow from Street - Waterline from Street - Waterline - Storm Drainage	- Waterline from Storage - Waterline from Street - Waterline from Storage - Waterline from Street - Waterline from Storage - Waterline from Street	- Waterline from Storage - Waterline from Street - Waterline from Storage - Waterline from Street - Waterline from Storage - Waterline from Street	- Waterline from Storage - Waterline from Street - Waterline from Storage - Waterline from Street - Waterline from Storage - Waterline from Street
---	---	---	---

SCALE

0 100 200 300 400 500

0 20 40 60 80 100 120

FEET METERS

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS
BELCHERTOWN
 MASSACHUSETTS

INDEX DIAGRAM

MAP NO
243



5/2/16
PHOTO KEY
MAP
16 OF 18

256 C
NO OUT FALL

256 D

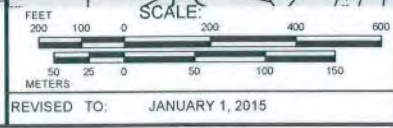
256 A
COULD NOT
FIND

256 B

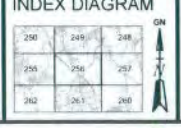
THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW
THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83.
DATA SOURCE: TOWN OF BELCHERTOWN
DATE: MAY 2015

PRODUCED BY
CAI Technologies
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LEGEND	
Urbanized Area Limits	Catch Basin Description
Data Added from Markups	Field Data 20160401
Catch Basin Fuss and O'Neill	Catch Basin
Manhole Fuss and O'Neill	Inlet
Pipe End New	Manhole
Storm Drain System	Outfall
	Storm Sewer Structures
	Catch Basin
	Culvert
	Drain Manhole
	Spillway
	Weir
	Retention Pond
	Holding Tank
	Sewer Manhole
	Pipe End



PUBLIC WORKS MAPS
BELCHERTOWN
MASSACHUSETTS



MAP NO.
256



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

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11 Pleasant Street, Littleton, NH 03561
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LEGEND

Urban/Aerial Data

- Data Added from Markups
- Catch Basin Flus and O'Neill
- Manhole Flus and O'Neill
- PipeEndNew
- SewerDrainSystem

Catch Basin Description

- X'd or Not Found
- Leaching CB (Adopt from Markups)
- Leaching CB (Add to existing data)

FieldData_20160401

- Catch Basin
- Inlet
- Manhole
- Outfall

Storm Sewer Structures

- Catch Basin
- Culvert
- Drain Manhole
- Holding Tank
- Pipe End
- Spillway
- Wier
- Retention Pond
- Sewer Manhole

SCALE

FEET: 200 100 0 100 200 400 600

METERS: 50 25 0 50 100 150

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS

INDEX DIAGRAM

256	249	248
255	254	253
252	251	250

MAP NO.

256

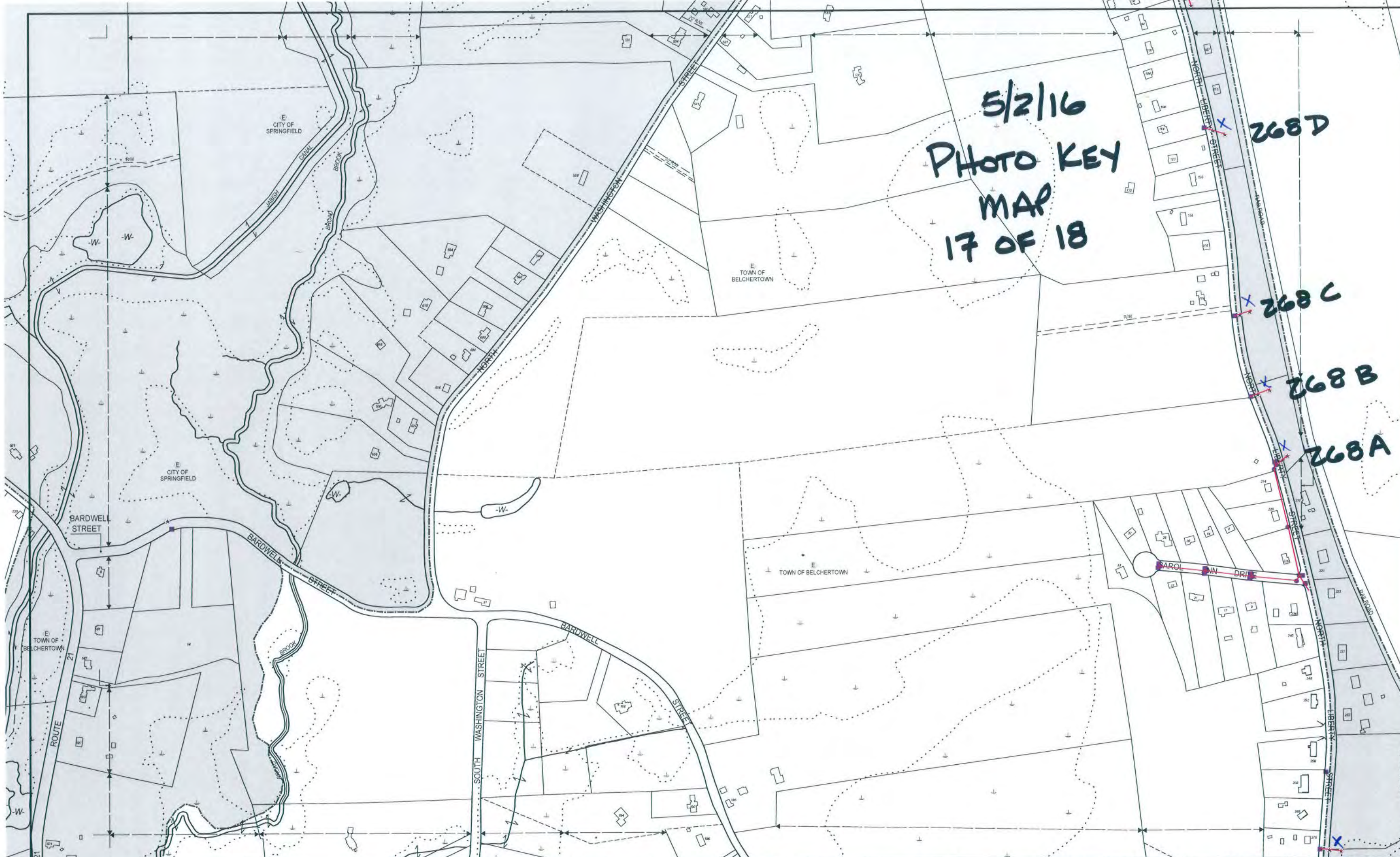
5/2/16
PHOTO KEY
MAP
17 OF 18

268 D

268 C

268 B

268 A



THIS MAP IS DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE BELCHERTOWN, MA DPW

THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83

DATA SOURCE: TOWN OF BELCHERTOWN

DATE: MAY 2015

PRODUCED BY

CAI Technologies
Presents Mapping Geospatial Solutions

11 Pleasant Street, Littleton, NH 03561
800.322.4540 - www.cai-tech.com

LEGEND

Urbanized Areas

- Urbanized Areas

Data Added from Markups

- Catch Basin Fuzz and O'Neill
- Manhole Fuzz and O'Neill
- PipeEndView
- StormDrainSystem

Catch Basin Description

- X'd or Not Found
- Leaching CB (Added from Markups)
- Leaching CB (notin existing data)

FieldData_20160401

- Catch Basin
- Inlet
- Manhole
- Outfall

Storm Sewer Structures

- Catch Basin
- Culvert
- Drain Manhole
- Holding Tank

Sewer Structures

- Pipe End
- Spillway
- Weir
- Retention Pond
- Sewer Manhole

SCALE:

FEET: 200 100 0 200 400 600

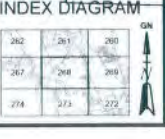
METERS: 50 25 0 50 100 150

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS



MAP NO.

268

5/2/16
PHOTO KEY
MAP
17 OF 18

268 D

268 C

268 B

268 A

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THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83

DATA SOURCE: TOWN OF BELCHERTOWN

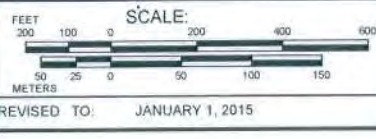
DATE: MAY 2015

PRODUCED BY

CAI Technologies
Precision Mapping. Unmatched Solutions.

11 Pleasant Street, Littleton, N4103961
800.322.4540 • www.cai-tech.com

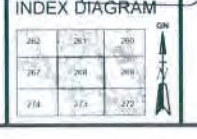
- LEGEND**
- Urbanized Areas**
- Urbanized Areas
- Data Added from Markings**
- Catch Basin Pits and C/Nails
 - Manhole Pits and C/Nails
 - Pipe End View
 - Storm Drain System
- Catch Basin Description**
- X'd or Not Found
 - Leaching CB (Added from Markings)
 - Leaching CB (Within existing data)
- Field Data 20140401**
- Catch Basin
 - Inlet
 - Manhole
 - Outfall
- Storm Sewer Structures**
- Catch Basin
 - Culvert
 - Drain Manhole
 - Holding Tank
- Sewer Structures**
- Pipe End
 - Spillway
 - Wall
 - Retention Pond
 - Sewer Manhole



PUBLIC WORKS MAPS

BELCHERTOWN

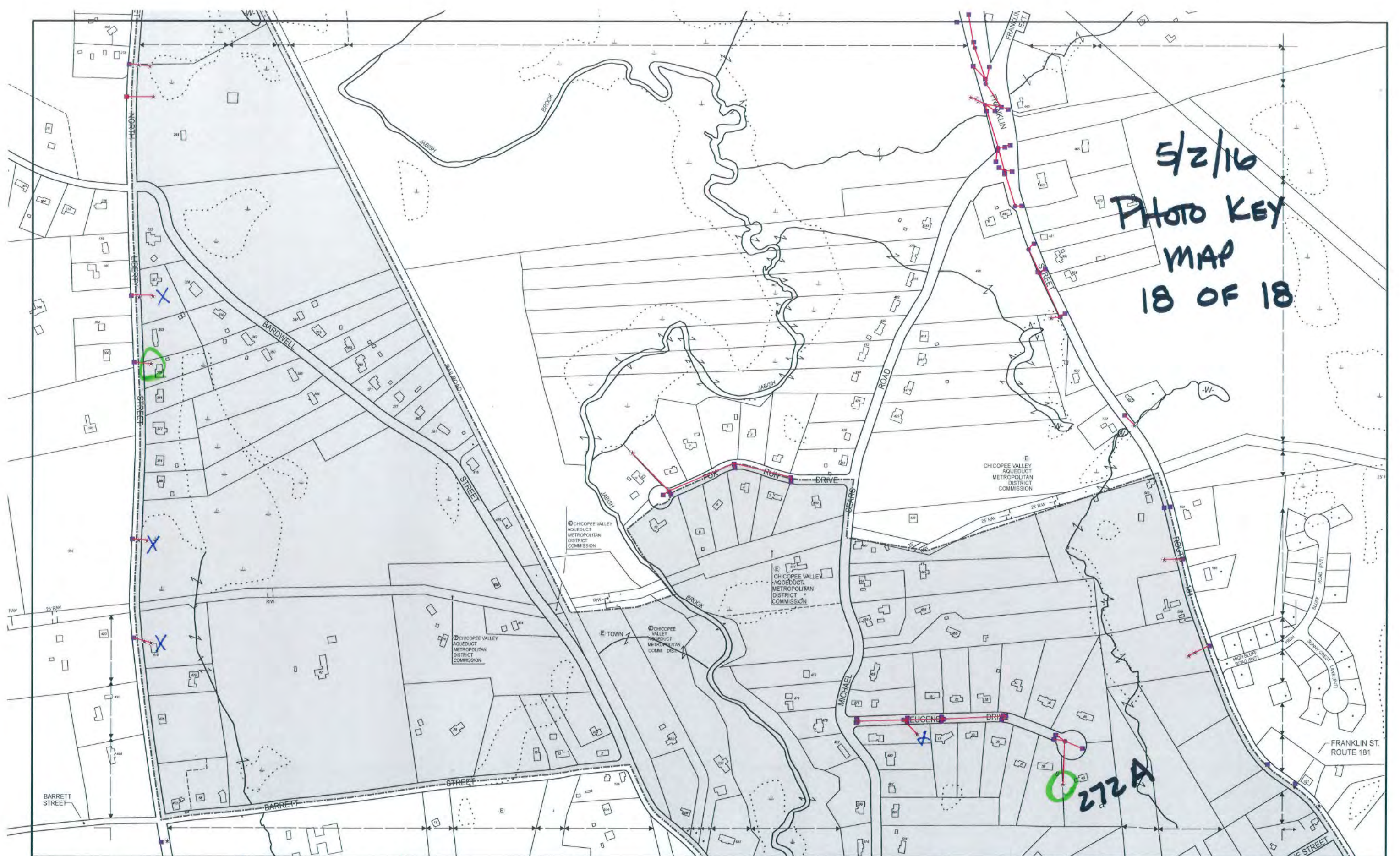
MASSACHUSETTS



MAP NO.

268

5/2/16
PHOTO KEY
MAP
18 OF 18



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THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83.

DATA SOURCE: TOWN OF BELCHERTOWN

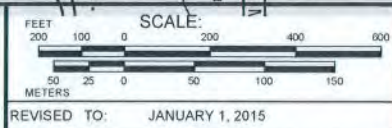
DATE: MAY 2015

PRODUCED BY

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Precision Mapping. Geospatial Solutions.

11 Pleasant Street, Littleton, NE 03561
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- LEGEND**
- Urban/Armed Inlets**
- Data Added from Markups
 - Catch Basin Pits and O'Neill
 - Manhole Pits and O'Neill
 - ★ Pipe End/Note
 - Storm Drain System
- Catch Basin Description**
- ✱ X'd or Not Found
 - Leaching CB (Added from Markups)
 - Leaching CB (within existing data)
- Field Data 20160401**
- Catch Basin
 - Inlet
 - Manhole
 - Outfall
- Storm Sewer Structures**
- Catch Basin
 - Culvert
 - Drain Manhole
 - Holding Tank
- Sewer Structures**
- ★ Pipe End
 - ★ Spillway
 - ★ Viter
 - Retention Pond
 - Sewer Manhole



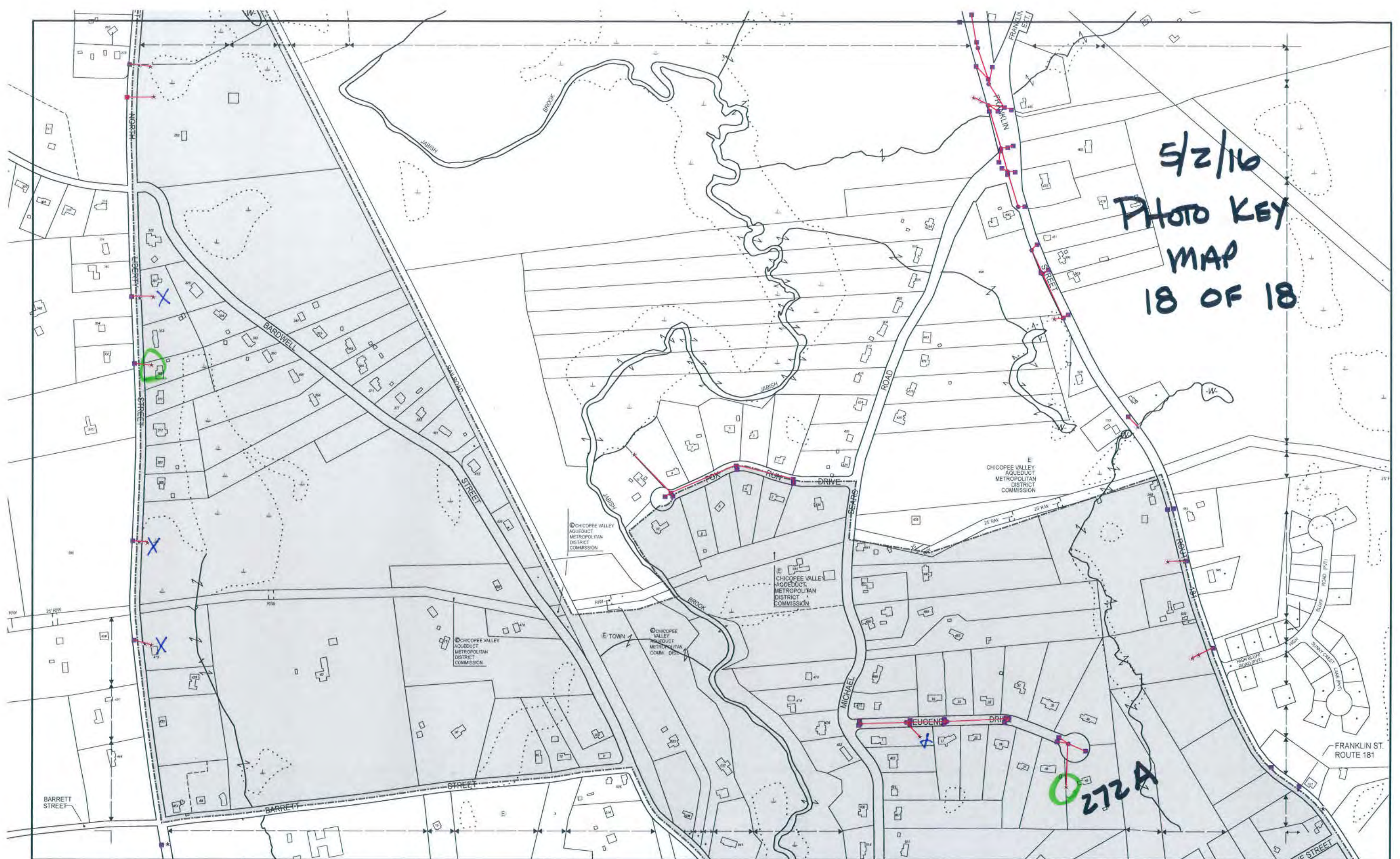
PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS



5/2/16
PHOTO KEY
MAP
18 OF 18



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THE HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83

DATA SOURCE TOWN OF BELCHERTOWN

DATE MAY 2015

PRODUCED BY

CAI Technologies

11 Pleasant Street, Littleton, CO 80120-1195
800.322.4540 - www.cai-tech.com

- LEGEND**
- | | | |
|------------------------------|------------------------------------|------------------------|
| Urban/Drainage Area | Catch Basin Description | Storm Sewer Structures |
| Data Added from Markings | Field Data 2010/2011 | Catch Basin |
| Catch Basin Pits and O'Neill | Inlet | Catch Basin |
| Manhole Pits and O'Neill | Leaching CB (Added from Markings) | Inlet |
| Pipe Enclosure | Leaching CB (within existing data) | Manhole |
| Storm Drain System | | Outfall |
- Storm Sewer Structures**
- Catch Basin
 - Culvert
 - Drain Manhole
 - Holding Tank
 - Sewer Manhole
- Sewer Structures**
- Pipe End
 - Spillway
 - Retention Pond

SCALE

FEET 0 100 200 300 400 500 600

METERS 0 25 50 100 150

REVISED TO: JANUARY 1, 2015

PUBLIC WORKS MAPS

BELCHERTOWN

MASSACHUSETTS

INDEX DIAGRAM

MAP NO. **272**

2

Appendix E

Construction Site Control Materials

Belchertown DPW~ Review of Stormwater Permit Applications -Year 2016						
STWM Permit		Ass. Map/Lot	Applicant	Location	Routing Slip Approval/Denied	
2016-01		Map 273, Lot 15.15	LaFleur & Sons, Inc.	18 South Washington St.	1.7.2016	A
2016-02		Map 269, Lot 110.00	Belchertown Renewables	271 Franklin St.	1.7.2016	A
2016-03		Map 240, Lot 55.07	JP Builders/J. Pirog	Emily Lane	1.7.2016	A
2016-04		Map 268, Lot 29(2)	Koczor, Applicant	Lot 2, So. Washington St.	1.15.2016	A
2016-05		Map 104, Lot 5	Arcadia Construction	Lot 39, #8 Old Farm Road	2.11.2016	A
2016-06		Map 268, Lot 24	Denis Mikhayilichenko	Lot CC, No. Washington St.	2.11.2016	A
2016-07		Map 2698, Lot 22	Denis Mikhayilichenko	Lot EE, No. Washington St.	2.11.2016	A
2016-08		Map268, Lot 24(Z)	Bell Property, LLC Andre Korchevsky, owner	Lot Z, Bardwell Street	2.24.2016	A
2016-09		Map 248, Lot #3.050	Moltenbry Builders, LLC	Sabin Street	2.24.2016	A
2016-10		Map 268, Lot # 5A	Martin & Susan Denette	Lots 28.06 & 28.07 , Bardwell	3.16.2016	A
2016-11		Map 273, Lot 15.14	LeFleur & Son, Inc.	Lot 19, So. Washington St.	3.23.2016	A
2016-12		Map 244, Lot #9 & F	William & Sarah Shea	Lot # 156, Old Sawmill Rd.	3.31.2016	A
2016-13		Map 281, Lot 41.04	G & H Development, LLC	Lot D, Railroad Street	4.21.2016	A
2016-14		Map 268, Lot 29.00	J.P. Builders, Inc.	Lot 1, South Washington St.	4.14.2016	A

2016-15		Map 240, Lot 55.00	J.P. Builders, Inc.	Lot 1, Emily Lane	4.14.2016	A	
2016-16		Map 280, Lot 5.03	Riverbend II Properties, LLC	Lot C, South Washington St.	4.28.2016	A	
2016-17		Map 106, Lot 5	Jeffrey & Virginia Oldenberg	Lot 5, Bay Road	4.28.2016	A	
2016-18		Map 244, Lot 156	Paul Alexanderson & Kim Reiner, App.	Lot 156.00 Old Sawmill Ext.	5.3.2016	A	
2016-19		Map 268, Lot	Michael & Diane McDonald	Lot 3, South Washington St.	5.31.2016	A	
2016-20		Map 268, Lot 29.01	Michael Roy	Lot A, Bardwell St.	5.31.2016	A	
2016-21		Map 244, Lot 55.01	Mark Jackson	Lot 3, Sargent Street	6.6.2016	A	
2016-22		Map 268, Lot 52	Howard Weston	Lot B, No. Liberty Street	6.14.2016	A	
2016-23		Map 280, Lot 5.04	Michael Gomes	Lot 5E, So. Washington St.	6.14.2016	A	
2016-24		Map 268, Lot 29.08	Gary Decoteau	Sublot 8, Bardwell St.	6.21.2016	A	
2016-25		Map 280, Lot 9.00	Mark Raymond	Lot A, So. Washington St.	7.19.2016	A	
2016-26		Map 280, Lot 4.00	Whisperwood Realty Trust	Lot 4A,4B,4C So. Washington St	7.19.2016	A	
2016-27		Map 256, Lot 21.00	Leon & Regina Berneche	Lot 187, No. Washington St.	7.19.2016	A	
2016-28		Map 238, Lot 188.00	Richard Lemilin/CARWASH	5 George Hannum Rd.	7.27.2016	A	
2016-29		Map 250-Lot 49.00	Jame Demers	Lot 2C (Rev.) No. Washington	8.19.2016	A	
2016-30		Map 248, Lot 20.10	Verizon Wireless	#134 Aldrich Street	8.19.2016	NA	
2016-31		Map 251, Lot 70.05	J.P. Builders, Inc.	Lot 4A State Street	9.12.2016	A	

2016-32		Map 268, Lot 29.04	Renata Obiedzinski	Sublot 4, So.Washington St.	9.21.2016	A	
2016-33		Map 276, Lot 102	RGC,LLC.	Lot 1, Pine Street	10.28.2016	A	
2016-34		Map 278, Lot 3.00	Robert Van Zandt	Lot 1, 146 South Liberty St.	11.9.2016	A	
2016-35		Map 278, Lot 3.00	Robert Van Zandt	Lot 2, 146 South Liberty St.	11.9.2016	A	
2016-36		Map 254, Lot 15.10	Ted Bukowski	Lot E-1 Crestview Drive	12.19.2016	A	
2016-37		Map 276, Lot 103	RGC,LLC	Lot 2, Pine Street	12.16.2016	A	
2016-38		Map 276, Lot 103	RGC,LLC	Lot 3, Pine Street	12.16.2016	A	
Total: 38							

Town of Belchertown, DPW - Stormwater Permitting - Year 2017						
STWM Permit #	Ass. Map/Lot	Applicant	Location	Routing Slip Approval/Denied		
2017-01	Map 250, Lot 18.00	B'Town Motors, LLC.	141 State Street	2.2.2017	A	
2017-02	Map 232, Lot 130.	Coderre Development, Inc.	Allen Street, Lot A	2.7.2017	A	
2017-03	Map 245, Parcel 93.	Henry Martin	Willow Lane	2.11.2017	A	
2017-04	Map 273, Lot 15.11	Zbigniew Babinski	Bardwell Street,	2.11.2017	A	
2017-05	Map 206, Parcel #19.06	Heidi Dollard & Don Verrastro	Lot 6, South Gulf Road	PENDING	P	
2017-06	Map 245, Parcel #94.	Joe Bielin	94 Willow Lane, Lot 7	3.28.2017	A	
2017-07	Map 253, Parcel #19.	Jose & Dolores Aponte, Jr.	Barton St., 129AB	3.28.2017	A	
2017-08	Map 268, Parcel #29.	Ted Bukowski	Lot 6, South Washington St.	4.4.2017	A	
2017-09	Map 268, Lot 29.07	Pioneer Vall. Cust. Homes, LLC.	Lot 7, Bardwell Street	4.18.2017	A	
2017-10	Map 268, Lot #24.04(BB)	Danielle LaBarre	North Washington Street	4.21.2017	A	
Codes:						
A=Approved						
D = Denied						
P = Pending						

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2016	
Single Dwelling	0	1	1	6	8	6	5	7	2	2	6	3	47	
Condos	0	0	0	0	4	2	2	2	4	0	0	4	18	
Two Dwelling	0	0	0	0	0	0	0	0	0	0	0	0	0	
Trench Permits	1	0	10	6	14	5	5	5	4	7	5	1	63	
Business/Commercial	0	1	0	0	0	0	1	0	0	0	0	0	2	
sheet metal	2	2	1	4	0	1	1	4	4	2	0	3	24	
Add/Alter/Repairs	22	15	29	33	38	30	20	39	30	31	23	26	336	
Solar	13	7	13	15	12	11	9	10	6	8	7	21	132	
Shed/Barn/Gar/Deck	0	1	5	6	5	7	3	6	6	9	3	0	51	
Accessory Apt.								1	0	1	0	0	2	
WoodStove/Chimney	6	5	0	2	0	2	3	7	0	8	1	4	38	
Demolitions	0	0	2	0	2	0	1	0	0	0	0	0	5	
Pools	0	0	0	3	3	7	3	3	0	0	0	0	19	
Renewals/Signs	0	0	1	0	0		0	0	0	1	0	1	3	
Other *** see below	1	2	0	3	3	1		4	5	0	1	1	21	
Total Bldg Permits	45	34	62	78	89	72	53	88	61	69	46	64	761	
Cert. of Inspection	1	0	0	8	2	1	0	1	0	8	1	2	24	
Weights & Measures	0	0	0	1	1	0	0	0	0	0	1	1	4	
Home Occup Zon	6	6	0	4	4	2	3	4	3	2	1	5	40	
Total	7	6	0	13	7	3	3	5	3	10	3	8	68	
Electrical Permits	41	19	37	43	42	34	46	48	44	34	41	46	475	
Plumbing Permits	12	9	9	12	10	13	19	19	14	20	18	15	170	
Gas Permits	15	8	9	14	10	16	17	19	31	28	26	21	214	
TOTAL	68	36	55	69	62	63	82	86	89	82	85	82	859	
		Found	Not	Dog		Farm	Cell	Solar						
Other Breakdown	stove hood	Only	Approved	Kennel	Ramp	Camp	Tower	Field	Antenna					
January	1													
February		1	1											
March														
April		2		1										
May		2			1									
June		1												
July														
august		1				1	2							
Sept.		4						1						
Oct														
Nov									1					
Dec								1						

Appendix F

Stormwater Training Materials



Department of Public Works
290 Jackson Street, Post Office Box 306
Belchertown, Massachusetts 01007-0306
(413) 323-0415

M E M O R A N D U M

Date: March 8, 2017
To: ALL DPW Divisions, Highway, WWTP, Maintenance
From: Steven J. Williams, Director, Dept. of Public Works
RE: Annual Stormwater Training -2017

Annual Stormwater Training has been scheduled for Tuesday, April 4, 2017 at 11:00AM.
This meeting will be held at the Department of Public Works, 290 Jackson Street location.

If you are unable to attend, please contact me at the DPW Office at (413) 323-0415
or email: swilliams@belchertown.org.

Sincerely,

Steven J. Williams, Director
Dept. of Public Works

SJW/dml

ANNUAL STORMWATER TRAINING
Industrial and MS4
Conducted by J.Cavanaugh, Fuss & O'Neill
Town of Belchertown, MA
Attendance - April 4, 2017

Name	Department
Denis N. Lessard	Hwy
John Panzetti	Hwy
Ed Burton	Hwy
Melissa J Cook	Maint.
DAVID CLEGG	Maint
Jeff Grossman	Maint.
Sean Madden	Maint.
Kent Jones	Maint
Max W. Beck	Maint.
Dave Emptel	Hwy
Chris Johnson	Main
as for Anthony Hurtado	WWTP
David Wanczyk	WWTP
Heather Blandhard	WWTP
Simone K Taylor	Maintenance

Ken Hunt	WWTP
Jon Drown	Highway
Stephen Sikes	 Hwy
Joe Lee	Hwy
Chris Laurendo	Hwy
Steve Williams	Dpw
STEVEN COLE	WWTP

Cold Weather Safety Fact Sheet

Wind Chill

☐ Little Danger
 ☐ Increasing Danger
 ☐ Greater Danger that Exposed Flesh Will Freeze

WIND VELOCITY (mph)

	0	5	10	15	20	25	30	35	40	45	50
TEMPERATURE (°F)	-10	-15	-31	-45	-52	-58	-63	-67	-69	-70	-70
-5	-5	-11	-27	-40	-46	-52	-56	-60	-62	-63	-63
0	0	-6	-22	-33	-40	-45	-49	-52	-54	-54	-56
5	5	1	-15	-25	-32	-37	-41	-43	-45	-46	-47
10	10	7	-9	-18	-24	-29	-33	-35	-36	-38	-38
15	15	12	-2	-11	-17	-22	-26	-27	-29	-31	-31
20	20	16	2	-6	-9	-15	-18	-20	-22	-24	-24
25	25	21	9	1	-4	-7	-11	-13	-15	-17	-17
30	30	27	16	11	3	0	-2	-4	-4	-6	-7
35	35	33	21	16	12	7	5	3	1	1	0
40	40	37	28	22	18	16	13	11	10	9	8

WIND CHILL TABLE

5 mph = moves a light flag
 10 mph = fully extends a flag
 15 mph = will raise a newspaper sheet
 20 mph = produces blowing and drifting snow

Personal Protective Clothing

- Wear at least three layers: layer 1 breaks the wind, layer 2 absorbs sweat, layer 3 draws sweat off the body.
- Keep a change of clothing available, should one set get wet.
- Pay special attention to your feet hands head and face. Keep your head covered (up to 40% of body heat can be lost by being uncovered).
- Wear footwear that protects against cold and dampness.

Environmental Protection

- Consider an on-site source of heat
- For prolonged exposures to 20° F or less, consider a heated shelter
- Shield work areas from drafty or windy conditions.
- Do not sit or kneel on cold unprotected surfaces.

Cold Weather Safety Fact Sheet

- Take extra work breaks as necessary
- Avoid activities that lead to heavy perspiration
- Work indoors if possible during the coldest days; when outside, select the warmest part of the day.
- Prevent dehydration by drinking warm, sweet, caffeine-free, non-alcoholic drinks or soup.
- Avoid working alone in very cold weather. Use a buddy system.

Recognizing Hypothermia

- Shivering/exhaustion
- Confusion/fumbling hands
- Memory loss/slurred speech
- Drowsiness

What to do

- Get the victim to a warm shelter.
- If the victim's clothing is wet, remove them.
- Cover victim and warm body first.
- Provide **warm** beverages; nothing alcoholic. Do not give beverages to an unconscious person.
- Keep victim dry and wrapped in a warm blanket.
- Get medical attention ASAP.

Recognizing Frostbite

- A white or grayish-yellow skin area
- Skin that feels unusually firm or waxy
- Numbness

What to do

- Check for hypothermia
- Get to a warm shelter
- Unless necessary, do not walk on frostbitten feet or toes
- Immerse the affected area in **warm** – not hot – water
- Do not rub the affected area.
- Do not use a heating pad, heat lamp, fireplace or radiator for warming – Affected areas are numb, and easily burned.

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 ☐ Increasing Danger
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	0	5	10	15	20	25	30	35	40	45	50
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-5	-5	-11	-27	-40	-46	-52	-56	-60	-62	-63	-63
0	0	-6	-22	-33	-40	-45	-49	-52	-54	-54	-56
5	5	1	-15	-25	-32	-37	-41	-43	-45	-46	-47
10	10	7	-9	-18	-24	-29	-33	-35	-36	-38	-38
15	15	12	-2	-11	-17	-22	-26	-27	-29	-31	-31
20	20	16	2	-6	-9	-15	-18	-20	-22	-24	-24
25	25	21	9	1	-4	-7	-11	-13	-15	-17	-17
30	30	27	16	11	3	0	-2	-4	-4	-6	-7
35	35	33	21	16	12	7	5	3	1	1	0
40	40	37	28	22	18	16	13	11	10	9	8

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- Do not use a heating pad, heat lamp, fireplace or radiator for warming – Affected areas are numb, and easily burned.

Risk Reminder

3 Point Contact

Help to prevent slips and falls while working by maintaining three points of contact when entering or exiting the cab of your truck. That is, a driver should have two feet on the steps and one hand on the handhold, or two hands on the handhold and one foot on the step.

The fact is that three-point contact gives you the best balance and least chance of slipping, tripping or falling, as well as the best chance to catch yourself if you do slip.



On or away from the employer's premises, drivers fall frequently and for many different reasons. Cabs can be several feet off the ground, and a driver can sustain serious injuries if he/she falls while entering or exiting the truck. Transitioning out of the cab and onto uneven terrain, slippery, greasy or oily surfaces can cause slips and falls. Oil and grease can accumulate on yard surfaces and be transferred to the driver's shoes. In winter weather, snow and ice can accumulate on the truck decking that leads into/out of the cab. To reduce these exposures, consider:

- Use of foot and handholds, as well as non-skid decking, can help prevent such falls.
- Remember to always face your vehicle when entering or exiting your cab.
- Put anything you are carrying into the cab first, and then climb in. Don't try getting in with an armful.
- Drivers should be aware of which leg they lead with when climbing into and out of the cab.
- Based on the design of the steps, leading with the left or right leg can reduce the amount of twisting of the torso and increase the ease of maintaining a three point stance.
- Furthermore, the driver must be aware that jumping from cabs is an unsafe and prohibited practice. This is especially true when considering some of the ruts and uneven terrain you encounter on a job-site. Jumping out of the cab and landing on this uneven terrain can cause significant injuries such as twisted or broken ankles.
- Also avoid bad habits such as swinging down from the cab, skipping or missing steps.



RiskReminder

Eye Hazards



Good vision is priceless!

Luckily, 90 percent of all workplace eye injuries are preventable with the use of proper safety eyewear.

Nearly one million Americans have already lost some degree of sight to an eye injury. With over 365,000 work-related eye injuries still occurring each year, Americans could use a few tips on how to prevent eye injuries in the workplace.

Watch Out for Common Eye Hazards

- Flying particles from grinding, sawing, etching and other machine operations.
- Sparks from welding and other operations.
- Fumes and splashes from molten materials and chemicals.
- Harmful light rays from arc and electrical welding, furnace operations and acetylene torches.

Use the Right Eye Protection for your job. . .

- ANSI approved.
- Properly fitted.
- In good repair.
- **NEVER DEPEND ON REGULAR GLASSES OR CONTACT LENSES TO PROTECT YOU!**

Eye Safety Checklist

- ✓ Be alert to eye hazards at your worksite
- ✓ Follow established safety guidelines
- ✓ Learn first aid for eye injuries
- ✓ Know where all eyewash stations and emergency equipment are
- ✓ Get prompt medical attention for any eye injury
- ✓ Ask your supervisor if it's safe to wear contact lenses in your work area

Contact Tim McGuire for more information at 781-683-1112 or tmcguire@ccmsi.com

Safety Training Sign In

Safety Training

National Grid Power Lines Safety

3/22/2017

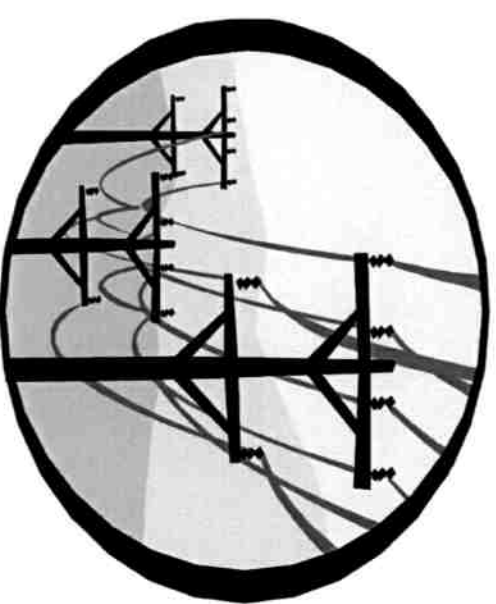
Print Name	Sign	Date	Division
Rollen Delvitt	<i>[Signature]</i>	3/22/17	WRF
John Panzetti	<i>[Signature]</i>	3-22-17	Highway
Larry Bulfin	<i>[Signature]</i>	3/22/17	Highway
Terry Chera/12	<i>[Signature]</i>	3/22/17	Highway
Jon Grossman	<i>[Signature]</i>	3/22/17	Highway
Dylan Buchard	<i>[Signature]</i>	3/22/17	Highway
Dave Martel	<i>[Signature]</i>	3-22-17	Highway
Darin Braese	<i>[Signature]</i>	3-22-17	Hwy
Stephen Sikes	<i>[Signature]</i>	3/22/17	Hwy
Lee Beet	<i>[Signature]</i>	3-22-17	Hwy
Chris Lawrence	<i>[Signature]</i>	3/22/17	HIGHWAY
STEVEN COLE	<i>[Signature]</i>	3/22/17	WRF
ROY MCGINNIS	<i>[Signature]</i>	3/22/17	WATER DISTRICT
Chris Johnson	<i>[Signature]</i>	3/22/17	Maintenance
David Wanczyk	<i>[Signature]</i>	3/22/17	WRF
Melissa Cook	<i>[Signature]</i>	3/22/17	maintenance
James Khyler	<i>[Signature]</i>	3/22/17	maintenance
Jeff Grossman	<i>[Signature]</i>	3/22/17	Maintenance
Sam Madden	<i>[Signature]</i>	3/22/17	Maint.
Kevin Williams	<i>[Signature]</i>	3/22/17	Water District
Anthony Hurtado	<i>[Signature]</i>	3-22-17	WTP
SEPERE E. O'NEILL	<i>[Signature]</i>	3-22-17	Water District
Instructor Sign/Date :			
Company :			

Belchertown Electrical Safety Presentation

March 22, 2017

National Grid

Jeffrey E. McPherson, CUSP, CUSA



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PREVENTION IS THE KEY



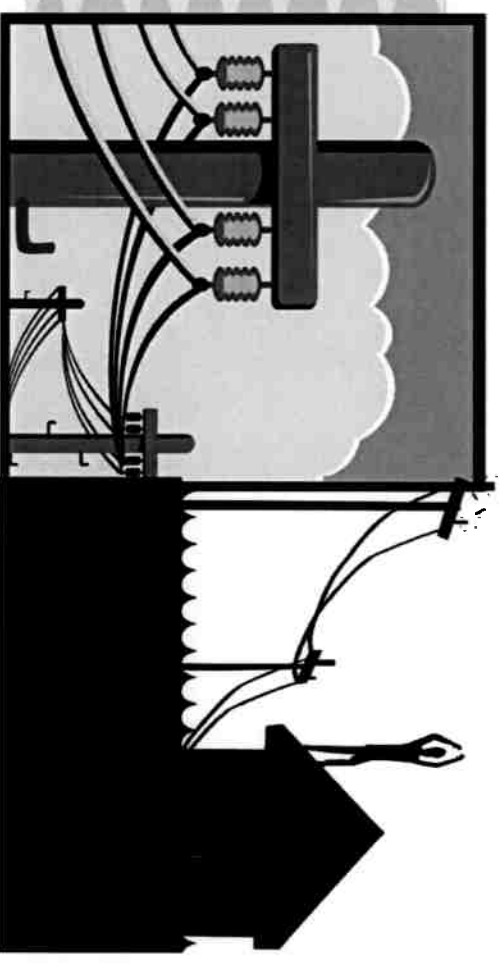
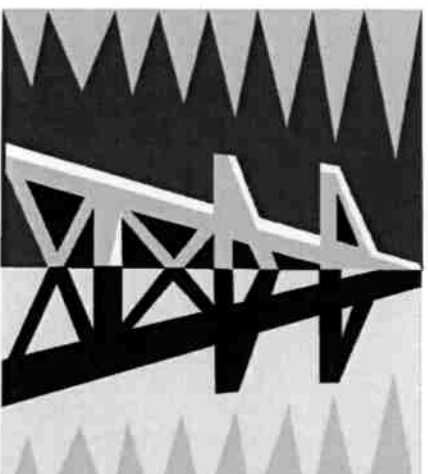
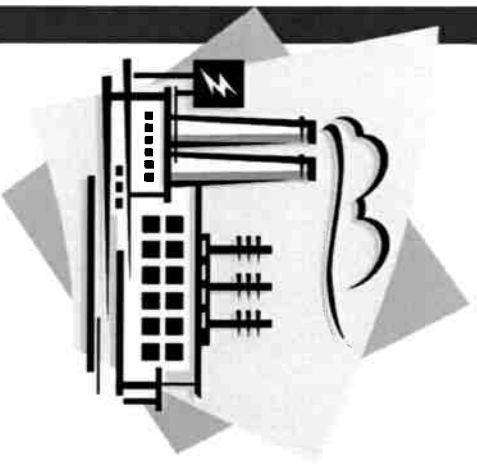
**An incident involving
electricity can cause:**

- Cardiac Arrest
- Blindness
- Ventricular Fibrillation
- Tissue Destruction
- Brain Damage
- Bone Damage
- Stoppage of Breathing
- Seizures

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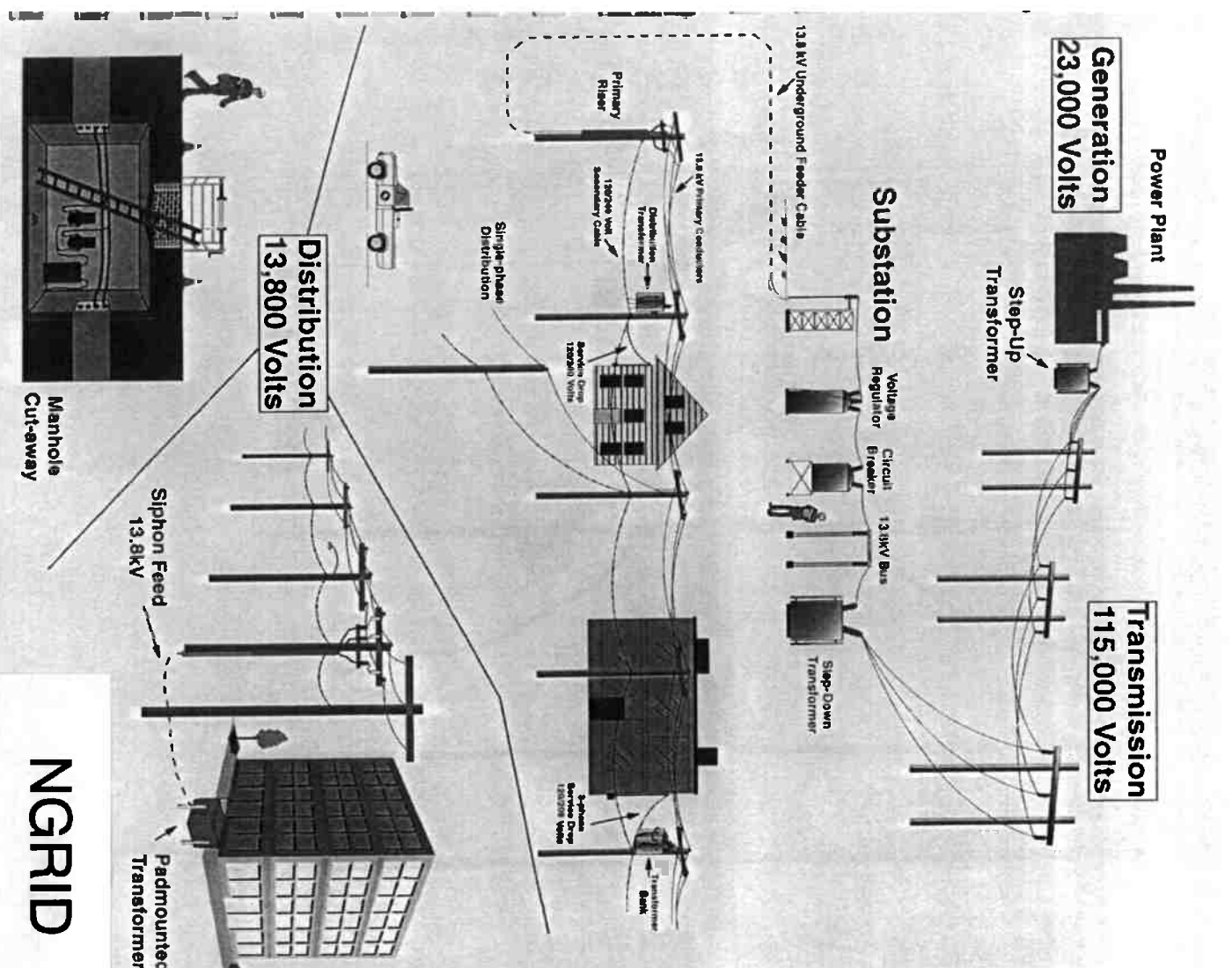
Overview of Transmission and Distribution System

- ♦ Generation
- ♦ Transmission
- ♦ Distribution



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Typical Electricity Supply and Delivery System



NGRID

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TYPICAL POLE TOP

Crossarm & Pole Top Pin

3-1/0 Bare Alum. Primary
13,800 volts

15kV 100A Fused-Cutout

25kVA 13.2kV/7620V Transformer

25

Street Light

1/0-3/4 Secondary Cable
120/240 volts

Service to house

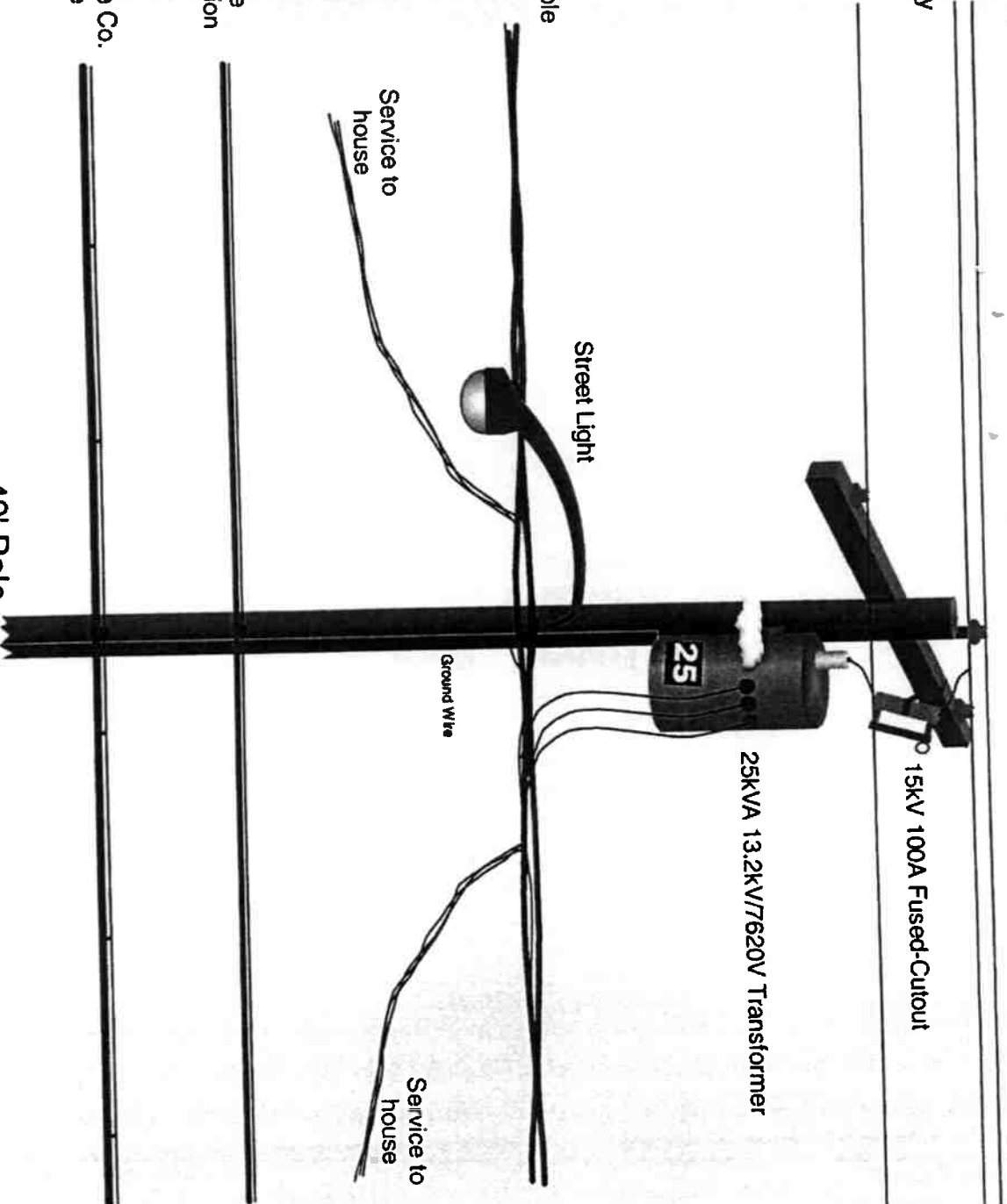
Ground Wire

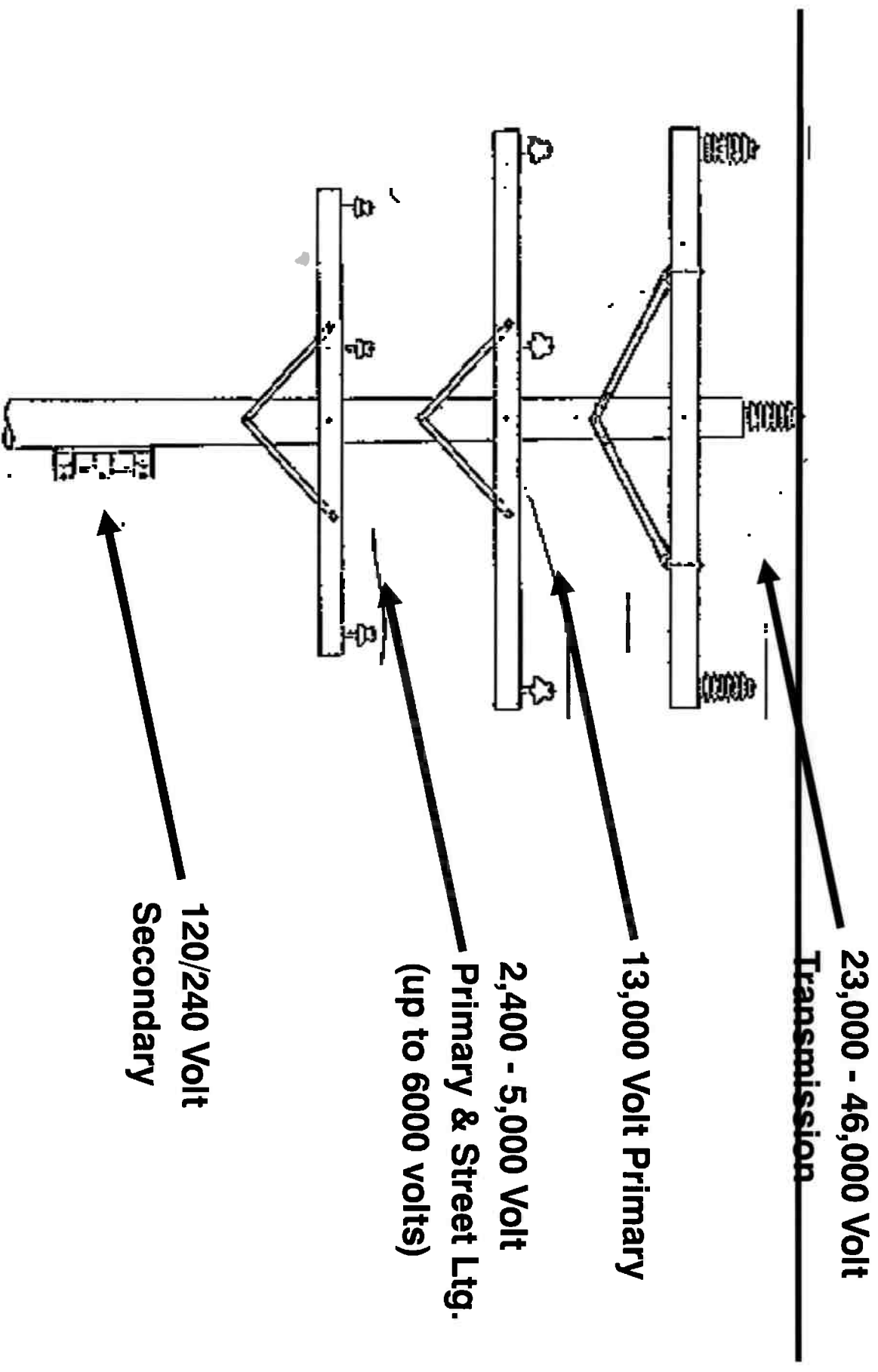
Service to house

Cable
Television

Telephone Co.
Cable

40' Pole





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All Downed Wires are Considered Energized !!!!!



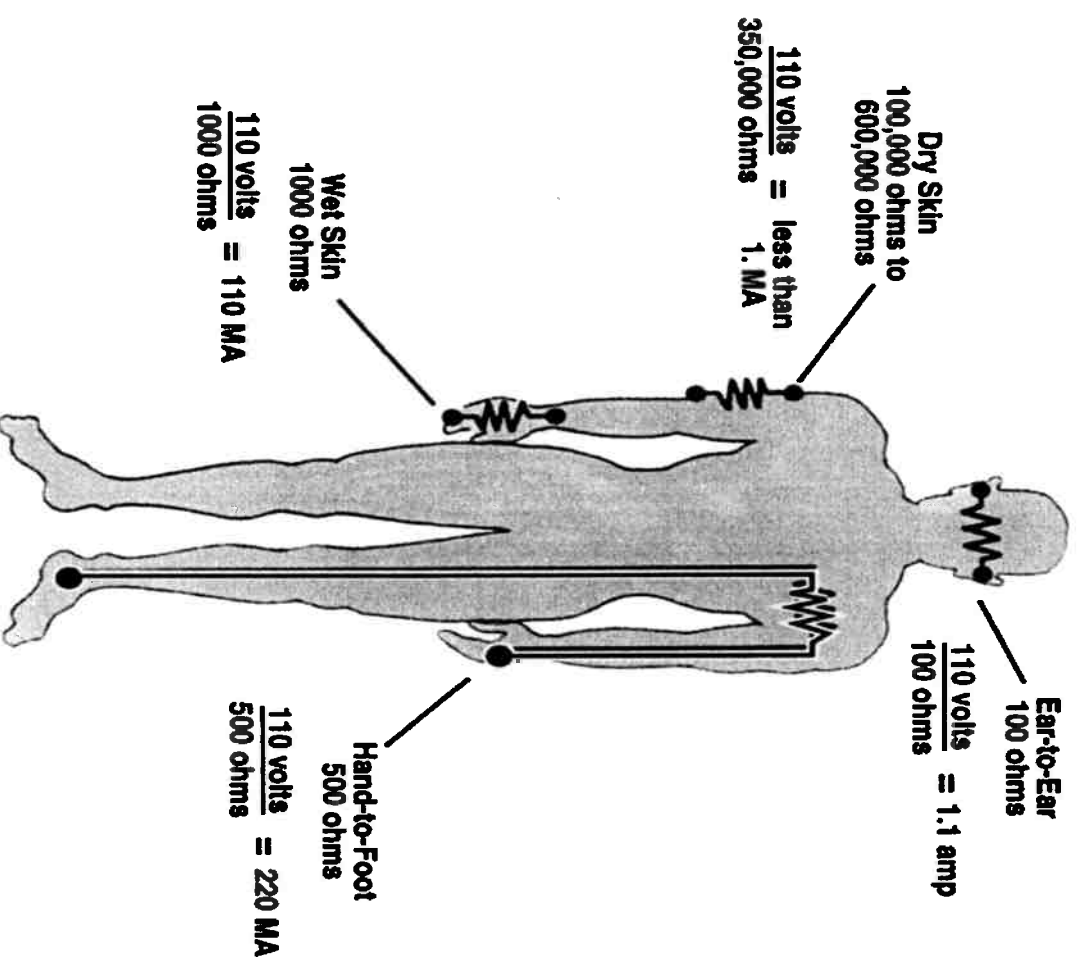
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Electricity Works Like Water Flowing Through a Pipe

- ◆ Increasing the pressure (**voltage**) increases the flow (**current**); using a smaller pipe (**increasing the resistance**) decreases the flow.
- ◆ Electrical power lost in overcoming the resistance is exhibited in the form of heat.

Effects of Current Flow

Resistance to current flow is mainly to be found in the skin surface. Once the skin resistance is broken down, the current flows readily through the blood and body tissues. Wet skin has a resistance of about 1000 ohms while the internal body, hand to foot, varies between 400 and 600 ohms. Skin resistance decreases rapidly with increase in voltage.



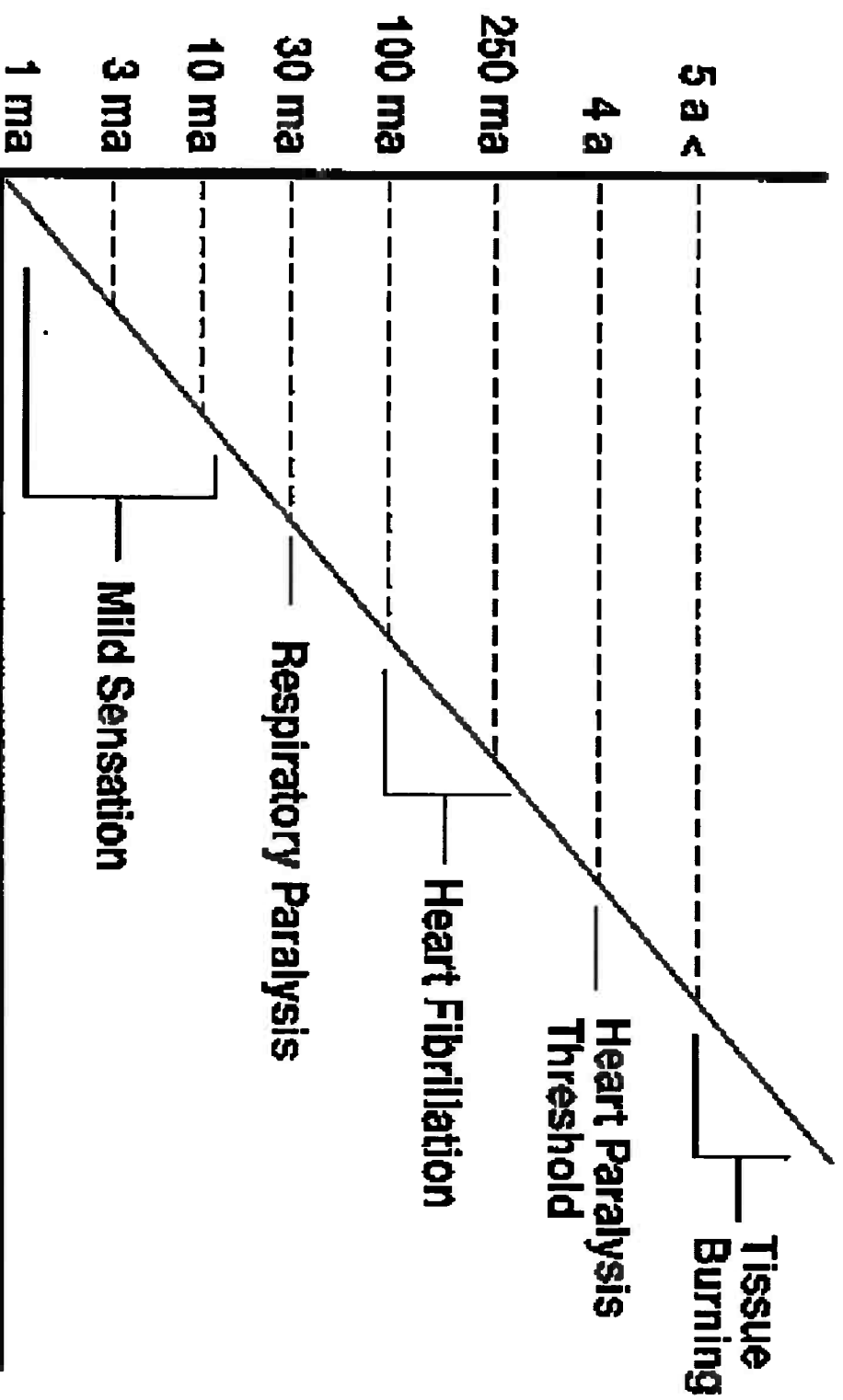
Effects of Electricity

- ♦ Cardiac Arrest – the heart stops
- ♦ Ventricular Fibrillation – may be a low voltage, but has a life-threatening effect to heart.
- ♦ Tissue Destruction – heat accumulates within the body along the current path.
- ♦ Flash Burn/Blindness – occurs when the body is close to or in contact with an arc.

The Extent of Injuries is Dependent on:

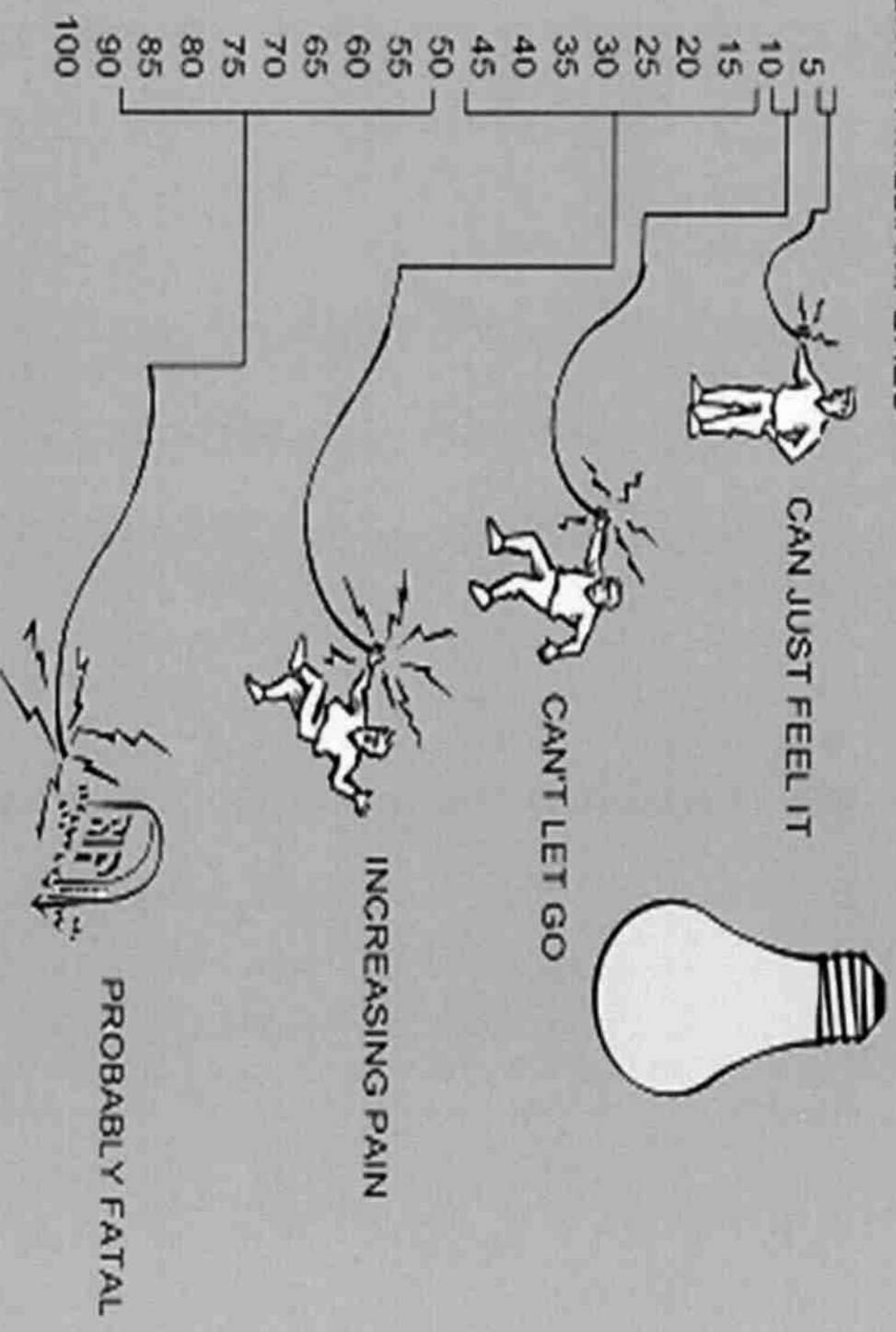
- ◆ Amount of Current
- ◆ Path through the body
- ◆ Length of contact
- ◆ Skin condition
- ◆ As the time of current flow increases, heat will accumulate within the body along the current path.

Effects of Current Flow on the Human Body



AVERAGE BODY TOLERANCE
ELECTRIC CURRENT IN MILLIAMPERES

A 100 watt LIGHTBULB
USES 1000 milliamps OF CURRENT
(1000 milliamps = 1 amp)



EFFECTS OF AMPERAGE ON THE BODY

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EFFECTS OF 60 HZ CURRENT ON AVERAGE HUMAN

- ♦ 1 Milliampere, or less.....

CAUSES NO SENSATION - NOT FELT

Is at threshold of perception.

- ♦ 1 to 8 Milliamperes.....

SENSATION OF SHOCK. NOT PAINFUL

Individual can let go at will, as muscular control is not lost.

- ♦ 5mA is accepted as maximum harmless current intensity.

UNSAFE CURRENT VALUES

- ◆ 8 to 15 Milliamperes.....PAINFUL SHOCK.
Individual can let go at will, as muscular control is not lost
- ◆ 15 to 20 Milliamperes.....PAINFUL SHOCK.
Muscular control of adjacent muscles lost.
Can NOT let go
- ◆ 20 to 50 Milliamperes.....PAINFUL.
Severe muscular contractions. Breathing is difficult

UNSAFE CURRENT VALUES

- ◆ 50 to 200 Milliamperes.....

VENTRICULAR FIBRILLATION

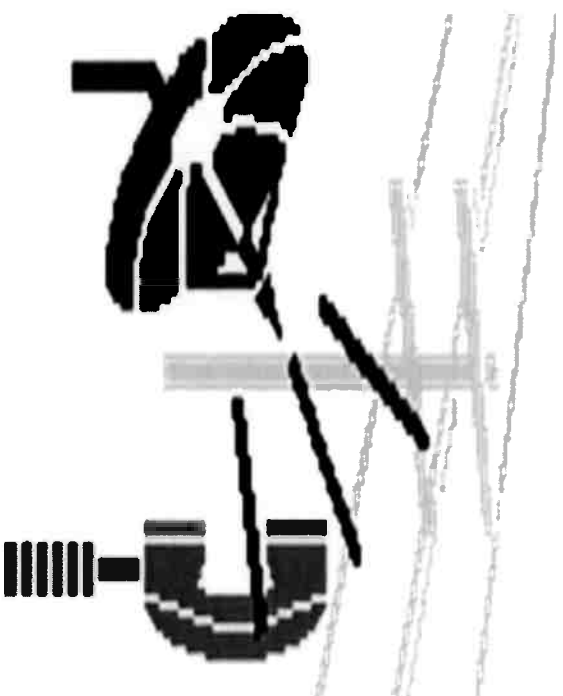
Heart condition that results in death.

- ◆ 200 Milliamperes, or more.....**SEVERE BURNS.**

Severe muscular contractions, so severe that chest muscles clamp heart and stop it during duration of shock.

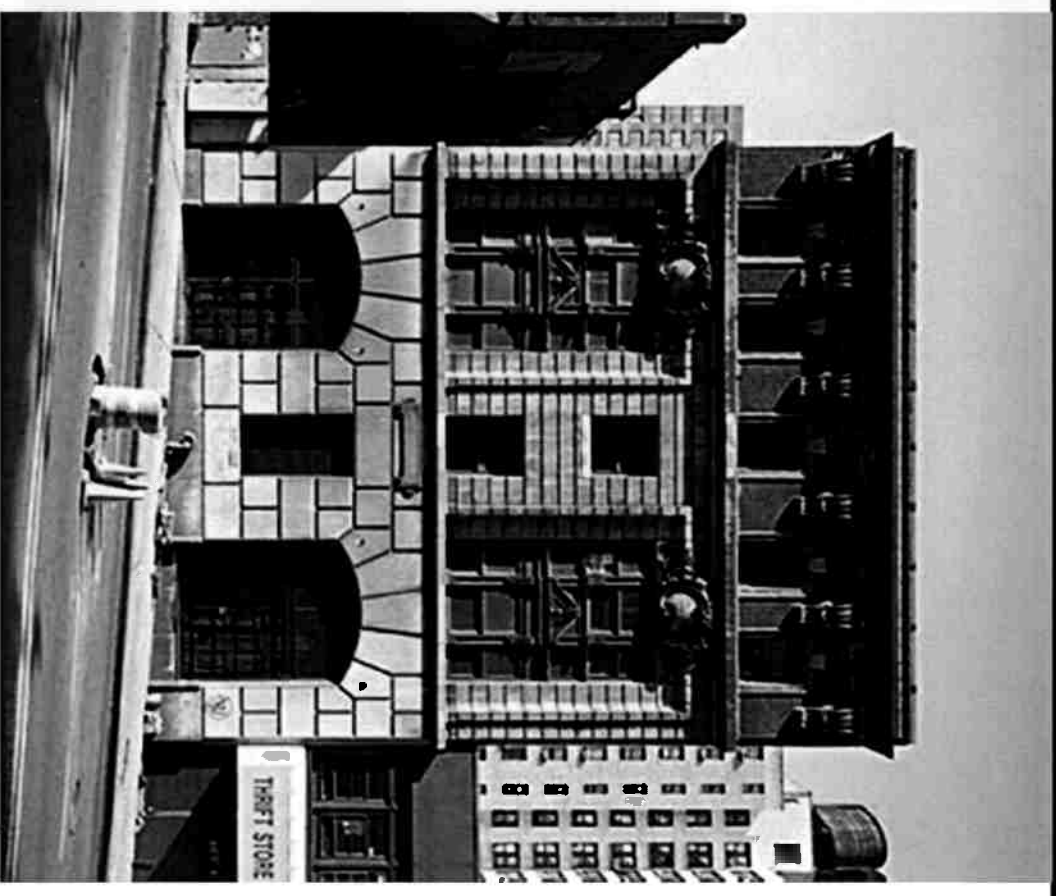
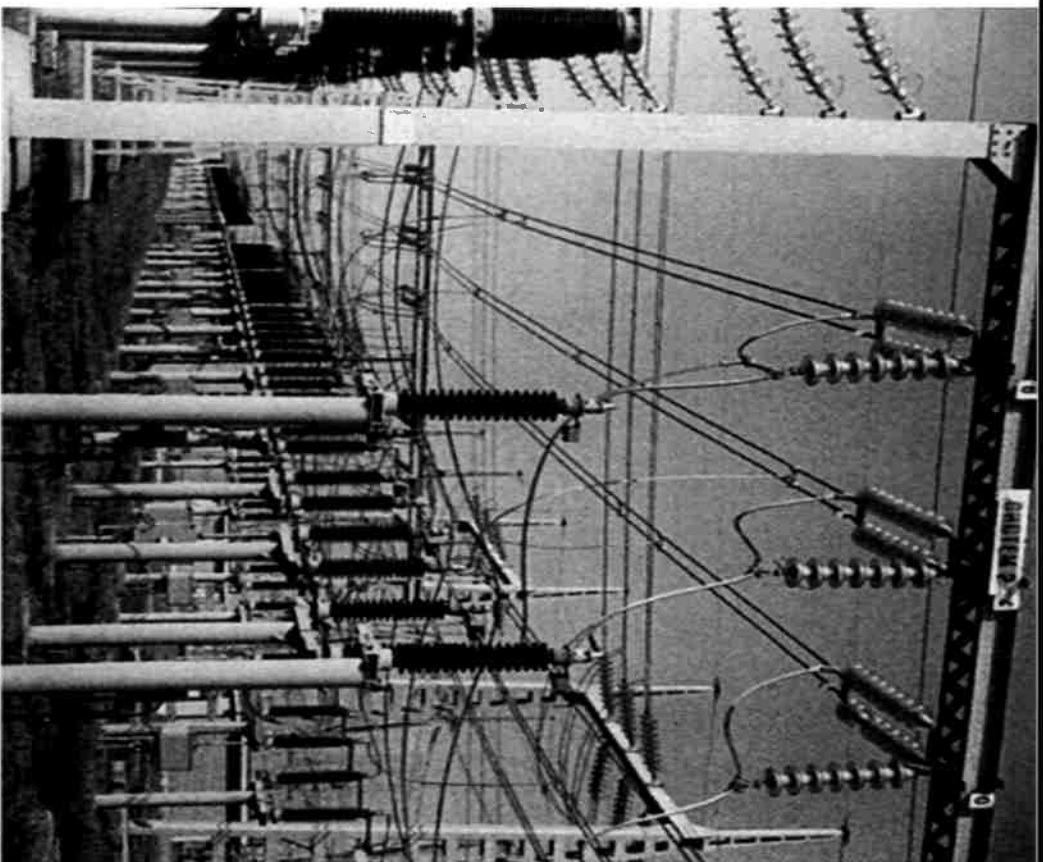
In an Emergency:

- ◆ Don't touch the wires.
- ◆ Secure the area.
- ◆ Call your Local Utility.



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SUBSTATIONS!!



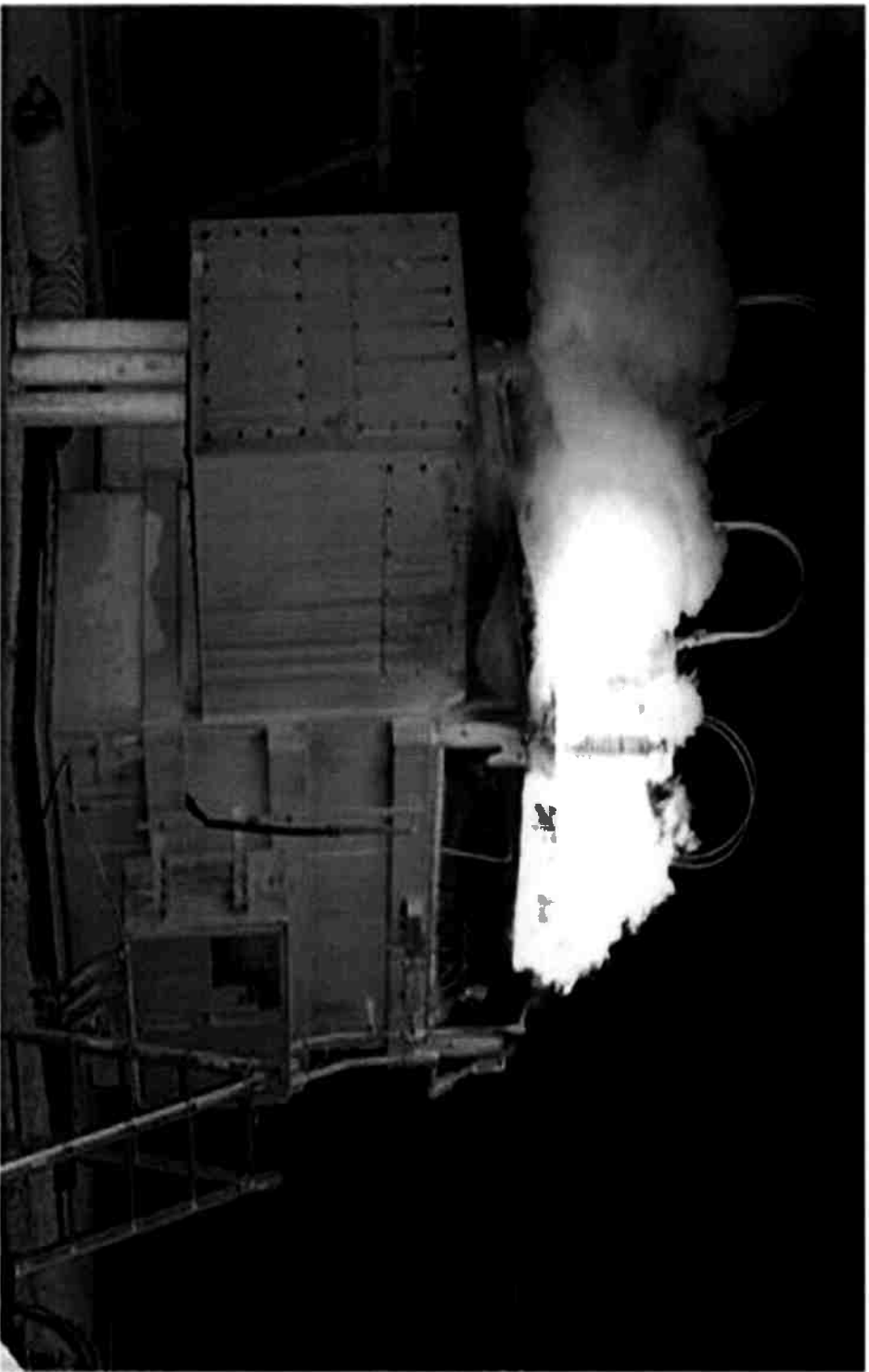
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Substations

- ♦ Voltage is reduced from transmission for local distribution
- ♦ In an Emergency –
 - ♦ **Never enter!**
 - ♦ **Secure the area outside the fence line during an emergency.**
 - ♦ **Call the electric company immediately if fire or other problem is discovered.**
 - ♦ **Signs are located on the fence with an emergency phone number and the name of the substation**

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SUBSTATION FIRES (continued)



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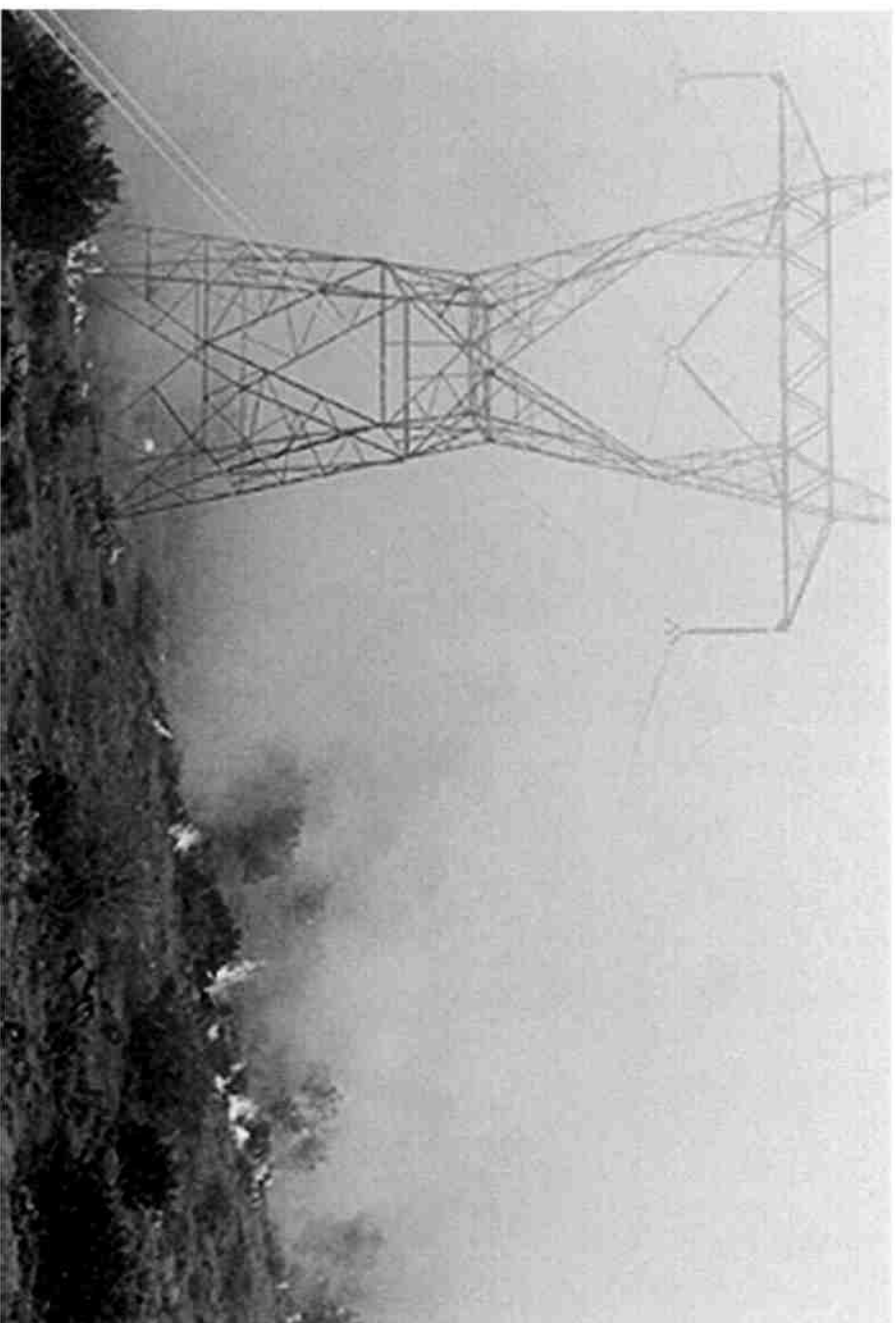
Overhead T & D Lines

- ♦ Voltage range 2,400 Volts to 345,000 Volts
- ♦ Lines are not insulated.
- ♦ Downed power lines can energize other conductive materials – fences, gutters, equipment, vehicles, aluminum siding, and antennas.
- ♦ Telephone & other wires may become energized due to conditions further down the street from the immediate response area.



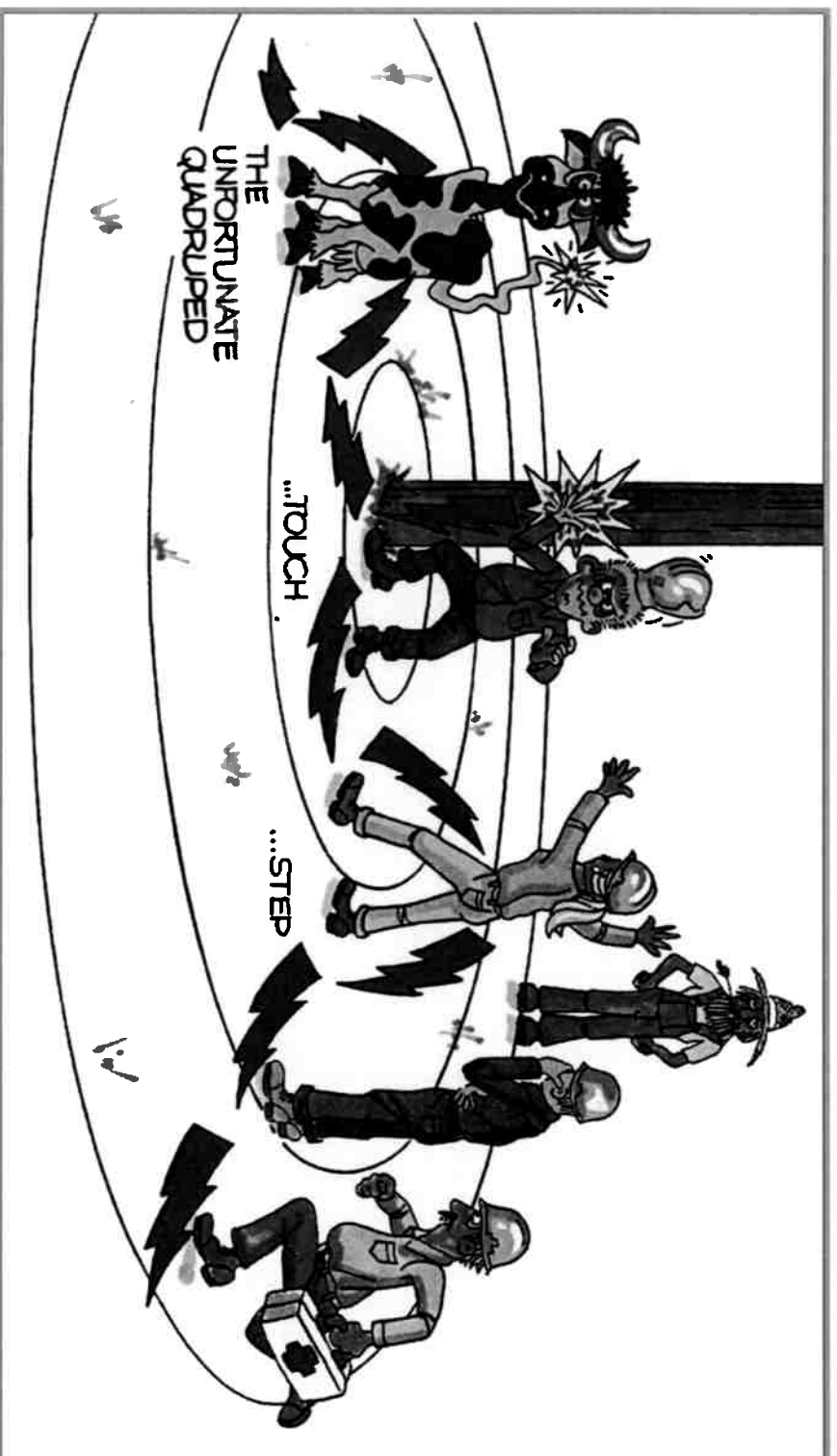
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Dense Smoke Could Cause *Fatal* Electrical Discharges from High Voltage Power Lines



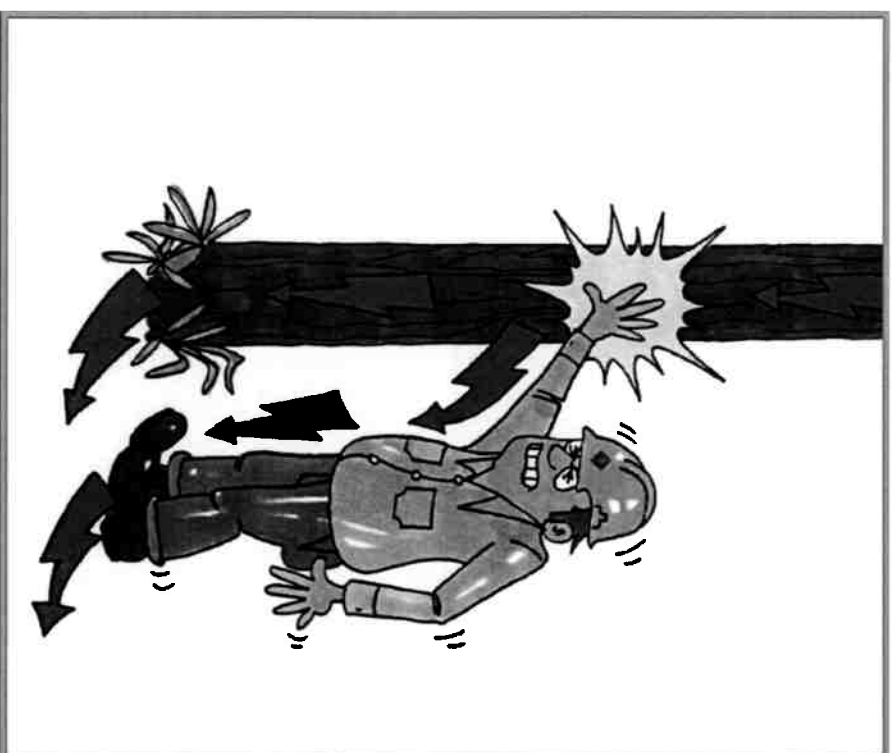
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Touch & Step Potential



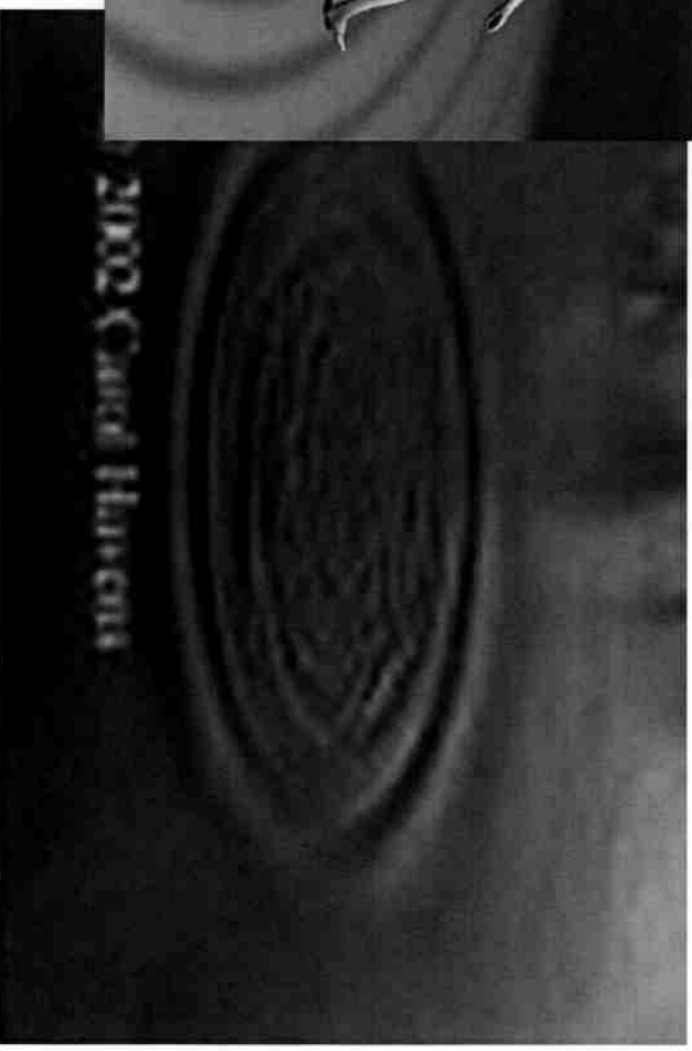
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Touch Potential



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Step Potential

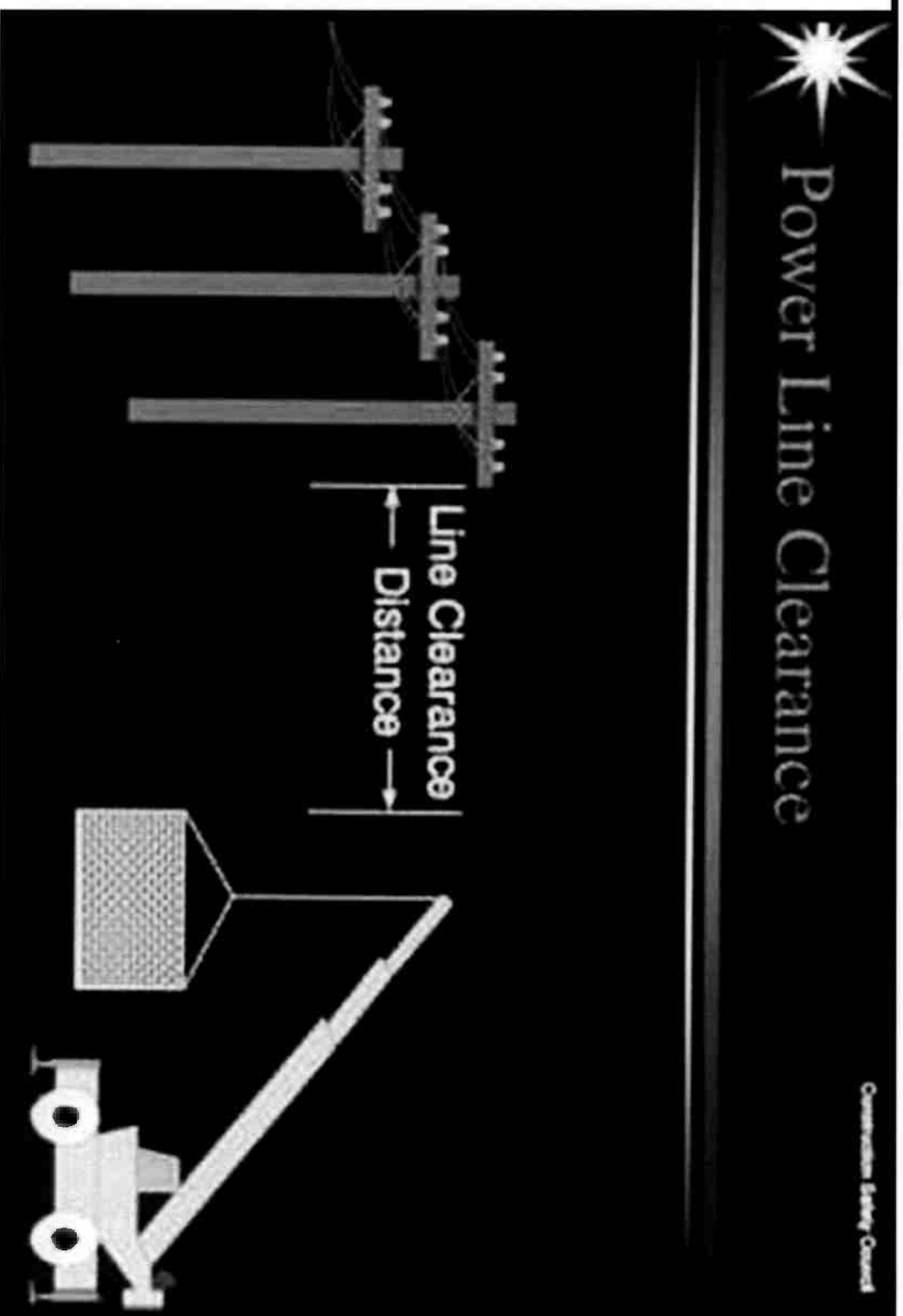


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Hazard Identification

- ◆ Improper clearance between lines and equipment
 - ◆ Ladders
 - ◆ Backhoes
 - ◆ Cranes
- ◆ Open Pad-mounted transformers
- ◆ Open manholes
- ◆ Unlocked gates or vandalized substation fences

Power Line Clearance



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Power Line Clearance Distances

Distance from	
<u>Voltages</u>	<u>Power Lines</u>
$\leq 50\text{kV}$	10 feet
200kV	15 feet
350kV	20 feet
500kV	25 feet
650kV	30 feet
800kV	35 feet



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Sources of Non-Utility Power Line Contacts in Construction

Heavy Equipment

- ◆ Cranes, Drilling Rigs, Dump Trucks, Aerial Buckets, Backhoes and Concrete Pumps
- ◆ Material Handling
- ◆ Ladders
- ◆ Direct Human Contact

Contractors Who Frequently

Contact Power Lines

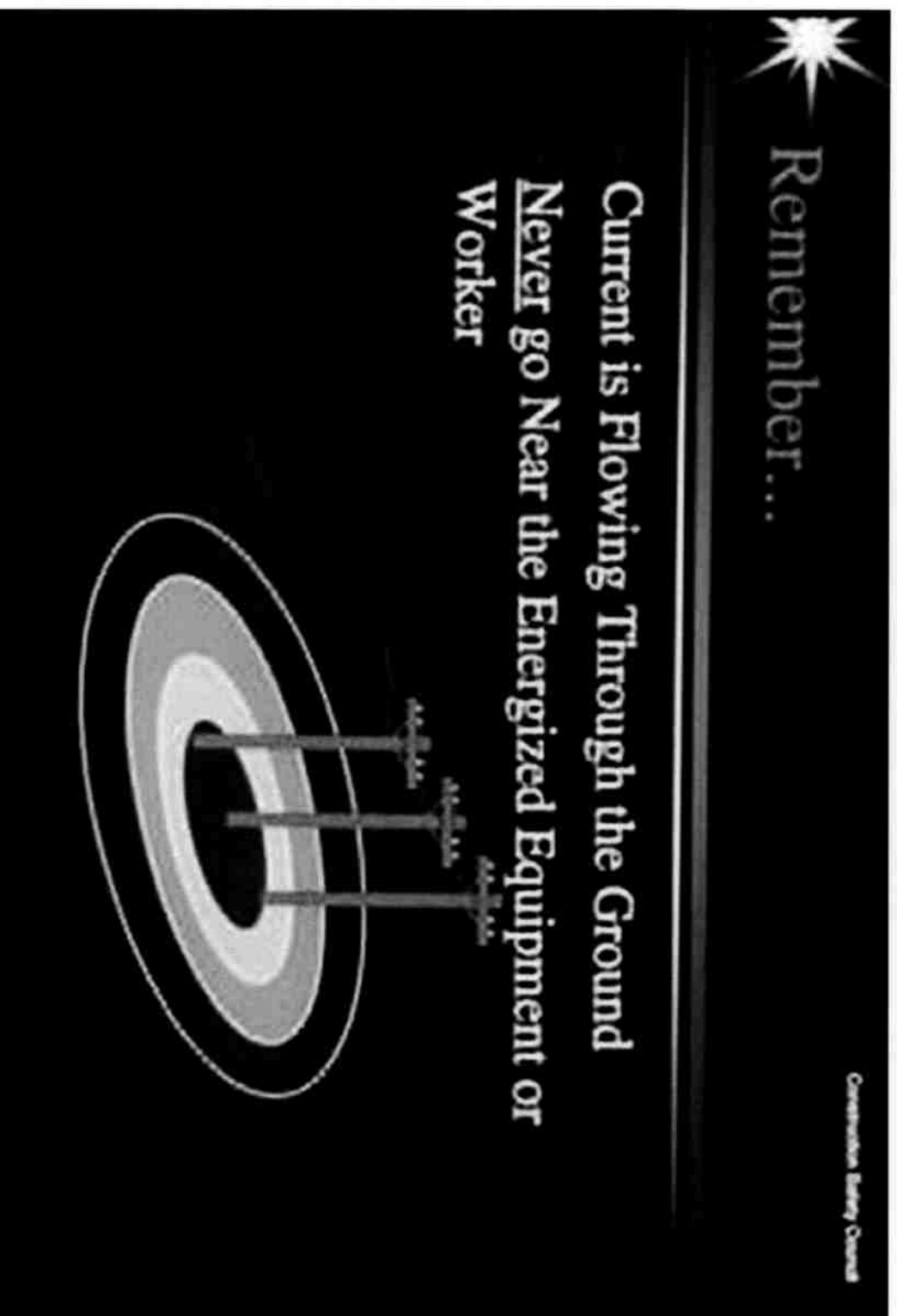
- ◆ Roofing, Siding and Sheet Metal Contractors (9.3%)
- ◆ Tree Trimming Contractors (8.5%)
- ◆ Water, Sewer, Pipeline and Communication Contractors (7.9%)
- ◆ Painting and Paper Hanging Contractors (7.3%)

OSHA IMIS, 1985-1994

De-energizing the Power Line

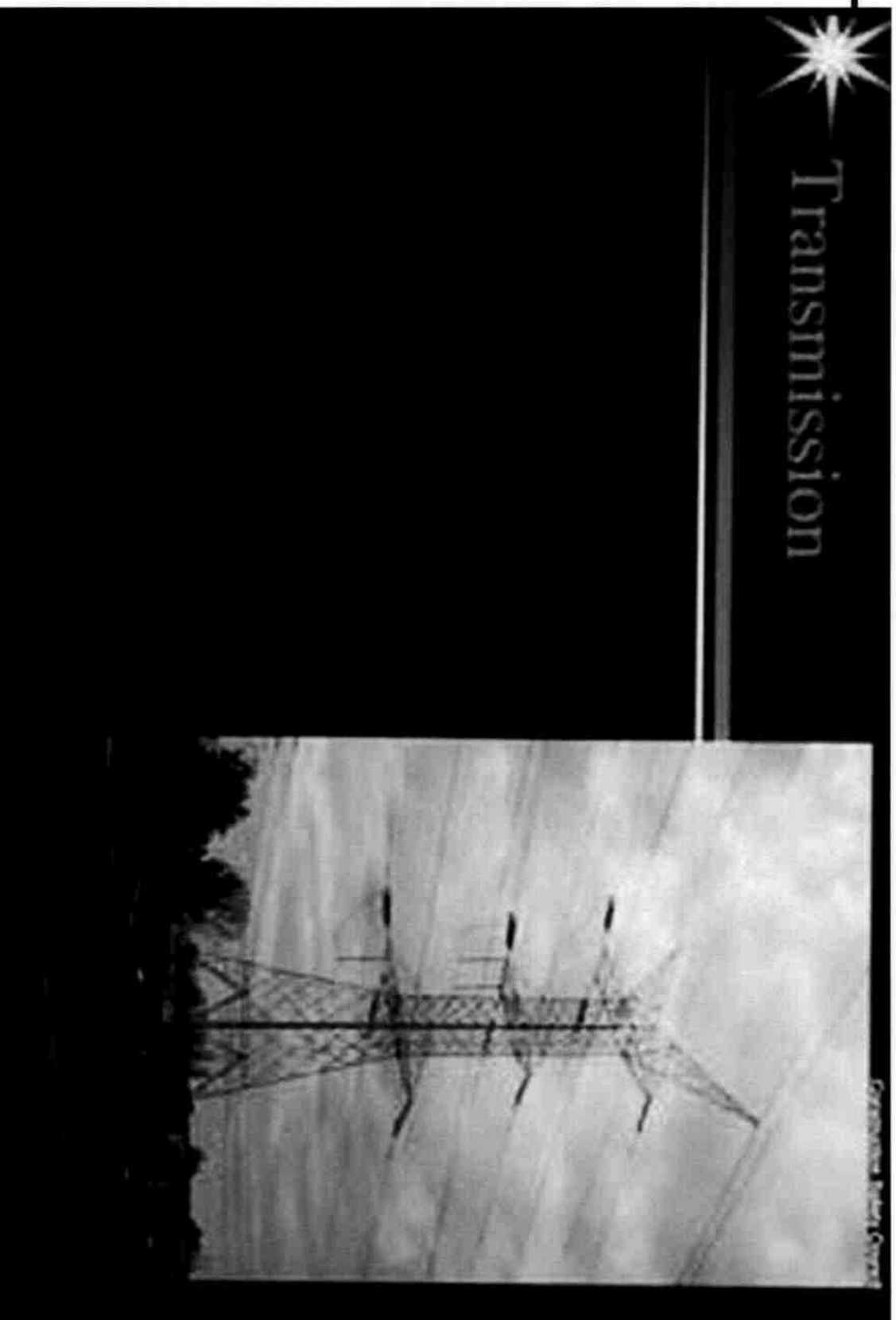
- ◆ Conducted by the Utility Company
- ◆ Never assume that all lines near a grounded line are de-energized
- ◆ Always confirm with the utility and have them identify and ensure the lines have been de-energized

Remember...



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Transmission



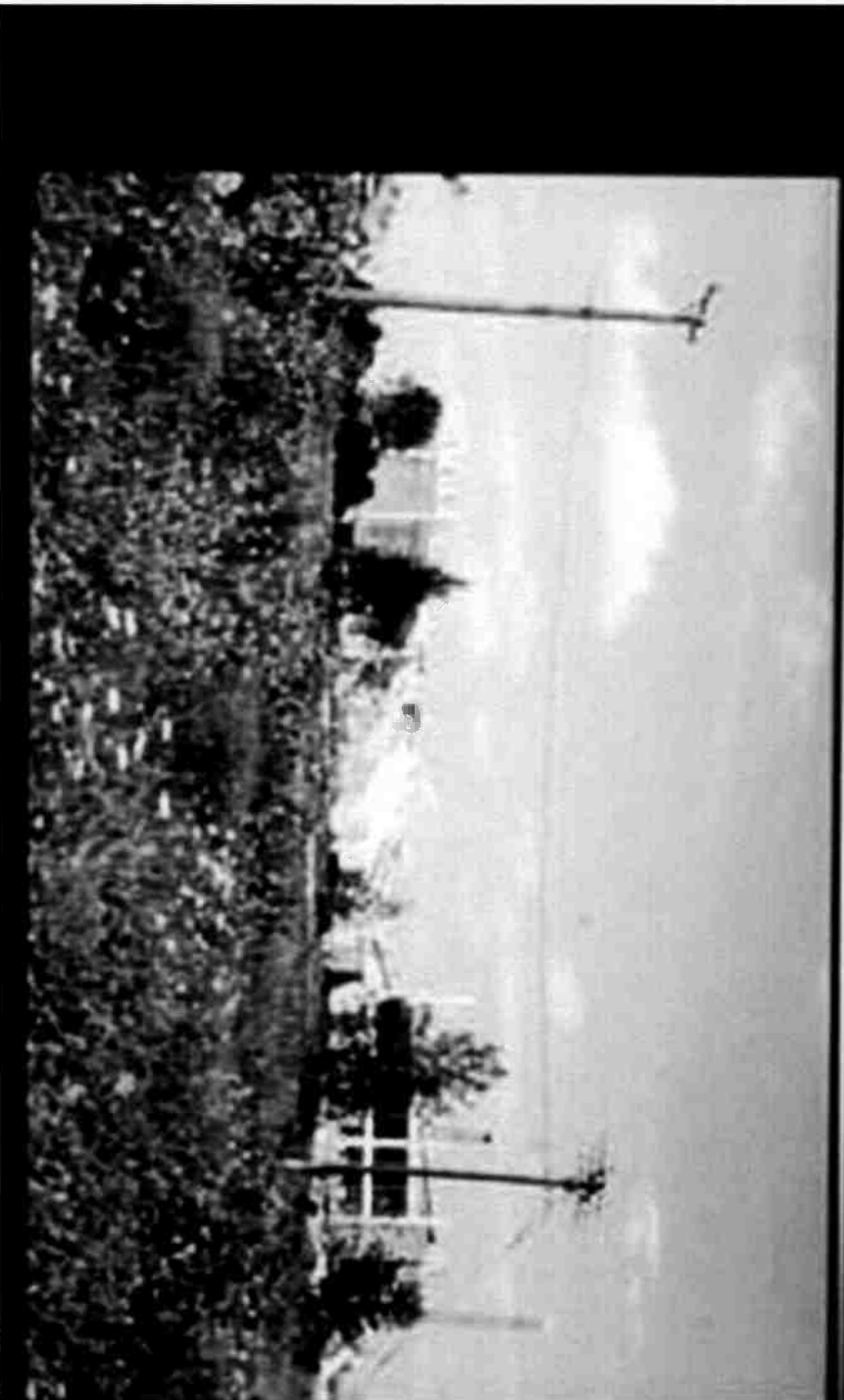
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Distribution



Distribution

Construction Safety Council



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Service Drop



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Electrical Safety

- ♦ Overhead power lines are not insulated, and carry enough energy to cause serious injury or even death. Regard all wires as live.
- ♦ Keep yourself, your co-workers, friends, family and vehicles at least 10 feet away from residential electric lines and equipment.
- ♦ Stay alert. Keep ladders at least 10 feet away from power lines when carrying, moving, and raising them.
- ♦ Keep away from wires when working with tools, pipe, lumber or siding—all of which can conduct electricity.
- ♦ Make sure the area is clear of wires before working near trees or shrubs.
- ♦ Never attach or tie anything off to power lines or electrical equipment.
- ♦ To further ensure your safety, consider all lines "energized" and put an effective ground on all equipment working near overhead electric lines.

Generator Safety

-
- ♦ **Please review these safety tips before installing or using a generator:**
 - ♦ Have a licensed electrician install your generator.
 - ♦ Before you operate a generator, make sure your wiring system is disconnected from our system by ensuring that the main circuit breaker in your electric service panel box is in the OFF position or, in older electric service panel boxes, that the main fuse block is removed. This prevents your generator's electricity from going back into the power lines in the street, which could endanger line crews and your neighbors.
 - ♦ For permanent installations, a double throw switch will allow you to safely disconnect from our system and connect your generator. It must be rated for its intended use according to the NEC and listed by a Nationally Recognized Test Laboratory.
 - ♦ Make sure your generator is properly ventilated to prevent carbon monoxide poisoning. Never install a generator inside a house or building. If your generator is located in a garage or outside building, check to be sure it is properly ventilated.

What Can You Do To Help Spread the Word? Carbon Monoxide

Carbon Monoxide Carbon monoxide is a gas that is colorless, odorless, tasteless and virtually impossible to detect. Common sources of carbon monoxide in the home include malfunctioning fuel-burning appliances such as hot-air furnaces, space heaters and natural gas ranges. Other sources are woodstoves, charcoal grills, motor vehicle engines, fireplaces and generators.

Symptoms of Carbon Monoxide Exposure

The symptoms of carbon monoxide exposure are similar to the flu. A person may experience headaches, dizziness, weakness, sleepiness, nausea, confusion, tightness of the chest, fluttering of the heart, redness of the skin and loss of muscle control. If you suspect carbon monoxide poisoning, immediately go outside and breathe deeply. If symptoms are severe, get medical attention immediately.

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Carbon Monoxide

Protect Yourself, Your Family, and Others

- ♦ **Install at least one carbon-monoxide detector to monitor the air for high levels of carbon monoxide. Be sure the detector you buy is "UL LISTED."**
- ♦ **Before the heating season begins, have your heating system checked by a licensed professional heating contractor.**
- ♦ **Check chimneys or flues for debris, birds' nests or other blockage.**
- ♦ **Be sure all space heaters and woodstoves are in good condition and used in strict compliance with the manufacturer's instructions, with adequate ventilation and plenty of fresh air.**
- ♦ **Never use a gas range for heating. Also, never burn coal or charcoal in an enclosed space.**
- ♦ **Never leave a car idling in a closed garage.**
- ♦ **When adding a coal- or wood-burning stove, be sure it is professionally installed and vented.**
- ♦ **Never block or seal shut vents and exhaust ducts of appliances such as water heaters, ranges and clothes dryers.**



Office of
Board of Health
Lawrence Memorial Hall
2 Jabish Street, Post Office Box 670
Belchertown, Massachusetts 01007-0670
Telephone: (413) 323-0406
Facsimile: (413) 323-9801

Judy Metcalf, RS., CHO
Director of Public Health

Ruth Amador, RN, MSN

NAME:

Bloodborne Pathogens Training 01/06/17

DEPARTMENT:

Denis N. Lessard	Hwy.
Larry Belbin	Hwy
John Panzetti	Hwy
Rollin DeWitt	WRF
Darin Braese	Hwy
RAYMOND MCGINNIS	WATER DISTRICT
DAVID CLEGG	MAINT
Dave Martel	Hwy.
Karl Jensen	main
Heather Blanchard	WWTP
Dylan Bachand	Highway
TERY CHEVA/ER	Hwy
Edwin Burton	DPW
Jon Grossman	Hwy
CHRIS LAURENCO	HIGHWAY
Chris Johnson	maintenance
Nick Ledue	Main
Jeff Grossman	Maintenance
Melissa Cook	Maintenance

Jonathan Taylor	Mainstance
Max W. Boek	Maint.
Sam Madden	Maint.
Steve Williams	Dpw
Scot Swistak	Highway
Stephen Sikes	Hwy
Anthony Hurtado	WWTP
David Wanczyk	WWTP



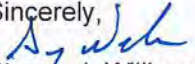
Department of Public Works
290 Jackson Street, Post Office Box 306
Belchertown, Massachusetts 01007-0306
(413) 323-0415

M E M O R A N D U M

Date: February 10, 2016
To: ALL DPW Divisions, Highway, WWTP, Maintenance
From: Steven J. Williams, Director, Dept. of Public Works
RE: Annual Stormwater Training -2016

The Annual Stormwater Training session has been scheduled for Wednesday, April 6th, 2016 at 11:00AM. This meeting will be held at the Department of Public Works, 290 Jackson Street, location.

If you are unable to attend, please contact me at the DPW Office at (413) 323-0415 or email: swilliams@belchertown.org.

Sincerely,

Steven J. Williams, Director
Dept. of Public Works

SJW/dml

ANNUAL STORMWATER TRAINING
Phase I and Phase II
Conducted by J.Cavanaugh, Fuss & O'Neill
Town of Belchertown, MA
Attendance - April 6, 2016

Name	Department
Denis Lessard	Hwy
STEVEN COLE	WRF
John Panzetti	Hwy
Stephen Sikes	Hwy
Kew Street	Hwy
Chris Johnson	Maintenance
Sean Madden	Maintenance
Karl Jensen	Maintenance
Chris Besancon	Maintenance
DAVID CLEGG	MAINTENANCE
Max W. Beck	Maint.
Blandin	WRF
Anthony Hunter de	WRF
Scot Swistak	Hwy
Dave Martel	Hwy

Darin Braese	Hwy
Dan Bachand	Hwy
* Ed Burton *	Highway Dept.
Ed Burton	WWRP
Terry Chevrolet	Hwy
Don Grossman	Hwy
Chris Lorenzo	Highway
Darren Gallagher	Mont
Dan Wonezyl	WRP
Steve Williams	DPW

Appendix G

Street Sweeping & Catch Basin Cleaning Log

BELCHERTOWN DPW-STREET SWEEPING - 2016

STREET NAME	DATE COMPLETED	AMOUNT OF MATERIAL (Yards)	TOTAL MATERIAL USED (yds)	Not Developed or non-jurisdictional-Other
Alden Avenue	7.23.2016	0	0	With Pheasant Run
Aldrich Street	4.1.2016 4.7.2016	3 yds 4 yds	7	
Allen Street	4.19.2016 4.20.2016 4.22.2016	3 yds 6 yds 4 yds	13	
Amherst Road	NA	0	0	X-Rte. 9
Atherton Lane	3.10.2016	0	0	Part of Dana Woods
Autumn Lane	7.23.2016	2.yds	2	
Azalea Way	6.6.2016	3 yds	3	

Ballou Street	NA	0	0	X-Gravel
Bardwell Street	6.22.2016 6.24.2016	18 yds 3 yds	21	
Barrett Street	6.30.2016 7.1. 2016	3 yds 6 yds	9	
Barton Avenue	6.6.2016	15 yds	15	
Bay Path Road	8.26.2016	2 yds	2	
Bay Road	4.13.2016	2.5 yds	2.5	
Berkshire Ave	NA	0	0	Salt Only
Blacksmith Rd	6.29.2016	1 yd	1	
Blossom Lane	6.21.2016	1.5 yds	1.5	With Cedar Glen
Blue Meadow Rd	5.9.2016	17 yds	17	
Boardman Street	4.27.2016	3 yds	3	
Brandywine Drive	4.20.2016	9 yds	9	
Brenda Lane	5.2.2016	2 yds	2	
Bridge Street	7.12.2016	1 yd	1	
Bunker Way	6.21.2016	1 yd	1	
Business Tech Dr –East	NA	0	0	
Business Tech Dr-West	NA	0	0	

Cadwell Lane	3.10.2016	0	0	With Dana Woods
Canal Drive	6.21.2016	2 yds	2	
Carol Ann Drive	6.24.2016	3 yds	3	
	Total Yards:	115 yds	115 yds	

BELCHERTOWN DPW-STREET SWEEPING - 2016

STREET NAME	DATE COMPLETED	AMOUNT OF MATERIAL	TOTAL MATERIAL USED (yds)	Not Developed or Non-jurisdictional-Other
Catherine Drive	4.25.2016	1 yd	1	
Cedar Glen Drive	6.21.2016	1.5 yds	1.5	
Center Street	7.1.2016	1 yd	1	
Chadbourne Rd-(north section)	3.11.2016	1 yd	1	With Lloyd Ave.
Chadborne Rd.-(dead-end)	3.11.2016	0	0	With Lloyd Ave.
Channel Drive	0	0	0	Private
Chartier Drive	4.28.2016	2 yds	2	
Chauncey Walker St.	4.15.2016	25 yds	25	
Cheryl Circle	4.25.2016	6 yds	6	
Chestnut Drive	6.7.2016	2 yds	2	
Clark Street	3.10.2016	0	0	With Dana Woods
Clearbrook Drive	6.20.2016	1 yd	1	
Clover Hill Road	5.10.2016	1.5 yds	1.5	
Cobb Lane	3.10.2016	0	0	With Dana Woods
Cold Spring Road	7.19.2016	0	0	
Concord Road	NA	0	0	x-Amherst
Cordner Road	7.12.2016	3 yds	3	
Cottage Street	7.12.2016	0	0	Salt Only
Cottage Street-(bet. 21 & 37 East Walnut St.)	7.12.2016	0	0	Salt Only
Country Lane	4.25.2016	1 yd	1	
Crestview Drive	6.7.2016	3 yds	3	

Dana Woods	3.10.2016	2 yds	2	
Daniel Shays High	NA	0	0	x-MassDOT
Daniel Square	6.20.2016	2 yds	2	
Daniel Square Ext.	6.20.2016	1 yd	1	
Deer Run	4.19.2016	6 yds	6	
Depot Street	NA	0	0	x-Rte.181
Diane Drive	NA	0	0	Not req'd
Doe Hollow	4.19.2016	6 yds	6	
Dogwood Drive	3.10.2016	0	0	Pt. Hickory Hills
Dressel Avenue	4.27.2016	5 yds	5	

Eagle Heights	4.28.2016	2 yds	2	
Earley Street	NA	0	0	Gravel
	Total Yards:	73 yds	73 yds	

BELCHERTOWN DPW-STREET SWEEPING - 2016

STREET NAME	DATE COMPLETED	AMOUNT OF MATERIAL	TOTAL MATERIAL USED (yds)	Not Developed or Non-jurisdictional-Other
East Walnut Street	7.12.2016	1 yd	1	
Eastview Drive	4.21.2016	0	0	With Jabish Hill
Edelcy Drive	7.19.2016	3.5 yds	3.5	
Emily Lane	6.20.2016	2.5 yds	2.5	
Enoch Sanford Road	7.13.2016	9 yds	17	
	7.18.2016	8 yds		
Eskett Road	4.27.2016	2 yds	2	
Eugene Drive	6.30.2016	3 yds	3	
Everett Avenue	7.12.2016	1 yd	1	

Federal Street	NA	0	0	Mass Highway
Fletcher Avenue	4.20.2016	4 yds	4	
Forest Road	6.21.2016	3 yds	3	
Fox Run Drive	6.30.2016	3 yds	3	
Franklin Street	4.21.2016	5 yds	9	
	5.10.2016	4 yds		
Front Street	7.12.2016	1 yd	1	
Fuller Street	4.14.2016	0	0	With No. Washington

George Hannum Road	4.11.2016	8 yds	11	
	4.27.2016	3 yds		
Gold Street	4.25.2016	23 yds	23	
Goodell Street	4.29.2016	8 yds	8	
Granby Road	6.3.2016	10 yds	10	
Green Avenue	6.6.2016	6 yds	6	
Greenwich Hill	3.10.2016	0	0	With Dana Hill
Grela Terrace	NA	0	0	Gravel
Gulf Road	4.26.2016	10 yds	22	
	4.26.2016	12 yds		
	Total Yards:	130 yds	130 yds	

BELCHERTOWN DPW-STREET SWEEPING - 2016

STREET NAME	DATE COMPLETED	AMOUNT OF MATERIAL	TOTAL MATERIAL USED (yds)	Not Developed or non-jurisdictional-Other
Hamilton Street	4.11.2016 4.13.2016	2 yds 2 yds	4	
Harris Way	NA	0	0	Private
Helen Lane	6.8.2016	3 yds	3	
Hemlock Hollow	6.7.2016	2 yds	2	
Henry Drive	6.7.2016	3 yds	3	
Heritage Drive	5.9.2016	2 yds	2	
Hickory Hill	3.11.2016	2 yds	2	
High Bluff Road Road (aka: High Meadow)	0	0	0	x
Howard Street	3.24.2016	4 yds	4	
Howe Street	3.10.2016	0	0	With Dana Hill

Jabish Street	3.24.2016 4.21.2016	8 yds 2 yds	10	
Jackson Street	3.11.2016	3 yds	3	
Jasons Way	4.7.2016	1 yd	1	
Jeffrey Lane	6.7.2016	1 yd	1	
Jensen Street	3.28.2016 4.1.2016	9 yds 1 yd	10	
Johnson Road	3.24.2016	3 yds	3	
Jon Drive	6.7.2016	2 yds	2	
Juckett Hill	4.22.2016	4 yds	4	

Keith Avenue	NA	0	0	Gravel
Kennedy Road	6.29.2016 6.30.2016	9 yds 3 yds	12	
Keyes Street	4.21.2016	0	0	With River Street
Kimball Street	NA	0	0	Not Regulated
Knight Street	NA	0	0	With Gold Street
Kopiac Avenue	4.25.2016 5.9.2016	0 9 yds	9	Not Regulated
	Totals:	75 yds	75 yds	

BELCHERTOWN DPW-STREET SWEEPING - 2016

STREET NAME	DATE COMPLETED	AMOUNT OF MATERIAL	TOTAL MATERIAL USED (yds)	Not Developed or non- jurisdictional- Other
Lake Drive	0	0	0	Gravel
Lamson Avenue	5.2.2016	0	0	With Old Bay & Plaza Ave
Laurel Ridge Drive	6.7.2016	2 yds	2	
Lawrence Road	6.7.2016	2 yds	2	
Ledgewood Circle	6.8.2016 6.21.2016	3 yds 3 yds	6	
Ledgewood Drive	6.8.2016	3 yds	3	
Lexington Drive	4.20.2016	2 yds	2	
Lloyd Avenue	3.11.2016	0	0	With Chadbourne
Ludlow Street	6.3.2016	9 yds	9	

Main Street	4.21.2016	2 yds	2	
Magnolia Lane	3.11.2016	0	0	With Hickory Hills
Maple Street	4.13.2016 4.21.2016	12 yds 2 yds	14	
Maplecrest Drive	6.3.2016	6 yds	6	Completed
Martin Circle	7.12.2016	2 yds	2	
Meadow Pond Road	4.7.2016	1 yd	1	
Mercier Drive	6.20.2016	1.5 yd	1.5	
Metacomet Circle	4.28.2016	1 yd	1	
Metacomet Street	4.23.2016	10 yds	10	
Michael Sears Road- lower	6.30.2016 6.30.2016	6 yds 2 yds	8	
Michael Sears Road -Upper	7.19.2016	18 yds	18	
Mill Valley Road	NA	0	0	With Rte.181
Mills Road	ONA	0	0	Gravel
Moss Lane	6.29.2016	2 yds	2	
Mountain View Dr.	6.3.2016	2 yds	2	
Munsell Street	4.22.2016	4 yds	4	
	Totals:	95.5 yds	95.5 yds	

BELCHERTOWN DPW-STREET SWEEPING - 2016

STREET NAME	DATE COMPLETED	AMOUNT OF MATERIAL	TOTAL MATERIAL USED (yds)	Not Developed or non- jurisdictional- Other
Nathanial Way	7.12.2016	2 yds	2	
Newton Street	3.10.2016	0	0	With Dana Hills
North Gulf Road	4.26.2016	6 yds	6	
North Liberty Street	4.14.2016	15 yds	15	Completed
North Main Street	3.11.2016 4.13.2016	3 yds 6 yds	9	
North Street	4.29.2016	4 yds	4	
No. Washington St.	4.14.2016 6.22.2016	12 yds 8 yds.	20	

Oak Ridge Drive	6.7.2016	9 yds	9	
Oak Ridge Drive (upper)	6.7.2016	0	0	with Oakridge
Oakwood Drive	6.29.2016	1 yd	1	With Mallard Est.
Oasis Drive	4.22.2016	2 yds	2	with Munsell
Old Amherst Road	4.28.2016	3	3	
Old Bay Road	5.2.2016	0	0	with Plaza Ave
Old Enfield Road	4.19.2016	18 yds	18	
Old Farm Circle	4.28.2016	7 yds	7	
Old Farm Road	4.28.2016	7 yds	7	
Old Pelham Road	4.22.2016	2 yds	2	
Old Sawmill Road	7.19.2016	20 yds	20	
Oliver Street	NA	0	0	Gravel
Orchard Street	4.29.2016	12 yds	12	
Overlook Drive	6.6.2016	2 yds	2	
	Totals:	139 yds	139 yds	

BELCHERTOWN DPW-STREET SWEEPING - 2016

STREET NAME	DATE COMPLETED	AMOUNT OF MATERIAL	TOTAL MATERIAL USED (yds)	Not Developed or non- jurisdictional- Other
Park Street	4.21.2016	2 yds	2	
Pease Lane	6.29.2016	2 yds	2	
Pelham Road	4.22.2016	2 yds	2	
Pendleton Road	6.21.2016	1 yd	1	
Pepper Ridge Road	6.21.2016	.5 yds	5	
Pheasant Run	7.28.2016	3 yds	3	
Pine Street	7.20.2016	11 yds	11	
Pinebrook Drive	6.20.2016	1.5 yd	1.5	
Plaza Avenue	5.2.2016	2 yds	2	
Pondview Circle	4.22.2016	4 yds	4	
Poole Road	4.28.2016	1 yd	1	
Prescott Hill	3.10.2016	0	0	With Dana Woods

Railroad Street	7.20.2016	12 yds	12	
Rainbow Drive	6.29.2016	1 yd	1	
Raymond Drive	5.2.2016	2 yds	2	
Rimrock Drive	6.6.2016	3 yds	3	
Rockrimmon Street	6.3.2016 6.6.2016	3 yds 9 yds	12	
Rita Lane	4.28.2016	1 yds	1	
River Street	4.21.2016 5.10.2016	2 yds 2 yds	4	
Robin Lane	6.29.2016	2 yds	2	
Rural Street	4.27.2016	5 yds	5	

Sabin Street	7.12.2016 7.3.2016	3 yds 12 yds	15	
Sarah Lane	4.28.2016	1 yd	1	
Sargent Street	NA	0	0	With Rte.9
Segur Lane	7.19.2016	20 yds	20	Completed-w/Old Sawmill & Edclcy Rd.
Shaw Street	5.16.2016	2 yds	2	2x-chip sealed
Shea Avenue	4.27.2016 5.9.2016 5.10.2016	21 yds 7 yds 5 yds	32	
Sheffield Drive	4.20.2016	8 yds	8	
Sherwood Drive	4.22.2016	4 yds	4	
	Totals:	158.5 yds	158.5 yds	

BELCHERTOWN DPW-STREET SWEEPING - 2016

STREET NAME	DATE COMPLETED	AMOUNT OF MATERIAL	TOTAL MATERIAL USED (yds)	Not Developed or non-jurisdictional-Other
South Gulf Road	4.26.2016	6 yds	6	
South Liberty Street	4.14.2016	15 yds	15	
South Main Street	4.13.2016	0	0	With North Main
South Street	4.21.2016	5 yds	5	
South Washington Street	6.22.2016 6.23.2016	6 yds 4 yds	10	
Spring Hill Road	4.20.2016	3 yds	3	
Springfield Road	6.21.2016	2 yds	2	
Stadler Street	7.12.2016	3 yds	3	
State Street	6.6.2016	2 yds	2	
Stebbins Street	6.20.2016	4 yds	4	
Summit Street	6.7.2016	9 yds	9	
Sycamore Circle	3.11.2016	0	0	With Hickory Hills
Sylvan Circle	7.20.2016	2 yds	2	

Terry Lane	6.7.2016	2 yds	2	
Town Beach Road	4.28.2016	0	0	With Federal
Trillium Way	5.25.2016	5 yds	5	
Tucker Lane	3.11.2016	1 yd	1	
Turkey Hill Road	6.3.2016	6 yds	6	
Two Pond Road	5.2.2016	2 yds	2	
Underwood Street	6.7.2016	6 yds	6	

Ware Road	NA	0	0	With Rte.9
Warner Street	4.19.2016	6 yds	6	
Warren Wright St.	4.29.2016	15 yds	15	
Waterford Drive	4.20.2016	2 yds	2	
West Street	7.28.2016	0	0	With Autumn Leaf
Westview Drive	5.2.2016	2 yds	2	
Westwood Drive	4.22.2016	3 yds	3	
Whispering Pines	NA	0	0	Gravel-Private
Whitlock Way	4.7.2016	1 yd	1	
Willow Lane	4.7.2016	1 yd	1	
Wilson Street	4.29.2016	3 yds	3	
Woodhaven Drive	3.11.2016	1 yd	1	
	Totals:	117 yds	117 yds	
	Yards of Material:	903 yds	903 yds	

- Note: Concord Road has houses on the Amherst side. This is a thru-street to Station Road (North Street).



Steven J. Williams
Director

Office of
DEPARTMENT OF PUBLIC WORKS

290 Jackson Street, P.O. Box 306
Belchertown, Massachusetts 01007-0306
Telephone: (413) 323-0415

Donna Lusignan
Administrative Assistant

Vendor: Easter Pipe Service, LLC. / Felix Septic Service, LLC
2 Thibeault Drive
Bow, New Hampshire, 03304

CATCH BASIN CLEANING REPORT – YEAR 2016

Month: September, 2016

Date of Service	Invoice #	Hours	Cost Per Hour	Total Per Day	Total Month
9.19.2016	1147	18.5	\$240.00	\$4440.00	
9.20.2016	1147	19.5	\$240.00	\$4680.00	
9.21.2016	1147	18	\$240.00	\$4320.00	
9.22.2016	1147	17	\$240.00	\$4080.00	
9.23.2016	1147	16	\$240.00	\$3840.00	
9.26.2016	1147	8	\$240.00	\$1920.00	
9.27.2016	1147	3	\$240.00	\$720.00	
7		100 hrs.	\$240.00		\$24,000.00

Catch Basin Cleaning Report 2016

Streets with basins cleaned:

Town Beach Road	Main St.	Azalea Way	Rockrimmon St.
Allen Road	N. Main St.	Laurel Ridge Dr.	Rimrock Dr.
Clover Hill Road	Warren Wright St.	Maplecrest Dr.	Springfield St.
Sylvan Circle	Oakridge Dr.	Crestview Dr.	Pendelton Rd.
N. Washington	Barton Ave.	Terry Lane	Deer Run
Maple St.	Chestnut Drive	Mountain View Dr.	Doe Hollow
State St.	Hemlock Hollow	Overlook Dr.	

Approximately 282 basins were cleaned in 100 total hours. There was approximately 132 tons of material removed. The material removed from the basins was taken to Waste Management in Chicopee as well as Complete Disposal in Holyoke.



Eastern Pipe Service, LLC
2 Thibeault Drive
Bow NH 03304

Invoice

Date	Invoice #
9/28/2016	1147

Town of Belchertown PO Box 306 Belchertown MA 01007

Town of Belchertown Belchertown MA

		P.O. No.	Terms	Job Number
Make Checks Payable To: Eastern Pipe Services, LLC			Net 30	3447
Quantity	Description	Rate		Amount
100	Catch Basin Cleaning 9/19/16 - 9/27/16 EPS 19 Vactor Truck EPS 15 Vactor Truck 9/19/16 - 18.5 Hours EPS 15 & EPS 19 9/20/16 - 19.5 Hours EPS 15 & EPS 19 9/21/16 - 18.0 Hours EPS 15 & EPS 19 9/22/16 - 17.0 Hours EPS 15 & EPS 19 9/23/16 - 16.0 Hours EPS 15 & EPS 19 9/26/16 - 8.00 Hours EPS 19 9/27/16 - 3.00 Hours EPS 19 ENCLOSURES: W9 Certificate of Insurance	240.00		24,000.00
We appreciate your prompt payment.		Fed ID #: 45-2251297		Total \$24,000.00
Phone #	Fax #	Web Site		Payments/Credits \$0.00
603-424-4600	603-856-8657	www.easternpipeservice.com		Balance Due \$24,000.00



UWM HOLDINGS, INC.
700 MAIN ST
c/o COMPLETE DISPOSAL COMPANY
HOLYOKE, MA 01040
Phone: (413) 572-0015
Fax: (413) 538-6060
completedisposal.net

CUSTOMER NO	004415
INVOICE DATE	11/19/2016
INVOICE NO	0000223508
CUSTOMER PO	
DUE DATE	12/19/2016

BALANCE FWD	\$0.00
PAYMENTS	\$0.00
CREDITS	\$0.00
CHARGES	\$1,377.00
BALANCE DUE	\$1,377.00

CURRENT	1-30 DAYS	31-30 DAYS	31-30 DAYS	OVER 30 DAYS	BALANCE DUE
\$ 1,377.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 1,377.00

Thank you for your business. Please make check payable to UWM Holdings, Inc. Balance due within 30 days.

DATE	QUANTITY	FREQUENCY	DESCRIPTION	WORK ORDER	TICKET	AMOUNT
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New Charges

Site 004415-0001 - BELCHERTOWN, TOWN OF - PO BOX 306, BELCHERTOWN

11/16/2016	16.20		CATCH BASIN - TRANSFER		190904	\$1,377.00
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Ayw- 11-23-16
10432-52921

Total New Charges: \$1,377.00

PLEASE RETURN THIS PORTION WITH YOUR PAYMENT

UWM HOLDINGS, INC.

700 MAIN ST
c/o COMPLETE DISPOSAL COMPANY
HOLYOKE, MA 01040
Phone: (413) 572-0015

CUSTOMER NO	INVOICE DATE	INVOICE NO	BALANCE DUE
004415	11/19/2016	0000223508	\$ 1,377.00
CHECK NO		AMOUNT ENCLOSED	
		\$	

BELCHERTOWN, TOWN OF
ATTN: STEVE WILLIAMS
PO BOX 306
BELCHERTOWN, MA 01007

Be sure to write your customer number on your check

HOLYOKE TRANSFER
c/o Complete Disposal Co., Inc.
686 Main Street
Holyoke, MA 01040

Inbound

Ticket: 190904
Date: 11/16/2016
Time: 14:02:07 - 14:18:49
Scale
Gross: 62220 lb In Scale 1
Tare: 29820 lb Out Scale 1
Net: 32400 lb

Truck: 01
Customer: 0044150001/BELCHERTOWN, TOWN

Comment:

Origin	Materials & Services	Quantity	Unit
NA/Not Applicable	HLCBASIN/CATCH BASIN - TRANS	16.20	Ton

Driver: _____

Deputy Weighmaster: _____
Randy Michalak

CB

**UWM HOLDINGS, INC.**

700 MAIN ST
c/o COMPLETE DISPOSAL COMPANY
HOLYOKE, MA 01040
Phone: (413) 572-0015
Fax: (413) 538-6060
completedisposal.net

CUSTOMER NO	004415
INVOICE DATE	11/26/2016
INVOICE NO	0000223715
CUSTOMER PO	
DUE DATE	12/26/2016

BALANCE FWD	\$1,377.00
PAYMENTS	\$0.00
CREDITS	\$0.00
CHARGES	\$3,170.50
BALANCE DUE	\$4,547.50

CURRENT	1-30 DAYS	31-30 DAYS	31-30 DAYS	OVER 30 DAYS	BALANCE DUE
\$ 4,547.50	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 4,547.50

Thank you for your business. Please make check payable to UWM Holdings, Inc. Balance due within 30 days.

DATE	QUANTITY	FREQUENCY	DESCRIPTION	WORK ORDER	TICKET	AMOUNT
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New Charges**Site 004415-0001 - BELCHERTOWN, TOWN OF - PO BOX 306, BELCHERTOWN**

11/22/2016	17.61		CATCH BASIN - TRANSFER		191576	\$1,496.85
11/22/2016	19.69		DISPOSAL CHARGE - C&D MIXED		191577	\$1,673.65

*Ag...
12-5-16
60473-52920
61433*

Total New Charges: \$3,170.50

PLEASE RETURN THIS PORTION WITH YOUR PAYMENT

UWM HOLDINGS, INC.

700 MAIN ST
c/o COMPLETE DISPOSAL COMPANY
HOLYOKE, MA 01040
Phone: (413) 572-0015

CUSTOMER NO	INVOICE DATE	INVOICE NO	BALANCE DUE
004415	11/26/2016	0000223715	\$ 4,547.50
CHECK NO		AMOUNT ENCLOSED	
		\$	

BELCHERTOWN, TOWN OF
ATTN: STEVE WILLIAMS
PO BOX 306
BELCHERTOWN, MA 01007

Be sure to write your customer number on your check

c/o Complete Disposal Co., Inc.
686 Main Street
Holyoke, MA 01040

Inbound

Ticket: 191577
Date: 11/22/2016
Time: 13:37:13 - 13:41:57

Truck: 14
Customer: 0044150001/BELCHERTOWN, TOWN

Scale
Gross: 67980 lb In Scale 1
Tare: 28600 lb Out Scale 1
Net: 39380 lb

Comment:

Origin	Materials & Services	Quantity	Unit
NA/Not Applicable	HLC&D-MIX/DISPOSAL CHARGE -	19.69	Ton

Driver: _____

Deputy Weighmaster: _____
Randy Michalak

HOLYOKE TRANSFER
c/o Complete Disposal Co., Inc.
686 Main Street
Holyoke, MA 01040

Inbound

Ticket: 191576
Date: 11/22/2016
Time: 13:36:24 - 13:39:55

Truck: 16
Customer: 0044150001/BELCHERTOWN, TOWN

Scale
Gross: 63180 lb In Scale 1
Tare: 27960 lb Out Scale 1
Net: 35220 lb

Comment:

Origin	Materials & Services	Quantity	Unit
NA/Not Applicable	HLCBASIN/CATCH BASIN - TRANS	17.61	Ton

Driver: _____

Deputy Weighmaster: _____
Randy Michalak



INDUSTRIAL WASTE SERVICES & DISPOSAL AGREEMENT

COMPANY: Waste Management of Massachusetts, Inc.
A WASTE MANAGEMENT COMPANY

CUSTOMER: Belchertown DPW

Name: Emily Brooks 9/25/14
Title: Project Manager *Date*

Name: Ed Burton 9/25/14
Title: _____ *Date*

Initial Term: 36 months

Effective Date of Agreement: 9/25/14

This Industrial Waste & Disposal Services Agreement, consisting of the terms and conditions set forth herein, and Exhibit A, and/or Confirmation Letter(s) and the Profile Sheet(s) entered into from and after the date hereof from time to time (all of the foregoing being collectively referred to as the "Agreement"), is made as of the Effective Date shown above by and between the Customer named above, on its and its subsidiaries and affiliates behalf (collectively, "Customer") and the Waste Management entity named above ("the Company").

TERMS AND CONDITIONS

1. SERVICES PROVIDED. The Company will provide Customer with collection, management, transportation, disposal, treatment, and recycling services ("Services") for Customer's non-hazardous solid waste, special waste, and/or hazardous waste (collectively "Industrial Waste") as described on Exhibit A and/or Confirmation Letter(s) and/or applicable Profile Sheets. **Solid Waste** means garbage, refuse and rubbish including those which are recyclable but excluding Special Waste and Hazardous Waste. **Special Waste** includes polychlorinated biphenyl ("PCB") wastes, industrial process wastes, asbestos containing material, petroleum contaminated soils, treated/decharacterized wastes, incinerator ash, medical wastes, demolition debris and other materials requiring special handling in accordance with applicable federal, state, provincial or local laws or regulations. **Hazardous Waste** means any toxic or radioactive substances, as such terms are defined by applicable federal, state, provincial or local laws or regulations. All Industrial Waste that is generated, handled and/or collected by Customer shall be managed exclusively by Company during the term of this Agreement. When Company handles special or hazardous waste for Customer, Customer will provide Company with a Generator's Waste Profile Sheet ("Profile Sheet") describing all special or hazardous waste, and provide a representative sample of such waste on request. In the event this Agreement includes transportation by Company, Customer shall, at the time of tender, provide to Company accurate and complete documents, shipping papers or manifests as are required for the lawful transfer of the special or hazardous waste under all applicable federal, state or local laws or regulations. Tender of delivery shall be considered nonconforming if not in accordance with this Paragraph.

2. CUSTOMER WARRANTIES. Customer hereby represents and warrants that all waste material delivered by Customer to Company shall be in accordance with waste descriptions given in this Agreement and shall not be or contain any Nonconforming Waste. "Nonconforming Waste" means: (a) non-hazardous Solid Waste that contains regulated Special Waste or Hazardous Waste; (b) waste that is not in conformance with the description of the waste in Exhibit A, the Confirmation Letter(s) or the Profile Sheet incorporated herein; (c) waste that is or contains any infectious waste, radioactive, volatile, corrosive, flammable, explosive, biomedical, biohazardous material, regulated medical or hazardous waste or toxic substances, as defined pursuant to or listed or regulated under applicable federal, state or local law, except as stated on the Profile Sheet or Confirmation Letter; or (d) waste that is prohibited from being received, managed or disposed of at the designated disposal facility by federal, state or local law, regulation, rule, code, ordinance, order, permit or permit condition. Customer (including its subcontractors) represents and warrants that it will comply with all applicable laws,

ordinances, regulations, orders, permits or other legal requirements applicable to the Industrial Waste.

3. TERM OF AGREEMENT; RIGHT OF FIRST REFUSAL. The Initial Term of this Agreement shall be 36 months, commencing on the Effective Date set forth above. This Agreement shall automatically renew thereafter for additional terms of twelve (12) months each ("Renewal Term") unless either party gives to the other party written notice of termination at least ninety (90) days prior to the termination of the then-existing term; provided however, that the terms and conditions of this Agreement shall remain in full force and effect, in accordance with its terms, with respect to any uncompleted or unfinished Service provided for in an Exhibit A, Confirmation Letter and/or Profile Sheet until such Service is completed. Customer grants to Company a right of first refusal to match any offer which Customer receives or intends to make after the completion of any Term of this Agreement relating to any services provided hereunder and further agrees to give Company prompt written notice of any such offer and a reasonable opportunity to respond to it.

4. INSPECTION; REJECTION OF WASTE. Title to and liability for Nonconforming Waste shall remain with Customer at all times. Company shall have the right to inspect, analyze or test any waste delivered by Customer. If Customer's Industrial Waste is Nonconforming Waste, Company can, at its option, reject Nonconforming Waste and return it to Customer or require Customer to remove and dispose of the Nonconforming Waste at Customer's expense. Customer shall indemnify, hold harmless (in accordance with Section 9) and pay or reimburse Company for any and all costs, damages and/or fines incurred as a result of or relating to Customer's tender or delivery of Nonconforming Waste or other failure to comply or conform to this Agreement, including costs of inspection, testing and analysis.

5. SPECIAL HANDLING; TITLE. If Company elects to handle, rather than reject, Nonconforming Waste, Company shall have the right to manage the same in the manner deemed most appropriate by Company given the characteristics of the Nonconforming Waste. Company may assess and Customer shall pay additional fees associated with delivery of Nonconforming Waste, including, but not limited to, special handling or disposal charges, and costs associated with different quantities of waste, different delivery dates, modifications in operations, specialized equipment, and other operational, environmental, health, safety or regulatory requirements. Title to and ownership of acceptable Industrial Waste shall transfer to Company upon its final acceptance of such waste.

6. COMPANY WARRANTIES. Company hereby represents and warrants that: (a) Company will manage the Industrial Waste in a safe and workmanlike manner in full compliance with all valid and applicable federal, state

and local laws, ordinances, orders, rules and regulations; and (b) it will use disposal facilities that have been issued permits, licenses, certificates or approvals required by valid and applicable laws, ordinances and regulations necessary to allow the facility to accept, treat and/or dispose of Industrial Waste. Except as provided herein, Company makes no other warranties and hereby disclaims any other warranty, whether implied or statutory.

7. LIMITED LICENSE TO ENTER. When a Customer is transporting Industrial Waste to a Company facility, Customer and its subcontractors shall have a limited license to enter a disposal facility for the sole purpose of off-loading Industrial Waste at an area designated, and in the manner directed, by Company. Customer shall, and shall ensure that its subcontractors, comply with all rules and regulations of the facility, as amended. Company may reject Industrial Waste, deny Customer or its subcontractors entry to its facility and/or terminate this Agreement in the event of Customer's or its subcontractors' failure to follow such rules and regulations.

8. CHARGES AND PAYMENTS. Customer shall pay the rates set forth on Exhibit A or a Confirmation Letter, which may be modified as provided in this Agreement. The rates may be adjusted by Company to account for: any increase in or to recoup all or any portion of, disposal, transportation, fuel or environmental compliance fees or costs; any change in the composition of the Industrial Waste; increased costs due to uncontrollable circumstances, including, without limitation, changes in local, state or federal laws or regulations, imposition of taxes, fees or surcharges and acts of God such as floods, fires, etc. Company may also increase the charges to reflect increases in the Consumer Price Index for the municipal or regional area in which the Services are rendered. Increases in charges for reasons other than as provided above require the consent of Customer which may be evidenced verbally, in writing or by the actions and practices of the parties. All rate adjustments as provided above and in Paragraph 5 shall take effect upon notification from Company to Customer. Customer shall pay the rates in full within 30 days of invoice date. Customer shall pay a late fee on all past due amounts accruing from the date of the invoice at a rate of 2.5% per month or, if less, the maximum rate allowed by law.

9. INDEMNIFICATION. The Company agrees to indemnify, defend and save Customer harmless from and against any and all liability (including reasonable attorneys fees) which Customer may be responsible for or pay out as a result of bodily injuries (including death), property damage, or any violation or alleged violation of law, to the extent caused by Company's breach of this Agreement or by any negligent act, negligent omission or willful misconduct of the Company or its employees, which occurs (1) during the collection or transportation of Customer's Industrial Waste by Company, or (2) as a result of the disposal of Customer's Industrial Waste, after the date of this Agreement, in a facility owned by a subsidiary or affiliate of Waste Management, provided that the Company's indemnification obligations will not apply to occurrences involving Nonconforming Waste.

Customer agrees to indemnify, defend and save the Company harmless from and against any and all liability (including reasonable attorneys fees) which the Company may be responsible for or pay out as a result of bodily injuries (including death), property damage, or any violation or alleged violation of law to the extent caused by Customer's breach of this Agreement or by any negligent act, negligent omission or willful misconduct of the Customer or its employees, agents or contractors in the performance of this Agreement or Customer's use, operation or possession of any equipment furnished by the Company.

Neither party shall be liable to the other for consequential, incidental or punitive damages arising out of the performance of this Agreement.

10. UNCONTROLLABLE CIRCUMSTANCES. Except for the obligation to make payments hereunder, neither party shall be in default for its failure to perform or delay in performance caused by events beyond its reasonable control, including, but not limited to, strikes, riots, imposition of laws or governmental orders, fires, acts of God, and inability to obtain equipment, permit

changes and regulations, restrictions (including land use) therein, and the affected party shall be excused from performance during the occurrence of such events.

11. ASSIGNMENT. This Agreement shall be binding on and shall inure to the benefit of the parties and their respective successors and assigns.

12. ENTIRE AGREEMENT. This Agreement represents the entire understanding and agreement between the parties relating to the management of waste and supersedes any and all prior agreements, whether written or oral, between the parties regarding the same; provided that, the terms of any national service agreement between the parties shall govern over any inconsistent terms herein.

13. TERMINATION; LIQUIDATED DAMAGES. Company may immediately terminate this Agreement, (a) in the event of Customer's breach of any term or provision of this Agreement, including failure to pay on a timely basis or (b) if Customer becomes insolvent, the subject of an order for relief in bankruptcy, receivership, reorganization dissolution, or similar law, or makes an assignment for the benefit of its creditors or if Company deems itself insecure as to payment ("Default"). Notice of termination shall be in writing and deemed given when delivered in person or by certified mail, postage prepaid, return receipt requested. In the event Customer terminates this Agreement prior to the expiration of any Initial or Renewal Term for any reason other than as provided herein, or in the event Company terminates this Agreement for Customer's Default, liquidated damages in addition to the Company's legal fees shall be paid and calculated as follows: 1) if the remaining Initial Term under this Agreement is six or more months, Customer shall pay its most recent monthly charges multiplied by six; 2) if the remaining Initial Term under this Agreement is less than six months, Customer shall pay its most recent monthly charges multiplied by the number of months remaining in the Term; 3) if the remaining Renewal Term under this Agreement is three or more months, Customer shall pay its most recent monthly charges multiplied by three; or 4) if the remaining Renewal Term under this Agreement is less than three months, Customer shall pay its most recent monthly charges multiplied by the number of months remaining in the Renewal Term. Customer acknowledges that the actual damage to Company in the event of termination is difficult to fix or prove, and the foregoing liquidated damages amount is reasonable and commensurate with the anticipated loss to Company resulting from such termination and is an agreed upon fee and is not imposed as a penalty. Collection of liquidated damages by Company shall be in addition to any rights or remedies available to Company under this Agreement or at common law.

14. MISCELLANEOUS. (a) The prevailing party will be entitled to recover reasonable fees and court costs, including attorneys' fees, in interpreting or enforcing this Agreement. In the event Customer fails to pay Company all amounts due hereunder, Company will be entitled to collect all reasonable collection costs or expenses, including reasonable attorneys fees, court costs or handling fees for returned checks from Customer; (b) The validity, interpretation and performance of this Agreement shall be construed in accordance with the law of the state in which the Services are performed; (c) If any provision of this Agreement is declared invalid or unenforceable, then such provision shall be deemed severable from and shall not affect the remainder of this Agreement, which shall remain in full force and effect; (d) Customer's payment obligation for Services and the Warranties and Indemnification made by each party shall survive termination of this Agreement.

Agreed & Accepted

COMPANY

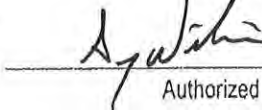
Signed:



Authorized Signatory

CUSTOMER

Signed:



Authorized Signatory



EXHIBIT A

SITE: CHICOPEE

Billing Customer Information		Job Site Contact Information		Service Location (Generator)	
BELCHERTOWN DPW				BELCHERTOWN DPW	
PO BOX 306				PO BOX 306	
BELCHERTOWN MA 01007				BELCHERTOWN MA 01007	
Ed Burton				Ed Burton	
Phone (413) 323-0415		Phone		Phone (413) 323-0415	
Fax (413) 323-0470		Fax		Fax (413) 323-0470	
PO Number NONE				NONE	
Sales Contacts					
WM Sales Rep:	Jon Wagman	WM Customer Service Phone:	(800) 963-4776	WM Contact Fax:	716-286-0211
Sales Rep ID	231				
SERVICE INFORMATION					
Catch Basin Cleanings - MSW	\$90.00 per Ton with 1	Ton Minimum Per Load			
Landfill Fuel Surcharge	Subject to change weekly		Current rate at time of quote is	8.49%	
Environmental Fee			Applied to Invoice Total	10.00%	
Regulatory Cost Recovery			Applied to Invoice Total	3.60%	
Other 1	Each	Other Trans Fee	Load		
Other 2	Each	Other Trans Fee	Load		
Other 3	Each	Other Trans Fee	Load		
Other 4	Each	Other Trans Fee	Load		
		Other Trans Fee	Load		
		Other Trans Fee	Load		
Service Agreement Expiration	Auto Renew				
	Pricing is subject to an annual Price Increase				
Additional Information:	TECHNICAL SERVICE CENTER (800) 963-4776				
THE WORK CONTEMPLATED BY THIS EXHIBIT A IS TO BE DONE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE INDUSTRIAL WASTE & DISPOSAL SERVICES AGREEMENT BETWEEN THE PARTIES DATED: <u>9/25/2014</u>					

COMPANY: Waste Management of Massachusetts, Inc.

By: _____
 Name: Emily Brooks
 Title: Project Manager

9/25/14
 Date

COMPANY: BELCHERTOWN DPW

By: Steven J. Williams
 Name: Ed Burton
 Title: Public Works Director

9/25/14
 Date



INVOICE

Page 1 of

Customer ID:**14-20112-0300**

Customer Name:

BELCHERTOWN DPW

Service Period:

11/01/16 - 11/15/16

Invoice Date:

11/16/2016

Invoice Number:

0019170-0444-

How To Contact Us**Visit wm.com**

To setup your online profile, sign up for paperless statements, manage your account, view holiday schedules, pay your invoice or schedule a pickup



Customer Service:
(413) 594-4172

Your Payment Is Due**12/15/2016**

If full payment of the invoiced amount is not received within your contractual terms, you may be charged a monthly late charge of 2.5% of the unpaid amount, with a minimum monthly charge of \$5, or such late charge allowed under applicable law, regulation or contract.

Your Total Due**\$8,766.93**

See Reverse for Important Messages

Previous Balance	+	Payments	+	Adjustments	+	Current Charges	=	Total Due
6,811.53		0.00		0.00		1,955.40		8,766.93

Details for Service Location:

Belchertown Dpw, PO Box 306, Belchertown MA 01007-0306

Customer ID: 14-20112-03004

Description	Date	Ticket	Quantity	Unit of	Rate	Amount
Vehicle#: b-16	11/01/16	529040				0.00
Catch basin cleanings-msw			17.54	TON	91.80	1,610.17
Fuel surcharge - landfill			1.00	PCT	4.59	73.91
Standard environmental fee - percent (landfill)			1.00	PCT	13.25	213.35
Regulatory cost recovery			1.00	PCT	3.60	57.97
Ticket Total						1,955.40
Total Current Charges						1,955.40

Agd 11-21-16
10432-52921

Please detach and send the lower portion with payment (no cash or staples)



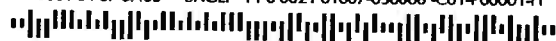
WASTE MANAGEMENT OF MASSACHUSETTS
PO BOX 42090
PHOENIX, AZ 85080

Invoice Date	Invoice Number	Customer ID (Include with your payment)
11/16/2016	0019170-0444-0	14-20112-03004
Payment Terms	Total Due	Amount Paid
Total Due by 12/15/2016	\$8,766.93	

0444000142011203004000191700000019554000000876693 5

0000001 01 SP 0.465 **SNGLP T1 0 6621 01007-030606 -C01-P00001-1

10444L92



BELCHERTOWN DPW
PO BOX 306
BELCHERTOWN MA 01007-0306



WASTE MANAGEMENT OF MASSACHUSETTS
CHICOPEE LANDFILL
PO BOX 13648
PHILADELPHIA PA 19101-3648

THINK GREEN!

Printed on



Chicopee LF
161 New Lombard Rd
Chicopee, MA, 01020
Ph: (413) 594-4172

Original
Ticket# 529040

Customer Name	BELCHERTOWN DP	Carrier	BELCHERTOWN BELCHERTOWN
Ticket Date	11/01/2016	Vehicle#	B-16
Payment Type	Credit Account	Container	
Manual Ticket#		Driver	
Hauling Ticket#		Check#	
Route		Billing #	0000786
State Waste Code		Gen EPA ID	
Manifest			
Destination		Grid	
PO			
Profile	(3)		
Generator			

	Time	Scale	Operator	Inbound	Gross	
In	11/01/2016 08:37:14	Inbound	JIM			62980 lb
Out	11/01/2016 08:37:14		JIM		Tare	27900 lb
					Net	35080 lb
					Tons	17.54

Comments:

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 245-CATCH BASIN CL 100		17.54	Tons				MA
2 FUEL-Fuel Surcharg 100			%				MA
3 EVF-P-Standard Env 100			%				MA
4 RCR-P-Regulatory C 100			%				MA



Customer ID:
14-20112-03004
Customer Name:
BELCHERTOWN DPW
Service Period:
10/16/16 - 10/31/16
Invoice Date:
11/01/2016
Invoice Number:
0019132-0444-0

How To Contact Us

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Customer Service:
(413) 594-4172

Your Payment Is Due

11/30/2016

If full payment of the invoiced amount is not received within your contractual terms, you may be charged a monthly late charge of 2.5% of the unpaid amount, with a minimum monthly charge of \$5, or such late charge allowed under applicable law, regulation or contract.

Your Total Due

\$6,811.53

Agreed 11-7-16
10432-52921

See Reverse for Important Messages

Previous Balance	+	Payments	+	Adjustments	+	Current Charges	=	Total Due
3,228.60		(3,228.60)		0.00		6,811.53		6,811.53

Details for Service Location:

Belchertown Dpw, PO Box 306, Belchertown MA 01007-0306

Customer ID: 14-20112-03004

Description	Date	Ticket	Quantity	Unit of	Rate	Amount
Vehicle#: B-16	10/26/16	528707				0.00
CATCH BASIN CLEANINGS-MSW			15.83	TON	91.80	1,453.19
Fuel Surcharge - Landfill			1.00	PCT	4.59	66.70
Standard Environmental Fee - Percent (Landfill)			1.00	PCT	13.25	192.55
Regulatory Cost Recovery			1.00	PCT	3.60	52.31
Ticket Total						1,764.75
Vehicle#: B-16	10/26/16	528718				0.00
CATCH BASIN CLEANINGS-MSW			16.49	TON	91.80	1,513.78
Fuel Surcharge - Landfill			1.00	PCT	4.59	69.48
Standard Environmental Fee - Percent (Landfill)			1.00	PCT	13.25	200.58
Regulatory Cost Recovery			1.00	PCT	3.60	54.50
Ticket Total						1,838.34
Vehicle#: B-14	10/26/16	528719				0.00
CATCH BASIN CLEANINGS-MSW			17.75	TON	91.80	1,629.45

----- Please detach and send the lower portion with payment ----- (no cash or staples) -----



WASTE MANAGEMENT OF MASSACHUSETTS
PO BOX 42090
PHOENIX, AZ 85080

Invoice Date	Invoice Number	Customer ID (include with your payment)
11/01/2016	0019132-0444-0	14-20112-03004
Payment Terms	Total Due	Amount Paid
Total Due by 11/30/2016	\$6,811.53	

0444000142011203004000191320000068115300000681153 2

0001820 01 AT 0.396 **AUTO TO 1 7606 01007-030606 -C01-P01821-11

10444L90



BELCHERTOWN DPW
PO BOX 306
BELCHERTOWN MA 01007-0306



WASTE MANAGEMENT OF MASSACHUSETTS
CHICOPEE LANDFILL
PO BOX 13648
PHILADELPHIA PA 19101-3648

THINK GREEN!



444-0000786-0444-4

Customer ID:

14-20112-03004

Customer Name:

BELCHERTOWN DPW

Service Period:

10/16/16 - 10/31/16

Invoice Date:

11/01/2016

Invoice Number:

0019132-0444-0

Details for Service Location:				Customer ID: 14-20112-03004		
Belchertown Dpw, PO Box 306, Belchertown MA 01007-0306						
Description	Date	Ticket	Quantity	Unit of	Rate	Amount
Fuel Surcharge - Landfill			1.00	PCT	4.59	74.79
Standard Environmental Fee - Percent (Landfill)			1.00	PCT	13.25	215.90
Regulatory Cost Recovery			1.00	PCT	3.60	58.66
Ticket Total						1,978.80
Vehicle#: B-24	10/26/16	528720				0.00
CATCH BASIN CLEANINGS-MSW			11.03	TON	91.80	1,012.55
Fuel Surcharge - Landfill			1.00	PCT	4.59	46.48
Standard Environmental Fee - Percent (Landfill)			1.00	PCT	13.25	134.16
Regulatory Cost Recovery			1.00	PCT	3.60	36.45
Ticket Total						1,229.64
Total Current Charges						6,811.53



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recycled paper.

Driver's Signature



Chicopee LF
161 New Lombard Rd
Chicopee, MA, 01020
Ph: (413) 534-4172

Original
Ticket# 528718

Customer Name	BELCHERTOWN DP	Carrier	BELCHERTOWN
Ticket Date	10/26/2016	Vehicle#	B-16
Payment Type	Credit Account	Container	
Manual Ticket#		Driver	
Hauling Ticket#		Check#	
Route		Billing #	0000786
State Waste Code		Gen EPA ID	
Manifest			
Destination		Grid	
PO			
Profile	()		
Generator			

	Time	Scale	Operator	Inbound	Gross	
In	10/26/2016 10:15:12	Inbound	JIM		Tare	50620 lb
-Out	10/26/2016 10:26:13	OutBound	JIM		Net	27640 lb
					Tons	32980 lb
						16.49

Comments

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 245-CATCH BASIN CL 100		16.49	Tons				MA
2 FUEL-Fuel Surcharg 100			%				MA
3 EVF-P-Standard Env 100			%				MA
4 RCR-P-Regulatory C 100			%				MA

Denis Lessard

Total Tax
Total Ticket

Driver : Signature



Chicopee LF
161 New Lombard Rd
Chicopee, MA, 01020
Ph: (413) 594-4172

Original
Ticket# 528720

Customer Name	BELCHERTOWNDPW BELCHERTOWN DP	Carrier	BELCHERTOWN BELCHERTOWN
Ticket Date	10/26/2016	Vehicle#	B-24
Payment Type	Credit Account	Container	Volume
Manual Ticket#		Driver	
Hauling Ticket#		Check#	
Route		Billing #	0000786
State Waste Code		Gen EPA ID	
Manifest			
Destination		Grid	
PO			
Profile	()		
Generator			

	Time	Scale	Operator	Inbound	Gross	
In	10/26/2016 10:16:40	Inbound	JIM		Tare	44120 lb
Out	10/26/2016 10:29:44	Outbound	JIM		Net	22060 lb
					Tons	11.03

Comments

Product	LD%	Qty	UDM	Rate	Tax	Amount	Origin
1 245-CATCH BASIN CL 100		11.03	Tons				MA
2 FUEL-Fuel Surcharg 100			%				MA
3 EVF-P-Standard Env 100			%				MA
4 RCR-P-Regulatory C 100			%				MA

Dylan David Bachand

Total Tax
Total Ticket

Driver's Signature



Chicopee LF
161 New Lombard Rd
Chicopee, MA, 01020
Ph: (413) 594-4172

Original
Ticket# 528719

Customer Name BELCHERTOWN DPW BELCHERTOWN DP Carrier BELCHERTOWN BELCHERTOWN
Ticket Date 10-26/2016 Vehicle# B-14 Volume
Payment Type Credit Account Container
Manual Ticket# Driver
Hauling Ticket# Check#
Route Billing # 0000786
State Waste Code Gen EPA ID
Manifest Grid
Destination
PO
Profile ()
Generator

	Time	Scale	Operator	Inbound	Gross	
In	10/26/2016 10:15:43	Inbound	JIM			63740 lb
Out	10/26/2016 10:28:31	Outbound	JIM		Tare	28240 lb
					Net	35500 lb
					Tons	17.75

Comments

Product	LDX	Qty	UOM	Rate	Tax	Amount	Origin
1 245-CATCH BASIN CL 100		17.75	Tons				MA
2 FUEL-Fuel Surcharg 100			%				MA
3 EVF-P-Standard Env 100			%				MA
4 RCR-P-Regulatory C 100			%				MA

Scot Swistak

Total Tax
Total Ticket

Driver's Signature



Chicopee LF
161 New Lombard Rd
Chicopee, MA, 01020
Ph: (413) 594-4172

Original
Ticket# 528707

Customer Name BELCHERTOWN DPW BELCHERTOWN DPW Carrier BELCHERTOWN BELCHERTOWN
Ticket Date 10/26/2016 Vehicle# B-15 Volume
Payment Type Credit Account Container
Manual Ticket# Driver
Hauling Ticket# Check#
Route Billing # 0000786
State Waste Code Gen EPA ID
Manifest Grid
Destination
PO
Profile ()
Generator

	Time	Scale	Operator	Inbound	Gross	
In	10/26/2016 08:49:47	Inbound	JIM			59560 lb
Out	10/26/2016 08:59:43	Outbound	JIM		Tare	27900 lb
					Net	31660 lb
					Tons	15.83

Comments

Product	LDX	Qty	UOM	Rate	Tax	Amount	Origin
1 245-CATCH BASIN CL 100		15.83	Tons				MA
2 FUEL-Fuel Surcharg 100			%				MA
3 EVF-P-Standard Env 100			%				MA
4 PCR-P-Regulatory C 100			%				MA

Denis V. Lessard

Total Tax
Total Ticket

Driver's Signature



Chicopee LF
161 New Lombard Rd
Chicopee, MA, 01020
Ph: (413) 594-4172

Original
Ticket# 529040

Customer Name BELCHERTOWNDPW BELCHERTOWN DP Carrier BELCHERTOWN BELCHERTOWN
Ticket Date 11/01/2016 Vehicle# B-16 Volume
Payment Type Credit Account Container
Manual Ticket# Driver
Hauling Ticket# Check#
Route Billing # 0000786
State Waste Code Gen EPA ID
Manifest
Destination Grid
PO
Profile ()
Generator

	Time	Scale	Operator	Inbound	Gross	
In	11/01/2016 08:37:14	Inbound	JIM			62980 lb
Out	11/01/2016 08:37:14		JIM		Tare	27900 lb
					Net	35080 lb
					Tons	17.54

Comments

Product	LDX	Qty	UDM	Rate	Tax	Amount	Origin
1 245-CATCH BASIN CL 100		17.54	Tons				MA
2 FUEL-Fuel Surcharg 100			%				MA
3 EVF-P-Standard Env 100			%				MA
4 RCR-P-Regulatory C 100			%				MA



INVOICE

Waste Management of Massachusetts
PO Box 42090
PHOENIX, AZ 85080

(800) 262-5633
(800) 972-4545
www.wm.com

Customer: BELCHERTOWN DPW
Online WM ezPay ID: 00014-20112-03004
Invoice Date: 11/16/2015
Invoice Number: 0018161-0444-0
Account Number: 444-0000786-0444-4
Due Date: 12/15/2015

Total Current Charges Total Amount Due

3,228.60

3,228.60

Account Summary

Description

Previous Balance	3,857.57
Total Credits and Adjustments	0.00
Total Payments Received	3,857.57
Total Current Charges	3,228.60
Total Amount Due	3,228.60
Total Amount Past Due	0.00

Please pay total amount due. Thank you for your business.

Service Period: 11/01/15 - 11/15/15

Description	Amount
Landfill	3,228.60
Total Current Charges	3,228.60

If full payment of the invoiced amount is not received within 30 days of the invoice date, you will be charged a monthly late fee of 2.5% of the unpaid amount, with a minimum monthly charge of \$5.00, or such late fee allowed under applicable law, regulation or contract. Additionally, if your service is suspended for non-payment, you may be charged a resume fee to restart your service. For each returned check, a fee will be assessed on your next billing equal to the maximum amount permitted by applicable state law.

Beginning with services on or after 1/1/2015, the environmental fee assessed on your account will increase by 1% of all invoice charges (with a minimum of \$8). Payment of the invoice will be considered consent to this change. For more details visit www.wm.com/fec.

Use your iPhone or Android mobile device to manage your account, pay your bill, and schedule a roll-off pickup, similar to wm.com. More at wm.com/GoMobile.

Agw- 12-7-15
61433-58922

Current Due	Over 30	Over 60	Over 90	Over 120	Total Due
3,228.60	0.00	0.00	0.00	0.00	3,228.60



Waste Management of Massachusetts
PO Box 42090
PHOENIX, AZ 85080

(800) 262-5633
(800) 972-4545
www.wm.com

Payment Coupon

Please detach and send with checks only (no cash).
Please send all other correspondence to your local site.

Your Account Number

444-0000786-0444-4

Invoice Date

11/16/2015

Your Invoice Number

0018161-0444-0

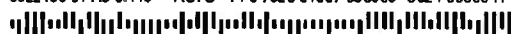
To pay this bill online and switch to paperless billing, go to wm.com/paperless

Due Date	Total Due	Amount Paid
12/15/2015	3,228.60	

0444440000786000181610000032286000000322860 3

0022186 01 A8 0.413 **AUTO T1 0 7320 01007-030606 -C02-P00000-11

10444L55



BELCHERTOWN DPW
PO BOX 306
BELCHERTOWN MA 01007-0306



Waste Management of Massachusetts
Chicopee Landfill
P O Box 13648
Philadelphia PA 19101-3648



From everyday collection to environmental protection,
Think Green. Think Waste Management.
FOR CHANGE OF ADDRESS OR ANY SERVICE ISSUES CONTACT NUMBER ON PAGE 1

C



Waste Management of Massachusetts
PO Box 42090
PHOENIX, AZ 85080

Customer: BELCHERTOWN DPW
Online WM ezPay ID: 00014-20112-03004
Invoice Date: 11/16/2015
Invoice Number: 0018161-0444-0
Account Number: 444-0000786-0444-4
Due Date: 12/15/2015

Service Location: 444-786 Belchertown Dpw: PO Box 306: Belchertown Ma 01007-0306						
Date	Ticket	Description	Quantity	U/M	Rate	Amount
11/05/15	501767	Vehicle#: b17				
		Catch basin cleanings-msw	10.10	TON	91.80	927.18
		Fuel surcharge - landfill	1.00	PCT	4.62	42.84
		Standard environmental fee - percent (landfill)	1.00	PCT	11.00	101.99
		Regulatory cost recovery	1.00	PCT	3.60	33.38
		Ticket Total				1,105.39
11/05/15	501796	Vehicle#: b17				
		Catch basin cleanings-msw	10.99	TON	91.80	1,008.88
		Fuel surcharge - landfill	1.00	PCT	4.62	46.61
		Standard environmental fee - percent (landfill)	1.00	PCT	11.00	110.98
		Regulatory cost recovery	1.00	PCT	3.60	36.32
		Ticket Total				1,202.79
11/06/15	501814	Vehicle#: b17				
		Catch basin cleanings-msw	8.41	TON	91.80	772.04
		Fuel surcharge - landfill	1.00	PCT	4.62	35.67
		Standard environmental fee - percent (landfill)	1.00	PCT	11.00	84.92
		Regulatory cost recovery	1.00	PCT	3.60	27.79
		Ticket Total				920.42
Total charges for service location						3,228.60
Total Current Charges						3,228.60

Payments Received Detail	
11/18/2014 Payment - thank you	3,857.57-
Total Payments Received	3,857.57-

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FOR CHANGE OF ADDRESS OR ANY SERVICE ISSUES CONTACT NUMBER ON PAGE 1



Waste Management of Massachusetts
PO Box 42090
PHOENIX, AZ 85080

Customer:
Online WM ezPay ID:
Invoice Date:
Invoice Number:
Account Number:
Due Date:

Page 3 of 3
BELCHERTOWN DPW
00014-20112-03004
11/16/2015
0018161-0444-0
444-0000786-0444-4
12/15/2015

Service Location: 444-786 Belchertown Dpw: PO Box 306: Belchertown Ma 01007-0306						
Date	Ticket	Description	Quantity	U/M	Rate	Amount
11/05/15	501767	Vehicle#: b17				
		Catch basin cleanings-msw	10.10	TON	91.80	927.18
		Fuel surcharge - landfill	1.00	PCT	4.62	42.84
		Standard environmental fee - percent (landfill)	1.00	PCT	11.00	101.99
		Regulatory cost recovery	1.00	PCT	3.60	33.38
		Ticket Total				1,105.39
11/05/15	501796	Vehicle#: b17				
		Catch basin cleanings-msw	10.99	TON	91.80	1,008.88
		Fuel surcharge - landfill	1.00	PCT	4.62	46.61
		Standard environmental fee - percent (landfill)	1.00	PCT	11.00	110.98
		Regulatory cost recovery	1.00	PCT	3.60	36.32
		Ticket Total				1,202.79
11/06/15	501814	Vehicle#: b17				
		Catch basin cleanings-msw	8.41	TON	91.80	772.04
		Fuel surcharge - landfill	1.00	PCT	4.62	35.67
		Standard environmental fee - percent (landfill)	1.00	PCT	11.00	84.92
		Regulatory cost recovery	1.00	PCT	3.60	27.79
		Ticket Total				920.42
Total charges for service location						3,228.60
Total Current Charges						3,228.60

Payments Received Detail	
11/18/2014 Payment - thank you	3,857.57-
Total Payments Received	3,857.57-

Customer Summary Report

Criteria: 01/01/2015 12:00 AM to 12/31/2015 11:59 PM

Business Unit Name: Chicopee Landfill (CT Valley) - S03374 (USA)

Date: Apr 04 2016, 12:40:28 PM - Central Standard Time

Customer Name: BELCHERTOWNDPW (BELCHERTOWN DPW)

Ticket Date	Ticket ID	Cust Code	MAS Unique ID	Customer	Truck	Material	Material Description	Origin	Tons
11/5/2015	501767	0000786	142011203004	BELCHERTOWN DPW	B17	245	CATCH BASIN CLEANINGS-MSW	MA	10.1
11/5/2015	501796	0000786	142011203004	BELCHERTOWN DPW	B17	245	CATCH BASIN CLEANINGS-MSW	MA	10.99
11/6/2015	501814	0000786	142011203004	BELCHERTOWN DPW	B17	245	CATCH BASIN CLEANINGS-MSW	MA	8.41
Material Total	3								29.5

Appendix H

Detention Pond Cleaning List

<i>Pond</i>	<i>Location</i>	<i>Outfall I.D.- NPDES</i>	<i>Outfall Pass/Fail</i>	<i>Veg.</i>	<i>Mowing Required</i>	<i>Comment(s)</i>
18 Hickory Hill	Right side of Hickory Hill Entrance George Hannum St.	NA	P	OK	Cut January 2017	NA
19 Hickory Hill	Hickory Hill (Left Side Entrance)	NA	P	OK	Contractor Maintains until Finished	Cattails
20 Helen Lane	33 Helen Lane	NA	P	OK	Cut January 2017	Pond partially filled w/water & cattails
21 High School	High School Pond (maintained by DPW)	NA	P	OK	Cut February 2017	Located west of BHS., Minor Sand/Silt
22 Jason's Way	Across from 36 Jason's Way	NA	P	OK	Contractor Maintains until Finished	Cattails and trees in outer perimeter that requires cutting.
23 Meadow Pond	71 Meadow Pond Rd.	NA	P	OK	Contractor Maintains until Finished	NA
24 Newton	16 Newton St.	NA	P	OK	Cut January 2017	Minor Sand/Silt
25 Oak Ridge	Across from 47 Oak Ridge Dr.	NA	P	OK	Cut January 2017	Clearing of trees and brush completed.
26 Oasis	36 Oasis Dr.	NA	P	OK	Cut January 2017	Outfall has (2 pipes)
27 Old Saw Mill	39 Old Sawmill Rd	NA	P	OK	Contractor to Maintain until finished	NA
28 Pheasant Run	Behind 16 Pheasant Run	NA	P	OK	Cut January 2017	NA
29 Pepper Ridge	Pepper Ridge (One in Front)	NA	P	OK	Cut January 2017	3 Total
30 Pepper Ridge	Pepper Ridge 3 in Back on left side of Cul-de-sac)	NA	P	OK	Cut January 2017	NA
31 Pendleton	41 Pendleton Ave	#23	P	OK	Cut January 2017	NA
32 Plaza Ave.	20 Plaza Ave.	NA	P	OK	Cut January 2017	Minor Sand/Silt
	Beginning on Right Emily Lane	NA	P	OK	Cut January 2017	
33 Rimrock	14 Rimrock Drive	NA	P	OK	Cut February 2017	NA
34 Sheffield	Sheffield Dr.- Pond A Bottom of Hill	NA	P	OK	Cut January 2017	Has two(2) outfalls. 1 st : Outfall is ok
						<i>Page 2 of 3</i>

<i>Pond</i>	<i>Location</i>	<i>Outfall I.D.- NPDES</i>	<i>Outfall Pass/Fail</i>	<i>Veg.</i>	<i>Mowing Required</i>	<i>Comment(s)</i>
36 Sheffield	Pond Behind Pond 130 Sheffield	NA	P	OK	Cut February, 2017	NA
37 Sheffield	170 Sheffield Dr.- Pond C	NA	P	OK	Cut January 2017	NA
38 Spring Hill	14 Spring Hill Rd	NA	P	OK	Cut January 2017	People are dumping Lawn debris in or near Inlet
39 Segur Lane	55 Segur Lane	NA	P	OK	Cut January 2017	NA
40 Tucker Lane	Left Side of 30 Tucker Lane	NA	P	OK	Cut January 2017	NA
41 Two Ponds	8 Two Ponds Rd.-A	NA	P	OK	Cut January 2017	NA
42 Two Ponds	30 Two Ponds Rd.-B	NA	P	OK	Cut January 2017	NA
43 Two Ponds	Two Ponds Rd. C (End of Cul-de-sac On right)	NA	P	OK	Cut January 2017	NA
44 Trillium Way	Left Side of 25 Trillium Way	NA	P	OK	Cut January 2017	Cattails, Minor Sand/Silt
45 Willow Lane	11 Willow Lane	NA	P	OK	Cut January 2017	NA
<i>Total: 45</i>						<i>Page 3 of 3</i>

- Inspection completed February 28, 2017 with a few ponds still in the process of being mowed/brush cut.
- All ponds will be cleared of brush by March 31, 2017 with only summer time mowing to be completed.
- Conditions for all locations have shown improvement since year 2014.
- Work performed was conducted by the Belchertown Maintenance Division.

Appendix I

SPCC Facility Inspection Reports

SPCC Inspection Sheet

Date: 5/31/2016

Time: 7:45

Inspector: E. Burton

Above Ground Storage Tanks

1. Roth nonmetallic 275 gal. cap. tank for Heating Oil – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	✓	
b. Bolts, rivets, or seams O.K.	✓	
c. Tank foundation intact	✓	
d. Level gauges and alarms working	✓	
e. Vents not obstructed	✓	
f. Valves, Flanges, and gaskets leak free	✓	
g. Containment walls intact	✓	
h. Tank and ground surface checked for leaks	✓	
i. Piping connected to system leak free	✓	

2. Kohler 30 Emergency Generator 253 gal. cap. diesel tank – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	✓	
b. Bolts, rivets, or seams O.K.	✓	
c. Tank foundation intact	✓	
d. Level gauges and alarms working	✓	
e. Vents not obstructed	✓	
f. Valves, Flanges, and gaskets leak free	✓	
g. Containment walls intact	✓	
h. Tank and ground surface checked for leaks	✓	
i. Piping connected to system leak free	✓	

3. 275 gal. cap. Oil Tank (15w-40) – inside containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	✓	
b. Bolts, rivets, or seams O.K.	✓	
c. Tank foundation intact	✓	
d. Level gauges and alarms working	✓	
e. Vents not obstructed	✓	
f. Valves, Flanges, and gaskets leak free	✓	
g. Containment walls intact	✓	
h. Tank and ground surface checked for leaks	✓	
i. Piping connected to system leak free	✓	

4. 50 gal. cap. Hydraulic Oil Tank for floor lift in Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

5. 500 gal. cap. Waste Oil Furnace Storage Tank in containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

Drums and Portable Containers

Areas to inspect: Exterior surfaces, free of corrosion, signs of leakage, and that drums have secondary containment.

Drum size and contents	Inspected	Location
1. 55 gal Hyd Oil	EMB	MAINT GAR Spill cont
2. 55 gal SW-30 Oil	"	" AREA
3. 2-55 gal Coolant	"	"
4. 2-55 gal Hyd Oil	"	"
5. 2-5 gal 80W-90 Oil	"	"
6. 2-5 gal Hyd Oil	"	"
7. 2-5 gal ATF Oil	"	"
8. _____	_____	_____
9. 3-55 gal WASTE Oil	"	Back GAR Spill Pallet
10. 2-55 gal WASTE Oil	"	"
11. 1-55 gal " "	"	" ON Floor " spill Pallet BROKEN NEW ON ORDER
12. _____	_____	_____
13. _____	_____	_____
14. 55 gal 15W-40 Oil	EMB	MAINT GAR Spill Pallets
15. 55 gal 30W Oil	"	"
16. 55 gal SW-30 Oil	"	"
17. 55 gal COOLANT	"	"
18. _____	_____	_____
19. _____	_____	_____
20. _____	_____	_____

Any addition comments on Drum and Portable Containers : _____

Oil Filled Equipment

1. Floor Mounted Hydraulic Lift in Highway Garage -1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	✓	
b. Bolts, rivets, or seams O.K.	✓	
c. Tank foundation intact	✓	
d. Level gauges and alarms working	✓	
e. Vents not obstructed	✓	
f. Valves, Flanges, and gaskets leak free	✓	
g. Containment walls intact	✓	
h. Tank and ground surface checked for leaks	✓	
i. Piping connected to system leak free	✓	

2. Floor Mounted Hydraulic Lift in Maintenance Garage – 1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	✓	
b. Bolts, rivets, or seams O.K.	✓	
c. Tank foundation intact	✓	
d. Level gauges and alarms working	✓	
e. Vents not obstructed	✓	
f. Valves, Flanges, and gaskets leak free	✓	
g. Containment walls intact	✓	
h. Tank and ground surface checked for leaks	✓	
i. Piping connected to system leak free	✓	

Security

All locks, fences, gates, and lighting systems for the above areas are in good working order. YES yes/no

Spill Response Material

Spill response materials (spill kits, granular absorbents, pads, booms, etc.) are in proper areas for deployment.

Area	yes/no
1. Highway Garage	<u>YES</u>
2. Maintenance Garage	<u>YES</u>

Inspector's Signature:

Supervisor's Signature:

SPCC Inspection Sheet

Date: 7/14/2016

Time: 06:30

Inspector: E. Burton

Above Ground Storage Tanks

1. Roth nonmetallic 275 gal. cap. tank for Heating Oil – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

2. Kohler 30 Emergency Generator 253 gal. cap. diesel tank – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

3. 275 gal. cap. Oil Tank (15w-40) – inside containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

4. 50 gal. cap. Hydraulic Oil Tank for floor lift in Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

5. 500 gal. cap. Waste Oil Furnace Storage Tank in containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

Drums and Portable Containers

Areas to inspect: Exterior surfaces, free of corrosion, signs of leakage, and that drums

have secondary containment.

Drum size and contents	Inspected	Location
1. 3-55 gal. Hydraulic		MAINT Hwy GAR Cont AREA
2. 2-55 gal. Coolant		" " " "
3. 1-55 gal 5W-30 Oil		" " " "
4. 3-5 gal 80W-90 Oil		" " " "
5. 3-5 gal Hydraulic		" " " "
6. 2-5 gal ATF		" " " "
7. 1-5 gal Grease		" " " "
8.		
9. 3-55 gal waste Oil		BACK Hwy GAR Spill Pallets
10. 3-55 gal " "		" " " "
11.		
12. 1-55 gal 5W-30 Oil		MAINT GAR Spill Pallets
13. 1-55 gal Coolant		" " " "
14. 1-55 gal 15W-40 Oil		" " " "
15. 1-55 gal 30W Oil		" " " "
16.		
17.		
18.		
19.		
20.		

Any addition comments on Drum and Portable Containers : _____

Oil Filled Equipment

1. Floor Mounted Hydraulic Lift in Highway Garage -1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	✓	
b. Bolts, rivets, or seams O.K.	✓	
c. Tank foundation intact	✓	
d. Level gauges and alarms working	✓	
e. Vents not obstructed	✓	
f. Valves, Flanges, and gaskets leak free	✓	
g. Containment walls intact	✓	
h. Tank and ground surface checked for leaks	✓	
i. Piping connected to system leak free	✓	

2. Floor Mounted Hydraulic Lift in Maintenance Garage – 1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	✓	
b. Bolts, rivets, or seams O.K.	✓	
c. Tank foundation intact	✓	
d. Level gauges and alarms working	✓	
e. Vents not obstructed	✓	
f. Valves, Flanges, and gaskets leak free	✓	
g. Containment walls intact	✓	
h. Tank and ground surface checked for leaks	✓	
i. Piping connected to system leak free	✓	

Security

All locks, fences, gates, and lighting systems for the above areas are in good working order. YES yes/no

Spill Response Material

Spill response materials (spill kits, granular absorbents, pads, booms, etc.) are in proper areas for deployment.

Area	yes/no
1. Highway Garage	<u>YES</u>
2. Maintenance Garage	<u>YES</u>

Inspector's Signature:

Supervisor's Signature:

SPCC Inspection Sheet

Date: 8/31/16 Time: 8:00

Inspector: EMB

Above Ground Storage Tanks

1. Roth nonmetallic 275 gal. cap. tank for Heating Oil – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

2. Kohler 30 Emergency Generator 253 gal. cap. diesel tank – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

3. 275 gal. cap. Oil Tank (15w-40) – inside containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

4. 50 gal. cap. Hydraulic Oil Tank for floor lift in Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

5. 500 gal. cap. Waste Oil Furnace Storage Tank in containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

Drums and Portable Containers

Areas to inspect: Exterior surfaces, free of corrosion, signs of leakage, and that drums have secondary containment.

Drum size and contents	Inspected	Location
1. 55 gal SW-30 Oil	EMB	main Hwy GAR Cont. AREA
2. 55 gal Ant. FREEZE	EMB	" " "
3. 55 gal Hydr Oil	EMB	" " "
4. 3 - 5 gal 80W-90 Oil	EMB	" " "
5. 3 - 5 gal ATF	EMB	" " " " "
6. 3 - 55 gal WASTE Oil	EMB	Back GAR Hwy Spill Pallet
7. 3 - 55 gal waste Oil	EMB	" " " " "
8. _____	_____	_____
9. 55 gal SW-30	EMB	Build/ground GAR Spill Pallet
10. 55 gal Antifreeze	EMB	" " " "
11. 55 gal 15W-40	EMB	" " " "
12. 55 gal 30 W	EMB	" " " "
13. _____	_____	_____
14. _____	_____	_____
15. _____	_____	_____
16. _____	_____	_____
17. _____	_____	_____
18. _____	_____	_____
19. _____	_____	_____
20. _____	_____	_____

Any addition comments on Drum and Portable Containers : _____

Oil Filled Equipment

1. Floor Mounted Hydraulic Lift in Highway Garage -1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

2. Floor Mounted Hydraulic Lift in Maintenance Garage – 1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

Security

All locks, fences, gates, and lighting systems for the above areas are in good working order. OK yes/no

Spill Response Material

Spill response materials (spill kits, granular absorbents, pads, booms, etc.) are in proper areas for deployment.

Area	yes/no
1. Highway Garage	<u>YES</u>
2. Maintenance Garage	<u>YES</u>

Inspector's Signature: 

Supervisor's Signature: 

SPCC Inspection Sheet

Date: 9/08/16 Time: 2:45 pm

Inspector: E. Buefow

Above Ground Storage Tanks

1. Roth nonmetallic 275 gal. cap. tank for Heating Oil – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

2. Kohler 30 Emergency Generator 253 gal. cap. diesel tank – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

3. 275 gal. cap. Oil Tank (15w-40) – inside containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

4. 50 gal. cap. Hydraulic Oil Tank for floor lift in Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

5. 500 gal. cap. Waste Oil Furnace Storage Tank in containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

Drums and Portable Containers

Areas to inspect: Exterior surfaces, free of corrosion, signs of leakage, and that drums

have secondary containment.

Drum size and contents	Inspected	Location
1. 55 gal Hydr Oil		Spill Cont. Area Main Hwy Gar
2. 55 gal SW-30 Oil		"
3. 2-55 gal Pak Nol		"
4. 2-55 gal Hydrn Oil		"
5. 3-55 gal 80W-90 Oil		"
6. 3-5 gal ATF		"
7.		
8. 3-55 gal WASTE Oil		Spill Pallet Back Hwy Gar
9. 3-55 gal waste Oil		"
10. 1-55 gal USED Pak Nol		"
11.		
12. 1-55 gal Pak Nol		Maint. Gar Spill Pallet
13. 1-55 gal SW-30 Oil		"
14. 1-55 gal 15W-40 Oil		"
15. 1-55 gal 30W Oil		"
16.		
17.		
18.		
19.		
20.		

Any addition comments on Drum and Portable Containers : _____

Oil Filled Equipment

1. Floor Mounted Hydraulic Lift in Highway Garage -1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

2. Floor Mounted Hydraulic Lift in Maintenance Garage – 1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

Security

All locks, fences, gates, and lighting systems for the above areas are in good working order. YES yes/no

Spill Response Material

Spill response materials (spill kits, granular absorbents, pads, booms, etc.) are in proper areas for deployment.

Area	yes/no
1. Highway Garage	<u>YES</u>
2. Maintenance Garage	<u>YES</u>

Inspector's Signature: Eden R

Supervisor's Signature: Ch. Jung

SPCC Inspection Sheet

Date: 11/29/2016

Time: 07:20

Inspector: E. Burton

Above Ground Storage Tanks

1. Roth nonmetallic 275 gal. cap. tank for Heating Oil – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

2. Kohler 30 Emergency Generator 253 gal. cap. diesel tank – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

3. 275 gal. cap. Oil Tank (15w-40) – inside containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

4. 50 gal. cap. Hydraulic Oil Tank for floor lift in Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

5. 500 gal. cap. Waste Oil Furnace Storage Tank in containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

Drums and Portable Containers

Areas to inspect: Exterior surfaces, free of corrosion, signs of leakage, and that drums have secondary containment.

Drum size and contents	Inspected	Location
1. <u>55 gal Hyd Oil</u>	<u>EMB</u>	<u>main Hwy GAR. Spill Cont Area</u>
2. <u>55 gal 5W-30 Oil</u>	<u>EMB</u>	<u>"</u>
3. <u>55 gal 5W-30 Oil</u>	<u>EMB</u>	<u>"</u>
4. <u>2-55 gal Anti Freeze</u>	<u>EMB</u>	<u>"</u>
5. <u>2-55 gal Hyd Oil</u>	<u>EMB</u>	<u>"</u>
6. <u>3-5 gal 80W-90 Oil</u>	<u>EMB</u>	<u>"</u>
7. <u>3-5 gal ATF Oil</u>	<u>EMB</u>	<u>"</u>
8. _____	_____	_____
9. <u>55 gal Hydro Oil</u>	<u>EMB</u>	<u>Spill Pallet Back Hwy GAR</u>
10. <u>6-55 gal WASTE Oil</u>	<u>EMB</u>	<u>"</u>
11. <u>55 gal WASTE Coolant</u>	<u>EMB</u>	<u>"</u>
12. _____	_____	_____
13. <u>55 gal Anti Freeze</u>	<u>EMB</u>	<u>maint GAR Spill Pallets</u>
14. <u>55 gal 5W-30 Oil</u>	<u>EMB</u>	<u>"</u>
15. <u>55 gal 15W-40 Oil</u>	<u>EMB</u>	<u>"</u>
16. <u>55 gal 30W Oil</u>	<u>EMB</u>	<u>"</u>
17. _____	_____	_____
18. _____	_____	_____
19. _____	_____	_____
20. _____	_____	_____

Any addition comments on Drum and Portable Containers : _____

Oil Filled Equipment

1. Floor Mounted Hydraulic Lift in Highway Garage -1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	✓	
b. Bolts, rivets, or seams O.K.	✓	
c. Tank foundation intact	✓	
d. Level gauges and alarms working	✓	
e. Vents not obstructed	✓	
f. Valves, Flanges, and gaskets leak free	✓	
g. Containment walls intact	✓	
h. Tank and ground surface checked for leaks	✓	
i. Piping connected to system leak free	✓	

2. Floor Mounted Hydraulic Lift in Maintenance Garage – 1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	✓	
b. Bolts, rivets, or seams O.K.	✓	
c. Tank foundation intact	✓	
d. Level gauges and alarms working	✓	
e. Vents not obstructed	✓	
f. Valves, Flanges, and gaskets leak free	✓	
g. Containment walls intact	✓	
h. Tank and ground surface checked for leaks	✓	
i. Piping connected to system leak free	✓	

Security

All locks, fences, gates, and lighting systems for the above areas are in good working order. OK yes/no

Spill Response Material

Spill response materials (spill kits, granular absorbents, pads, booms, etc.) are in proper areas for deployment.

Area	yes/no
1. Highway Garage	<u>YES</u>
2. Maintenance Garage	<u>YES</u>

Inspector's Signature: John H. [Signature]

Supervisor's Signature: _____

SPCC Inspection Sheet

Date: 12/15/2016 Time: 7:40

Inspector: E. Burton

Above Ground Storage Tanks

1. Roth nonmetallic 275 gal. cap. tank for Heating Oil – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	
b. Bolts, rivets, or seams O.K.	<u>✓</u>	
c. Tank foundation intact	<u>✓</u>	
d. Level gauges and alarms working	<u>✓</u>	
e. Vents not obstructed	<u>✓</u>	
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	
g. Containment walls intact	<u>✓</u>	
h. Tank and ground surface checked for leaks	<u>✓</u>	
i. Piping connected to system leak free	<u>✓</u>	

2. Kohler 30 Emergency Generator 253 gal. cap. diesel tank – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	
b. Bolts, rivets, or seams O.K.	<u>✓</u>	
c. Tank foundation intact	<u>✓</u>	
d. Level gauges and alarms working	<u>✓</u>	
e. Vents not obstructed	<u>✓</u>	
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	
g. Containment walls intact	<u>✓</u>	
h. Tank and ground surface checked for leaks	<u>✓</u>	
i. Piping connected to system leak free	<u>✓</u>	

3. 275 gal. cap. Oil Tank (15w-40) – inside containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	
b. Bolts, rivets, or seams O.K.	<u>✓</u>	
c. Tank foundation intact	<u>✓</u>	
d. Level gauges and alarms working	<u>✓</u>	
e. Vents not obstructed	<u>✓</u>	
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	
g. Containment walls intact	<u>✓</u>	
h. Tank and ground surface checked for leaks	<u>✓</u>	
i. Piping connected to system leak free	<u>✓</u>	

4. 50 gal. cap. Hydraulic Oil Tank for floor lift in Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

5. 500 gal. cap. Waste Oil Furnace Storage Tank in containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

Drums and Portable Containers

Areas to inspect: Exterior surfaces, free of corrosion, signs of leakage, and that drums have secondary containment.

Drum size and contents	Inspected	Location
1. 3-55 gal. Drum Hydr Oil	EMB	Spill Cont AREA Main Hwy GAR.
2. 2-55 gal Drum 5W-30 Oil	"	"
3. 2-55 gal Drum AntiFreeze	"	"
4. 3-55 gal 80W-90 Gear Oil	"	"
5. 3-55 gal ATF	"	"
6. _____	_____	_____
7. 3-55 gal Drum WASTE Oil	EMB	Spill Pallets Back Hwy GAR
8. 1-55 gal Drum WASTE AntiFreeze	"	"
9. 3-55 gal Drum WASTE Oil	"	"
10. 1-55 gal Hydr Oil	"	"
11. _____	_____	_____
12. 1-55 gal Drum AntiFreeze	EMB	Main GAR Spill Pallets
13. 1-55 gal Drum 5W-30 oil	"	"
14. 1-55 gal Drum 15W-40 oil	"	"
15. 1-55 gal Drum 30W Oil	"	"
16. _____	_____	_____
17. 1-55 gal Drum Old GAS?	_____	Back Shed, no Spill Pallet
18. _____	_____	will Rectify today
19. _____	_____	_____
20. _____	_____	_____

Any addition comments on Drum and Portable Containers : _____

Oil Filled Equipment

1. Floor Mounted Hydraulic Lift in Highway Garage -1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

2. Floor Mounted Hydraulic Lift in Maintenance Garage – 1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

Security

All locks, fences, gates, and lighting systems for the above areas are in good working order. YES yes/no

Spill Response Material

Spill response materials (spill kits, granular absorbents, pads, booms, etc.) are in proper areas for deployment.

Area	yes/no
1. Highway Garage	<u>YES</u>
2. Maintenance Garage	<u>YES</u>

Inspector's Signature: _____

Supervisor's Signature: _____

SPCC Inspection Sheet

Date: 1/23/17

Time: 9:45

Inspector: E. Burton

Above Ground Storage Tanks

1. Roth nonmetallic 275 gal. cap. tank for Heating Oil – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

2. Kohler 30 Emergency Generator 253 gal. cap. diesel tank – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

3. 275 gal. cap. Oil Tank (15w-40) – inside containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

4. 50 gal. cap. Hydraulic Oil Tank for floor lift in Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

5. 500 gal. cap. Waste Oil Furnace Storage Tank in containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

Drums and Portable Containers

Areas to inspect: Exterior surfaces, free of corrosion, signs of leakage, and that drums have secondary containment.

Drum size and contents	Inspected	Location
1. 2-55 gal 5W-30 Oil	EMB	Main Hwy GAR Spill cont AREA
2. 3-55 gal 424 Hyde Oil	EMB	"
3. 2-55 gal Anti-Freeze	"	"
4. 4-5 gal 80W-90 Oil	"	"
5. 4-5 gal ATF	"	"
6. _____	_____	_____
7. 3-55 gal WASTE Oil	EMB	Back GAR Hwy on
8. 1-55 gal WASTE Anti Freeze	"	Spill Pallets
9. 3-55 WASTE Oil	"	"
10. 1-55 gal 424 Hydro Oil	"	"
11. _____	_____	_____
12. 6-Empty Drums - to	EMB	ON Floor
13. _____ RETURN	_____	_____
14. _____	_____	Spill Pallets in
15. 1-55 gal Anti-Freeze	EMB	MAINT. GAR.
16. 1-55 gal 5W-30 Oil	"	"
17. 1-55 gal 15W-40 Oil	"	"
18. 1-55 gal 30W Oil	"	"
19. _____	_____	_____
20. _____	_____	_____

Any addition comments on Drum and Portable Containers : _____

Items to inspect	yes/no	Comments
a. Tank condition good	✓	
b. Bolts, rivets, or seams O.K.	✓	
c. Tank foundation intact	✓	
d. Level gauges and alarms working	✓	
e. Vents not obstructed	✓	
f. Valves, Flanges, and gaskets leak free	✓	
g. Containment walls intact	✓	
h. Tank and ground surface checked for leaks	✓	
i. Piping connected to system leak free	✓	

Area	yes/no
1. Highway Garage	✓
2. Maintenance Garage	✓

SPCC Inspection Sheet

Date: 2/22/2017

Time: 1:00 pm

Inspector: E. Burton

Above Ground Storage Tanks

1. Roth nonmetallic 275 gal. cap. tank for Heating Oil – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

2. Kohler 30 Emergency Generator 253 gal. cap. diesel tank – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

3. 275 gal. cap. Oil Tank (15w-40) – inside containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

4. 50 gal. cap. Hydraulic Oil Tank for floor lift in Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

5. 500 gal. cap. Waste Oil Furnace Storage Tank in containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

Drums and Portable Containers

Areas to inspect: Exterior surfaces, free of corrosion, signs of leakage, and that drums have secondary containment.

Drum size and contents	Inspected	Location
3- 55 gal Hydraulic Oil	_____	main Hwy GAR Spill
2- 55 gal 5W-30 Oil	_____	Containment Area
3- 55 gal Antifreeze	_____	"
4- 5 gal GEAR Oil	_____	"
4- ATF 5 gal	_____	"
2- 5 gal Hydraulic	_____	"
7. _____	_____	_____
8- 3- 55 gal waste Oil	_____	Back Hwy GAR
9. _____	_____	Spill Pallet
10- 55 gal waste Coolant	_____	"
11. _____	_____	_____
2- 12- 55 gal Hydraulic Oil	_____	"
2- 13- 55 gal waste Oil	_____	"
14. _____	_____	_____
15. _____	_____	_____
16. _____	_____	_____
17- 55 gal 30W - Oil	_____	MAINT. Dept GAR
18- 55 gal 15W-30 Oil	_____	Spill Pallets
19- 55 gal 5W-30 Oil	_____	_____
20- 55 gal Antifreeze	_____	_____

Any addition comments on Drum and Portable Containers : _____

Oil Filled Equipment

1. Floor Mounted Hydraulic Lift in Highway Garage -1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

2. Floor Mounted Hydraulic Lift in Maintenance Garage – 1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

Security

All locks, fences, gates, and lighting systems for the above areas are in good working order. YES yes/no

Spill Response Material

Spill response materials (spill kits, granular absorbents, pads, booms, etc.) are in proper areas for deployment.

Area	yes/no
1. Highway Garage	<u>YES</u>
2. Maintenance Garage	<u>YES</u>

Inspector's Signature: Edmund

Supervisor's Signature: Chi-Fung

SPCC Inspection Sheet

Date: 3/31/17

Time: 07:50

Inspector: E. Bureyon

Above Ground Storage Tanks

1. Roth nonmetallic 275 gal. cap. tank for Heating Oil – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

2. Kohler 30 Emergency Generator 253 gal. cap. diesel tank – outside northwest side of building.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

3. 275 gal. cap. Oil Tank (15w-40) – inside containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

4. 50 gal. cap. Hydraulic Oil Tank for floor lift in Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

5. 500 gal. cap. Waste Oil Furnace Storage Tank in containment area of Highway Garage.

Items to inspect	yes/no	Comments
a. Tank condition good	<u>✓</u>	<u> </u>
b. Bolts, rivets, or seams O.K.	<u>✓</u>	<u> </u>
c. Tank foundation intact	<u>✓</u>	<u> </u>
d. Level gauges and alarms working	<u>✓</u>	<u> </u>
e. Vents not obstructed	<u>✓</u>	<u> </u>
f. Valves, Flanges, and gaskets leak free	<u>✓</u>	<u> </u>
g. Containment walls intact	<u>✓</u>	<u> </u>
h. Tank and ground surface checked for leaks	<u>✓</u>	<u> </u>
i. Piping connected to system leak free	<u>✓</u>	<u> </u>

Drums and Portable Containers

Areas to inspect: Exterior surfaces, free of corrosion, signs of leakage, and that drums have secondary containment.

Drum size and contents	Inspected	Location
1. 3- 55 gal Hydra Oil	EMB	Spill Cont AREA MAIN
2. 1- 5W-30 55 gal Oil	"	Highway GAR.
3. 1- 55 gal. Coolant	"	"
4. 3- 5 gal ATF	"	"
5. 4- 5 gal 80W-90 Gear Oil	"	"
6. 1- 5 gal Hydra Oil	"	"
7. _____	_____	_____
8. 6- 55 gal WASTE Oil	"	Spill Pallets BACK
9. 1- 55 gal WASTE Coolant	"	Highway GAR.
10. _____	_____	_____
11. 1- 55 gal waste Oil	_____	Spill Pallets in
12. 1- 55 gal 5W-30 Oil	_____	MAIN MAINTENANCE GAR
13. 1- 55 gal Coolant	_____	"
14. 1- 55 gal 15W-40 Oil	_____	"
15. 1- 55 gal 30W Oil	_____	"
16. _____	_____	_____
17. _____	_____	_____
* 18. 1- 55 gal DRUM Hydraulic Oil	_____	No Spill Pallet *
19. _____	_____	ON FLOOR
20. _____	_____	_____

Any addition comments on Drum and Portable Containers: MAINTENANCE DEPT NEED
TO TAKE Spill PREVENTION SERIOUSLY!

Oil Filled Equipment

1. Floor Mounted Hydraulic Lift in Highway Garage -1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

2. Floor Mounted Hydraulic Lift in Maintenance Garage – 1 gal. storage

Items to inspect	yes/no	Comments
a. Tank condition good	☒	
b. Bolts, rivets, or seams O.K.	☒	
c. Tank foundation intact	☒	
d. Level gauges and alarms working	☒	
e. Vents not obstructed	☒	
f. Valves, Flanges, and gaskets leak free	☒	
g. Containment walls intact	☒	
h. Tank and ground surface checked for leaks	☒	
i. Piping connected to system leak free	☒	

Security

All locks, fences, gates, and lighting systems for the above areas are in good working order. YES yes/no

Spill Response Material

Spill response materials (spill kits, granular absorbents, pads, booms, etc.) are in proper areas for deployment.

Area	yes/no
1. Highway Garage	<u>YES</u>
2. Maintenance Garage	<u>YES</u>

Inspector's Signature: Edna Ch. R.

Supervisor's Signature: Chi Jung

1 Introduction

This document is a Spill Prevention, Control and Countermeasure (SPCC) Plan for the Belchertown Department of Public Works Highway Garage (Highway Garage) located at 290 Jackson Street in Belchertown, Massachusetts. This Plan has been prepared and implemented as required by the U.S. Environmental Protection Agency (EPA) regulation contained in Title 40, Code of Federal Regulations, Part 112, (40 CFR 112). A non-transportation related facility is subject to the SPCC regulations if:

- The aggregate aboveground oil storage capacity of the facility exceeds 1,320 gallons (excluding those bulk storage containers and oil filled equipment below 55 gallons in capacity) or if the aggregate underground oil storage capacity of the facility exceeds 42,000 gallons (excluding those that are currently subject to all of the technical requirements of 40 CFR Part 280 or all of the technical requirements of state programs approved under 40 CFR Part 281); and
- If, due to its location, the facility could reasonably be expected to discharge oil into or upon the navigable waters or adjoining shorelines of the United States.

This facility is subject to the SPCC regulations because the total aboveground quantity of oil stored at the facility exceeds the threshold applicability requirements of 40 CFR Part 112.

A copy of this SPCC Plan is maintained at the facility and is available for on-site review by the Regional Administrator of the EPA during normal working hours.

2 Facility Operations

2.1 Facility Location and Description

The Highway Garage is located on an approximately 20-acre parcel at 290 Jackson Street in Belchertown, Massachusetts (*Figure 1*). The site is the staging point for the Town's highway maintenance and public works operations. George Hannum Road and Jackson Street border the northern and western perimeter of the Highway Garage site, respectively. The Central Vermont Railroad borders the eastern perimeter, and agricultural facilities operated by the New England Small Farms Institute occupy the parcel south of the Highway Garage. The majority of the Highway Garage facility is located on the southern portion of the property and consists of a vehicle maintenance garage, sand/salt storage sheds, vehicle refueling station, miscellaneous storage sheds, a dog pound, assorted material storage piles, and equipment storage for the town (goal posts, picnic tables, trash barrels for the town fair, etc.). The remainder of the site consists of undeveloped fields, wetlands, and woodland. Also located on the northern portion of the site is an unnamed stream, a small pond, and associated wetlands. A facility site plan is shown as *Figure 2*.

6 Substantial Harm Certification

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons? **No**
2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area? **No**
3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula¹) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? **No**
4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula¹) such that a discharge from the facility would shut down a public drinking water intake²? **No**
5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years? **No**

If a comparable formula is used, documentation of the reliability and analytical soundness of the comparable formula must be attached to this form.

²For the purpose of 40 CFR 112, public drinking water intakes are analogous to public water systems as described at 40 CFR 143.2(c). (from 40 CFR 112 Appendix C, Attachment C-II)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Signature

Title

Name (Printed)

Date

TABLE 1
OIL STORAGE SUMMARY

Storage Location	Container Type/Material	Capacity	Contents	Date Installed	Active or Inactive	Secondary Containment
Fixed Storage						
Vehicle fueling area	Double-walled cathodically protected steel UST	4,000 gal	Diesel Fuel	1995	Active	Double-walled UST
Vehicle fueling area	Double-walled cathodically protected steel UST	4,000 gal	Gasoline	1995	Active	Double-walled UST
Outside of Vehicle Maintenance Building	Non-metallic AST	(1) 275 gal	Diesel Fuel	2008	Active	Double-walled AST
Outside of Vehicle Maintenance Building	Steel AST – Generator	(1) 275 gal	Diesel Fuel	2012	Active	Double-walled AST
Vehicle Maintenance Building	Steel AST	(1) 500 gal	Waste Oil	2004	Active	Concrete containment berm.
Vehicle Maintenance Building	Steel AST	(1) 330 gal	Motor Oil	1980	Active	Concrete containment berm.
Vehicle Maintenance Building (within concrete containment)	55-gallon drums	(10) 55 gal drums	Miscellaneous*	N/A	Active	Concrete containment.
Vehicle Maintenance Building (scattered throughout building)	55-gallon drums	(10) 55 gal drums	Miscellaneous*	N/A	Active	Spill pallets.
Equipment Maintenance Building	55-gallon drums	(4) 55 gal drums	Miscellaneous*	N/A	Active	Spill pallets.

Table



TABLE 1
OIL STORAGE SUMMARY

Storage Location	Container Type/Material	Capacity	Contents	Date Installed	Active or Inactive	Secondary Containment
Vehicle Maintenance Building	5-gallon containers	(20) 5 gal containers	Miscellaneous*	N/A	Active	Spill pallets (not subject to SPCC rule since smaller than container threshold capacity of 55 gallons).
Oil-filled Equipment						
Vehicle Maintenance Building	Hydraulic lifts	(1) 5 gal (1) Approx. 100 gal	Hydraulic Oil	N/A	Active	Lift Trench (smaller reservoir is not subject to SPCC rule since smaller than container threshold capacity of 55 gallons).

Notes:* Miscellaneous refers to various oils used in the routine maintenance of vehicles and equipment (i.e. motor oil, lube oil, transmission oil, etc.)

TABLE 2
POTENTIAL OIL DISCHARGES

Oil Source	Potential Event	Discharge Description and Direction	Max. Volume	Flow Rate
Waste Oil AST	Spill or leak	Spill or leak from the waste oil AST would be released into the containment area.	500 gallons	500 gal/min
Motor Oil AST	Spill or leak	Spill or leak from the motor oil AST would be released into the containment area.	330 gallons	330 gal/min
Hydraulic Oil AST – Hydraulic Lift Reservoir	Spill or leak	Spill or leak from the hydraulic oil AST would be released into the lift trench area and/or the garage floor and enter the floor drains.	100 gallons	100 gal/min
Miscellaneous oil stored in 55-gallon drums within the containment area	Spill or leak	Spill or leak from the larger 55-gallon drums would be released into the containment area.	55 gallons	55 gal/min
Miscellaneous oil stored in 55-gallon drums (and smaller) in locations scattered throughout the vehicle maintenance building	Spill or leak	Spill or leak from the larger 55-gallon drums would be released into the spill pallets and/or the garage floor and enter the floor drains.	55 gallons	55 gal/min
55-gallon drums within the equipment maintenance building	Spill or leak	Spill or leak from the 55-gallon drums would be released into the spill pallets and/or the garage floor.	55 gallons	55 gal/min

The Belchertown DPW will perform monthly visual inspections to address the integrity testing requirements for the aboveground bulk storage containers at the facility. According to the Steel Tank Institute *Standards for the Inspection of Aboveground Storage Tanks* (STI SP-001-05, Section 5.5), required inspections for Category 1 Shop-Fabricated aboveground storage tanks with capacities between 0 and 5,000 gallons, including 55-gallon drums, are limited to periodic inspections. Monthly visual inspections of these storage tanks will be performed and documented on inspection checklists. The monthly visual inspections address both the monthly and annual inspection requirements of STI SP001. Completed inspection checklists will be maintained on file at the facility.

If signs of leakage or deterioration from the storage tanks are observed during the inspections, the tanks will be inspected by an inspector certified by the American Petroleum Institute or STI to assess its suitability for continued service, according to SP-001-05.

Periodic testing (e.g., pressure testing) will be performed for facility oil piping on an “as needed” basis. Integrity and leak testing must be performed on buried oil piping at the time of installation, modification, construction, relocation, or replacement.

6.3 Record Keeping Procedures

Inspection and test records will be signed by the inspector and/or tester and maintained on file for a minimum of three (3) years. Copies of inspection and test records must be maintained for comparison purposes. Usual and customary business records may serve as a record of tests or inspections.

7 Recommendations

The table in *Appendix E* contains recommendations identified during SPCC Plan inspections, reviews, or amendments. The table should be updated as recommendations are identified and completed.

later than six (6) months following preparation of the amendment. This change may be either the result of construction of a new structure, modifications to an existing structure, or simply a change in the facility's oil handling practices.

5 Personnel Training

In accordance with 40 CFR 112.7(f), facility personnel who are involved in oil handling activities receive regular training in the proper operation and maintenance of equipment to prevent discharge of oil, system controls, and applicable oil pollution control laws, rules, and regulations. This training includes a mix of on-the-job training and an annual review of this SPCC Plan. Personnel are instructed on the general facility activity, operation of facility oil storage and transfer mechanisms, emergency response equipment operation and maintenance, and emergency response procedures.

Additionally, discharge prevention briefings will be conducted once per year to ensure that employees have an adequate understanding of this SPCC Plan. These briefings highlight any past discharges or failures, malfunctioning components, and any recently developed precautionary measures. Attendance records of these briefings and discharge prevention training are kept on the form in *Appendix C*.

The designated person accountable for oil discharge prevention at the facility is identified in the "General Information" section at the beginning of this SPCC Plan.

6 Inspections, Tests, and Records

6.1 Inspections

Facility oil storage containers and aboveground piping are visually inspected for leaks, deterioration, and damage on a regular basis during normal facility operations. Informal visual inspections will also be conducted for leaks, deterioration, and damage during filling of storage tanks. The Emergency Response Coordinator or other designated personnel conduct formal monthly inspections of these areas and spill response equipment. Copies of the inspection forms are provided as *Appendix D*. Leaks, deterioration, damage, or accumulation of oil inside the containment structures will be noted on the inspection forms and remedial action will be taken. Monthly inspections will be signed by the inspector and maintained on file for three years. Inspections will also be signed by the appropriate supervisor.

6.2 Integrity Testing

Aboveground bulk storage containers will be subjected to integrity testing on a regular basis and when material repairs are made. Containers that do not store oil, but merely use oil, (e.g., oil-filled electrical equipment, operating equipment such as hydraulic equipment with oil reservoirs, off-road equipment and vehicles) are excluded from the regulatory definition of "bulk storage container" and are not subject to the integrity testing requirements of 40 CFR 112.8(c)(6). The testing must combine visual inspection with another technique such as hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, or other system of non-destructive shell testing following industry standards.

4.1 Five Year Review Process

The Belchertown DPW must review and evaluate this SPCC Plan at least once every five (5) years. This review must include an assessment of new technology that has become available for the prevention of oil discharges since the Plan was last reviewed. As a result of this review and evaluation, the SPCC Plan must be amended within six (6) months, to include more effective discharge prevention and control technology if the technology will significantly reduce the likelihood of an oil discharge, and if such technology has been field-proven at the time of the review.

Completion of the review and evaluation must be documented with a signed statement as to whether or not the SPCC Plan will be amended. The following words will suffice:

I have completed review and evaluation of the SPCC Plan for the Belchertown Department of Public Works Highway Garage facility on (date), and will (will not) amend the Plan as a result.

Documentation of the five-year review will be maintained in *Appendix B* or at the beginning or end of this Plan. The five-year review does not necessarily need to be undertaken by a registered Professional Engineer. However, 40 CFR 112 regulations require that a Professional Engineer certify SPCC Plan amendments that reflect a change that “materially affects” the facility’s potential to discharge oil. Personnel will record amendments to this Plan on the log sheet included in *Appendix B*.

4.2 EPA Required Review and Amendments

As discussed previously in this SPCC Plan, review and reporting procedures will be initiated per the Regional Administrator of the EPA following the occurrence of certain discharges to navigable waters. Within sixty (60) days of the occurrence of the previously described discharge scenarios, a report must be submitted to the EPA Regional Administrator (Region 1).

Should the EPA require an amendment to the SPCC Plan following a review of that report, the facility will be notified by certified mail or by personal delivery. The EPA will specify the terms of such amendment. Within thirty (30) days from receipt of the notice, the facility may submit written information, views, and arguments on the proposed amendment. After considering all material presented, EPA will either notify the facility that an amendment is required or will rescind the notice. Any EPA proposed amendment becomes a part of the SPCC Plan thirty (30) days after such notice. The amendment must be implemented as soon as possible but not later than six (6) months after the amendment becomes part of the SPCC Plan.

4.3 Facility Modification Required Review and Amendments

Whenever there is a change in facility design, construction, operations, or maintenance that materially affects the potential for an oil discharge at the facility, the Belchertown DPW must amend this SPCC Plan within six (6) months of the change, and implement the amendment as soon as possible, but not

Waters of the United States are defined in 40 CFR Part 110 and include wetlands, interstate waters, and tributaries that lead to navigable waterways.

In accordance with 40 CFR 112.4, if the oil discharge incident(s) meet either of the following criteria, a report must be filed with the EPA:

1. A discharge of more than 1,000 gallons of oil into or upon the navigable waters of the United States or adjoining shoreline in a single spill event; or
2. Discharge of more than 42 gallons of oil in each of two (2) spill events within any twelve-month period.

Within sixty days of the occurrence of either of these conditions, a report containing the following information must be submitted to the Regional Administrator (Region I) of the EPA and the state spill reporting contact listed in the previous section:

1. Name of the facility.
2. Name of the individual submitting the information.
3. Location of the facility.
4. Maximum storage or handling capacity of the facility and normal daily throughput.
5. The corrective actions and/or countermeasures taken, including adequate description of equipment repairs and/or replacements.
6. Description of the facility including maps, flow diagrams, and topographical map.
7. The cause(s) of such discharge(s), including a failure analysis of system or subsystem in which failure occurred.
8. Additional preventive measures taken or contemplated to minimize the possibility of recurrence.
9. Such other information as the Regional Administrator may reasonably require that is pertinent to the plan or discharge event(s).

A copy of all information provided to the State and EPA will be maintained on file at the facility.

4 Plan Review and Amendment

Amendments to the SPCC Plan are required as follows:

1. If the required five-year Plan review (see *Section 4.1*) indicates more effective spill control and prevention technology will significantly reduce the likelihood of an oil discharge, then the Plan must be amended within six (6) months from the time of that review to include such technology; or
2. Within six months when required by the EPA after review of the SPCC Plan, submitted because of a discharge (see *Section 4.2*); or
3. When there is a change in facility design, construction, operations, or maintenance that materially affects the potential for an oil discharge (see *Section 4.3*).

3.4 Spill Notification and Reporting

Personnel listed under the "Emergency Contact List" at the beginning of this SPCC Plan will be responsible for completing necessary reporting to the regulatory agencies in the event of an oil discharge. Various state and federal agencies must be notified if a discharge of oil from the facility meets applicable notification requirements. Additionally, follow-up reporting is required pursuant to SPCC regulations for certain oil discharges.

Following an oil discharge, the Belchertown DPW will assess the response to the discharge, determine what steps can be taken to prevent future discharges, and implement any steps which may make a future oil discharge response more efficient.

3.4.1 State Requirements

In accordance with the Commonwealth of Massachusetts reporting requirements of 310 CMR 40.0000, a release or threat of release equal to or greater than 10 gallons of oil to the environment will be reported to the Massachusetts Department of Environmental Protection (MA DEP) within a 2-hour period. Pursuant to 310 CMR 40.0311 ("Releases Which Require Notification Within Two Hours"), persons shall notify the MA DEP as soon as possible but not more than two hours after obtaining knowledge of "a sudden, continuous or intermittent release to the environment of any hazardous material that is listed at 310 CMR 40.1600 or that exhibits one or more of the characteristics described in 310 CMR 40.0347, when: (a) the quantity of the release is equal to or greater than the applicable Reportable Quantity." [Oil has a Reportable Quantity of 10-gallons.]

Any other release should be evaluated under the reporting requirements of the Massachusetts Contingency Plan (MCP). A MA DEP "Release Notification" form (BWSC-103), may be appropriate. A copy of the MA DEP "Release Notification Form" is included in *Appendix A*. The forms shall be mailed to the DEP Western Region office at the following address:

Massachusetts Department of Environmental Protection
Western Region
436 Dwight Street
Springfield, MA 01103
Phone: (413) 784-1100 (regular business hours)
Fax: (413) 784-1149
MA Emergency Management (508) 820-2000 (all other business hours)

Massachusetts regulations (310 CMR 40.0000) require that a Licensed Site Professional (LSP) be retained to manage response actions relating to release of oil greater than State Reportable Concentrations (i.e. 10 gallons).

3.4.2 Federal Requirements

Discharges of oil to waters of the United States that cause a film, sheen, or deposition or violate applicable water quality standards are reportable to the National Response Center (800-424-8802).

3.2 Spill Response Procedures

Spills or other discharges of oil will, in general, be handled in the following manner:

1. The person who notices the discharge will determine its source. If possible, this person will attempt, without risk of injury, to stop the discharge by closing valves or other direct means. On-site spill response equipment, which includes absorbents, brooms, and shovels, will be used whenever possible. Concurrently, personnel will stop pedestrian and vehicular traffic in the area of the spill or discharge.
2. Personnel will then contact those person(s) identified as Emergency Coordinators under the "Emergency Contact List" at the beginning of this Plan.
3. The Emergency Coordinators will assess the discharge, determine if the secondary containment system is adequate, and then determine and initiate the appropriate course of action.

If the discharge is incidental and manageable by DPW personnel with on-site spill response resources, then the Emergency Coordinator will instruct DPW personnel to respond to the discharge with the use of dry absorbent material and other available on-site resources. Recovered material shall be properly disposed by a licensed hauler.

Additional personnel may be assigned to assist as necessary. The Belchertown DPW intends to respond only to incidental oil discharges, which can be immediately absorbed or otherwise controlled at the time of the release. Small discharges that occur outside of secondary containment may be determined to be incidental and controllable, and manageable by on-site resources. If the discharge is not manageable by facility personnel (i.e. non-incidental and non-controllable), then the on-site Emergency Coordinators (or other appropriate supervisor) will contact an Emergency Spill Response Contractor listed at the beginning of this SPCC Plan.

Personnel potentially responsible for incidental spill response will read this SPCC Plan and be familiar with spill cleanup procedures.

3.3 Spill Response Equipment and Supplies

Emergency response equipment and supplies (absorbents, booms, pads, socks, etc.) are maintained at the following facility locations for responding to an oil discharge:

- Vehicle maintenance building
- Equipment maintenance building

Delivery personnel and/or DPW personnel strictly supervise product transfer from delivery trucks to facility storage tanks. Delivery and pick-up vendors are required to comply with the minimum requirements and regulations of the Department of Transportation. Tank fill pipes remain locked while not in use and the delivery truck drivers coordinate with appropriate DPW personnel before transferring oil products to the tanks. Care is taken to prevent accidental spillage or leakage during transfer of product to and from on-site storage containers. Spill response materials are readily available at these locations for use by DPW personnel in the event of an oil discharge during transfer operations.

2.8 Site Security

Site security is primarily provided by the on-site presence of facility personnel during working hours. After hours, the facility buildings are closed and locked and equipped with an alarm system, and the yard is lighted. The fuel pumps are also equipped with locks that require a personnel key to pump fuel.

Flow and drain valves and other valves permitting direct outward flow of the container's contents to the surface have adequate security measures so that they remain in closed position when in non-operating or non-standby status. The loading and unloading connections of oil pipelines are capped when not in service or when in standby service for an extended time. Appropriate lighting exists to detect spills during hours of darkness.

2.9 Conformance with Other Applicable State Programs

As applicable and in accordance with Section 112.7(j), this plan also addresses conformance with other applicable Massachusetts regulations, including:

- 310 CMR 30.000 – Waste Oil/ Hazardous Waste Regulations
- 527 CMR 9.00 – Tanks and Containers (MA Board of Fire Prevention)
- 310 CMR 40.0000 – Massachusetts Contingency Plan

3 Spill Response Equipment and Procedures

3.1 General

This section provides a set of procedures that can be followed in the event of an oil spill or discharge at the site. Spill response notification contacts are provided at the beginning of this SPCC Plan under the "Emergency Contact List."



2.4 Potential Oil Discharges

Table 2 summarizes potential oil discharge events that could reasonably be expected to occur at the facility, including a description of the discharge scenario, the direction, the maximum discharge volume, and the approximate discharge rate.

2.5 Facility Drainage

Figure 2 shows the facility drainage system, drainage flow paths, and oil storage locations at the site. The site consists of seven drainage areas. Stormwater runoff from the developed portion of the site generally flows from southeast to northwest. Runoff from a majority of the developed portion of the site discharges to the on-site stream and associated wetlands. Other areas of the site discharge as diffuse overland flow to the adjacent properties or Town roads.

Drainage area 1 is located between the northern driveway/access road and the highway garage building and includes various indoor and outdoor storage areas. Stormwater runoff from this area discharges as overland flow to a grass swale at the western edge of the parking lot between the storage sheds and the highway garage building (Outfall 1). Runoff that does not infiltrate into the ground discharges as overland flow across the northern driveway and to the adjacent wetlands. The floor drains in the highway garage building discharge to the sanitary sewer via an oil/water separator.

Drainage area 2 contains a majority of the operational areas of the facility. Stormwater runoff from the highway garage building, vehicle refueling area, and outdoor equipment and material storage areas is collected by three catch basins located along a paved drainage ditch behind the highway garage building. Stormwater runoff collected by this drainage system is conveyed to the unnamed stream at Outfall 2.

Stormwater runoff from the southern and western portions of the site discharges as diffuse overland flow to Jackson Street or the adjacent properties. Drainage area 4, located at the southern end of the site, includes most of the facility's sand and salt storage and handling operations (half of the northwestern salt shed is in Drainage area 3). Drainage area 3 includes the front portion of the facility between the highway garage building and Jackson Street, half of the northwestern salt shed, and primarily consists of vehicle parking and lawn areas.

The remainder of the developed portion of the site includes material storage areas between the northern driveway and the unnamed stream. Stormwater runoff from this area discharges as diffuse overland flow to Jackson Street or the adjacent undeveloped land.

2.6 Oil Transfer

The facility has underground oil piping connecting the diesel fuel USTs to the dispensers. The piping is cathodically-protected and is equipped with a Veedor-Root leak detection system. Additionally, aboveground piping connects the 500-gallon waste oil AST to the heating system associated with the vehicle maintenance building. The pipeline system is located away from vehicular traffic and within secondary containment. Aboveground oil pipelines and valves are examined monthly to assess their condition, as outlined in Section 6.1.



Approximately four 55-gallon drums containing motor oil used for the routine maintenance of facility equipment are located on spill pallets in the equipment maintenance building. Spill response materials (i.e., absorbents) are stored inside the equipment maintenance building.

A maximum of ten 55-gallon drums containing new oil products (i.e. motor oil, hydraulic oil, transmission oil, etc.) are located within the concrete containment berm located in the vehicle maintenance garage. This concrete containment area also includes the 330-gallon motor oil AST (described in the previous section). The oil is used for routine maintenance of facility vehicles and equipment.

Other miscellaneous 55-gallon drums containing motor oil, lube oil, and waste oil associated with the routine maintenance of facility vehicles and equipment are also located in the vehicle maintenance building. These drums are stored on spill containment pallets. Other miscellaneous (unregulated) 5-gallon and 1-gallon containers of oils are stored in flammable lockers located in the vehicle maintenance building. Spill response materials (i.e., absorbents) are stored inside the vehicle maintenance building.

2.3 Oil-filled Equipment

Table 1 lists equipment that does not store oil, but contains oil in-use, and therefore does not meet or is specifically excluded from the regulatory definition of “bulk storage container.” This equipment is not subject to the bulk storage container requirements of 112.8(c), including secondary containment and integrity testing.

Potential oil releases from such equipment, which is subject to the general secondary containment provisions of §112.7(c), would be controlled by appropriate containment and equipment to prevent a discharge or handled using on-site spill response equipment and resources, as described in this Plan.

Hydraulic Lifts

Two hydraulic lifts are located within the vehicle maintenance building for the routine maintenance of DPW vehicles and equipment. One hydraulic lift has a hydraulic oil reservoir capacity of 5 gallons; the second hydraulic lift has a hydraulic oil reservoir capacity of approximately 100 gallons. The 5 gallon lift reservoir is exempt from SPCC regulations due to its capacity.

An oil release from the 100-gallon hydraulic reservoir would discharge into the nearby lift trench (capacity approximately 1,000-gallons). In the unlikely scenario that the lift trench is filled with water at the time of the release (occurs occasionally in the winter due to snowmelt from public works vehicles), the hydraulic oil could potentially discharge to the floor drains located within the building. The floor drains discharge to the site’s oil water separator. Potential oil releases to the garage floor would be handled using on-site spill response equipment and resources.

2.2 Oil Storage Containers

Table 1 lists the oil storage containers at the facility, including underground storage tanks, aboveground storage tanks, drums and portable containers, and miscellaneous storage containers. Each of the containers described in this section are constructed of materials compatible with the product stored and conditions of storage.

Underground Storage Tanks

4,000-gallon Diesel Fuel and 4,000-gallon Gasoline USTs: These double-walled cathodically-protected steel tanks are located at the vehicle fueling area adjacent to the vehicle maintenance building. Fuel is transferred to the dispensers via underground cathodically protected steel piping. Both tanks are equipped with a Veedor-Root leak detection system, as well overfill prevention devices. The USTs are subject to the Massachusetts Underground Storage Tank regulations and are therefore exempt from the SPCC program.

Aboveground Storage Tanks

275-gallon Diesel Fuel AST: This double-walled above ground non-metallic fuel oil tank is located outside of the northwest corner of the vehicle maintenance building. The tank stores heating fuel for the building furnace. The tank is situated on a concrete slab and is equipped with a visual liquid level gauge.

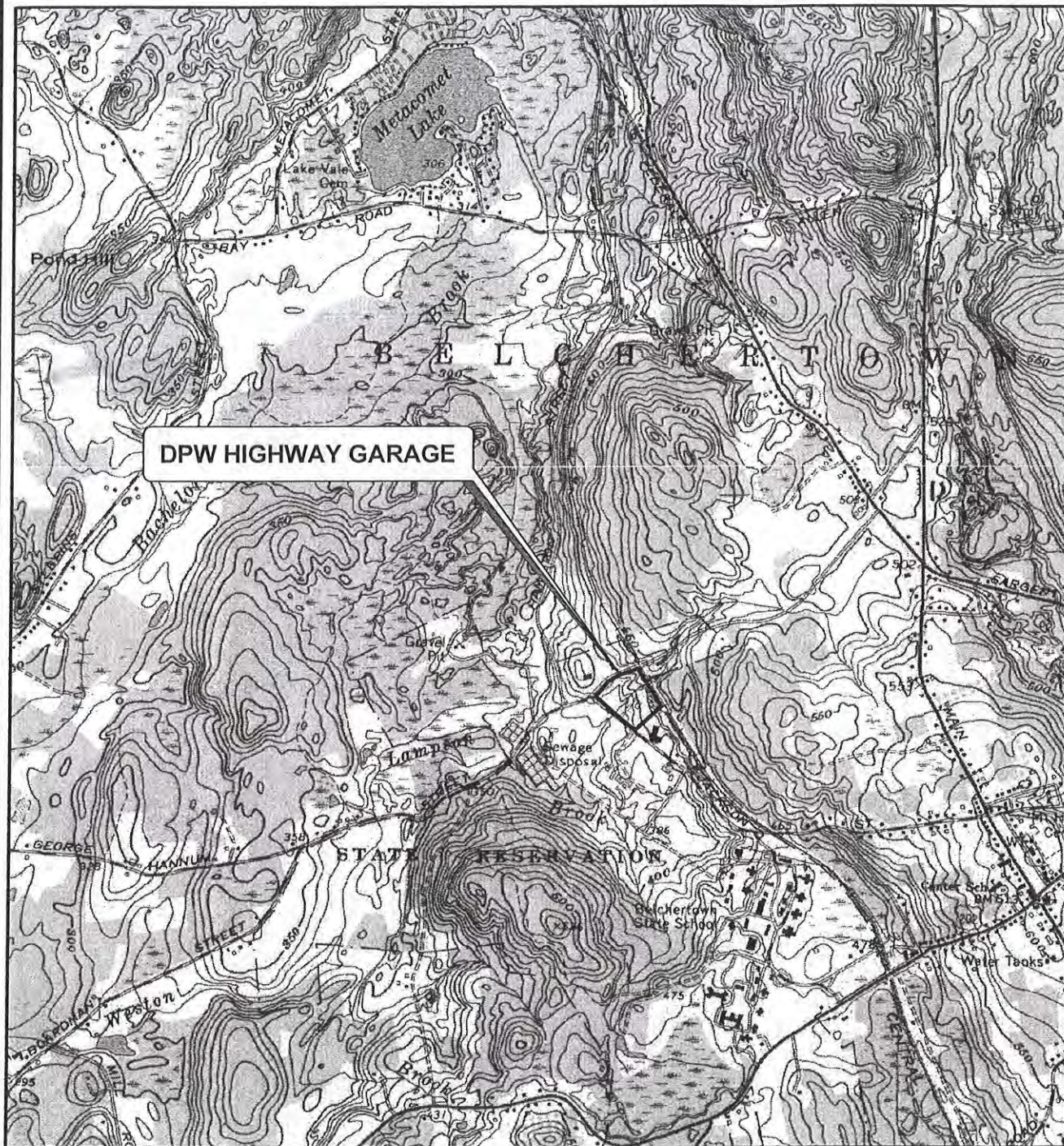
275-gallon Diesel Fuel AST: This double-walled day tank is associated with a generator located outside of the northwest corner of the vehicle maintenance building. The generator is located on a concrete slab and is equipped with a visual liquid level gauge.

500-gallon Waste Oil AST: A 500-gallon single-wall steel tank is located in the vehicle maintenance garage within a concrete secondary containment area. The tank stores waste oil generated from vehicle and equipment maintenance activities in the garage. The tank is connected to a waste oil burner that is used to heat the building during winter months. A spill or leak from the tank would be contained within the concrete containment area. Spill response materials (i.e., absorbents) are stored inside the vehicle maintenance building.

330-gallon Motor Oil: This single-wall steel tank is located in the vehicle maintenance building. The tank is located on a cradle within a concrete secondary containment berm. The tank stores motor oil used for the routine maintenance of vehicles and equipment inside the garage. A spill or leak from the tank would be contained within the concrete containment area. Spill response materials (i.e., absorbents) are stored inside the vehicle maintenance building.

Drums and Portable Containers

Oil drums and portable containers are stored in designated areas of the facility. When handling oil drums and portable containers, care is taken to prevent accidental spillage or leakage.



MAP REFERENCE

THIS MAP WAS PREPARED FROM THE FOLLOWING
 7.5' SERIES USGS MAP: Q125890, Q125894,
 Q129890, & Q129894.

SCALE:	
HORIZ.:	1" = 2000'
VERT.:	
DATUM:	
HORIZ.:	
VERT.:	
0 1000' 2000'	
GRAPHIC SCALE	



FUSS & O'NEILL

78 INTERSTATE DRIVE
 WEST SPRINGFIELD, MA 01089
 413.452.0445
 www.fando.com

BELCHERTOWN DEPARTMENT OF PUBLIC WORKS

SITE LOCATION MAP

DPW HIGHWAY GARAGE

BELCHERTOWN

MASSACHUSETTS

PROJ. No.: 20020548.A50
 DATE: MAY 2013

FIG. 1

Figure 1

Site Location Map

Figure 2

Facility Diagram



FIG. 2

BELCHERTOWN DEPARTMENT OF PUBLIC WORKS

FACILITY DIAGRAM
DPW HIGHWAY GARAGE

BELCHERTOWN
MASSACHUSETTS

FUSS & O'NEILL

78 INDEPENDENT DRIVE
WEST SPRINGFIELD, MA 01089

SCALE

HORIZ: 1" = 40'

VERT: 1" = 40'

WATUM

HORIZ: 1" = 40'

VERT: 1" = 40'

GRAPHIC SCALE

40 20 0 20 40

[illegible]

Appendix J

Transfer Station and Hazardous Waste Collection Materials



HAZARDOUS WASTE COLLECTION SCHEDULE –YEAR 2016

The Town of Belchertown, Department of Public Works will not be hosting a HHW Day Collection Event in Year 2016.
Residents planning on attending an event located in another community should contact your town's DPW or recycling coordinator to confirm
Fees, method of payment, location directions and questions regarding your disposal needs.

***PRE-REGISTRATION IS REQUIRED AT ALL EVENTS**

<i>Date</i>	<i>Community</i>	<i>Time</i>	<i>Phone/ Contact</i>	<i>Location</i>
5.22.2016	Northampton	9AM-Noon	413-587-1059 – Susan Waite	Smith Vocational High School
9.12.2016	Agawam	9AM-Noon	413-821-0624- Tracy Demaio	Agawam DPW Yard
9.17.2016	Wilbraham- (East Longmeadow Hampden Longmeadow, Ludlow Palmer)	9AM-1PM	413-567-5027-Arlene Miller	Wilbraham Regional High School
9.24.2016	South Hadley/Granby	8AM-Noon	413-538-5033- Veronique Blanchard- So. Hadley Jeanne Crosby -Granby	10 Industrial Avenue
9.25.2016	Amherst	9AM-Noon	413-259-3049- Steve Telega	Amherst Transfer Station
10.1.2016	Greenfield (FCSWMD	9AM-Noon	413-772-2438-FCSWMD Staff	Greenfield Community College
10.1.2016	Orange (FCSWMD Towns)	9AM-Noon	413-772-2438-FCSWMD Staff	Orange Transfer Station
10.1.2016	Chicopee	9AM-Noon	413-594-3557-Barry Brouillard	Baskin Drive/DPW
10.22.2016	West Springfield	9AM-Noon	413-263-3030-Rob Colson	430 Westfield St., West Springfield
10.29.2016	Westhampton (HRMC Towns)	9AM-Noon	413-685-5498- Kathleen Casey	Westhampton DPW

TRANSFER STATION - In October, 2016 the Department welcomed new Transfer Station Supervisor, Elmer “Chuck” Dodge who has restored and continued to maintain the Stations cleanliness and daily functions. All aspects of the towns’ waste disposal activities are monitored and in adherence to the Transfer Station Rules & Regulations. Violators consisting of non-permitted users and failure to use the town’s orange recyclable trash bags are recognized with the assistance of the stations onsite surveillance system and those identified as not adhering to the towns’ set regulations are promptly notified. The annual Transfer Station Rules & Regulations can be found on the DPW/Town website located at www.belchertown.org. DPW link/page.

Our residential number of household Transfer Station users totaled **1643** (FY’16) which continues to vary slightly from year to year for those who participate in our disposal/recycling program. The following quantities of solid waste and recyclables were generated during year 2016.

<i>Recyclable</i>	<i>Per Unit(s)</i>	<i>Year 2015</i>	<i>Year 2016</i>
Paper & Cardboard (co-mingled)	Tons	573.2	646.23
Waste Oil (gals)	Single	1500	1900
Tires (single)	Tons	5.67s/513t	510s/4.39t
Solid Waste (tons)	Tons	720.55	728.9
Electronics (tons)	Tons	14.95	18.67
Scrap Steel (tons)	Tons	58.98	72.01
Textile (tons)	Tons	3.93	3.68
Hazardous Material (NEDT)	Pounds	724lbs.	522lbs.

In addition, the Department was able to maintain pricing now entering into its eighth year in a row (FY’ 09) for a Transfer Station Permit Sticker fee set at \$100.00 per year and discounted for senior citizens age 65+ at \$80.00. However, effective October 1, 2016 prices were increased slightly per bundle for large bags from \$19.00 per bundle of 10 to \$20.00 per bundle of 10 (up \$1.00 per bundle), and small bags per bundle of 10 remained at \$13.00. Bags may be purchased at a variety of in-town stores, DPW, Finnerty House and at the Transfer Station.

The Department additionally applied for and received \$3250 from the MassDEP “Sustainable Materials Recovery Program” in which payments are provided to municipalities who maximize reuse, recycling and waste reduction. Whereas municipalities receive payments according to the number of criteria points earned in the program, the Department earned a total of ten points through its “Pay as You Throw Program”, yard waste drop off, bulky items collected and reciprocal Hazardous Waste Collection Events. In turn, this funding will be designated towards the purchase of recycling costs/ materials for the town.

In addition and as part of the MassDEP Grant award we re-implemented a revised “Buy Recycle Policy” that was approved by the Board of Selectmen (Orig. Jan.25.1998, Rev. May 2.2016), to all Lawrence Memorial Hall Offices and Finnerty House. This policy is to ensure that whenever practicable, all purchasing of paper products contain a minimum of 30% recyclable content. This policy is designed to ultimately minimize waste, preserve the environment and promote recycling. In addition, each municipal office was provided with an additional blue recyclable plastic bin to exercise internal paper waste.



New England Disposal Technologies (NEDT)

<http://nedt.org/>

A Household Hazardous Products Collection Center

now permitted to accept household hazardous products from ANY municipality in Massachusetts and adjoining states. The Collection Center operates on a "Pay-as-you-thro" basis. For more information click on the link provided above.

NEDT - Hazardous Household Waste Material Drop-Off

Year 2015

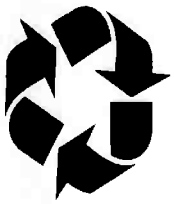
Westfield, MA

Hazardous Household Product to NEDT site: 724 lbs

Year 2016

Westfield, MA

Hazardous Household Product to NEDT site: 522 lbs



YEAR 2017

The Town of Belchertown

TRANSFER STATION DAILY HOURS OF OPERATION

Sunday & Monday ~ CLOSED

Tuesday 7:30am - 3:15pm
Wednesday 7:30am - 3:15pm
Thursday 7:30am - 5:15pm
Friday 7:30am - 3:15pm
Saturday 7:30am - 3:15pm

Transfer Station Observed Holiday Schedule:

Martin Luther King Day	1.17.2017
Presidents Day	2.21.2017
Patriots Day	4.18.2017
Memorial Day	5.30.2017
Fourth of July	7.4.2017
Labor Day	9.5.2017
Columbus Day	10.10.2017
Veterans Day	11.11.2017
Thanksgiving Day	11.23.2017
Day after Thanksgiving	11.24.2017
Christmas Eve - 1/2 day closing at 11AM	12.23.2017
Christmas	12.26.2017
New Year's Eve - 1/2 day closing at 11AM	12.30.2017
New Year's Day	1.2.2018

****Transfer Station will be closed on the above dates***

Transfer station permit stickers now available

BELCHERTOWN - Annual Transfer Station permit stickers are now available for purchase at a cost of \$100 and/or senior citizens age 65+ are \$80. Stickers are valid from Feb. 28-29, 2007 to Feb. 28-29, 2018 and can be purchased Tuesday through Friday at the Transfer Station and Monday through Friday at the Finnerty House and Department of Public Works during normal business hours.

Annual permit stickers may be purchased at the

Transfer Station, located at 135 Hamilton St. on the following Saturdays: Feb. 18, Feb. 25, March 4, March 11 and March 18. Purchase of a sticker must be accompanied by a valid vehicle registration, current driver's license or proof of residency.



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Western Regional Office • 436 Dwight Street, Springfield MA 01103 • 413-784-1100

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

February 29, 2016

Dear MRF Community:

In accordance with your contract with Waste Management Recycle America Alliance (WMRA) and the Massachusetts Department of Environmental Protection (MassDEP), enclosed is payment for the recyclable materials delivered on behalf of your community to the Springfield Materials Recycling Facility (MRF) for the period of July through December, 2015.

Please note that this is the first payment under the provisions of the new MRF contract. During this payment period, sales of recyclables did not trigger a revenue share to communities. Therefore, community payments are based solely on the \$10.00 per ton fixed payment provision. On the back side of this letter, please find tonnage data on which the municipal payments were based.

Should you have any questions regarding your community's payment, or the MRF program in general, please contact Steve Ellis at 413-755-2239, or via email at Steven.Ellis@state.ma.us.

Sincerely,

Steven Ellis
Deputy Regional Director
Department of Environmental Protection

Michael Moores
Plant Manager- Springfield MRF
Waste Management Recycle America

July - December 2015	Payable Tons Delivered	Payment @ \$10.00/Ton
CITY OF CHICOPEE	31.18	\$311.80
CITY OF HOLYOKE	948.78	\$9,487.80
CITY OF NORTHAMPTON	519.24	\$5,192.40
CITY OF PITTSFIELD	852.85	\$8,528.50
CITY OF WESTFIELD	22.94	\$229.40
TOWN OF GREAT BARRINGTON	63.86	\$638.60
TOWN OF AGAWAM	856.53	\$8,565.30
TOWN OF ALFORD	39.32	\$393.20
TOWN OF ASHFIELD	112.71	\$1,127.10
TOWN OF BECKET	56.66	\$566.60
TOWN OF BELCHERTOWN	330.68	\$3,306.80
TOWN OF BERNARDSTON	86.58	\$865.80
TOWN OF BLANDFORD	37.65	\$376.50
TOWN OF BUCKLAND	65.38	\$653.80
TOWN OF CHARLEMONT	41.72	\$417.20
TOWN OF CHESTER	25.41	\$254.10
TOWN OF CHESTERFIELD	33.91	\$339.10
TOWN OF COLRAIN	56.94	\$569.40
TOWN OF CONWAY	105.25	\$1,052.50
TOWN OF DALTON	166.15	\$1,661.50
TOWN OF DEERFIELD	162.18	\$1,621.80
TOWN OF EASTHAMPTON	98.77	\$987.70
TOWN OF EAST LONGMEADOW	771.96	\$7,719.60
TOWN OF EGREMONT	110.96	\$1,109.60
TOWN OF ERVING	87.22	\$872.20
TOWN OF GILL	64.07	\$640.70
TOWN OF GOSHEN	34.24	\$342.40
TOWN OF GREENFIELD	794.60	\$7,946.00
TOWN OF HADLEY	72.12	\$721.20
TOWN OF HAMPDEN	87.55	\$875.50
TOWN OF HATFIELD	79.29	\$792.90
TOWN OF HEATH	33.22	\$332.20
TOWN OF LEVERETT	75.91	\$759.10
TOWN OF LONGMEADOW	932.27	\$9,322.70
TOWN OF LUDLOW	33.59	\$335.90
TOWN OF MIDDLEFIELD	20.76	\$207.60
TOWN OF MONTAGUE	288.41	\$2,884.10
TOWN OF MONTEREY	71.47	\$714.70
TOWN OF MONTGOMERY	38.36	\$383.60
TOWN OF MOUNT WASHINGTON	9.16	\$91.60
TOWN OF NEW SALEM	41.87	\$418.70
TOWN OF NORTHFIELD	112.07	\$1,120.70
TOWN OF OTIS	104.31	\$1,043.10
TOWN OF PALMER	90.74	\$907.40
TOWN OF PLAINFIELD	28.01	\$280.10
TOWN OF ROWE	25.32	\$253.20
TOWN OF RUSSELL	39.08	\$390.80
TOWN OF SANDISFIELD	36.71	\$367.10
TOWN OF SHEFFIELD	100.77	\$1,007.70
TOWN OF SHELBURNE	74.48	\$744.80
TOWN OF SHUTESBURY	90.40	\$904.00
TOWN OF SOUTH HADLEY	804.15	\$8,041.50
TOWN OF SOUTHAMPTON	221.84	\$2,218.40
TOWN OF SOUTHWICK	201.63	\$2,016.30
TOWN OF STOCKBRIDGE	154.81	\$1,548.10
TOWN OF TOLLAND	23.34	\$233.40
TOWN OF WARWICK	30.49	\$304.90
TOWN OF WASHINGTON	21.25	\$212.50
TOWN OF WENDELL	51.40	\$514.00
TOWN OF WEST SPRINGFIELD	7.25	\$72.50
TOWN OF WEST STOCKBRIDGE	75.56	\$755.60
TOWN OF WHATELY	58.41	\$584.10
TOWN OF WILBRAHAM	363.93	\$3,639.30
TOWN OF WILLIAMSBURG	111.41	\$1,114.10
TOWN OF WORTHINGTON	57.04	\$570.40
UMASS AMHERST	16.08	\$160.80
TOTAL	11262.20	\$112,622.00



Waste Management
P.O. Box 3027
Houston, TX 77253

Check No. 0000649655

Doc Date	Invoice Number / Description	Original Amount	Discount Amount	Amount Paid
12/31/2015	122015REBATE 2010 JUL-DEC 2015 REBATE	3,306.80	0.00	3,306.80
Vendor Number 0000003376	Name TOWN OF BELCHERTOWN			
Check Number 0000649655	Date 02/02/2016	Total Amount \$3,306.80	Discounts Taken \$0.00	Total Paid Amount \$3,306.80

THIS DOCUMENT HAS A COLORED BACKGROUND AND MICROPRINTING IN THE ENDORSEMENT SIGNATURE LINE. THE REVERSE SIDE OF THIS DOCUMENT HAS AN ARTIFICIAL WATERMARK.



Waste Management
P.O. Box 3027
Houston, TX 77253

BANK OF AMERICA
COMMERCIAL DISBURSEMENT ACCOUNT
NORTHBROOK, IL

CHECK NO 0000649655

70-2328 / 719



PAY EXACTLY

\$3,306.80***

VOID AFTER 90 DAYS

DATE: 02/02/2016

PAY EXACTLY

THREE THOUSAND THREE HUNDRED SIX AND 80 / 100 DOLLAR

TO THE
ORDER
OF

TOWN OF BELCHERTOWN

Dept of Public Works

PO Box 306
Belchertown, MA 01007

Devina J Rankin

AUTHORIZED SIGNATURE

AUTHORIZED SIGNATURE

0000649655 0719232841 8765304418



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Western Regional Office • 436 Dwight Street, Springfield MA 01103 • 413-784-1100

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

August 11, 2016

Dear MRF Community:

In accordance with your contract with Waste Management Recycle America Alliance (WMRA) and the Massachusetts Department of Environmental Protection (MassDEP), enclosed is payment for the recyclable materials delivered on behalf of your community to the Springfield Materials Recycling Facility (MRF) for the period of January through June, 2016.

Please note that during this payment period, sales of recyclables did not trigger a revenue share to communities. Therefore, community payments are based solely on the \$10.00 per ton fixed payment provision. Additionally, where applicable, payments were reduced to reflect a deduction for the municipality's FY17 MRF program public education fee. On the back side of this letter, please find tonnage and public education fee data on which the municipal payments were based.

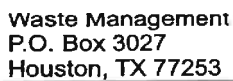
Should you have any questions regarding your community's payment, or the MRF program in general, please contact Steve Ellis at 413-755-2239, or via email at Steven.Ellis@state.ma.us.

Sincerely,

Steven Ellis
Deputy Regional Director
Department of Environmental Protection

Michael Moores
Plant Manager- Springfield MRF
Waste Management Recycle America

January through June 2016	Total Tons Delivered	Revenue Earned (Tons X \$10)	Public Education Fee FY2017	Community Payment
CITY OF CHICOPEE	27.61	\$ 276.10	\$ 2,764.90	\$ (2,488.80)
CITY OF HOLYOKE	894.18	\$ 8,941.80	\$ 1,994.00	\$ 6,947.80
CITY OF NORTHAMPTON	522.28	\$ 5,222.80	\$ 1,427.45	\$ 3,795.35
CITY OF PITTSFIELD	847.12	\$ 8,471.20	\$ 2,236.85	\$ 6,234.35
CITY OF WESTFIELD	21.64	\$ 216.40	\$ 2,054.70	\$ (1,838.30)
GREAT BARRINGTON	67.27	\$ 672.70	\$ 355.20	\$ 317.50
TOWN OF AGAWAM	784.67	\$ 7,846.70	\$ 1,421.90	\$ 6,424.80
TOWN OF ALFORD	27.4	\$ 274.00	\$ 24.70	\$ 249.30
TOWN OF ASHFIELD	95.86	\$ 958.60	\$ 103.70	\$ 854.90
TOWN OF BECKET	45.9	\$ 459.00	\$ 88.95	\$ 370.05
TOWN OF BELCHERTOWN	322.63	\$ 3,226.30	\$ 732.45	\$ 2,493.85
TOWN OF BERNARDSTON	80.91	\$ 809.10	\$ 142.00	\$ 667.10
TOWN OF BLANFORD	38.16	\$ 381.60	\$ 61.65	\$ 319.95
TOWN OF BUCKLAND	59.71	\$ 597.10	\$ 95.10	\$ 502.00
TOWN OF CHARLEMONT	40	\$ 400.00	\$ 63.30	\$ 336.70
TOWN OF CHESTER	20.54	\$ 205.40	\$ 66.85	\$ 138.55
TOWN OF CHESTERFIELD	32.34	\$ 323.40	\$ 61.10	\$ 262.30
TOWN OF COLRAIN	50.43	\$ 504.30	\$ 83.55	\$ 420.75
TOWN OF CONWAY	96.12	\$ 961.20	\$ 94.85	\$ 866.35
TOWN OF DALTON	133.16	\$ 1,331.60	\$ 337.80	\$ 993.80
TOWN OF DEERFIELD	168.09	\$ 1,680.90	\$ 256.25	\$ 1,424.65
TOWN OF EASTHAMPTON	99.06	\$ 990.60	\$ 802.65	\$ 187.95
TOWN OF EAST LONGMEADOW	751.98	\$ 7,519.80	\$ 786.00	\$ 6,733.80
TOWN OF EGREMONT	96.02	\$ 960.20	\$ 61.25	\$ 898.95
TOWN OF ERVING	80.93	\$ 809.30	\$ 90.00	\$ 719.30
TOWN OF GILL	61.82	\$ 618.20	\$ 75.00	\$ 543.20
TOWN OF GOSHEN	29.02	\$ 290.20	\$ 52.70	\$ 237.50
TOWN OF GREENFIELD	746.62	\$ 7,466.20	\$ 872.80	\$ 6,593.40
TOWN OF HADLEY	70.2	\$ 702.00	\$ 262.50	\$ 439.50
TOWN OF HAMPDEN	71.38	\$ 713.80	\$ 256.95	\$ 456.85
TOWN OF HATFIELD	66.87	\$ 668.70	\$ 163.95	\$ 504.75
TOWN OF HEATH	29.46	\$ 294.60	\$ 35.30	\$ 259.30
TOWN OF LEVERETT	69.16	\$ 691.60	\$ 92.55	\$ 599.05
TOWN OF LONGMEADOW	864.12	\$ 8,641.20	\$ 789.20	\$ 7,852.00
TOWN OF LUDLOW	31.96	\$ 319.60	\$ 1,055.15	\$ (735.55)
TOWN OF MIDDLEFIELD	14.85	\$ 148.50	\$ 26.05	\$ 122.45
TOWN OF MONTAGUE	273.29	\$ 2,732.90	\$ 421.85	\$ 2,311.05
TOWN OF MONTEREY	52.63	\$ 526.30	\$ 48.05	\$ 478.25
TOWN OF MONTGOMERY	28.33	\$ 283.30	\$ 41.90	\$ 241.40
TOWN OF MT WASHINGTON	7.42	\$ 74.20	\$ 8.35	\$ 65.85
TOWN OF NEW SALEM	38.54	\$ 385.40	\$ 49.50	\$ 335.90
TOWN OF NORTHFIELD	109.77	\$ 1,097.70	\$ 151.60	\$ 946.10
TOWN OF OTIS	68.97	\$ 689.70	\$ 80.60	\$ 609.10
TOWN OF PALMER	96.12	\$ 961.20	\$ 607.00	\$ 354.20
TOWN OF PLAINFIELD	22.37	\$ 223.70	\$ 32.40	\$ 191.30
TOWN OF ROWE	19.6	\$ 196.00	\$ 19.65	\$ 176.35
TOWN OF RUSSELL	35.65	\$ 356.50	\$ 88.75	\$ 267.75
TOWN OF SANDISFIELD	31.62	\$ 316.20	\$ 45.75	\$ 270.45
TOWN OF SHEFFIELD	94.25	\$ 942.50	\$ 162.85	\$ 779.65
TOWN OF SHELBURNE	62.08	\$ 620.80	\$ 94.65	\$ 526.15
TOWN OF SHUTESBURY	91.7	\$ 917.00	\$ 88.55	\$ 828.45
TOWN OF SOUTH HADLEY	746.74	\$ 7,467.40	\$ 875.70	\$ 6,591.70
TOWN OF SOUTHAMPTON	201.77	\$ 2,017.70	\$ 289.60	\$ 1,728.10
TOWN OF SOUTHWICK	198.41	\$ 1,984.10	\$ 475.10	\$ 1,509.00
TOWN OF STOCKBRIDGE	117.65	\$ 1,176.50	\$ 97.35	\$ 1,079.15
TOWN OF TOLLAND	16.88	\$ 168.80	\$ 24.25	\$ 144.55
TOWN OF WARWICK	30.47	\$ 304.70	\$ 39.00	\$ 265.70
TOWN OF WASHINGTON	18.45	\$ 184.50	\$ 26.90	\$ 157.60
TOWN OF WENDELL	47.48	\$ 474.80	\$ 42.40	\$ 432.40
TOWN OF WEST SPRINGFIELD	7.8	\$ 78.00	\$ 1,419.55	\$ (1,341.55)
TOWN OF WEST STOCKBRIDGE	71.48	\$ 714.80	\$ 65.30	\$ 649.50
TOWN OF WHATELY	57.72	\$ 577.20	\$ 74.80	\$ 502.40
TOWN OF WILBRAHAM	320.2	\$ 3,202.00	\$ 710.95	\$ 2,491.05
TOWN OF WILLIAMSBURG	103.12	\$ 1,031.20	\$ 124.10	\$ 907.10
TOWN OF WORTHINGTON	48.16	\$ 481.60	\$ 57.80	\$ 423.80
Total	10478.14	\$ 104,781.40	\$ 26,153.55	\$ 85,032.98



Doc Date	Invoice Number / Description	Original Amount	Discount Amount	Amount Paid
06/30/2016	062016REBATE *2010* JAN-JUN 2016 REBATE	2,493.85	0.00	2,493.85
Vendor Number 0000003376	Name TOWN OF BELCHERTOWN			
Check Number	Date	Total Amount	Discounts Taken	Total Paid Amount
0000682631	07/28/2016	\$2,493.85	\$0.00	\$2,493.85

Vendor Number
0000003376

Name
TOWN OF BELCHERTOWN

Check Number	0000682631
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Date
07/28/2016

Total Amount
\$2,493.85

Discounts Taken	
\$0.00	-

Total Paid Amount
\$2,493.85

THIS DOCUMENT HAS A COLORED BACKGROUND AND MICROPRINTING IN THE ENDORSEMENT SIGNATURE LINE. THE REVERSE SIDE OF THIS DOCUMENT HAS AN ARTIFICIAL WATERMARK.



Waste Management
P.O. Box 3027
Houston, TX 77253

ED

BANK OF AMERICA
COMMERCIAL DISBURSEMENT ACCOUNT
NORTHBROOK, IL

CHECK NO.

0000682631

70-2328 / 719

 Security features included. Details on **back**

PAY EXACTLY

\$2,493.85***

VOID AFTER 90 DAYS

DATE: 07/28/2016

PAY EXACTLY.

*****TWO THOUSAND FOUR HUNDRED NINETY-THREE AND 85 / 100 DOLLAR*****

TOWN OF BELCHERTOWN

Dept of Public Works

PO Box 306

Belchertown, MA 01007

AUTHORIZED SIGNATURE

5. AUTHORIZED SIGNATURE

11000068 263 111 1:07 1923 2841: 87653 044 1811