Appendices

Appendix A: MS4 Permit

NPDES Permit No. DC0000221

Modification #1

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM MUNICIPAL SEPARATE STORM SEWER SYSTEM PERMIT

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*

Government of the District of Columbia
The John A. Wilson Building
1350 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

is authorized to discharge from all portions of the municipal separate storm sewer system owned and operated by the District of Columbia to receiving waters named:

Potomac River, Anacostia River, Rock Creek and stream segments tributary to each such water body

in accordance with the Stormwater Management Program(s), subsequent updates, and related reports, strategies, plans, effluent limitations, monitoring requirements and other conditions set forth in this permit:

This modified permit and the authorization to discharge expires at midnight on October 7, 2016.

The effective date of this permit modification is: November 9, 2012.

Signed this 9th day of November, 2012.

Jon M. Capacasa, Director
Water Protection Division
U.S. Environmental Protection Agency
Region III

Simple Errata:

1. On page 9, Table 1, the part number for the Retrofit Program is corrected to 4.1.5.
2. On page 53, within the definition for "TMDL Implementation Plan", the reference to section 8.1.4 is replaced with the correct reference to section 4.10.3.

References to the Permittee:

In all places in the document where the term 'District' has been used in the context of a mandate to the permittee to carry out a provision, that term is replaced with the term 'permittee'. The term 'District' or 'District of Columbia' continues to be used when the reference is to the specific geographical area.

Revised portions of the Permit – the below language will replace the language in the corresponding areas of the Permit:

Part 1.4

The permittee must manage, implement and enforce a stormwater management program (SWMP) in accordance with the Clean Water Act and corresponding stormwater NPDES regulations, 40 C.F.R. Part 122, to meet the following requirements:

1.4.1. Effectively prohibit pollutants in stormwater discharges or other unauthorized discharges into the MS4 as necessary to comply with existing District of Columbia Water Quality Standards (DCWQS);

1.4.2. Attain applicable wasteload allocations (WLAs) for each established or approved Total Maximum Daily Load (TMDL) for each receiving water body, consistent with 33 U.S.C. § 1342(p)(3)(B)(iii); 40 C.F.R. § 122.44(k)(2) and (3); and

1.4.3. Comply with all other provisions and requirements contained in this permit, and in plans and schedules developed in fulfillment of this permit.

Compliance with the provisions contained in Parts 2 through 8 of this permit, including milestones and final dates for attainment of applicable WLAs, shall constitute adequate progress toward compliance with DCWQS and WLAs for this permit term.

Part 4.3.1:

4.3.1. Sanitary Sewage System Maintenance Overflow and Spill Prevention Response

The permittee shall implement an effective response protocol for overflows of the sanitary sewer system into the MS4. The response protocol shall clearly identify agencies responsible and telephone numbers and e-mail for any contact and shall contain at a minimum, procedures for:

1. Investigating any complaints received within 24 hours of the incident report.

2. Responding within two hours to overflows for containment.
3. Notifying appropriate sewer and public health agencies within 24 hours when the sanitary sewer overflows to the MS4.
4. Notifying the public in a timely and effective manner when SSO discharges to the MS4 may adversely affect public health.

This provision in no way authorizes sanitary sewer overflow discharges either directly or via the MS4.

Section 4.9.4.1:

4.9.4.1 The permittee shall continue to create opportunities for the public to participate in the decision making processes involving the implementation and update of the permittee's SWMP. In particular, the permittee shall provide meaningful opportunity for the public to participate in the development of the permittee's Consolidated TMDL Implementation Plan. The permittee shall continue to implement its process for consideration of public comments on their SWMP.

Section 4.10.3:

4.10.3 Consolidated TMDL Implementation Plan

For all TMDL wasteload allocations assigned to District MS4 discharges, the permittee shall develop, public notice and submit to EPA for review and approval a consolidated TMDL Implementation Plan within 30 months of the effective date of this permit provision. This Plan shall include, at a minimum, the following TMDLs and any subsequent updates:

1. TMDL for Biochemical Oxygen Demand (BOD) in the Upper and Lower Anacostia River (2001)
2. TMDL for Fecal Coliform Bacteria in the Upper and Lower Anacostia River (2003)
3. TMDL for Organics and Metals in the Anacostia River and Tributaries (2003)
4. TMDL for Fecal Coliform Bacteria in Kingman Lake (2003)
5. TMDL for Total Suspended Solids, Oil and Grease and Biochemical Oxygen Demand in Kingman Lake (2003)
6. TMDL for Fecal Coliform Bacteria in Rock Creek (2004)
7. TMDL for Organics and Metals in the Tributaries to Rock Creek (2004)
8. TMDL for Fecal Coliform Bacteria in the Upper, Middle and Lower Potomac River and Tributaries (2004)
9. TMDL for Organics, Metals and Bacteria in Oxon Run (2004)
10. TMDL for Organics in the Tidal Basin and Washington Ship Channel (2004)
11. TMDL for Sediment/Total Suspended Solids for the Anacostia River Basin in Maryland and the District (2007) [pending resolution of court vacature, Anacostia Riverkeeper, Inc. v. Jackson, No. 09-cv-97 (RCL)]
12. TMDL for PCBs for Tidal Portions of the Potomac and Anacostia Rivers in the District of Columbia, Maryland and Virginia (2007)

13. TMDL for Nutrients/Biochemical Oxygen Demand for the Anacostia River Basin in Maryland and the District (2008)
14. TMDL for Trash for the Anacostia River Watershed, Montgomery and Prince George's Counties, Maryland and the District of Columbia (2010)
15. TMDL for Nitrogen, Phosphorus and Sediment for the Chesapeake Bay Watershed (2010)

This Plan shall place particular emphasis on the pollutants in Table 4, but shall also evaluate other pollutants of concern for which relevant WLAs exist. EPA will incorporate elements of the Consolidated TMDL Implementation Plan as enforceable permit provisions, including milestones and final dates for attainment of applicable WLAs. The permittee shall fully implement the Plan upon EPA approval. This Plan shall preempt any existing TMDL implementation plans for the relevant WLAs. To account for any new or revised TMDL established or approved by EPA with wasteload allocations assigned to District MS4 discharges, the permittee shall submit an updated Consolidated TMDL Implementation Plan annually, as necessary. Such updates will account for any actions taken in the 12-month period preceding the date 6 months before the revision is due. If necessary, the first such update will be due 18 months after submittal of the initial Plan, with subsequent updates due on the anniversary of the submittal date.

The Plan shall include:

1. A specified schedule for attainment of WLAs that includes final attainment dates and, where applicable, interim milestones and numeric benchmarks.
   a. Numeric benchmarks will specify annual pollutant load reductions and the extent of control actions to achieve these numeric benchmarks.
   b. Interim milestones will be included where final attainment of applicable WLAs requires more than five years. Milestone intervals will be as frequent as possible but will in no case be greater than five (5) years.
2. Demonstration using modeling of how each applicable WLA will be attained using the chosen controls, by the date for ultimate attainment.
3. An associated narrative providing an explanation for the schedules and controls included in the Plan.
4. Unless and until an applicable TMDL is no longer in effect (e.g., withdrawn, reissued or the water delisted), the Plan must include the elements in 1-3 above for each TMDL as approved or established.
5. The current version of the Plan will be posted on the permittee's website.

Section 4.10.4:

4.10.4 Adjustments to TMDL Implementation Strategies

If evaluation data, as outlined in the monitoring strategy being developed per Part 5.1, indicate insufficient progress towards attaining any WLA covered in 4.10.1, 4.10.2 or 4.10.3, the permittee shall make the appropriate adjustments within six (6) months to address the insufficient progress and document those adjustments in the Consolidated TMDL

Implementation Plan. The Plan modification shall include a reasonable assurance demonstration of the additional controls to achieve the incorporated milestones. Annual reports must include a description of progress as evaluated against all implementation objectives, milestones and benchmarks, as relevant, outlined in Part 4.10.

Section 5.1.1:

5.1.1 Design of the Revised Monitoring Program

Within 30 months of the effective date of Part 4.10.3 of this permit the permittee shall develop, public notice and submit to EPA for review and approval a revised monitoring program. The permittee shall fully implement the program upon EPA approval.

Section 9

Permit Definitions:

"Benchmark" as used in this permit is a quantifiable goal or target to be used to assess progress toward "milestones" (see separate definition) and WLAs, such as a numeric goal for BMP implementation. If a benchmark is not met, the permittee should take appropriate corrective action to improve progress toward meeting milestones or other objectives. Benchmarks are intended as an adaptive management aid and generally are not considered to be enforceable.

"Milestone" as used in this permit is an interim step toward attainment of a WLA that upon incorporation into the permit will become an enforceable limit or requirement to be achieved by a stated date. A milestone should be expressed in numeric terms, i.e. as a volume reduction, pollutant load, specified implementation action or set of actions or other objective metric, when possible and appropriate.

"Permittee" refers to the Government of the District of Columbia.

PERMIT FOR THE DISTRICT OF COLUMBIA
MUNICIPAL SEPARATE STORM SEWER SYSTEM

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1. DISCHARGES AUTHORIZED UNDER THIS PERMIT

1.1 Permit Area

This permit covers all areas within the jurisdictional boundary of the District of Columbia served by, or otherwise contributing to discharges from, the Municipal Separate Storm Sewer System (MS4) owned or operated by the District of Columbia. This permit also covers all areas served by or contributing to discharges from MS4s owned or operated by other entities within the jurisdictional boundaries of the District of Columbia unless those areas have separate NPDES MS4 permit coverage or are specifically excluded herein from authorization under the District's stormwater program. Hereinafter these areas collectively are referred to as "MS4 Permit Area".

1.2 Authorized Discharges

This permit authorizes all stormwater point source discharges to waters of the United States from the District of Columbia's MS4 that comply with the requirements of this permit. This permit also authorizes the discharge of stormwater commingled with flows contributed by process wastewater, non-process wastewater, or stormwater associated with industrial activity provided such discharges are authorized under separate NPDES permits.

This permit authorizes the following non-stormwater discharges to the MS4 when appropriate stormwater activities and controls required through this permit have been applied and which are: (1) discharges resulting from clear water flows, roof drainage, dechlorinated water line flushing, landscape irrigation, ornamental fountains, diverted stream flows, rising ground waters, uncontaminated ground water infiltration to separate storm sewers, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation waters, springs, footing drains, lawn watering, individual resident car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, wash water, fire fighting activities, and similar types of activities; and (2) which are managed so that water quality is not further impaired and that the requirements of the federal Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*, and EPA regulations are met.

1.3 Limitations to Coverage

1.3.1 Non-stormwater Discharges

The permittee, as defined herein, shall effectively prohibit non-stormwater discharges into the MS4, except to the extent such discharges are regulated with an NPDES permit.

1.3.2 Waivers and Exemptions

This permit does not authorize the discharge of any pollutant from the MS4 which arises from or is based on any existing waivers and exemptions that may otherwise apply and are not consistent with the Federal Clean Water Act and other pertinent guidance, policies, and regulations. This narrative prohibition on the applicability of such waivers and exemptions extends to any activity that would otherwise be authorized under District law, regulations or

ordinance but which impedes the reduction or control of pollutants through the use of stormwater control measures and/or prevents compliance with the narrative /numeric effluent limits of this permit. Any such discharge not otherwise authorized may constitute a violation of this permit.

1.4 Discharge Limitations

The permittee must manage, implement and enforce a stormwater management program (SWMP) in accordance with the Clean Water Act and corresponding stormwater NPDES regulations, 40 C.F.R. Part 122, to meet the following requirements:

1.4.1. Effectively prohibit pollutants in stormwater discharges or other unauthorized discharges into the MS4 as necessary to comply with existing District of Columbia Water Quality Standards (DCWQS);

1.4.2. Attain applicable wasteload allocations (WLAs) for each established or approved Total Maximum Daily Load (TMDL) for each receiving water body, consistent with 33 U.S.C. § 1342(p)(3)(B)(iii); 40 C.F.R. § 122.44(k)(2) and (3); and

1.4.3. Comply with all other provisions and requirements contained in this permit, and in plans and schedules developed in fulfillment of this permit.

Compliance with the provisions contained in Parts 2 through 8 of this permit, including milestones and final dates for attainment of applicable WLAs, shall constitute adequate progress toward compliance with DCWQS and WLAs for this permit term.

2. LEGAL AUTHORITY, RESOURCES AND STORMWATER PROGRAM ADMINSTRATION

2.1 Legal Authority

2.1.1 The permittee shall use its existing legal authority to control discharges to and from the Municipal Separate Storm Sewer System in order to prevent or reduce the discharge of pollutants to achieve water quality objectives, including but not limited to applicable water quality standards. To the extent deficiencies can be addressed through regulation or other Executive Branch action, the permittee shall remedy such deficiencies within 120 days. Deficiencies that can only be addressed through legislative action shall be remedied within 2 years of the effective date of this permit, except where otherwise stipulated, in accordance with the District's legislative process. Any changes to or deficiencies in the legal authority shall be explained in each Annual Report.

2.1.2 No later than 18 months following the effective date of this permit, the permittee shall update and implement Chapter 5 of Title 21 of District of Columbia Municipal Regulations (Water Quality and Pollution) ("updated DC Stormwater Regulations"), to address the control of stormwater throughout the MS4 Permit Area. Such regulations shall be consistent with this

permit, and shall be at least as protective of water quality as the federal Clean Water Act and its implementing regulations require.

2.1.3 The permittee shall ensure that the above legal authority in no way restricts its ability to enter into inter-jurisdictional agreements with other District agencies and/or other jurisdictions affected through this permit.

2.1.4 Review and revise, where applicable, building, health, road and transportation, and other codes and regulations to remove barriers to, and facilitate the implementation of the following standards: (1) standards resulting from issuance of District stormwater regulations required by Section 2.1, paragraph 1 herein; and (2) performance standards required by this permit.

2.2 Fiscal Resources

The permittee, including all agencies and departments of the District as specified in section 2.3 below, shall provide adequate finances, staff, equipment and support capabilities to implement the existing Stormwater Management Program (SWMP) and the provisions of this permit. For the core program the permittee shall provide a dedicated funding source. Each annual report under Part 6 of this permit shall include a demonstration of adequate fiscal capacity to meet the requirements of this permit.

2.3 Stormwater Management Program Administration/Permittee Responsibilities

2.3.1 The Government of the District of Columbia is the permittee, and all activities of all agencies, departments, offices and authorities of the District must comply with the requirements of this permit. The permittee has designated the District Department of the Environment (DDOE) as the agency responsible for managing the MS4 Stormwater Management Program and all activities necessary to comply with the requirements of this permit and the Comprehensive Stormwater Management Enhancement Amendment Act of 2008 by coordinating and facilitating a collaborative effort among other city agencies and departments including but not limited to departments designated as "Stormwater Agencies" by the Comprehensive Stormwater Management Enhancement Amendment Act of 2008:

District Department of Transportation (DDOT);
Department of Public Works (DPW);
Office of Planning (OP);
Office of Public Education Facilities Modernization (OPEFM);
Department of Real Estate Services (DRES);
Department of Parks and Recreation; and
DC Water and Sewer Authority (also known as and hereinafter referred to as DC Water).

Each named entity is responsible for complying with those elements of the permit within its jurisdictional scope and authorities.

2.3.2 DDOE shall coordinate, and all agencies, offices, departments and authorities shall implement provisions of the existing MS4 Task Force Memorandum of Understanding (MOU) dated 2000, updated matrix of responsibilities (January 2008), and any subsequent updates; the MOU between DDOE and DC Water (2012) and any subsequent updates; and other institutional agreements to coordinate compliance activities among agency partners to implement the provisions of this permit. DDOE's major responsibilities under these MOUs and institutional agreements shall include:

1. Convening regular meetings and communication with MS4 Task Force agencies and other committees established to implement this permit to budget, assign and implement projects, and monitor, inspect and enforce all activities required by the MS4 permit.

2. Providing technical and administrative support for the MS4 Task Force and other committees established to implement this permit

3. Evaluating, assessing, and synthesizing results of the monitoring and assessment programs and the effectiveness of the implementation of management practices and coordinating necessary adjustments to the stormwater management program in order to ensure compliance.

4. Coordinating the completion and submission of all deliverables required by the MS4 Permit.

5. Projecting revenue needs to meet MS4 Permit requirements, overseeing the District's stormwater fees to fulfill revenue needs, and coordinating with DC Water to ensure the District's stormwater fee is collected.

6. Making available to the public and other interested and affected parties, the opportunity to comment on the MS4 stormwater management program.

2.3.3 Within 180 days of permit issuance, the permittee shall complete an assessment of additional governmental agencies and departments, non-governmental organizations, watershed groups or other community organizations in the District and adjacent states to partner with to administer required elements of the permit. Intra- and inter-agency agreements between relevant governmental and nongovernmental organizations shall be established to ensure successful coordination and implementation of stormwater management activities in accordance with the requirements of this permit. Additional government and nongovernmental organizations and programs to consider include; land use planning, brownfields redevelopment, fire department, building and safety, public health, parks and recreation, and federal departments and agencies, including but not limited to, the National Park Service, Department of Agriculture, Department of Defense, and General Services Administration, responsible for facilities in the District.

3. STORMWATER MANAGEMENT PROGRAM (SWMP) PLAN

The permittee shall continue to implement, assess and upgrade all of the controls,

procedures and management practices, described in this permit, and in the SWMP dated February 19, 2009, and any subsequent updates. This Program has been determined to reduce the discharge of pollutants to the maximum extent practicable. The Stormwater Management Program is comprised of all requirements in this permit. All existing and new strategies, elements, initiatives, schedules or programs required by this permit must be documented in the SWMP Plan, which shall be the consolidated document of all stormwater program elements. Updates to the plan shall be consistent with all compliance deadlines in this permit. A current plan shall be posted on the permittee's website at an easily accessible location at all times.

New Stormwater Management Program strategies, elements, initiatives and plans required to be submitted to EPA for review and approval are included in Table 1.

TABLE 1
Elements Requiring EPA Review and/or Approval

Element	**Submittal Date (from effective date of this permit)**
Anacostia River Watershed Trash Reduction Calculation Methodology (4.10)	1 year
Catch Basin Operation and Maintenance Plan (4.3.5.1)	18 months
Outfall Repair Schedule (4.3.5.3)	18 months
Off-site Mitigation/Payment-in-Lieu Program (4.1.3)	18 months
Retrofit Program (4.1.5)	2 years
Consolidated TMDL Implementation Plan (4.10.3)	2 years
Revised Monitoring Program (5.1)	2 years
Revised Stormwater Management Program Plan (3)	4 years

No later than 3 years from the issuance date of this permit the permittee shall public notice a fully updated Plan including all of the elements required in this permit. No later than 4 years from the issuance date of this permit the permittee shall submit to EPA the fully updated plan for review and approval, as part of the application for permit renewal.

The measures required herein are terms of this permit. These permit requirements do not prohibit the use of 319(h) funds for other related activities that go beyond the requirements of this permit, nor do they prohibit other sources of funding and/or other programs where legal or contractual requirements preclude direct use for stormwater permitting activities.

TABLE 2
Legal Authority for Selected Required Program Stormwater Elements

Required Program Application Element	**Regulatory References**
Adequate Legal Authority	40 C.F.R. § 122.26(d)(2)(I)(C)-(F)

Green technology stormwater management practices, which incorporate technologies and practices across District activities.	Chapter 5 of Title 21 of District of Columbia Municipal Regulations (Water Quality and Pollution)
Existing Structural and Source Controls	40 C.F.R. § 122.26(d)(2)(iv)(A)(1)
Roadways	40 C.F.R. § 122.26(d)(2)(iv)(A)(3)
Pesticides, Herbicides, and Fertilizers Application	40 C.F.R. § 122.26(d)(2)(iv)(A)(6)
Municipal Waste Sites	40 C.F.R. § 122.26(d)(2)(iv)(A)(5)
Spill Prevention and Response	40 C.F.R. § 122.26(d)(2)(iv)(B)(4)
Infiltration of Seepage	40 C.F.R. § 122.26(d)(2)(iv)(B)(7)
Stormwater Management Program for Commercial and Residential Areas	40 C.F.R. § 122.26(d)(2)(iv)(A)
Manage Critical Source Areas	40 C.F.R. § 122.26(d)(iii)(B)(6)
Stormwater Management for Industrial Facilities	40 C.F.R. § 122.26(d)(2)(iv)(C)
Industrial and High Risk Runoff	40 C.F.R. § 122.26(d)(2)(iv)(C), (iv)(A)(5)
Identify Priority Industrial Facilities	40 C.F.R. § 122.26(d)(2)(iv)(C)(1)
Illicit Discharges and Improper Disposal	40 C.F.R. § 122.26(d)(2)(iv)(B)(1)-(5), (iv)(B)(7)
Flood Control Projects	40 C.F.R. § 122.26(d)(2)(iv)(A)(4)
Public Education and Participation	40 C.F.R. § 122.26(d)(2)(iv)(A)(6), (iv)(B)(5), (iv)(B)(6)

Monitoring and Assessment and Reporting	40 C.F.R. § 122.26(d)(2)(iv)(D)(v)
Monitoring Program	40 C.F.R. § 122.26(d)(2)(iv)(B)(2), (iii), iv(A), (iv)(C)(2)
Characterization Data	40 C.F.R. § 122.26(d)(2)(iii)(B)-(D), 40 C.F.R. § 122.21(g)(7)
Reporting	40 C.F.R. § 122.41(l)

4. IMPLEMENTATION OF STORMWATER CONTROL MEASURES

4.1 Standard for Long-Term Stormwater Management

The permittee shall continue to develop, implement, and enforce a program in accordance with this permit and the permittee's updated SWMP Plan that integrates stormwater management practices at the site, neighborhood and watershed levels that shall be designed to mimic pre-development site hydrology through the use of on-site stormwater retention measures (e.g., harvest and use, infiltration and evapotranspiration), through policies, regulations, ordinances and incentive programs

4.1.1 Standard for Stormwater Discharges from Development

No later than 18 months following issuance of this permit, the permittee shall, through its Updated DC Stormwater Regulations or other permitting or regulatory mechanisms, implement one or more enforceable mechanism(s) that will adopt and implement the following performance standard for all projects undertaking development that disturbs land greater than or equal to 5,000 square feet:

Require the design, construction and maintenance of stormwater controls to achieve on-site retention of 1.2" of stormwater from a 24-hour storm with a 72-hour antecedent dry period through evapotranspiration, infiltration and/or stormwater harvesting and use for all development greater than or equal to 5,000 square feet.

The permittee may allow a portion of the 1.2" volume to be compensated for in a program consistent with the terms and requirements of Part 4.1.3.

4.1.2 Code and Policy Consistency, Site Plan Review, Verification and Tracking

By the end of this permit term the permittee must review and revise, as applicable, stormwater, building, health, road and transportation, and other codes and regulations to remove barriers to, and facilitate the implementation of the retention performance standard required in

Section 4.1.1. The permittee must also establish/update and maintain a formal process for site plan reviews and a post-construction verification process (e.g., inspections, submittal of as-builts) to ensure that standards are appropriately implemented. The permittee must also track the on-site retention performance of each project subject to this regulatory requirement.

4.1.3 Off-Site Mitigation and/or Fee-in Lieu for all Facilities

Within 18 months of the effective date of this permit the permittee shall develop, public notice, and submit to EPA for review and comment an off-site mitigation and/or fee-in-lieu program to be utilized when projects will not meet stormwater management performance standard as defined in Section 4.1.1. The permittee has the option of implementing an off-site mitigation program, a fee-in-lieu program, or both. Any allowance for adjustments to the retention standard shall be defined in the permittee's regulations. The program shall include at a minimum:

1. Establishment of baseline requirements for on-site retention and for mitigation projects. On-site volume plus off-site volume (or fee-in-lieu equivalent or other relevant credits) must equal no less than the relevant volume in Section 4.1.1;
2. Specific criteria for determining when compliance with the performance standard requirement for on-site retention cannot technically be met based on physical site constraints, or a rationale for why this is not necessary;
3. For a fee-in-lieu program, establishment of a system or process to assign monetary values at least equivalent to the cost of implementation of controls to account for the difference in the performance standard, and the alternative reduced value calculated; and
4. The necessary tracking and accounting systems to implement this section, including policies and mechanisms to ensure and verify that the required stormwater practices on the original site and appropriate required off-site practices stay in place and are adequately maintained.

The program may also include incentives for achieving other important environmental objectives such as ongoing measurable carbon sequestration, energy savings, air quality reductions in green house gases, or other environmental benefits for which the program can develop methods for quantifying and documenting those outcomes. Controls implemented to achieve those outcomes are subject to the same level of site plan review, inspection, and operation and maintenance requirements as stormwater controls.

District-owned transportation right-of-way projects are subject to a similarly stringent process for determining an alternate performance volume, but for the duration of this permit term need not conduct off-site mitigation or pay into a fee-in-lieu program to compensate for the difference.

4.1.4 Green Landscaping Incentives Program

No later than one year following permit issuance, the permittee shall develop an incentive program to increase the quantity and quality of planted areas in the District while allowing flexibility for developers and designers to meet development standards. The Incentive Program

shall use such methods as a scoring system to encourage green technology practices such as larger plants, permeable paving, green roofs, vegetated walls, preservation of existing trees, and layering of vegetation along streets and other areas visible to the public.

4.1.5 Retrofit Program for Existing Discharges

4.1.5.1 Within two years of the effective date of this permit the permittee shall develop, public notice, and submit to EPA for review and approval a program that establishes performance metrics for retrofit projects. The permittee shall fully implement the program upon EPA approval. The starting point for the performance metrics shall be the standard in Section 4.1.1. Performance metrics may be established generally for all retrofit projects, or for categories of projects, e.g., roads, sidewalks, parking lots, campuses. Specific site conditions may constitute justifications for setting a performance standard at something less than the standard in Section 4.1.1, and a similar calculator or algorithm process may be used in conjunction with a specific site analysis.

4.1.5.2 The permittee, with facilitation assistance from EPA Region III, will also work with major Federal landholders, such as the General Services Administration and the Department of Defense, with the objective of identifying retrofit opportunities, documenting federal commitments, and tracking pollutant reductions from relevant federal actions.

4.1.5.3 For each retrofit project estimate the potential pollutant load and volume reductions achieved through the DC Retrofit program by major waterbody (Rock Creek, Potomac, Anacostia) for the following pollutants: Bacteria (E. coli), Total Nitrogen, Total Phosphorus, Total Suspended Solids, Cadmium, Copper, Lead, Zinc, and Trash. These estimates shall be included in the annual report following implementation of the project.

4.1.5.4 The DC Retrofit Program shall implement retrofits for stormwater discharges from a minimum of 18,000,000 square feet of impervious surfaces during the permit term. A minimum of 1,500,000 square feet of this objective must be in transportation rights-of-way.

4.1.5.5 No later than 18 months following issuance of this permit, the permittee shall, through its Updated DC Stormwater Regulations or other permitting or regulatory mechanisms, implement an enforceable mechanism that will adopt and implement stormwater retention requirements for properties where less than 5,000 square feet of soil is being disturbed but where the buildings or structures have a footprint that is greater than or equal to 5,000 square feet and are undergoing substantial improvement. Substantial improvement, as consistent with District regulations at 12J DCMR § 202, is any repair, alteration, addition, or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started. The characteristics of these types of projects may constitute justifications for setting a performance standard at something less than the standard in Section 4.1.1.

4.1.5.6 The permittee shall ensure that every major renovation/rehabilitation project for District-owned properties within the inventory of DRES and OPEFM (e.g., schools and school administration buildings) includes on-site stormwater retention measures, including but not

limited to green roofs, stormwater harvest/reuse, and/or other practices that can achieve the retention performance standard.

4.1.6 Tree Canopy

4.1.6.1 No later than one year following issuance of this permit, the permittee shall develop and public notice a strategy to reduce the discharge of stormwater pollutants by expanding tree canopy throughout the city. The strategy shall identify locations throughout the District where tree plantings and expanded tree boxes are technically feasible and commit to specific schedules for implementation at locations throughout the District, with highest priority given to projects that offer the greatest stormwater retention potential. The strategy shall also include the necessary elements to achieve the requirements of Section 4.1.6.2.

4.1.6.2 The permittee shall achieve a minimum net annual tree planting rate of 4,150 plantings annually within the District MS4 area, with the objective of a District-wide urban tree canopy coverage of 40% by 2035. The annual total tree planting shall be calculated as a net increase, such that annual mortality is also included in the estimate. The permittee shall ensure that trees are planted and maintained, including requirements for adequately designed and sized tree boxes, to achieve optimal stormwater retention and tree survival rate. Trees shall be planted in accordance with the Planting Specifications issued by the International Society of Arboriculture as appropriate to the site conditions.

4.1.6.3 The permittee shall annually document the total trees planted and make an annual estimate of the volume of stormwater that is being removed from the MS4 (and combined system, as relevant) in a typical year of rainfall as a result of the maturing tree canopy over the life of the MS4 permit. Also report annually on the status of achieving 40% canopy District-wide.

4.1.7 Green Roof Projects

4.1.7.1 Complete a structural assessment of all District properties maintained by DRES and slated for redevelopment to determine current roof conditions and the feasibility for green roof installation. These assessments shall be performed on an ongoing basis for all properties as they are considered for redevelopment. Based on the structural assessment and other factors, identify all District-owned properties where green roof projects are technically feasible and commit to specific schedules for implementing these projects. Highest priority shall be given to projects that offer the greatest stormwater capture potential.

4.1.7.2 The permittee shall install at a minimum 350,000 square feet of green roofs on District properties during the term of the permit (including schools and school administration buildings).

4.1.7.3 Document the square footage of green roof coverage in the District, whether publicly or privately owned, report any incentive programs implemented during the permit term, and estimate the volume of stormwater that is being removed from the MS4 (and combined

system, as relevant) in a typical year of rainfall as a result of the combined total green roof facilities in the District.

4.2 Operation and Maintenance of Stormwater Capture Practices

4.2.1 District Owned and Operated Practices.

Within two years of the effective date of this permit, develop and implement operation and maintenance protocols and guidance for District-owned and operated on-site retention practices (development and retrofits) to include maintenance needs, inspection frequencies, estimated maintenance frequencies, and a tracking system to document relevant information. Provide training to all relevant municipal employees and contractors, with regular refreshers, as necessary.

4.2.2 Non-District Owned and Operated Practices.

In conjunction with updating of relevant ordinances and policies, develop accountability mechanisms to ensure maintenance of stormwater control measures on non-District property. Those mechanisms may include combinations of deed restrictions, ordinances, maintenance agreements, or other policies deemed appropriate by the permittee. The permittee must also include a long-term verification process of O&M, which may include municipal inspections, 3rd party inspections, owner/operator certification on a frequency deemed appropriate by the permittee, and/or other mechanisms. The permittee must continue to maintain an electronic inventory of practices on private property to include this information.

4.2.3 Stormwater Management Guidebook and Training

4.2.3.1 No later than 18 months from the permit issuance date, the permittee shall finalize a Stormwater Management Guidebook to be available for wide-spread use by land use planners and developers. The Stormwater Management Guidebook shall provide regular updates, as applicable, in a format that facilitates such regular updates, and shall include objectives and specifications for integration of stormwater management technologies, including on site retention practices, in the areas of:

a. Site Assessment.
b. Site Planning and Layout.
c. Vegetative Protection, Revegetation, and Maintenance.
d. Techniques to Minimize Land Disturbance.
e. Techniques to Implement Measures at Various Scales.
f. Integrated Water Resources Management Practices.
g. Designing to meet the required performance standard(s).
h. Flow Modeling Guidance.
i. Hydrologic Analysis.
j. Construction Considerations.
k. Operation and Maintenance

4.2.3.2 The permittee shall continue to provide key industry, regulatory, and other stakeholders with information regarding objectives and specifications of green infrastructure practices contained in the Stormwater Management Guidebook through a training program. The Stormwater Management training program will include at a minimum the following:

a. Stormwater management/green technology practices targeted sessions and materials for builders, design professionals, regulators, resource agencies, and stakeholders.
b. Materials and data from stormwater management/green technology practices pilot projects and demonstration projects including case studies.
c. Design and construction methods for integration of stormwater management/green technology practices measures at various project scales.
d. Guidance on performance and cost of various types of stormwater management/green technology practices measures in the District.

4.3 Management of for District Government Areas

Procedures to reduce the discharge of pollutants in stormwater runoff shall include, but not be limited to:

4.3.1 Sanitary Sewage System Maintenance Overflow and Spill Prevention Response

The permittee shall implement an effective response protocol for overflows of the sanitary sewer system into the MS4. The response protocol shall clearly identify agencies responsible and telephone numbers and e-mail for any contact and shall contain at a minimum, procedures for:

1. Investigating any complaints received within 24 hours of the incident report.
2. Responding within two hours to overflows for containment.
3. Notifying appropriate sewer and public health agencies within 24 hours when the sanitary sewer overflows to the MS4.
4. Notifying the public in a timely and effective manner when SSO discharges to the MS4 may adversely affect public health.

This provision in no way authorizes sanitary sewer overflow discharges either directly or via the MS4.

4.3.2 Public Construction Activities Management

The permittee shall implement and comply with the Development and Redevelopment and the Construction requirements in Part 4.6 of this permit at all permittee-owned or operated public construction projects.

The permittee shall obtain discharge authorization under the applicable EPA Construction General permit for construction activities and comply with provisions therein.

4.3.3 Vehicle Maintenance/Material Storage Facilities/ Municipal Operations.

The permittee shall implement stormwater pollution prevention measures at all permittee-owned, leased facilities and job sites including but not limited to vehicle/ equipment maintenance facilities, and material storage facilities.

For vehicle and equipment wash areas and municipal facilities constructed, redeveloped, or replaced, the permittee shall eliminate discharges of wash waters from vehicle and equipment washing into the MS4 by implementing any of the following measures at existing facilities with vehicle or equipment wash areas:

1. Self-contain, and haul off-site for disposal;
2. Equip with a clarifier; or
3. Equip with an alternative pre-treatment device.

4.3.4 Landscape and Recreational Facilities Management, Pesticide, Herbicide, Fertilizer and Landscape Irrigation

4.3.4.1 The permittee shall further reduce pollutants and pollutant discharges associated with the storage and application of pesticides, fertilizers, herbicides, the use of other toxic substances and landscape irrigation according to an integrated pest management program (IPM). The IPM shall be an ecosystem based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, use of resistant varieties, and use of low or no chemical and irrigation input landscapes, in accordance with the provisions of this permit, procedures and practices described in the SWMP and regulations.

The permittee shall further utilize IPM controls to reduce pollutants related to the storage and application of pesticides, herbicides, and fertilizers applied by employees or contractors, to public rights-of-way, parks, and other District property to ensure that:

a. Pesticides are used only if monitoring indicates they are needed according to established guidelines;

b. Fertilizers are used only when soil tests indicate that they are necessary, and only in minimum amounts and for needed purposes (e.g., seed germination).

c. Treatments are made with the purpose of removing only the target organism;

d. Pest controls are selected and applied in a manner that minimizes risks to human health, beneficial, non-target organisms, and the environment;

e. No pesticides or fertilizers are applied to an area immediately prior to an expected rain event, or during or immediately following a rain event, or when water is flowing off the area;

f. No banned or unregistered pesticides are stored or applied;

g. All staff applying pesticides are certified or are under the direct supervision of a pesticide applicator certified in the appropriate category;

h. Procedures are implemented to encourage the retention and planting of native and/or non-invasive, naturalized vegetation to reduce water, pesticide and fertilizer needs;

i. Pesticides and fertilizers are stored indoors or under cover on paved surfaces or enclosed in secondary containment and storage areas inspected regularly to reduce the potential for spills; and

j. Landscapes that maximize on-site retention of stormwater, while minimizing mowing, chemical inputs and irrigation are given preference for all new landscape installation.

4.3.4.2 The permittee shall coordinate internally among departments for the purpose of ensuring that pesticide and fertilizer use within its jurisdiction does not threaten water quality.

4.3.4.3 The permittee shall partner with other organizations to ensure that pesticide and fertilizer use within their jurisdiction does not threaten water quality.

4.3.4.4 The permittee shall continue to conduct education and outreach, as well as provide incentives, to curtail the use of turf-grass fertilizers for the purpose of reducing nitrogen and phosphorous discharges to surface waters. The program shall incentivize the use of vegetative landscapes other than turf grass and other measures to restrict the use of turf grass fertilizers.

4.3.4.5 The permittee shall use GIS layers of public land and sewersheds, as well as background data, to identify priority areas for a targeted strategy to reduce the sources of pesticides, herbicides, and fertilizers that contaminate the stormwater runoff, and report progress toward completing the screening characterization in the next Updated SWMP.

4.3.4.6 The permittee shall include in each Annual Report a report on the implementation of the above application procedures, a history of the improvements in the control of these materials, and an explanation on how these procedures will meet the requirements of this permit.

4.3.5 Storm Drain System Operation and Management and Solids and Floatables Reduction

4.3.5.1 Within 18 months of the effective date of this permit, the permittee shall complete, public notice and submit to EPA for review and approval a plan for optimal catch basin inspections, cleaning and repairs. The permittee shall fully implement the plan upon EPA approval.

4.3.5.2 Until such time as the catch basin maintenance study has been completed and approved, the permittee shall ensure that each catch basin within the DC MS4 Permit Area is cleaned at least once annually during the life of the permit. The permittee shall continue to use strategies for coordinated catch basin cleaning and street-sweeping that will optimize reduction of stormwater pollutants.

4.3.5.3 Within 18 months of the effective date of this permit, and consistent with the 2006 Outfall Survey, the permittee shall complete, public notice and submit to EPA for review and approval an outfall repair schedule to ensure that approximately 10% of all outfalls needing repair are repaired annually, with the overall objective of having all outfalls in good repair by 2022. This schedule may be combined with the catch basin maintenance study outlined in 4.3.5.1. The repair schedule shall be fully implemented upon EPA approval.

4.3.5.4 The permittee shall comply with the Anacostia River Trash TMDL implementation provisions in Part 4.10 of this permit and apply the technologies and other activities developed in the Anacostia River Watershed Trash TMDL throughout the entire MS4 Permit Area. The permittee shall continue to report the progress of trash reduction in the Consolidated Annual Report.

4.3.6 Streets, Alleys and Roadways

4.3.6.1 Street sweeping shall be conducted on no less than 641 acres of roadway in the MS4 area annually in accordance with the following schedule:

TABLE 3
Street Sweeping

Area/Street Classification	Frequency
Arterials-heavily developed commercial and central business districts with considerable vehicular and pedestrian traffic	At least nine (9) times per year
Industrial areas	At least six (6) times per year
Residential-residential areas with limited throughway and pedestrian traffic AND neighborhood streets which are used for local purposes only	At least four (4) times per year
Central Business District/Commercial-neighborhood business districts and main streets with moderate vehicular and pedestrian traffic	At least one (1) time every two weeks

Environmental hot spots in the Anacostia River Watershed	At least two (2) times per month March through October

4.3.6.2 Standard road repair practices shall include limiting the amount of soil disturbance to the immediate area under repair. Stormwater conveyances which are denuded shall be resodded, reseeded and mulched, or otherwise stabilized for rapid revegetation, and these areas should have effective erosion control until stabilized.

4.3.6.3 The permittee shall continue to evaluate and update the use, application and removal of anti-icers, chemical deicers, salt, sand, and/or sand/deicer mixtures in an effort to minimize the impact of these materials on water quality. The permittee shall investigate and implement techniques available for reducing pollution from deicing salts in snowmelt runoff and runoff from salt storage facilities. The permittee shall evaluate and implement the use of porous/permeable surfaces that require less use of deicing materials and activities. This evaluation shall be made a part of an overall investigation of ways to meet the requirements of the Clean Water Act and reported in each Annual Report.

4.3.6.4 The permittee shall continue to implement and update a program to ensure that excessive quantities of snow and ice control materials do not enter the District's water bodies. The permittee shall report its progress in implementing the program in each Annual Report. Except during a declared Snow Emergency when the permittee determines that the foremost concern of snow removal activities is public health and safety, it shall avoid snow dumping or storage in areas adjacent to water bodies, wetlands, and areas near public or private drinking water wells which would ultimately reenter the MS4.

4.3.7 Infrastructure Maintenance/Pollution Source Control Maintenance

The permittee shall continue to implement an operation and maintenance program that incorporates good housekeeping components at all municipal facilities located in the DC MS4 Permit Area, including but not limited to; municipal waste water treatment facility, potable drinking water facility, municipal fleet operations, maintenance garages, parks and recreation, street and infrastructure maintenance, and grounds maintenance operations, libraries and schools. The permittee shall document the program in the Annual Report, as required at Section 6.2 herein. The permittee shall, at a minimum:

1. Continue to implement maintenance standards at all municipal facilities that will protect the physical, chemical and biological integrity of receiving waters.

2. Continue to implement an inspection schedule in which to perform inspections to determine if maintenance standards are being met. Inspections shall be performed no less than once per calendar year and shall provide guidance in Stormwater Pollution Prevention Plan development and implementation, where needed.

3. Continue to implement procedures for record keeping and tracking inspections and maintenance at all municipal facilities.

4. Continue to implement an inspection and maintenance program for all permittee-owned management practices, including post-construction measures.

5. Continue to ensure proper operation of all treatment management practices and maintain them as necessary for proper operation, including all post-construction measures.

6. Ensure that any residual water following infrastructure maintenance shall be self-contained and disposed of legally in accordance with the Clean Water Act.

4.3.8 Public Industrial Activities Management/Municipal and Hazardous Facilities

For any municipal activity associated with industrial activity, as defined by 40 C.F.R. § 122.26, which discharges stormwater to, from and through the DC MS4, the permittee shall obtain separate coverage under either: (1) the EPA Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP) (As modified May 27, 2009); or (2) an individual permit.

4.3.9 Emergency Procedures

The permittee may conduct repairs of essential public service systems and infrastructure in emergency situations. An emergency includes only those situations included as conditions necessary for demonstration of an upset at 40 C.F.R. 122.41(n). For each claimed emergency, the permittee shall submit to the Permitting Authority a statement of the occurrence of the emergency, an explanation of the circumstances, and the measures that were implemented to reduce the threat to water quality, no later than required by applicable Clean Water Act regulations.

4.3.10 Municipal Official Training

The permittee shall continue to implement an on-going training program for those employees specified below, and any other employees whose job functions may impact stormwater program implementation. The training program shall address the importance of protecting water quality, the requirements of this permit, design, performance, operation and maintenance standards, inspection procedures, selecting appropriate management practices, ways to perform their job activities to prevent or minimize impacts to receiving waters, and procedures for tracking, inspecting and reporting, including potential illicit discharges. The permittee shall provide follow-up and refresher training at a minimum of once every twelve months, and shall include any changes in procedures, techniques or requirements.

The training program shall include, but is not limited to, those employees who work in the following areas:

1. Municipal Planning
2. Site plan review
3. Design
4. Construction
5. Transportation planning and engineering
6. Street/sewer and right-of-way construction and maintenance
7. Water and sewer departments
8. Parks and recreation department
9. Municipal water treatment and waste water treatment
10. Fleet maintenance
11. Fire and police departments
12. Building maintenance and janitorial
13. Garage and mechanic crew
14. Contractors and subcontractors who may be contracted to work in the above described
15. areas
16. Personnel responsible for answering questions about the permittee's stormwater program,
17. including persons who may take phone calls about the program
18. Any other department of the permittee that may impact stormwater runoff

4.4 Management of Commercial and Institutional Areas

The permittee shall establish and implement policies and procedures to reduce the discharge of pollutants in stormwater runoff from all commercial and institutional (including federal) areas covered by this permit.

The permittee shall ensure maintenance of all stormwater management controls in commercial and institutional land areas in accordance with the following provisions:

1. Tracking all controls;
2. Inspecting all controls on a regular basis, according to an inspection schedule;
3. Ensure compliance with the MS4 permit and municipal ordinances at commercial and institutional facilities.

4.4.1 Inventory of Critical Sources and Source Controls

4.4.1.1 The permittee shall continue to maintain a watershed-based inventory or database of all facilities within its jurisdiction that are critical sources of stormwater pollution. Critical sources to be tracked shall include the following:

a. Automotive service facilities, *e.g.*, service, fueling and salvage facilities;
b. Industrial activities, as defined at 40 C.F.R. §§ 122.26(b)(14); and
c. Construction sites exceeding one acre, or sites under one acre that are part of a larger common plan of development.
d. Dry cleaners

e. Any other facility the permittee has identified as a Critical Source

4.4.1.2 The permittee shall include the following minimum fields of information for each industrial and commercial facility identified as a critical source:

a. Name of facility and name of owner/ operator;
b. Address of facility;
c. Size of facility; and
d. Activities conducted at the facility that could impact stormwater.
e. Practices and/or measures to control pollutants.
f. Inspection and maintenance schedules, dates and findings.

4.4.1.3 The permittee shall update its inventory of critical sources at least annually. The update may be accomplished through collection of new information obtained through field activities or through other readily available inter and intra-agency informational databases (*e.g.*, business licenses, pretreatment permits, sanitary sewer hook-up permits, and similar information).

4.4.2 Inspection of Critical Sources

The permittee shall continue to inspect all commercial facilities identified in Part 4.4.1. herein and any others found to be critical sources twice during the five-year term of the permit. A minimum interval of six months between the first and the second mandatory compliance inspection is required, unless a follow-up inspection to ensure compliance must occur sooner.

4.4.3 Compliance Assurance.

At each facility identified as a critical source, the permittee's inspector(s) shall verify that the operator is implementing a control strategy necessary to protect water quality. Where the permittee determines that existing measures are not adequate to protect water quality, the permittee shall require additional site-specific controls sufficient to protect water quality.

4.5 <u>Management of Industrial Facilities and Spill Prevention</u>

4.5.1 The permittee shall continue to implement a program to monitor and control pollutants in stormwater discharged from Industrial Facilities located within the MS4 Permit Area, as defined herein, pursuant to the requirements in 40 C.F.R. § 122.26(d)(2)(iv)(C). These facilities shall include, but are not limited to:

a. Private Solid Waste Transfer Stations
b. Hazardous Waste Treatment, Disposal, and/or Recovery Plants
c. Industrial Facilities subject to SARA or EPCRA Title III
d. Industrial Facilities with NPDES Permits
e. Industrial facilities with a discharge to the MS4

4.5.2 The permittee shall continue to maintain and update the industrial facilities database.

4.5.3 The permittee shall continue to perform or provide on-site assistance/inspections and outreach focused on the development of stormwater pollution prevention plans and NPDES permit compliance.

4.5.4 The permittee shall continue to refine and implement procedures to govern the investigation of facilities suspected of contributing pollutants to the MS4, including at a minimum: (i) a review, if applicable, of monitoring data collected by the facility pursuant to its NPDES permit; and (ii) wet weather screening as required by Part 5.2.1 herein (including collecting data on discharges from industrial sites). These procedures shall be submitted as part of each Annual Report required by Part 6.2 herein.

4.5.5 The permittee shall continue to implement the prohibition against illicit discharges, control spills, and prohibit dumping. Continue to implement a program to prevent, contain, and respond to spills that may discharge to the MS4, and report on such implementation submitted in each Annual Report. The spill response program may include a combination of spill response actions by the permittee and/or another public or private entity.

4.5.6 The permittee shall report progress in developing and carrying out industrial-related programs in each Annual Report required by Section 6 herein. Provide an explanation as to how the implementation of these procedures will meet the requirements of the Clean Water Act.

4.6 Stormwater Management for Construction Sites

4.6.1 Continue implementation of the Program that reduces the discharge of pollutants from construction sites. In each Annual Report, the permittee shall evaluate and report to determine if the existing practices meet the requirements of 40 C.F.R. § 122.26(d)(2)(iv)(A) and (D).

4.6.2 Continue the review and approval process of the sediment and erosion control plans under this program. Also, the permittee shall ensure that all construction projects impacting one acre or greater, or less than one acre when part of a larger common plan of development or sale equal to or larger than one acre, are not authorized until documentation is provided that they have received EPA NPDES Construction General Permit Coverage.

4.6.3 Continue to implement inspection and enforcement procedures, including but not limited to inspection of permitted construction sites that disturb more than 5,000 square feet of soil as follows:

1. First inspection prior to ground disturbing activities to review planned sediment and erosion control measures;
2. Second inspection to verify proper installation and maintenance of sediment and erosion control measures;

3. Third inspection to review planned installation and maintenance of stormwater management practices;
4. Fourth inspection to verify proper installation of stormwater management practices following final stabilization of the project site; and
5. Other inspections as necessary to ensure compliance with relevant standards and requirements.

4.6.4 When a violation of local erosion and sediment control ordinances occurs, the permittee shall follow existing enforcement procedures and practices using standardized reports as part of the inspection process to provide accurate record keeping of inspections of construction sites. The permittee shall use a listing of all violations and enforcement actions to assess the effectiveness of the Enforcement Program in each Annual Report.

4.6.5 Continue with educational measures for construction site operators (Section 4.9 of this permit) that consist, at a minimum, of providing guidance manuals and technical publications.

4.6.6 Report progress in developing and carrying out the above construction-related programs in each Annual Report required by Parts 6.2 herein, including: (i) an explanation as to how the implementation of these procedures will meet the requirements of the Clean Water Act; (ii) an explanation as to how the implementation of these procedures, particularly with regard to District "waivers and exemptions", will meet the requirements of the Clean Water Act; and (iii) discussion of progress toward meeting TMDL and the District Watershed Implementation Plan deadlines.

4.7 Illicit Discharges and Improper Disposal.

4.7.1 The permittee shall continue to implement an ongoing program to detect illicit discharges, pursuant to the SWMP, and Part 4 of this permit, and to prevent improper disposal into the storm sewer system, pursuant to 40 C.F.R. § 122.26(d)(2)(iv)(B)(1). Such program shall include, at a minimum the following:

a. An updated schedule of procedures and practices to prevent illicit discharges, as defined at 40 C.F.R. § 122.26(b)(2), and, pursuant to 40 C.F.R. § 122.26(d)(2)(iv)(B)(1), to detect and remove illicit discharges as defined herein;

b. An updated inventory (organized by watershed) of all outfalls that discharge through the MS4 including any changes to the identification and mapping of existing permitted outfalls. Such inventory shall include, but not be limited to, the name and address, and a description (such as SIC code) which best reflects the principal products or services provided by each facility which may discharge to the MS4;

c. Continue to implement an illicit connection detection and enforcement program to perform dry weather flow inspections in target areas;

d. Visual inspections of targeted areas;

e. Issuance of fines, tracking and reporting illicit discharges, and reporting progress on stopping targeted illicit discharges, and in appropriate cases, chemical testing immediately after discovery of an illicit discharge;

f. Enforcement procedures for illicit discharges set forth in Part 4 herein;

g. All necessary inspection, surveillance, and monitoring procedures to remedy and prevent illicit discharges. The permittee shall submit an inspection schedule, inspection criteria, documentation regarding protocols and parameters of field screening, and allocation of resources as a part of each Annual Report.

h. The permittee shall continue to implement procedures to prevent, contain, and respond to spills that may discharge into the MS4. The permittee shall provide for the training of appropriate personnel in spill prevention and response procedures.

i. The permittee shall report the accomplishments of this program in each Annual Report.

4.7.2 The permittee shall continue to ensure the implementation of a program to further reduce the discharge of floatables (e.g. litter and other human-generated solid refuse). The floatables program shall include source controls and, where necessary, structural controls.

4.7.3 The permittee shall continue to implement the prohibition against the discharge or disposal of used motor vehicle fluids, household hazardous wastes, grass clippings, leaf litter, and animal waste into separate storm sewers. The permittee shall ensure the implementation of programs to collect used motor vehicle fluids (at a minimum oil and anti-freeze) for recycle, reuse, and proper disposal and to collect household hazardous waste materials (including paint, solvents, pesticides, herbicides, and other hazardous materials) for recycle, reuse, or proper disposal. The permittee shall ensure that such programs are readily available within the District, and that they are publicized and promoted on a regular basis, pursuant to Public Education provisions in this permit at Part 4.9 herein.

4.7.4 The permittee shall continue to work with members of the Metropolitan Police Department to enhance illegal dumping enforcement.

4.7.5 The permittee shall implement the District’s ban on coal tar pavement products, including conducting outreach and enforcement activities.

4.7.6 The permittee shall implement the Anacostia Clean Up and Protection Act of 2009, to ban the use of disposable non-recyclable plastic carryout bags and restrict the use on disposable carryout bags in certain food establishments.

4.8 Flood Control Projects

4.8.1 The permittee shall update the impervious surface analysis of floodplains six months after the approval of the revised Flood Insurance Rate Maps by the Federal Emergency Management Agency.

4.8.2 The permittee shall assess potential impacts on the water quality and the ability of the receiving water to support beneficial uses for all flood management projects. Evaluate the feasibility of retrofitting existing flood control devices to provide additional pollutant and volume removal from stormwater. Report results of such assessment, mapping program, and feasibility studies in the Annual Report (Part 6.2 herein).

4.8.3 The permittee shall review all development proposed in flood plain areas to ensure that the impacts on the water quality of receiving water bodies have been properly addressed. Information regarding impervious surface area located in the flood plains shall be used (in conjunction with other environmental indicators) as a planning tool. The permittee shall collect data on the percentage of impervious surface area located in flood plain boundaries for all proposed development beginning six months after the effective date of this permit. The permittee shall collect similar data for existing development in flood plain areas, in accordance with the mapping program and other activities designed to improve water quality. Critical unmapped areas shall be prioritized by the permittee with an emphasis on developed and developing acreage. Reports of this work shall be summarized in the Annual Report.

4.9 Public Education and Public Participation

The permittee shall continue to implement a public education program including but not limited to an education program aimed at residents, businesses, industries, elected officials, policy makers, planning staff and other employees of the permittee. The purpose of education is to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts. Education initiatives may be developed locally or regionally.

4.9.1 Education and Outreach.

4.9.1.1 The permittee shall continue to implement its education and outreach program for the area served by the MS4 that was established during the previous permit cycle. The outreach program shall be designed to achieve measurable improvements in the target audience's understanding of stormwater pollution and steps they can take to reduce their impacts.

4.9.1.2 The permittee shall assess current education and outreach efforts and identify areas where additional outreach and education are needed. Audiences and subject areas to be considered include:

a. General public

1) General impacts of stormwater flows into surface waters
2) Impacts from impervious surfaces
3) Source control practices and environmental stewardship actions and opportunities in the areas of pet waste, vehicle maintenance, landscaping, and rain water reuse.

4) A household hazardous waste educational and outreach program to control illicit discharges to the MS4 as required herein
5) Information and education on proper management and disposal of used oil, other automotive fluids, and household chemicals
6) Businesses, including home-based and mobile businesses
7) Management practices for use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials
8) Impacts of illicit discharges and how to report them including information for industries about stormwater permitting and pollution prevention plans and the requirement that they develop structural and non-structural control systems

b. Homeowners, landscapers and property managers

1) Use of low or no phosphorus fertilizers, alternatives to fertilizers, alternative landscaping requiring no fertilizers
2) Landscape designs to reduce runoff and pollutant loadings
3) Car washing alternatives with the objective of eliminating phosphorus detergent discharges
4) Yard care techniques that protect water quality
5) Management practices for use and storage of pesticides and fertilizers
6) Management practices for carpet cleaning and auto repair and maintenance
7) Runoff Reduction techniques, including site design, on-site retention, pervious paving, retention of forests and mature trees
8) Stormwater pond maintenance

c. Engineers, contractors, developers, review staff and land use planners

1) Technical standards for construction site sediment and erosion control
2) Runoff Reduction techniques, including site design, on-site reduction, pervious pavement, alternative parking lot design, retention of forests and mature trees
3) Stormwater treatment and flow control controls
4) Impacts of increased stormwater flows into receiving water bodies

4.9.2 Measurement of Impacts.

The permittee shall continue to measure the understanding and adoption of selected targeted behaviors among the targeted audiences. The resulting measurements shall be used to direct education and outreach resources most effectively, as well as to evaluate changes in adoption of the targeted behaviors.

4.9.3 Recordkeeping.

The permittee shall track and maintain records of public education and outreach activities.

4.9.4 Public Involvement and Participation.

The permittee shall continue to include ongoing opportunities for public involvement through advisory councils, watershed associations and/or committees, participation in developing updates to the stormwater fee system, stewardship programs, environmental activities or other similar activities. The permittee shall facilitate opportunities for direct action, educational, and volunteer programs such as riparian planting, volunteer monitoring programs, storm drain marking or stream clean up programs.

4.9.4.1 The permittee shall continue to create opportunities for the public to participate in the decision making processes involving the implementation and update of the permittee's SWMP. In particular, the permittee shall provide meaningful opportunity for the public to participate in the development of the permittee's Consolidated TMDL Implementation Plan. The permittee shall continue to implement its process for consideration of public comments on their SWMP.

4.9.4.2 The permittee shall continue to establish a method of routine communication to groups such as watershed associations and environmental organizations that are located in the same watershed(s) as the permittee, or organizations that conduct environmental stewardship projects located in the same watershed(s) or in close proximity to the permittee. This is to make these groups aware of opportunities for their direct involvement and assistance in stormwater activities that are in their watershed.

4.9.4.3 The permittee shall make all draft and approved MS4 documents required under this permit available to the public for comment. The current draft and approved SWMP and the MS4 annual reports deliverable documents required under this permit shall be posted on the permittee's website.

4.9.4.4 The permittee shall continue to develop public educational and participation materials in cooperation and coordination with other agencies and organizations in the District with similar responsibilities and objectives. Progress reports on public education shall be included in the Annual Report. An explanation shall be provided as to how this effort will reduce pollution loadings to meet the requirements of this permit.

4.9.4.5 The permittee shall periodically, and at least annually, update its website.

4.10 Total Maximum Daily Load (TMDL) Wasteload Allocation (WLA) Planning and Implementation

4.10.1 Anacostia River Watershed Trash TMDL Implementation

The permittee shall attain removal of 103,188 pounds of trash annually, as determined in the Anacostia River Watershed Trash TMDL, as a specific single-year measure by the fifth year of this permit term.

Reductions must be made through a combination of the following approaches:

1. Direct removal from waterbodies, e.g., stream clean-ups, skimmers
2. Direct removal from the MS4, e.g., catch basin clean-out, trash racks
3. Direct removal prior to entry to the MS4, e.g., street sweeping
4. Prevention through additional disposal alternatives, e.g., public trash/recycling collection
5. Prevention through waste reduction practices, regulations and/or incentives, e.g., bag fees

At the end of the first year the permittee must submit the trash reduction calculation methodology with Annual Report to EPA for review and approval. The methodology should accurately account for trash prevention/removal methods beyond those already established when the TMDL was approved, which may mean crediting a percentage of certain approaches. The calculation methodology must be consistent with assumptions for weights and other characteristics of trash, as described in the 2010 Anacostia River Watershed Trash TMDL.

Annual reports must include the trash prevention/removal approaches utilized, as well as the overall total weight (in pounds) of trash captured for each type of approach.

The requirements of this Section, and related elements as appropriate, shall be included in the Consolidated TMDL Implementation Plan (Section 4.10.3).

4.10.2 Hickey Run TMDL Implementation

The permittee shall implement and complete the proposed replacement/rehabilitation, inspection and enforcement, and public education aspects of the strategy for Hickey Run as described in the updated Plan to satisfy the requirements of the oil and grease wasteload allocations for Hickey Run. If monitoring or other assessment determine it to be necessary, the permittee shall install or implement appropriate controls to address oil & grease in Hickey Run no later than the end of this permit term. As appropriate, any requirement of this Section not completed prior to finalization of the Consolidated TMDL Implementation Plan (Section 4.10.3) shall be included in that Plan.

4.10.3 Consolidated TMDL Implementation Plan

For all TMDL wasteload allocations assigned to District MS4 discharges, the permittee shall develop, public notice and submit to EPA for review and approval a consolidated TMDL Implementation Plan within 30 months of the effective date of this permit provision. This Plan shall include, at a minimum, the following TMDLs and any subsequent updates:

1. TMDL for Biochemical Oxygen Demand (BOD) in the Upper and Lower Anacostia River (2001)
2. TMDL for Fecal Coliform Bacteria in the Upper and Lower Anacostia River (2003)
3. TMDL for Organics and Metals in the Anacostia River and Tributaries (2003)
4. TMDL for Fecal Coliform Bacteria in Kingman Lake (2003)
5. TMDL for Total Suspended Solids, Oil and Grease and Biochemical Oxygen Demand in Kingman Lake (2003)

6. TMDL for Fecal Coliform Bacteria in Rock Creek (2004)
7. TMDL for Organics and Metals in the Tributaries to Rock Creek (2004)
8. TMDL for Fecal Coliform Bacteria in the Upper, Middle and Lower Potomac River and Tributaries (2004)
9. TMDL for Organics, Metals and Bacteria in Oxon Run (2004)
10. TMDL for Organics in the Tidal Basin and Washington Ship Channel (2004)
11. TMDL for Sediment/Total Suspended Solids for the Anacostia River Basin in Maryland and the District (2007) [pending resolution of court vacature, Anacostia Riverkeeper, Inc. v. Jackson, No. 09-cv-97 (RCL)]
12. TMDL for PCBs for Tidal Portions of the Potomac and Anacostia Rivers in the District of Columbia, Maryland and Virginia (2007)
13. TMDL for Nutrients/Biochemical Oxygen Demand for the Anacostia River Basin in Maryland and the District (2008)
14. TMDL for Trash for the Anacostia River Watershed, Montgomery and Prince George's Counties, Maryland and the District of Columbia (2010)
15. TMDL for Nitrogen, Phosphorus and Sediment for the Chesapeake Bay Watershed (2010)

This Plan shall place particular emphasis on the pollutants in Table 4, but shall also evaluate other pollutants of concern for which relevant WLAs exist. EPA will incorporate elements of the Consolidate TMDL Implementation Plan as enforceable permit provisions, including milestones and final dates for attainment of applicable WLAs. The permittee shall fully implement the Plan upon EPA approval. This Plan shall preempt any existing TMDL implementation plans for the relevant WLAs. To account for any new or revised TMDL established or approved by EPA with wasteload allocations assigned to District MS4 discharges, the permittee shall submit an updated Consolidated TMDL Implementation Plan annually, as necessary. Such updates will account for any actions taken in the 12-month period preceding the date 6 months before the revision is due. If necessary, the first such update will be due 18 months after the submittal of the initial Plan, with subsequent updates due on the anniversary of the submittal date.

The Plan shall include:

1. A specified schedule for attainment of WLAs that includes final attainment dates and, where applicable, interim milestones and numeric benchmarks.
    a. Numeric benchmarks will specify annual pollutant load reductions and the extent of control actions to achieve these numeric benchmarks.
    b. Interim milestones will be included where final attainment of applicable WLAs requires more than five years. Milestone intervals will be as frequent as possible but will in no case be greater than five (5) years.
2. Demonstration using modeling of how each applicable WLA will be attained using the chosen controls, by the date for ultimate attainment.
3. An associated narrative providing an explanation for the schedules and controls included in the Plan.

4. Unless and until an applicable TMDL is no longer in effect (e.g., withdrawn, reissued or the water delisted), the Plan must include the elements in 1-3 above for each TMDL as approved or established.
5. The current version of the Plan will be posted on the permittee's website.

4.10.4 Adjustments to TMDL Implementation Strategies

If evaluation data, as outlined in the monitoring strategy being developed per Part 5.1, indicate insufficient progress towards attaining any WLA covered in 4.10.1, 4.10.2 or 4.10.3, the permittee shall make the appropriate adjustements within six (6) months to address the insufficient progress and document those adjustments in the Consolidated TMDL Implementation Plan. The Plan modification shall include a reasonable assurance demonstration of the additional controls to achieve the incorporated milestones. Annual reports must include a description of progress as evaluated against all implementation objectives, milestones and benchmarks, as relevant, outlined in Part 4.10.

4.11 Additional Pollutant Sources

For any additional pollutant sources not addressed in sections 4.1 through 4.9, the permittee shall continue to compile pertinent information on known or potential pollution sources, including significant changes in:

1. land use activities,
2. population estimates,
3. runoff characteristics,
4. major structural controls,
5. landfills,
6. publicly owned lands, and
7. industries impacting the MS4.

For purposes of this section, “significant changes” are changes that have the potential to revise, enhance, modify or otherwise affect the physical, legal, institutional, or administrative characteristics of the above-listed potential pollution sources. This information shall be submitted in each of the Annual Reports submitted to EPA pursuant to the procedures in Part 6.2 herein. For the Stormwater Model, analysis of data for these pollution sources shall be reported according to Part 7 herein.

The permittee shall implement controls to minimize and prevent discharges of pollutants from additional pollutant sources, including but not limited to Bacteria (*E. coli*), Total Nitrogen, Total Phosphorus, Total Suspended Solids, Cadmium, Copper, Lead, Zinc, and Trash, to receiving waters. Controls shall be designed to prevent and restrict priority pollutants from coming into contact with stormwater, *e.g.*, restricting the use of lawn fertilizers rather than end-of-pipe treatment. These strategies shall include program priorities and a schedule of activities to address those priorities and an outline of which agencies will be responsible for implementing those strategies. The strategies used to reduce or eliminate these pollutants shall be documented in updates to the Stormwater Management Program Plan.

5. MONITORING AND ASSESSMENT OF CONTROLS

5.1 Revised monitoring program

5.1.1 Design of the Revised Monitoring Program

Within 30 months of the effective date of Part 4.10.3 of this permit the permittee shall develop, public notice and submit to EPA for review and approval a revised monitoring program. The permittee shall fully implement the program upon EPA approval. The revised monitoring program shall meet the following objectives:

1. Make wet weather loading estimates of the parameters in Table 4 from the MS4 to receiving waters. Number of samples, sampling frequencies and number and locations of sampling stations must be adequate to ensure data are statistically significant and interpretable.

2. Evaluate the health of the receiving waters, to include biological and physical indicators such as macroinvertebrates and geomorphologic factors. Number of samples, frequencies and locations must be adequate to ensure data are statistically significant and interpretable for long-term trend purposes (not variation among individual years or seasons).

3. Include any additional necessary monitoring for purposes of source identification and wasteload allocation tracking. This strategy must align with the Consolidated TMDL Implementation Plan required in Part 4.10.3 For all pollutants in Table 4 monitoring must be adequate to determine if relevant WLAs are being attained within specified timeframes in order to make modifications to relevant management programs, as necessary.

Table 4
Monitoring Parameters

Parameter
E. coli
Total nitrogen
Total phosphorus
Total Suspended Solids
Cadmium
Copper
Lead
Zinc
Trash

4. All chemical analyses shall be performed in accordance with analytical methods approved under 40 C.F.R. Part 136. When there is not an approved analytical method, the applicant may use any suitable method as described in Section 5.7 herein, but must provide a description of the method.

5.1.2 Utilization of the Revised Monitoring Program

The permittee must use the information to evaluate the quality of the stormwater program and the health of the receiving waters at a minimum to include:

1. The permittee shall estimate annual cumulative pollutant loadings for pollutants listed in Table 4. Pollutant loadings and, as appropriate, event mean concentrations, will be reported in DMRs and annual reports on TMDL implementation for pollutants listed in Table 4 in discharges from the monitoring stations in Table 5.

2. The permittee shall perform the following activities at least once during the permit term, but no later than the fourth year of this permit:

   a. Identify and prioritize additional efforts needed to address water quality exceedances, and receiving stream impairments and threats;

   b. Identify water quality improvements or degradation

Upon approval of the Revised Monitoring Program by EPA Region III, or 2 years from the effective date of this permit, whichever comes first, the permittee shall begin implementation of the Revised Monitoring Program.

5.2 Interim Monitoring

Until such time as EPA has approved the Revised Monitoring Program, the permittee shall implement the following monitoring program:

5.2.1 Wet Weather Discharge Monitoring

The permittee shall monitor for the parameters identified in Table 4 herein, at the locations listed in Table 5 herein. Monitoring frequency for chemical/physical parameters shall be taken by at least three times per year at a minimum. This does not include a geomorphologic assessment and/or physical habitat assessment. The permittee shall conduct sampling as provided in 40 C.F.R. § 122.21(g)(7).

The permittee shall monitor and provide an annual Discharge Monitoring Report for the period of interim monitoring.

TABLE 5
Monitoring Stations

A. Anacostia River Sub Watershed Monitoring Sites
1. Gallatin Street & 14th Street N.E. across from the intersection of 14th St. and Gallatin St. in an outfall (MS-2)
2. Anacostia High School/Anacostia Recreation Center – Corner of 17th St and Minnesota Ave SE
B. Rock Creek Subwatershed Monitoring Sites
1. Walter Reed -- Fort Stevens Drive -- 16th Street and Fort Stevens Road, N.W. at an outfall (MS-6)
2. Soapstone Creek -- Connecticut Avenue and Ablemarle Street N.W. at an outfall (MS-5)
C. Potomac River Subwatershed Monitoring Sites
1. Battery Kemble Creek-49th and Hawthorne Streets, N.W. at an outfall (MS-4)
2. Oxon Run-Mississippi Avenue and 15th Street, S.E. into Oxon Run via an outfall (MS-1)

The permittee may revise this list of sites in accordance with its revised monitoring program in Section 5.1 herein. Otherwise, changes to the above MS4 monitoring stations and/or sites for any reason shall be considered a major modification to the permit subject to the reopener clause.

During the interim monitoring period for the pollutants listed in Table 4, demonstration of compliance will be calculated using the procedures identified in the SWMP, the approved Anacostia River TMDL Implementation Plan, and/or other appropriate modeling tools and data on management practices efficiencies. The annual report will provide all monitoring data, and a brief synthesis of whether the data indicate that relevant wasteload allocations and other relevant targets are being achieved.

5.2.2 Storm Event Data

In addition to the parameters listed above, the permittee shall continue to maintain records of the date and duration (in hours) of the storm events sampled; rainfall measurements or estimates (in inches) of the storm event which generated the sampled runoff; the duration (in hours) between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event; and a calculated flow estimate of the total volume (in gallons) and nature of the discharge sampled.

5.2.3 Sample Type, Collection, and Analysis

The following requirements apply only to samples collected for Part 5.2.1, Representative Monitoring.

1. For discharges from holding ponds or other impoundments with a retention period greater than 24 hours, (estimated by dividing the volume of the detention pond by the estimated volume of water discharged during the 24 hours previous to the time that the sample is collected) a minimum of one sample shall be taken for pollutants listed in Table 4 including temperature, DO, pH and specific conductivity. For all parameters, data shall be reported for the entire event of the discharge pursuant to 40 C.F.R. § 122.26(d)(2)(iii).

2. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. Samples may be taken with a continuous sampler or as a combination of a minimum of three sample aliquots taken in each hour of discharge for the entire discharge, with each aliquot being separated by a minimum period of fifteen minutes.

3. Analysis and collection of samples shall be done in accordance with the most recent EPA approved laboratory methods and procedures specified at 40 C.F.R. Part 136 and its subsequent amendments.

5.2.4 Sampling Waiver

When a discharger is unable to collect samples due to adverse climatic conditions, the discharger must submit in lieu of sampling data a description of why samples could not be collected, including available documentation of the event.

Adverse climatic conditions which may prohibit the collection of samples includes weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.).

5.3 Dry Weather Monitoring

5.3.1 Dry Weather Screening Program

The permittee shall continue with ongoing efforts to detect the presence of illicit connections and improper discharges to the MS4 pursuant to the District SWMP. The permittee shall perform the following: (1) continue to screen known problem sewersheds within the District based on past screening activities; (2) continue to inventory all MS4 outfalls in the District and inspect all outfalls by the end of the permit term; and (3) ensure that the dry weather screening program has addressed all watersheds within the permit term. The screening shall be

sufficient to estimate the frequency and volume of dry weather discharges and their environmental impact.

5.3.2 Screening Procedures

Screening may be developed and/or modified based on experience gained during actual field screening activities. The permittee shall establish a protocol which requires screening to ensure that such procedures are occurring, but such protocol need not conform to the procedures published at 40 C.F.R. § 122.26(d)(1)(iv)(D). The permittee shall describe the protocol actually used in each Annual Report with a justification for its use. The procedures described in the SWMP shall be used as guidance.

5.3.3 Follow-up on Dry Weather Screening Results

The permittee shall continue to implement its enforcement program for locating and ensuring elimination of all suspected sources of illicit connections and improper disposal identified during dry weather screening activities. The permittee shall report the results of such implementation in each Annual Report.

5.4. Area and/or Source Identification Program

The permittee shall continue to implement a program to identify, investigate, and address areas and/or sources within its jurisdiction that may be contributing excessive levels of pollutants to the MS4 and receiving waters, including but not limited to those pollutants identified in Table 4 herein.

5.5 Flow Measurements

The permittee shall continue to select and use appropriate flow measurement devices and methods consistent with accepted scientific practices to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device.

5.6 Monitoring and Analysis Procedures

5.6.1 Monitoring must be conducted according to laboratory and test procedures approved under 40 C.F.R. Part 136 and subsequent amendments, unless other test procedures have been specified in the permit.

5.6.2 The permittee is authorized to use a more current or sensitive (i.e., lower) detection method than the one identified in 40 C.F.R. Part 136 exists for a particular parameter, including but not limited to PCBs (Method 1668B) and mercury (Method 1631E). If used, the permittee shall report using the more current and/or more sensitive method for compliance reporting and monitoring purposes.

5.6.3 EPA reserves the right to modify the permit in order to require a more sensitive method for measuring compliance with any pollutant contamination levels, consistent with 40 CFR, Part 136, should it become necessary.

5.7 Reporting of Monitoring Results

The permittee shall continue to report monitoring results annually in a Discharge Monitoring Report. If NetDMR (http://www.epa.gov/netdmr/) is unavailable to any of the following then the original and one copy of the Report are to be submitted at the following addresses:

NPDES Permits Branch
U.S. EPA Region III (3WP41)
Water Protection Division
1650 Arch Street
Philadelphia, PA 19103-2029

National Marine Fisheries Service/Northeast Region
Protected Resource Division
55 Great Republic Drive
Gloucester, Massachusetts 01930-2276

Monitoring results obtained during the previous year shall be summarized and reported in the Annual Report.

5.8 Additional Monitoring by the Permittee

If the permittee monitors (for the purposes of this permit) any pollutant more frequently than required by this permit, using laboratory and test procedures approved under 40 C.F.R. Part 136 and subsequent amendments or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the annual Discharge Monitoring Report. Such frequency shall also be indicated.

5.9 Retention of Monitoring Information

The permittee shall continue to retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation for a period of at least five(5) years from the date of the sample, measurement or report. This period may be extended by request of EPA at any time.

5.10 Record Content

Records of monitoring information shall include:

1. The date, exact location, time and methods of sampling or measurements;
2. The individual(s) who performed the sampling or measurements;

3. The date(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses.

6. REPORTING REQUIREMENTS

The permittee shall comply with the reporting requirements identified in this section, including but not limited to the deliverables identified in Table 6 below.

TABLE 6
Reporting Requirements

Submittal	Deadline
Discharge Monitoring Report	Each year on the anniversary of the effective date of the permit (AEDOP)
Annual Report	Each year on the AEDOP.
MS4 Permit Application	Six months prior to the permit expiration date.

6.1 Discharge Monitoring Reports

The permittee shall provide discharge monitoring reports per Part 5.7 of this permit on the quality of stormwater discharges from the MS4 for all analytical chemical monitoring stipulated in Part 5 of this permit.

6.2 Annual Reporting

The permittee shall submit an Annual Report to EPA on or by the effective yearly date of the permit for the duration of the permitting cycle. At the same time the Annual Report it submitted to EPA it shall also be posted on the permittee's website at an easily accessible location. If the annual report is subsequently modified per EPA approval (part 6.2.3 of this permit) the updated report shall be posted on the permittee's website.

6.2.1 Annual Report.

The Annual Report shall follow the format of the permit as written, address each permit requirement, and also include the following elements:

a. A review of the status of program implementation and compliance (or non-compliance) with all provisions and schedules of compliance contained in this

permit, including documentation as to compliance with performance standards and other provisions and deliverables contained in Section 4 herein;

b. A review of monitoring data and any trends in estimated cumulative annual pollutant loadings, including TMDL WLAs and TMDL implementation activities;

c. An assessment of the effectiveness of controls established by the SWMP;

d. An assessment of the projected cost of SWMP implementation for the upcoming year (or longer) and a description of the permittee's budget for existing stormwater programs, including: (i) an overview of the permittee's financial resources and budget, (ii) overall indebtedness and assets, (iii) sources for funds for stormwater programs; and (iv) a demonstration of adequate fiscal capacity to meet the requirements of this permit, subject to the (a) the federal Anti-Deficiency Act, 31 U.S.C. §§ 1341, 1342, 1349, 1351, (b) the District of Columbia Anti-Deficiency Act, D.C. Official Code §§ 47-355.01-355.08 (2001), (c) D.C. Official Code § 47-105 (2001), and (d) D.C. Official Code § 1-204.46 (2006 Supp.), as the foregoing statutes may be amended from time to time;

e. A summary describing the number and nature of enforcement actions, inspections, and public education programs and installation of control systems;

f. Identification of water quality improvements or degradation through application of a measurable performance standard as stated throughout this permit;

g. Results of storm and water quality modeling and its use in planning installation of control systems and maintenance and other activities;

h. An assessment of any SWMP modifications needed to meet the requirements of this permit;

i. Revisions, if necessary, to the assessments of controls and the fiscal analysis reported in the permit application under 40 C.F.R. § 122.26(d)(2)(iv) and (v);

j. Methodology to assess the effects of the Stormwater Management Program (SWMP);

k. Annual expenditures and budget for the year following each annual report;

l. A summary of commitments for the next year and evaluation of the commitments from the previous year;

m. A summary of the monitoring data for stormwater and ambient sampling that is collected in the previous year and the plan, including identification of monitoring locations, to collect additional data for the next year;

n. The amount of impervious cover within the District, and within the three major watersheds in the District (Anacostia, Potomac and Rock Creek);

o. The percentage of effective impervious cover reduced annually, including but not limited to the number and square footage of green roofs installed in the District, including the square footage of drainage managed by practices that meet the performance standard in 4.1.1; and

p. An analysis of the work to be performed in the next successive year, including performance measures for those tasks. In the following year, progress with those performance measures shall be part of the Annual Report. The basis for each of the performance standards, which will be used as tools for evaluating environmental results and determining the success of each MS4 activity, shall be described incorporating an integrated program approach that considers all programs and projects which have a direct as well as an indirect affect on

stormwater management quantity and quality within the District. The report shall also provide an update of the fiscal analysis for each year of the permit as required by 40 C.F.R. § 122.26(d)(2)(vi).

6.2.2 Annual Report Meeting

Within 12 months of the effective date of this permit the permittee shall convene an annual report meeting with EPA to present annual progress and plans for the following year. In conjunction with this meeting the annual written report may consist of presentation materials summarizing all required elements of the annual report rather than a lengthy written report, as long as all required elements are included. Following this first annual reporting meeting EPA and the permittee shall determine if the meeting and associated presentation materials constitute an effective reporting mechanism. With the agreement of both EPA and the permittee the annual reporting meeting and the use of summarized presentation materials in lieu of a lengthy written report may be extended for the remainder of the permit term.

6.2.3 Annual Report Revisions

Each Annual Report may be revised with written approval by EPA. The revised Report will become effective after its approval.

6.2.4 Signature and Certification

The permittee shall sign and certify the Annual Report in accordance with 40 C.F.R §122.22(b), and include a statement or resolution that the permittee's governing body or agency (or delegated representative) has reviewed or been appraised of the content of such submissions. The permittee shall provide a description of the procedure used to meet the above requirement.

6.2.5 EPA Approval

In reviewing any submittal identified in Table 1 or 6, EPA may approve or disapprove each submittal. If EPA disapproves any submittal, EPA shall provide comments to the permittee. The permittee shall address such comments in writing within thirty (30) days of receipt of the disapproval from EPA. If EPA determines that the permittee has not adequately addressed the disapproval/comments, EPA may revise that submittal or portions of that submittal. Such revision by EPA is effective thirty (30) days from receipt by the permittee. Once approved by EPA, or in the event of EPA disapproval, as revised by EPA, each submission shall be an enforceable element of this permit.

6.3 MS4 Permit Application

The permittee develop a permit Application based on the findings presented in each of the Annual SWMP Reports submitted during the permitting cycle to be submitted six months prior to the expiration date of the permit. The permit application shall define the next iterative set of objectives for the program and provide an analysis to demonstrate that these objectives will be achieved in the subsequent permit term.

7. STORMWATER MODEL

The permittee shall continue to update and report all progress made in developing a Stormwater Model and Geographical Information System (GIS) to EPA on an annual basis as an attachment to each Annual Report required herein.

On an annual basis, the permittee shall report on pollutant load reductions throughout the area covered by this permit using the statistical model developed by DDOE or other appropriate model. In the annual update, the permittee shall include, at a minimum, other applicable components which are not only limited to those activities identified in Section 6 herein, but which are necessary to demonstrate the effectiveness of the permittee's Stormwater Management Program toward implementing a sustainable strategy for reducing stormwater pollution runoff to the impaired waters of the District of Columbia.

Assess performance of stormwater on-site retention projects through monitoring, modeling and/or estimating storm retention capacity to determine the volume of stormwater removed from the MS4 in a typical year of rainfall as a result of implementing stormwater controls. This provision does not require all practices to be individually monitored, only that a reasonable evaluation strategy must provide estimates of overall volume reductions by sewershed.

8. STANDARD PERMIT CONDITIONS FOR NPDES PERMITS

8.1 Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and may result in an enforcement action; permit termination, revocation and reissuance, or modification; and denial of a permit renewal application.

8.2 Inspection and Entry

The permittee shall allow EPA, or an authorized representative, and/or the permittee’s contractor(s)/subcontractor(s), upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises at reasonable times where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be maintained under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), processes, or operations regulated or required under this permit; and

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

8.3 Civil and Criminal Penalties for Violations of Permit Conditions

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

The Clean Water Act provides that any person who violates Sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act, or any permit condition or limitation implementing such section, or any requirement imposed in an approved pretreatment program and any person who violates any Order issued by EPA under Section 301(a) of the Act, shall be subject to a civil penalty not to exceed $25,000 per day for each violation, Pursuant to the Civil Monetary Penalty Inflation Adjustment Rule, EPA has raised the statutory maximum penalty for such violations to $37,500 per day for each such violation. 74 Fed. Reg. 626 (Jan. 7, 2009). The Clean Water Act also provides for an action for appropriate relief including a permanent or temporary injunction.

Any person who negligently violates Section 301, 302, 305, 307, 308, 318, or 405 of the Clean Water Act, any permit condition or limitation implementation any such section, shall be punished by a criminal fine of not less than $5,000 nor more than $50,000 per day of such violation, or by imprisonment for not more than 3 years, or by both. Any person who knowingly violates any permit condition or limitation implementing Section 301, 302, 305, 307, 308, 318, or 405 of the Clean Water Act, and who knows at the time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000, or by imprisonment of not more than 15 years, or by both.

8.4 Duty to Mitigate

The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

In the event that the permittee or permitting authority determines that discharges are causing or contributing to a violation of applicable WQS, the permittee shall take corrective action to eliminate the WQS exceedance or correct the issues and/or problems by requiring the party or parties responsible for the alleged violation(s) comply with Part I.C.1 (Limitations to Coverage) of this permit. The methods used to correct the WQS exceedances shall be documented in subsequent annual reports and in revisions to the Stormwater Management Program Plan.

8.5 Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

1. Violation of any terms or conditions of this permit;

2. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;

3. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge;

4. Information newly acquired by the Agency, including but not limited to the results of the studies, planning, or monitoring described and/or required by this permit;

5. Material and substantial facility modifications, additions, and/or expansions;

6. Any anticipated change in the facility discharge, including any new significant industrial discharge or changes in the quantity or quality of existing industrial discharges that will result in new or increased discharges of pollutants; or

7. A determination that the permitted activity endangers human health or the environment and that it can only be regulated to acceptable levels by permit modification or termination.

The effluent limitations expressed in this permit are based on compliance with the District of Columbia's water quality standards in accordance with the Clean Water Act. In the event of a revision of the District of Columbia's water quality standards, this document may be modified by EPA to reflect this revision.

The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition. When a permit is modified, only conditions subject to modification are reopened.

8.6 Retention of Records

The permittee shall continue to retain records of all documents pertinent to this permit not otherwise required herein, including but not limited copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five (5) years from the expiration date of this permit. This period may be extended by request of EPA at any time.

8.7 Signatory Requirements

All Discharge Monitoring Reports, plans, annual reports, certifications or information either submitted to EPA or that this permit requires be maintained by the permittee shall be signed by either a principal executive officer or ranking elected official, or a duly authorized representative of that person. A person is a duly authorized representative only if: (i) the authorization is made in writing by a person described above and submitted to EPA; and (ii) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for an agency. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).

If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new notice satisfying the requirements of this paragraph must be submitted to EPA prior or together with any reports, information, or applications to be signed by an authorized representative.

8.8 Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act, 33 U.S.C. § 1321.

8.9 District Laws, Regulations and Ordinances

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable District law, regulation or ordinance identified in the SWMP. In the case of "exemptions and waivers" under District law, regulation or ordinance, Federal law and regulation shall be controlling.

8.10 Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

8.11 Severability

The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstances is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

8.12 Transfer of Permit

In the event of any change in ownership or control of facilities from which the authorized discharge emanates, the permit may be transferred to another person if:

1. The current permittee notifies the EPA, in writing of the proposed transfer at least 30 days in advance of the proposed transfer date;

2. The notice includes a written agreement between the existing and new permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

3. The EPA does not notify the current permittee and the new permittee of intent to modify, revoke and reissue, or terminate the permit and require that a new application be submitted.

8.13 Construction Authorization

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters.

8.14 Historic Preservation

During the design stage of any project by the Government of the District of Columbia within the scope of this permit that may include ground disturbance, new and existing or retrofit construction, or demolition of a structure, the permittee shall notify the Historic Preservation liaison and provide the liaison planning documents for the proposed undertaking. The documents shall include project location; scope of work or conditions; photograph of the area/areas to be impacted and the methods and techniques for accomplishing the undertaking. Depending on the complexity of the undertaking, sketches, plans and specifications shall also be submitted for review. The documentation will enable the liaison to assess the applicability of compliance procedures associated with Section 106 of the National Historic Preservation Act. Among the steps in the process are included:

1. The determination of the presence or absence of significant historic properties (architectural, historic or prehistoric). This can include the evaluation of standing structures and the determination of the need for an archaeological survey of the project area.

2. The evaluation of these properties in terms of their eligibility for nomination to the National Register of Historic Places.

3. The determination of the effect that the proposed undertaking will have on these properties.

4. The development of mitigating measures in conjunction with any anticipated effects.

All such evaluations and determinations will be presented to the permittee for its concurrence.

If an alternate Historic Preservation procedure is approved by EPA in writing during the term of this permit, the alternate procedure will become effective after its approval.

8.15 Endangered Species

The U.S. Fish and Wildlife Service (FWS) has indicated that Hay's Spring Amphipod, a Federally listed endangered species, occurs at several locations in the District of Columbia. The National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) has indicated that the endangered shortnose sturgeon occurs in the Potomac River drainage and may occur within the District of Columbia. The FWS and NOAA Fisheries indicate that at the present time there is no evidence that the ongoing stormwater discharges covered by this permit are adversely affecting these Federally-listed species. Stormwater discharges, construction, or any other activity that adversely affects a Federally-listed endangered or threatened species are not authorized under the terms and conditions of this permit.

The monitoring required by this permit will allow further evaluation of potential effects on these threatened and endangered species once monitoring data has been collected and analyzed. EPA requires that the permittee submit to NOAA Fisheries, at the same time it submits to EPA, the Annual Outfall Discharge Monitoring Report of the monitoring data which will be used by EPA and NOAA Fisheries to further assess effects on endangered or threatened species. If this data indicates that it is appropriate, requirements of this NPDES permit may be modified to prevent adverse impacts on habitats of endangered and threatened species.

The above-referenced Report of monitoring data is required under this permit to be sent on an annual basis to:

The United States Environmental Protection Agency
Region III (3WP41)
Water Protection Division
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

National Marine Fisheries Service/Northeast Region
Protected Resource Division
55 Great Republic Drive
Gloucester, Massachusetts 01930-2276

8.16 Toxic Pollutants

If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under section 307(a) of the Act, 33 U.S.C. § 1317(a), for a toxic pollutant which is present in the discharge and such standard or prohibition

is more stringent than any limitation for such pollutant in this permit, the permittee shall comply with such standard or prohibition even if the permit has not yet been modified to comply with the requirement.

8.17 Bypass

8.17.1 Bypass not exceeding limitations. In accordance with 40 C.F.R. § 122.41(m), the permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation.

8.17.2 Notice

1. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it must submit prior notice at least ten days before the date of the bypass. See 40 C.F.R. § 122.41(m)(3)(i).

2. Unanticipated bypass. The permittee must submit notice of an unanticipated bypass as required by 40 C.F.R. § 122.41(l)6) (24-hour notice). See 40 C.F.R. § 122.41(m)(3)(ii).

8.17.3 Prohibition of bypass. See 40 C.F.R. § 122.41(m)(4).

1. Bypass is prohibited, and EPA may take enforcement action against the permittee for bypass, unless:

    a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage as defined herein;

    b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

    c. The permittee submitted notices as required herein.

2. EPA may approve an anticipated bypass, after considering its adverse effects, if EPA determines that it will meet the three conditions listed above.

8.18 Upset

Effect of an upset: An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of 40 C.F.R. § 122.41(n) are met.

8.19 Reopener Clause for Permits

The permit shall be modified or revoked and reissued, including but not limited to, for any of the following reasons:

1. To incorporate any applicable effluent standard or limitation issued or approved under Sections 301, 304, or 307 of the Clean Water Act, and any other applicable provision, such as provided for in the Chesapeake Bay Agreements based on water quality considerations, and if the effluent standard or limitation so issued or approved:

   a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

   b. Controls any pollutant not limited in the permit. The permit, as modified or reissued under this paragraph, shall also contain any other requirements of the Act then applicable; or

2. To incorporate additional controls that are necessary to ensure that the permit effluent limits are consistent with any applicable TMDL WLA allocated to the discharge of pollutants from the MS4 or to incorporate milestones and schedules of a TMDL Implementation Plan; or

3. As specified in 40 C.F.R. §§ 122.44(c), 122.62, 122.63, 122.64, and 124.5.

8.20 Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, it must apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit. EPA may grant permission to submit an application less than 180 days in advance but no longer than the permit expiration date. In the event that a timely and complete reapplication has been submitted and EPA is unable through no fault of he permittee, to issue a new permit before the expiration date of this permit, the terms and conditions of this permit are automatically continued and remain fully effective and enforceable.

9. PERMIT DEFINITIONS

Terms that are not defined herein shall have the meaning accorded them under section 502 of the Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*, or its implementing regulations, 40 C.F.R. Part 122.

"Annual Report" refers to the consolidated Annual Report that the permittee is required to submit annually.

"Benchmark" as used in this permit is a quantifiable goal or target to be used to assess progress toward "milestones" (see separate definition) and WLAs, such as a numeric goal for BMP implementation. If a benchmark is not met, the permittee should take appropriate corrective action to improve progress toward meeting milestones or other objectives. Benchmarks are intended as an adaptive management aid and generally are not considered to be enforceable.

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. See 40 C.F.R. § 122.41(m)(1)(i).

"CWA" means Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. (6-483 and Pub. L. 97-117, 33 U.S.C. §§ 1251 *et seq.*

"Development" is the undertaking of any activity that disturbs a surface area greater than or equal to 5,000 square feet, including new development projects and redevelopment projects. For purposes of Parts 4.1.1 through 4.1.4 of the permit the requirements apply to discharges from sites for which design or construction commenced after 18 months from the effective date of this permit or as required by District of Columbia law, whichever is sooner. The permittee may exempt development projects receiving site plan approval prior to this date from these requirements.

"Director" means the Regional Administrator of USEPA Region 3 or an authorized representative.

"Discharge" for the purpose of this permit, unless indicated otherwise, refers to discharges from the Municipal Separate Storm Sewer System (MS4).

"Discharge Monitoring Report", "DMR" or "Outfall Discharge Monitoring Report" includes the monitoring and assessment of controls identified in Section 5 herein.

"EPA" means USEPA Region 3.

"Green Roof" is a low-maintenance roof system that stores rainwater where the water is taken up by plants and/or transpired into the air.

"Green Technology Practices" means stormwater management practices that are used to mimic pre-development site hydrology by using site design techniques that retain stormwater on-site through infiltration, evapotranspiration, harvest and use.

"Guidance" means assistance in achieving a particular outcome or objective.

"Illicit connection" means any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

"Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to an NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities, pursuant to 40 C.F.R. § 122.26(b)(2).

“Impaired Water” (or “Water Quality Impaired Water” or “Water Quality Limited Segment”): A water is impaired for purposes of this permit if it has been identified by the District or EPA pursuant to Section 303(d) of the Clean Water Act as not meeting applicable State water quality standards (these waters are called “water quality limited segments” under 40 C.F.R. 30.2(j)). Impaired waters include both waters with approved or established TMDLs, and those for which a TMDL has not yet been approved or established.

"Landfill" means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit (i.e., an area where wastes are applied onto or incorporated into the soil surface [excluding manure spreading operations] for treatment or disposal), surface impoundment, injection well, or waste pile.

"Large or Medium municipal separate storm sewer system" means all municipal separate storm sewers that are either: (1) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and G of 40 C.F.R. Part 122); or (2) located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (these counties are listed in Appendices H and I of 40 C.F.R. Part 122); or (3) owned or operated by a municipality other than those described in paragraph (i) or (ii) and that are designated by the Director as part of the large or medium municipal separate storm sewer system.

"Milestone" as used in this permit is an interim step toward attainment of a WLA that upon incorporation into the permit will become an enforceable limit or requirement to be achieved by a stated date. A milestone should be expressed in numeric terms, i.e. as a volume reduction, pollutant load, specified implementation action or set of actions or other objective metric, when possible and appropriate.

"MS4" refers to either a Large or Medium Municipal Separate Storm Sewer System.

"Municipal Separate Storm Sewer" means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (1) owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes; (2) Designed or used to collect or convey stormwater (including storm drains, pipes, ditches, etc.); (3) not a combined sewer; and (4) not part of a Publicly-Owned Treatment Works as defined at 40 C.F.R. § 122.2.

“Offset” means a unit of measurement, either used as monetary or non-monetary compensation, as a substitute or replacement for mitigation of a stormwater control practice that has been determined to be impracticable to implement.

“Performance measure” means for purposes of this permit, a minimum set of criteria for evaluating progress toward meeting a standard of performance.

“Performance standard” means for purposes of this permit, a cumulative measure or provision for attainment of an outcome or objective.

"Permittee" refers to the Government of the District of Columbia.

"Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

“Pollutant of concern” means a pollutant in an MS4 discharge that may cause or contribute to the violation of a water quality criterion for that pollutant downstream from the discharge.

“Pre-Development Condition” means the combination of runoff, infiltration and evapotranspiration rates, volumes, durations and temperatures that typically existed on the site with natural soils and vegetation before human-induced land disturbance occurred. In the context of requirements in this permit the environmental objective is a stable, natural hydrologic site condition that protects or restores to the degree relevant for that site, stable hydrology in the receiving water, which will not necessarily be the hydrologic regime of that receiving water prior to any human disturbance in the watershed.

“Retention” means the use of soils, vegetation, water harvesting and other mechanisms and practices to retain a target volume of stormwater on a given site through the functions of: pore space and surface ponding storage; infiltration; reuse, and/or evapotranspiration.

“Retrofit” means improvement in a previously developed area that results in reduced stormwater discharge volumes and pollutant loads and/or improvement in water quality over current conditions.

“Stormwater” means the flow of surface water which results from, and which occurs immediately following, a rainfall event, snow melt runoff, and surface runoff and drainage.

“Stormwater management” means (1) for quantitative control, a system of vegetative or structural measures, or both, which reduces the increased volume and rate of surface runoff caused by man-made changes to the land; and (2) for qualitative control, a system of vegetative, structural, and other measures which reduce or eliminate pollutants which might otherwise be carried by surface runoff.

"SWMP" is an acronym for Stormwater Management Program. For purposes of this permit, the term includes all stormwater activities described in the District's SWMP Plan updated February 19, 2009, or any subsequent update, and all other strategies, plans, documents, reports, studies, agreements and related correspondences developed and used pursuant to the requirements of this permit.

"Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. See 40 C.F.R. § 122.41(m)(1)(ii).

"Total Maximum Daily Load (TMDL) Units" means for purposes of this permit, the sum of individual waste load allocations (WLAs) and natural background. Unless specifically permitted otherwise in an EPA-approved TMDL report covered under the permit, TMDLs are expressed in terms of mass per time, toxicity or other appropriate measure such as pollutant pounds of a total average annual load.

"TMDL Implementation Plan" means for purposes of this permit, a plan and subsequent revisions/updates to that plan that are designed to demonstrate how to achieve compliance with applicable waste load allocations as set forth in the permit requirements described in Section 4.10.3.

"Stormwater Management Program (SWMP)" is a modified and improved SWMP based on the existing SWMP and on information in each of the Annual Reports/Discharge Monitoring Reports. The purpose of the SWMP is to describe the list of activities that need to be done to meet the requirements of the Clean Water Act, an explanation as to why these activities will meet the Clean Water Act requirements, and a schedule for those activities.

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. See 40 C.F.R. § 122.41(n)(1).

"Waste pile" means any non-containerized accumulation of solid, nonflowing waste.

"Water quality standards" refers to the District of Columbia's Surface and Ground Water Quality Standards codified at Code of District of Columbia Regulations §§ 21-1100 *et seq.*, which are effective on the date of issuance of the permit and any subsequent amendments which may be adopted during the life of this permit.

"Waters of the United States" is defined at 40 C.F.R. § 122.2.

Appendix B: US EPA Notice of Stayed Conditions

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

FEB 11 2013

Dr. Hamid Karimi, Deputy Director
District Department of the Environment
1200 First Street N.E., 5th Floor
Washington, D.C. 20002

Re: Notification of Stayed Permit Conditions, District of Columbia Municipal Separate Storm Sewer System Permit,
NPDES Permit No. DC0000221
EAB Appeal Nos. NPDES 11-05, 11-06

Dear Dr. Karimi:

As you likely are aware, the Environmental Protection Agency (EPA) reissued the National Pollutant Discharge Elimination System (NPDES) permit DC0000221 (the Permit) to the Government of the District of Columbia on September 30, 2011, with an effective date of October 7, 2011. On November 4, 2011, Friends of the Earth, Anacostia Riverkeeper, Potomac Riverkeeper and Natural Resources Defense Council filed a petition for review of the Permit with EPA's Environmental Appeals Board (EAB), docketed as NPDES 11-06. On the same date, the District of Columbia Water and Sewer Authority and the Wet Weather Partnership filed a second petition for review, docketed as NPDES 11-05. As a result of these appeals, certain provisions of the reissued Permit were stayed, and the remaining provisions of the Permit became effective on January 22, 2012.[1]

On November 9, 2012, the EPA issued a limited modification to the Permit in which certain of the stayed provisions were withdrawn and replaced, effective as of the same date. On November 16, 2012, the EAB dismissed NPDES 11-06. On January 14, 2013, the EAB also dismissed NPDES 11-05.

This letter serves as notification pursuant to 40 C.F.R. sections 124.16(a)(2) and 124.60(b) that all Permit provisions stayed as a result of the appeals are no longer stayed. In addition, this letter provides notification of the effective date of each such provision, as well as the effective date of the revised Permit provisions.

---

[1] *See*, Letter of December 20, 2011 to Dr, Hamid Karimi, Deputy Director, District Department of the Environment (DDOE), from Jon M. Capacasa, Director, EPA Region 3 Water Protection Division (WPD); Letter of December 22, 2011 to Jeffery Seltzer, Associate Director, Stormwater Management Division, DDOE, from Evelyn S. MacKnight, Chief, NPDES Permits Branch, WPD. These letters, and the Permit Modification of November 9, 2012, are available at http://www.epa.gov/reg3wapd/npdes/dcpermits.htm.

Effective Date: November 9, 2012

The following Permit provisions are no longer stayed because, by way of its limited Permit modification, the EPA withdrew them pursuant to 40 C.F.R. 124.19(d) and replaced them with modified provisions. Accordingly, the effective date for the following provisions is November 9, 2012:

- Section 1.4 (Discharge Limitations), last sentence ("Compliance with the provisions contained in Parts 2 through 8 of this permit, including milestones and final dates for attainment of applicable WLAs, shall constitute adequate progress toward compliance with DCWQS and WLAs for this permit term.");
- Subsection 4.3.1.3 (SSO Reporting);
- Subsection 4.10.3 (Consolidated TMDL Implementation Plan); and
- Subsection 5.1.1 (Design of the Revised Monitoring Program).

Effective Date: November 16, 2012

The following Permit provisions are no longer stayed as a result of the EAB's dismissal of NPDES 11-06, which qualifies as a final agency action under 40 C.F.R. 124.19(f)(1). Accordingly, the effective date for the following provisions is November 16, 2012:

- Subsection 1.4.1; and
- Subsection 1.4.2.

Effective Date: January 14, 2013

The following Permit provisions are no longer stayed as a result of the EAB's dismissal of NPDES 11-05, which qualifies as a final agency action under 40 C.F.R. 124.19(f)(1). Accordingly, the effective date for the following provisions is January 14, 2013:

- Subsection 2.3.1 (Stormwater Management Program Administration/Permittee Responsibilities), to the extent that it refers to the "DC Water and Sewer Authority (DC Water)"; and
- Section 4.11 (Additional Pollutant Sources)

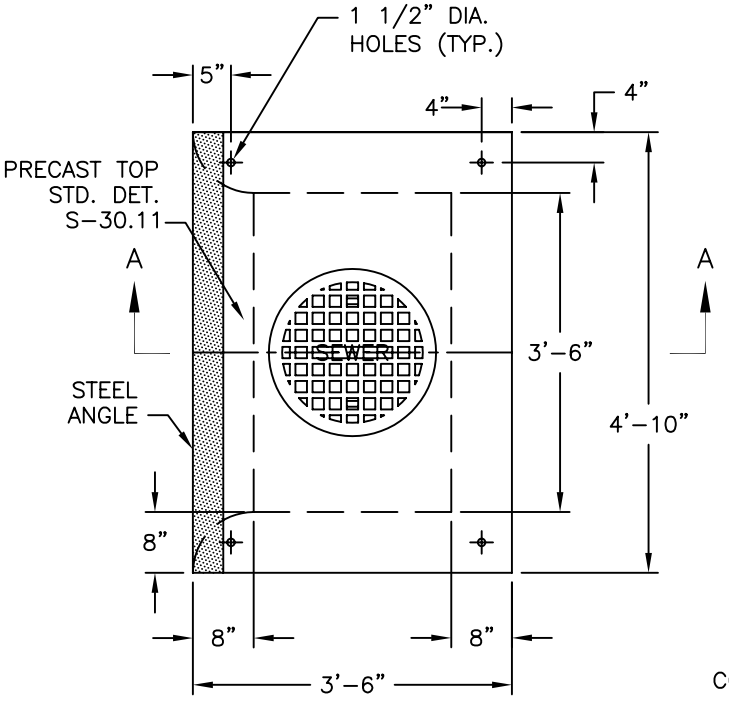
If you have any questions on this, please contact Kaitlyn Bendik of my staff or me.

Sincerely,

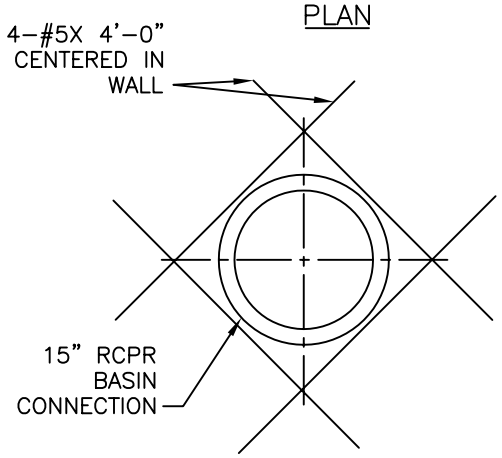
Jon M. Capacasa, Director
Water Protection Division

cc: Environmental Appeals Board
Alan Barak, Esq.
Paul Calamita, Esq.
Jennifer Chavez, Esq.
Rebecca Hammer, Esq.
Amy E. McDonnell, Esq.

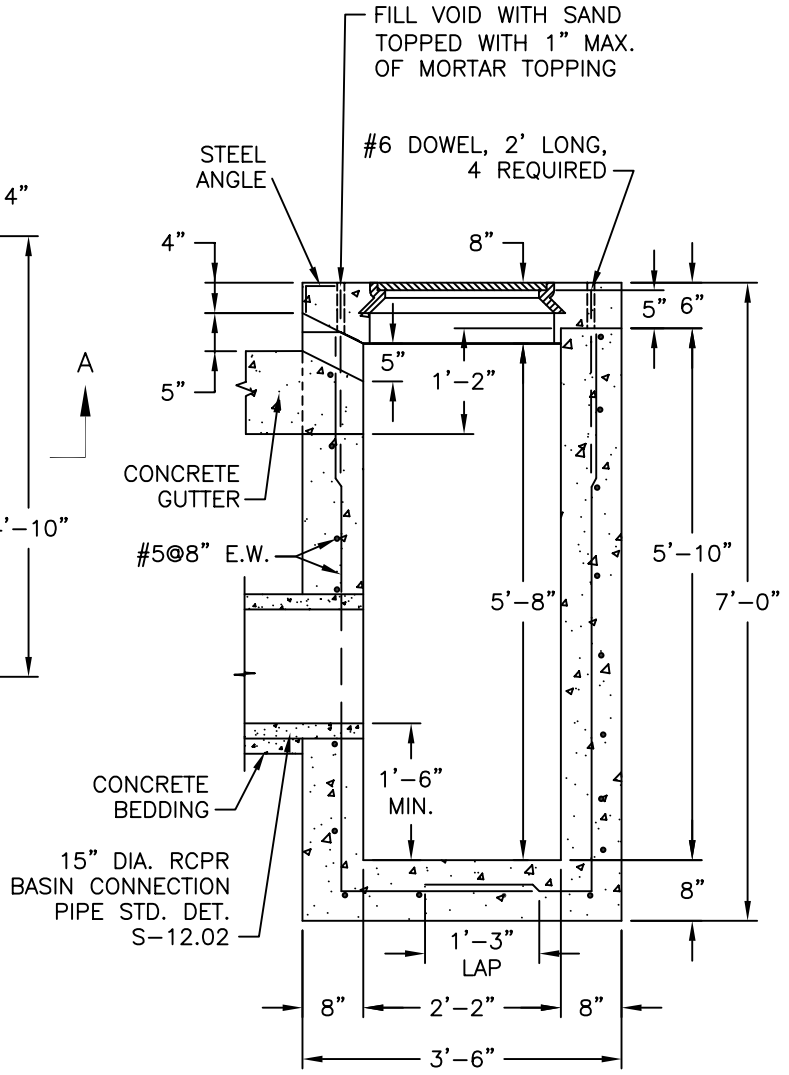
Appendix C: Standard Catch Basin Standard Details



PLAN



ADD'L REINFORCING
AT OPENING



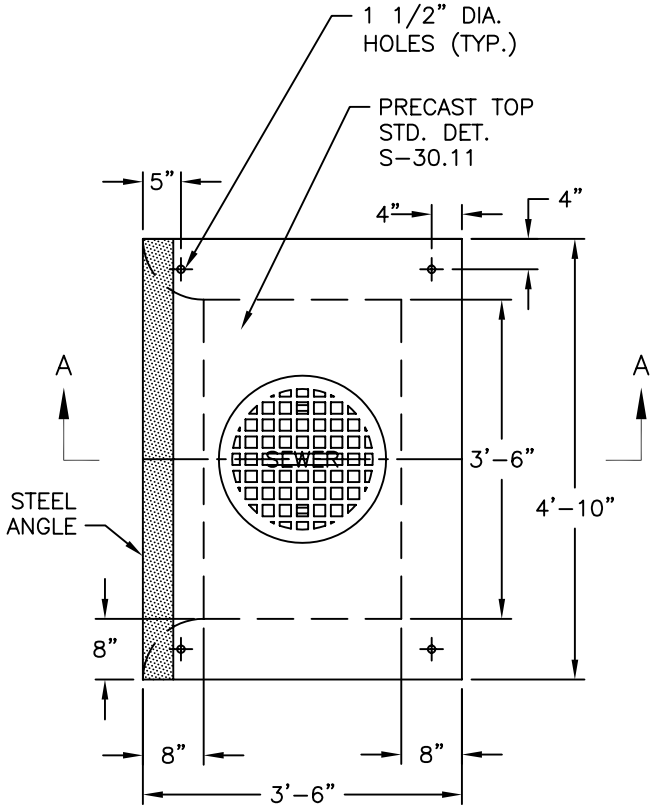
SECTION A – A

NOTES:

1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED,TYPE II CEMENT
2. REINFORCING SHALL BE CENTERED IN WALLS AND BASE AND SHALL CONFORM TO ASTM AC15 GRADE 60.

APPROVED DATE: June 20, 2003 DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	REVISION NO.: 0 DATE: 6/20/03 PREPARED BY: OBG/BKJV CHECKED BY: W.DARROW	STANDARD DETAIL STANDARD CATCH BASIN

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY	S-30.02 1 OF 1



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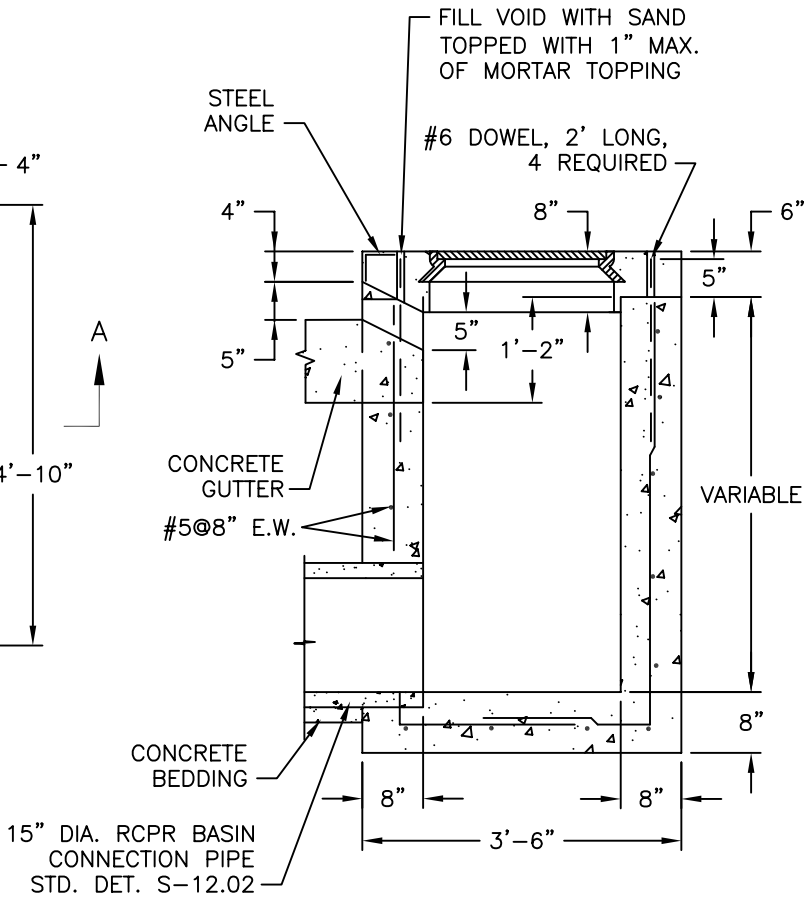
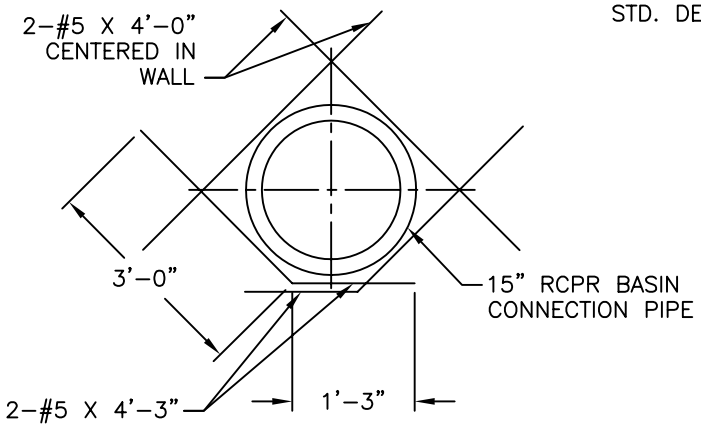


SECTION A – A



ADD'L REINFORCING
AT OPENING

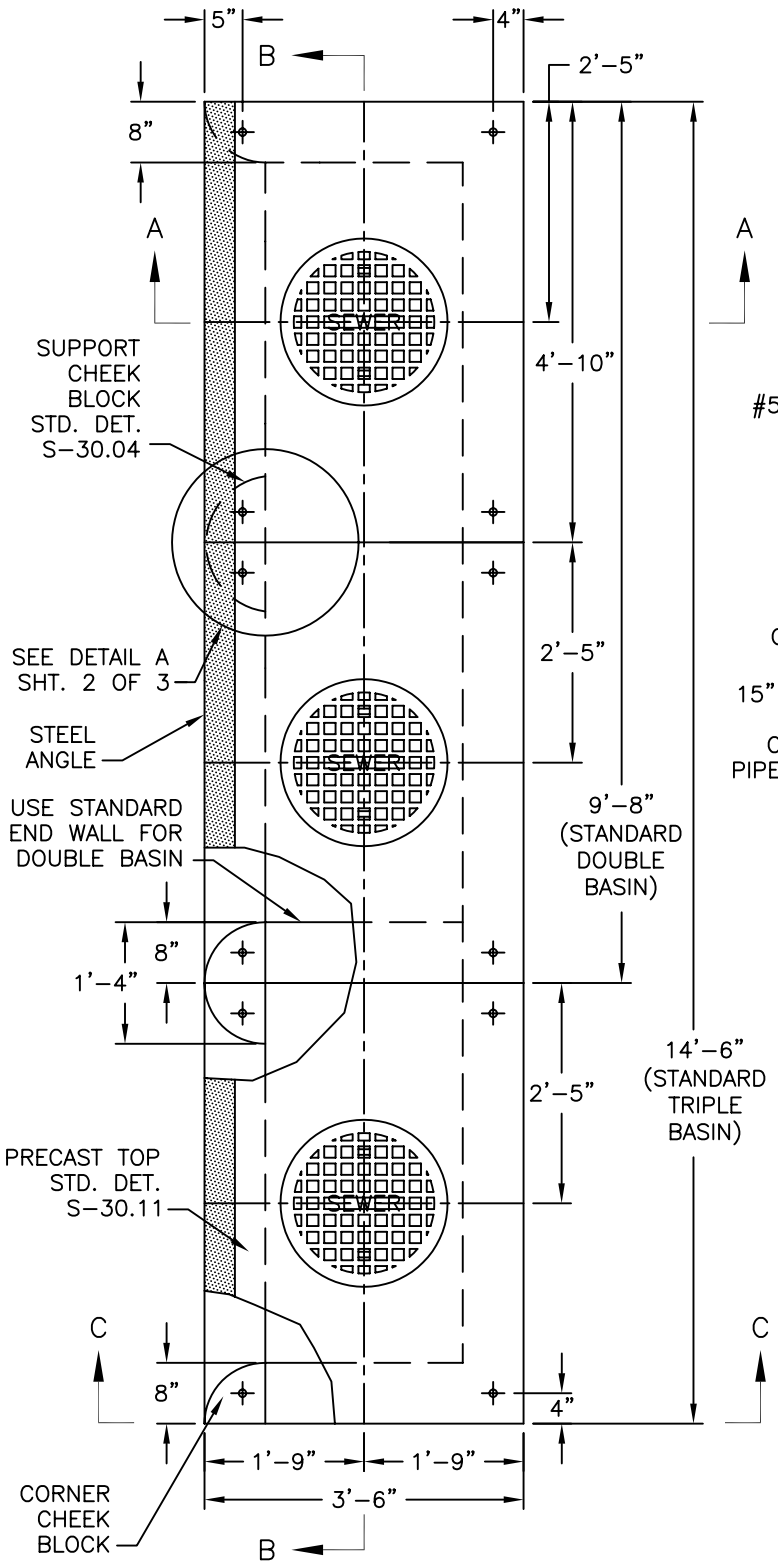
NOTES:

1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT
2. REINFORCING SHALL BE CENTERED IN WALLS AND BASE, AND SHALL CONFORM TO ASTM A615 GRADE 60.

APPROVED DATE: June 20, 2003 DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	REVISION NO.: 0 DATE: 6/20/03 PREPARED BY: OBG/BKJV CHECKED BY: W.DARROW	STANDARD DETAIL CATCH BASIN WITHOUT CATCHMENT CHAMBER

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

S-30.03
1 OF 2



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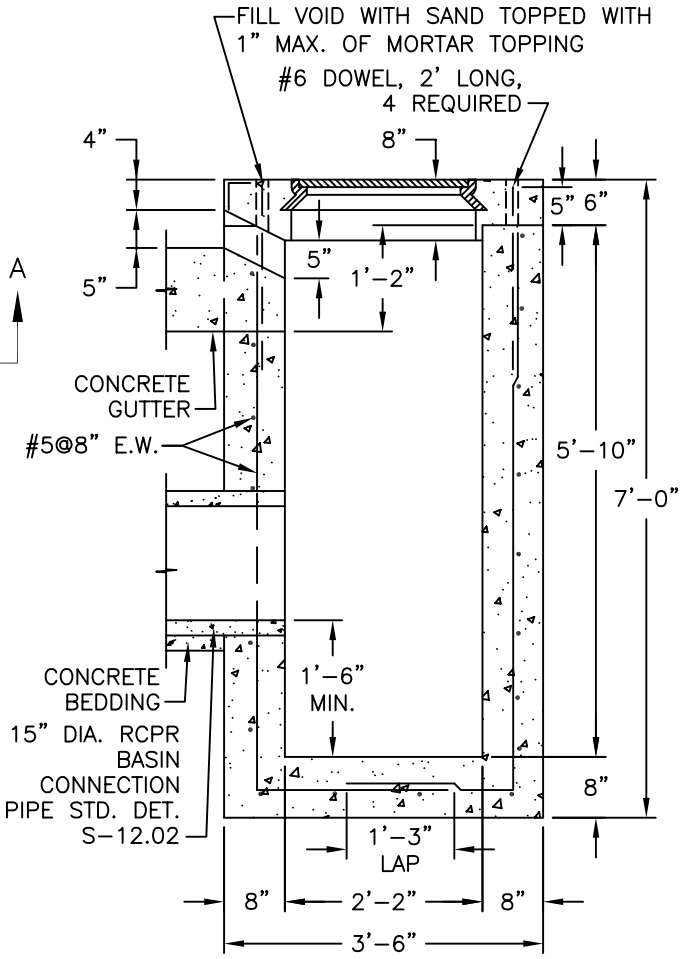
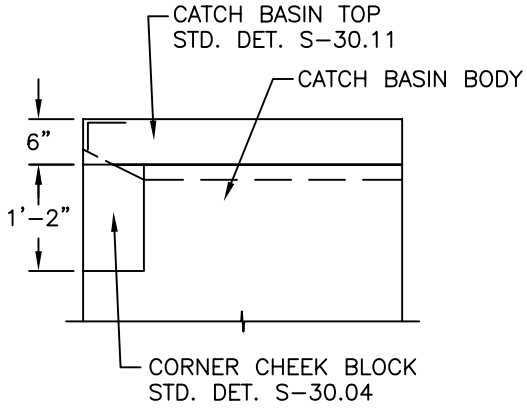


SECTION A-A

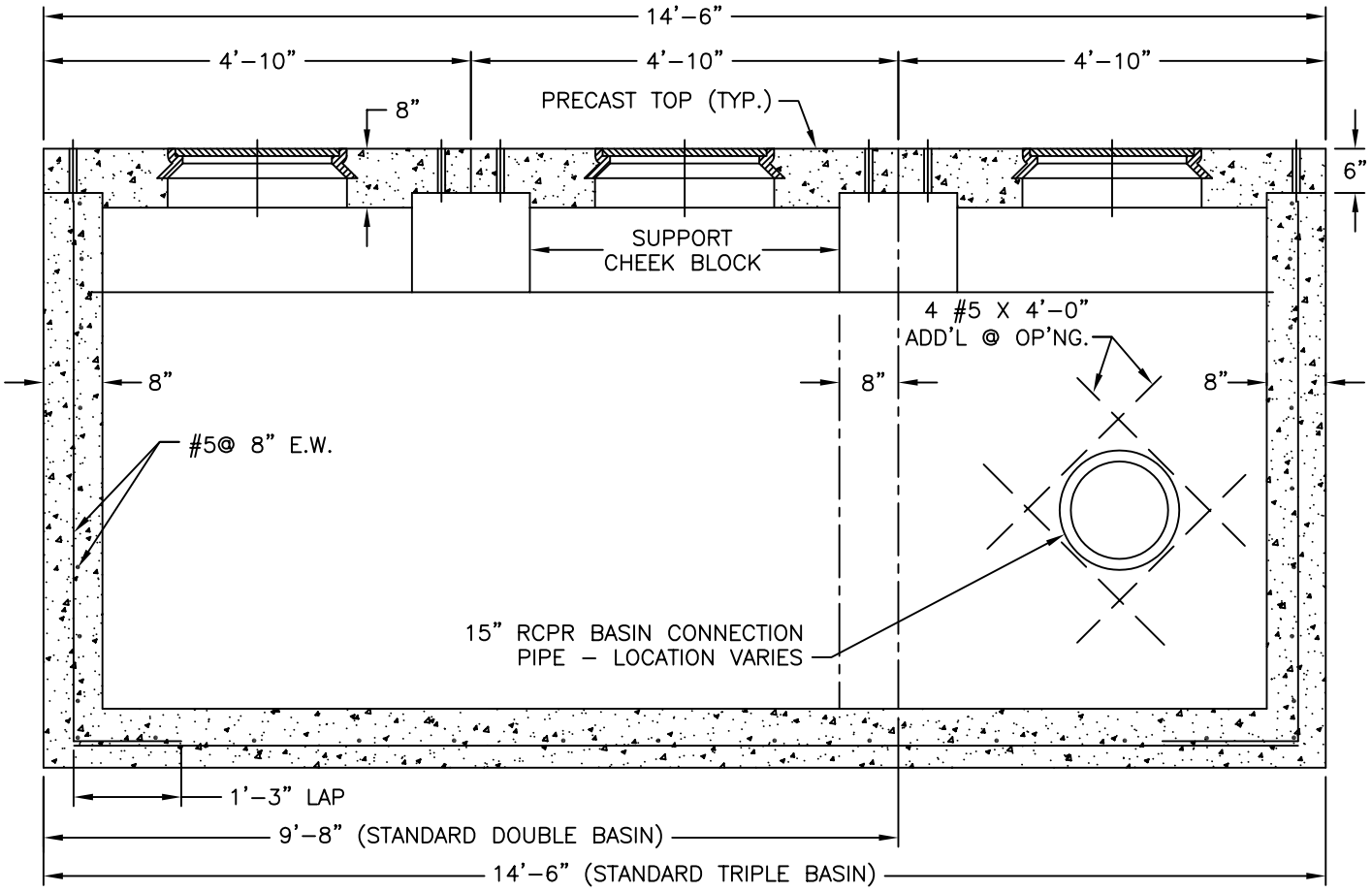


VIEW C-C

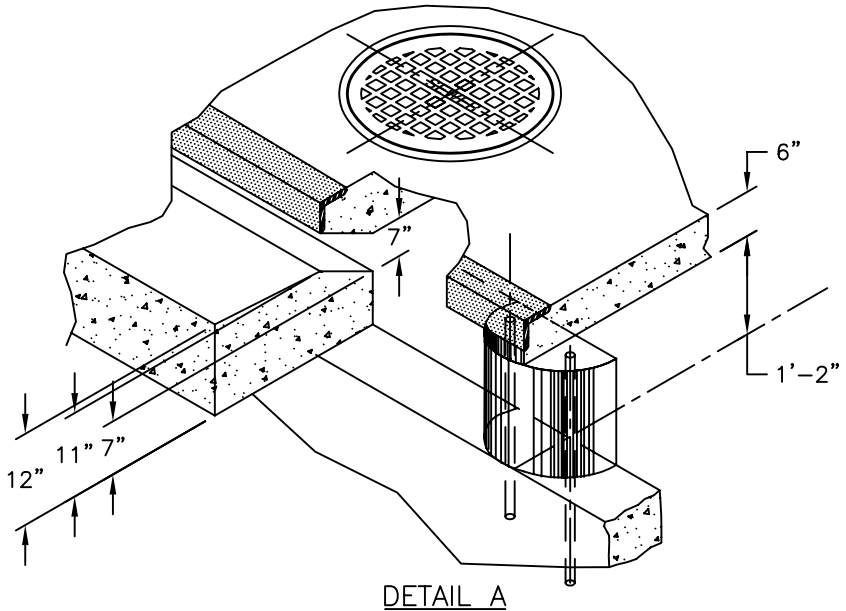
NOTES:

1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.

APPROVED DATE: June 20, 2003 DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	REVISION NO.: 0 DATE: 6/20/03 PREPARED BY: OBG/BKJV CHECKED BY: W.DARROW	STANDARD DETAIL STANDARD DOUBLE AND STANDARD TRIPLE BASINS

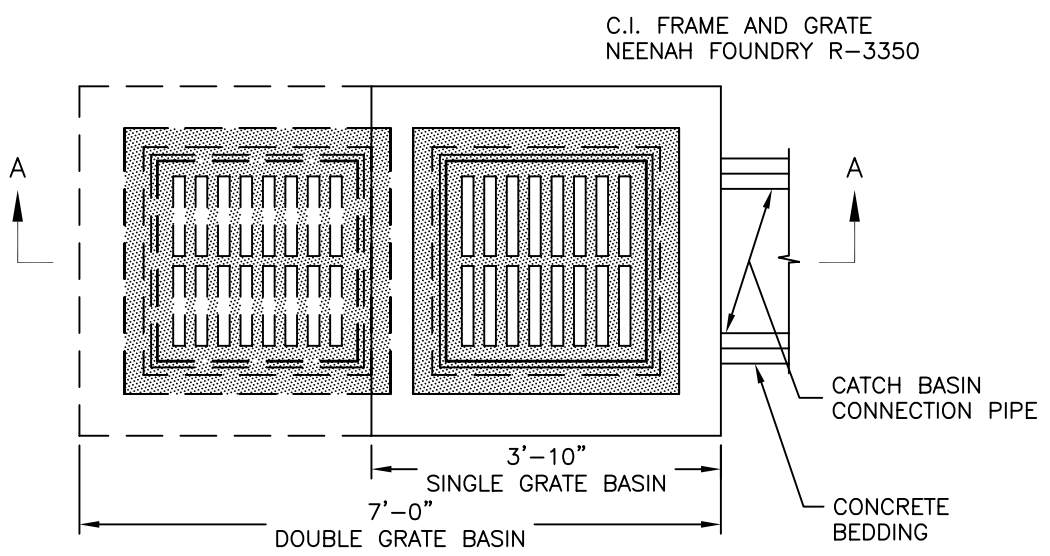


SECTION B–B



DETAIL A

APPROVED DATE: June 20, 2003 DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	REVISION NO.: 0 DATE: 6/20/03 PREPARED BY: OBG/BKJV CHECKED BY: W.DARROW	STANDARD DETAIL STANDARD DOUBLE AND STANDARD TRIPLE BASINS



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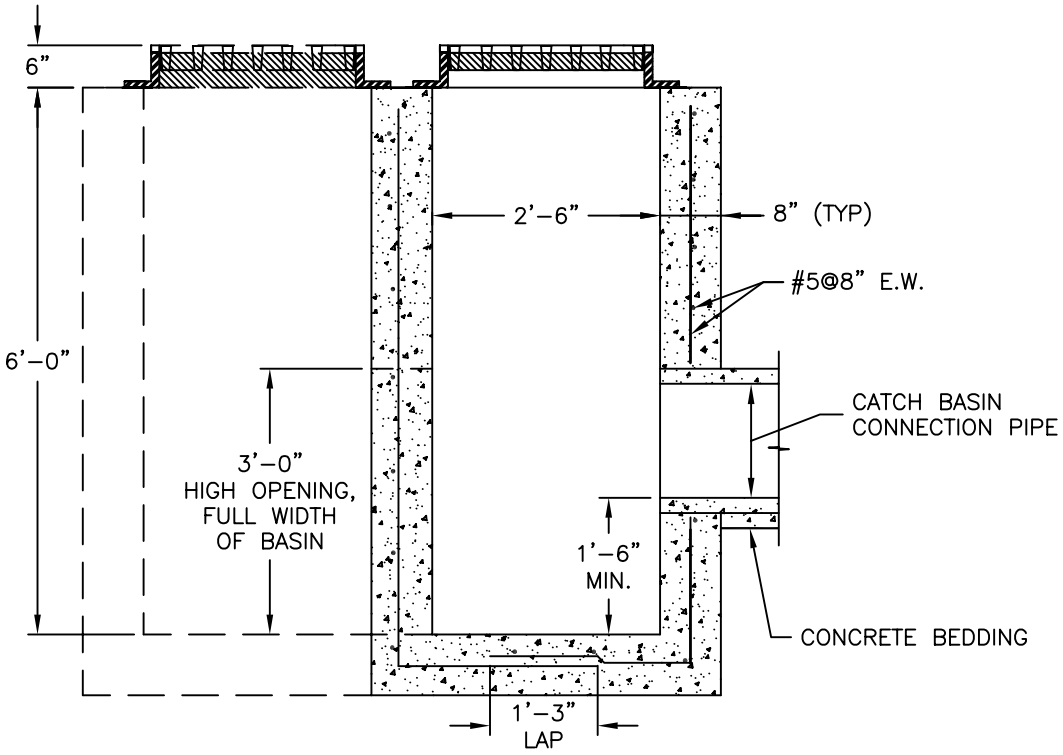
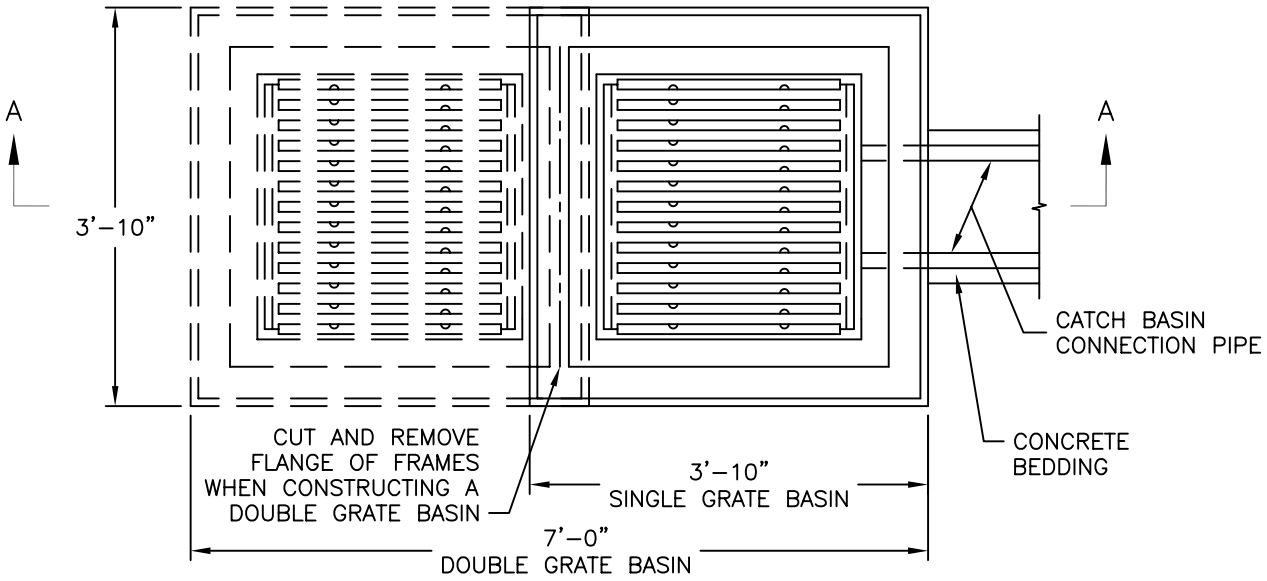


SECTION A – A

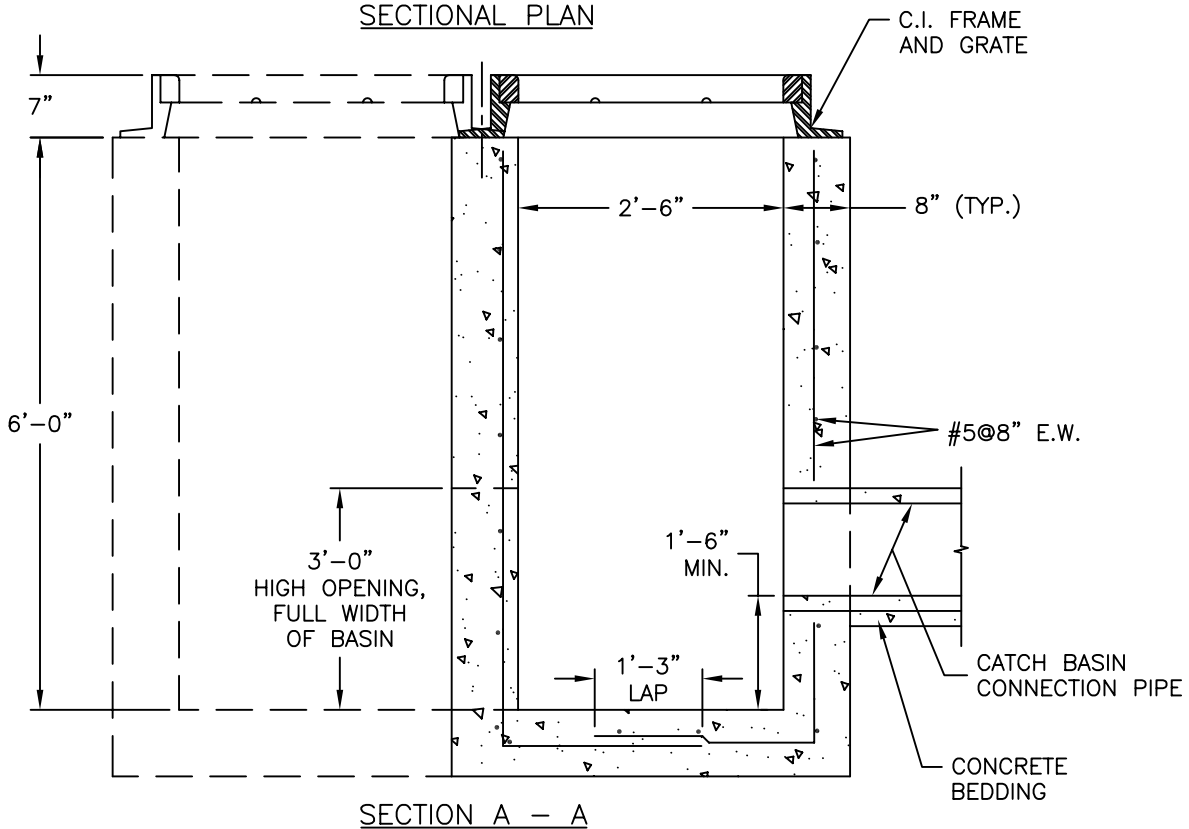
NOTES:

1. GRAY IRON CASTING PER ASTM A-48, CLASS 30A.
2. ALL MACHINE FINISH TO BE A.S.A. SPECIFICATION, ROUGHNESS SYMBOL 250, TOLERANCE -0 + 1/16".
3. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED TYPE II CEMENT.
4. BASIN TO BE USED IN UNPAVED AREAS ONLY.
5. REINFORCING SHALL BE CENTERED IN WALL AND BASE AND SHALL CONFORM TO ASTM A615 GRADE 60.

APPROVED DATE: June 20, 2003 DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	REVISION NO.: 0 DATE: 6/20/03 PREPARED BY: OBG/BKJV CHECKED BY: W.DARROW	STANDARD DETAIL FIELD INLET GRATE TYPE CATCH BASIN



SECTIONAL PLAN



SECTION A – A

NOTES:

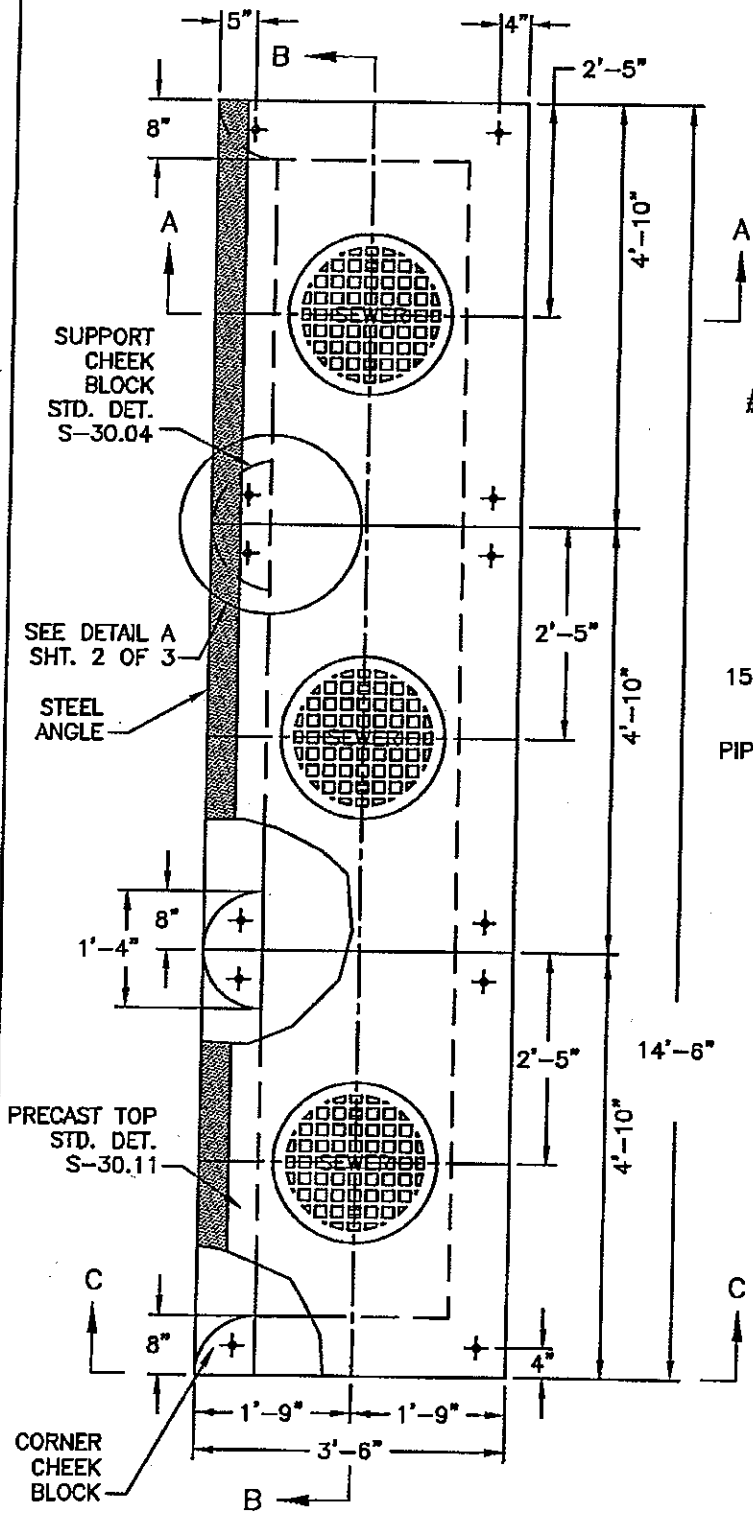
1. GRAY IRON CASTINGS PER ASTM A–48, CLASS 30A.
2. ALL MACHINE FINISH TO BE A.S.A. SPECIFICATION, ROUGHNESS SYMBOL 250, TOLERANCE – 0 + 1/16".
3. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT.
4. REINFORCING SHALL BE CENTERED IN WALL AND BASE AND SHALL CONFORM TO ASTM A615 GRADE 60.

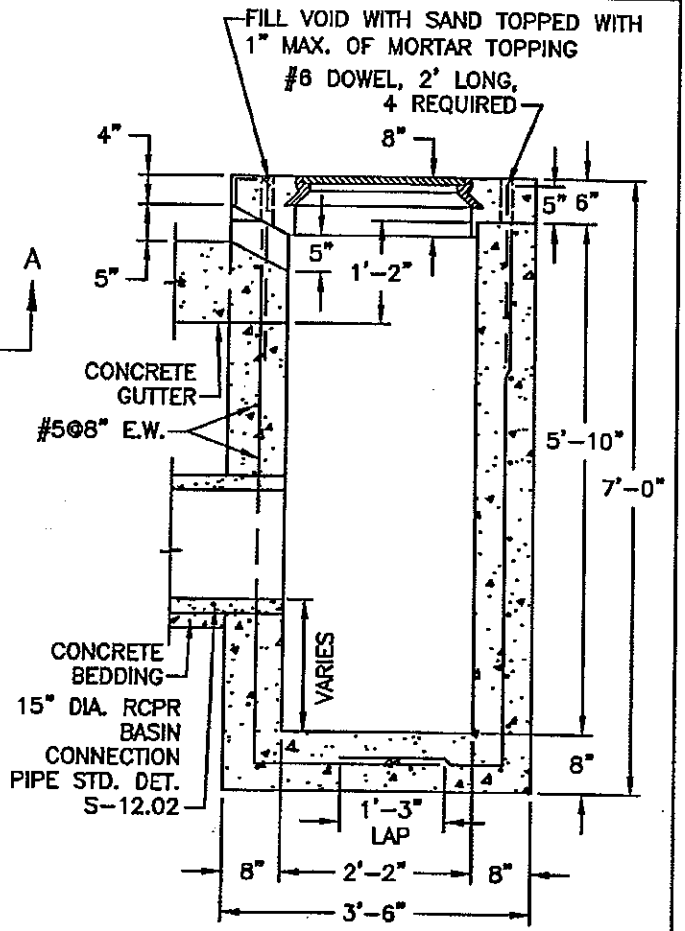
APPROVED DATE: June 20, 2003 DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	REVISION NO.: 0 DATE: 6/20/03 PREPARED BY: OBG/BKJV CHECKED BY: W.DARROW	STANDARD DETAIL GRATE TYPE CATCH BASIN WITH SAFETY GRATE

Appendix D: Water Quality Catch Basin Standard Details

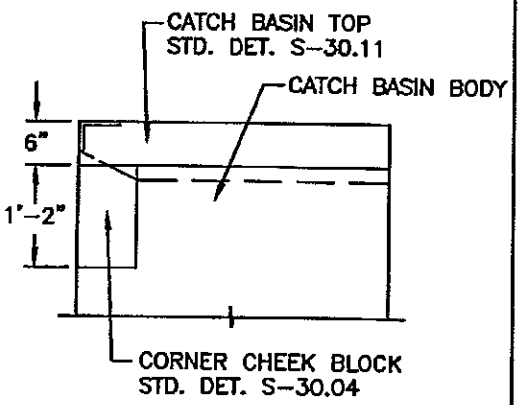
DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

S-31.01
1 OF 3





SECTION A-A

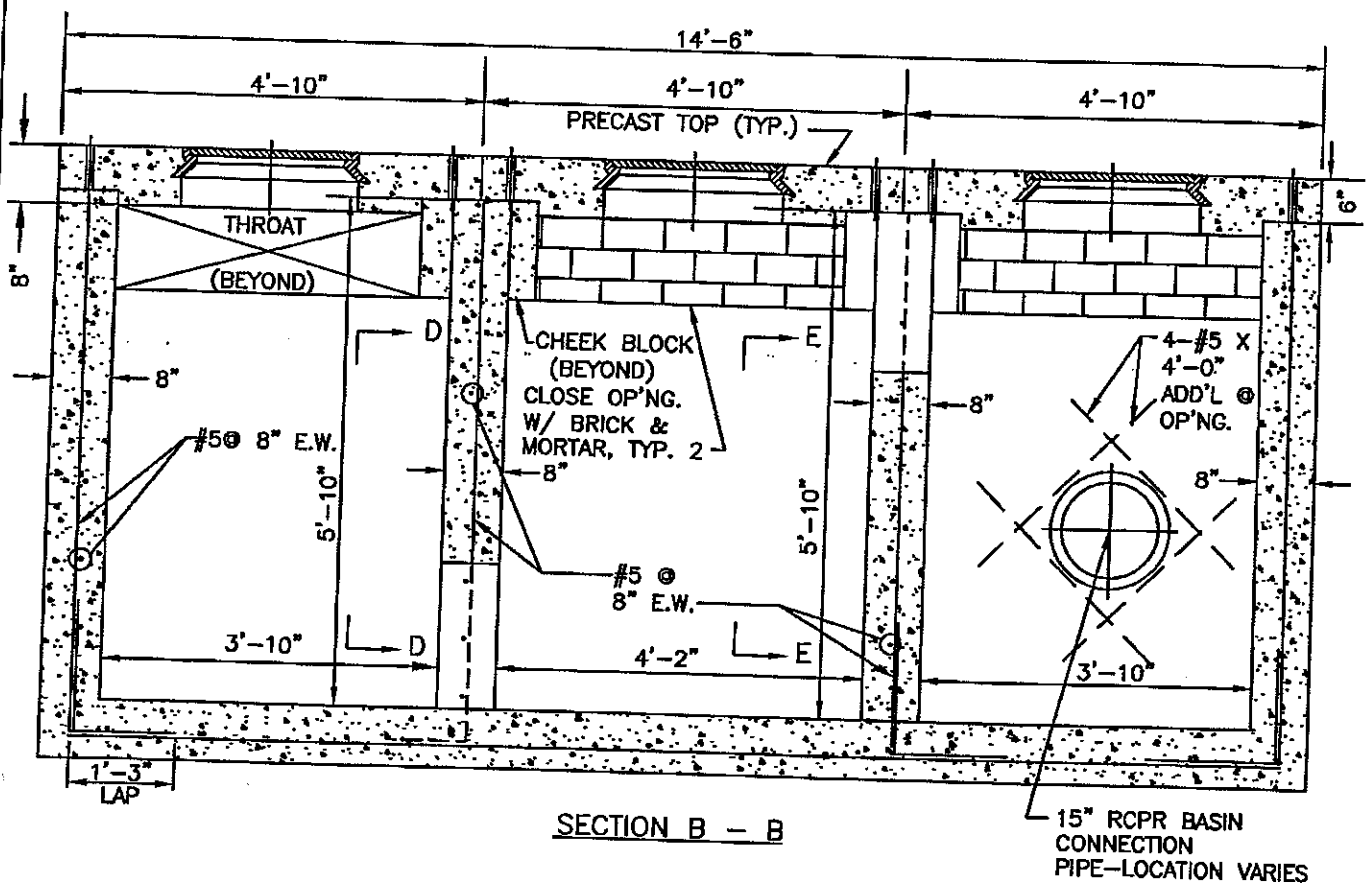


VIEW C-C

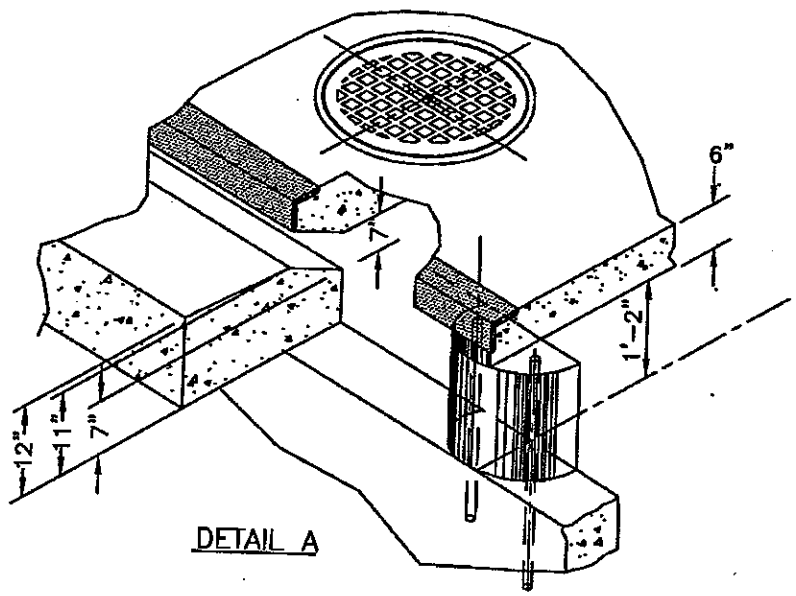
NOTES:

1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.

APPROVED DATE: MAY 00, 200X DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	REVISION NO.: 0 DATE: 5/00/0X PREPARED BY: I. SMITH CHECKED BY: W.DARROW	STANDARD DETAIL SINGLE THROAT WATER QUALITY BASIN

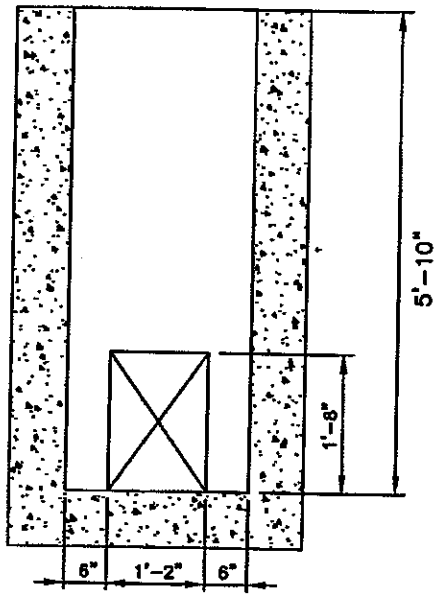


SECTION B – B

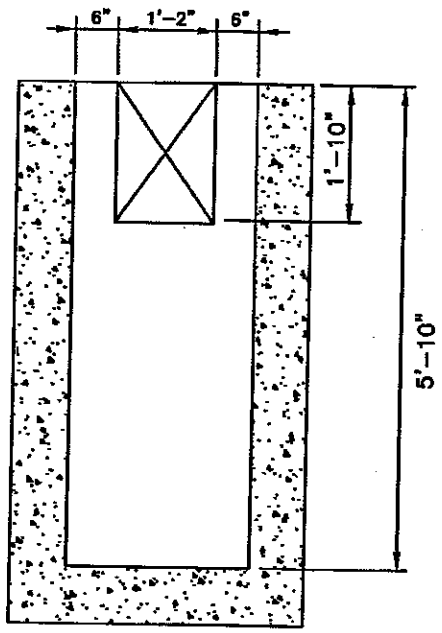


DETAIL A

APPROVED DATE: MAY 00, 200X DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	REVISION NO.: 0 DATE: 5/00/200X PREPARED BY: I. SMITH CHECKED BY: W. DARROW	STANDARD DETAIL SINGLE THROAT WATER QUALITY BASIN	



VIEW D-D

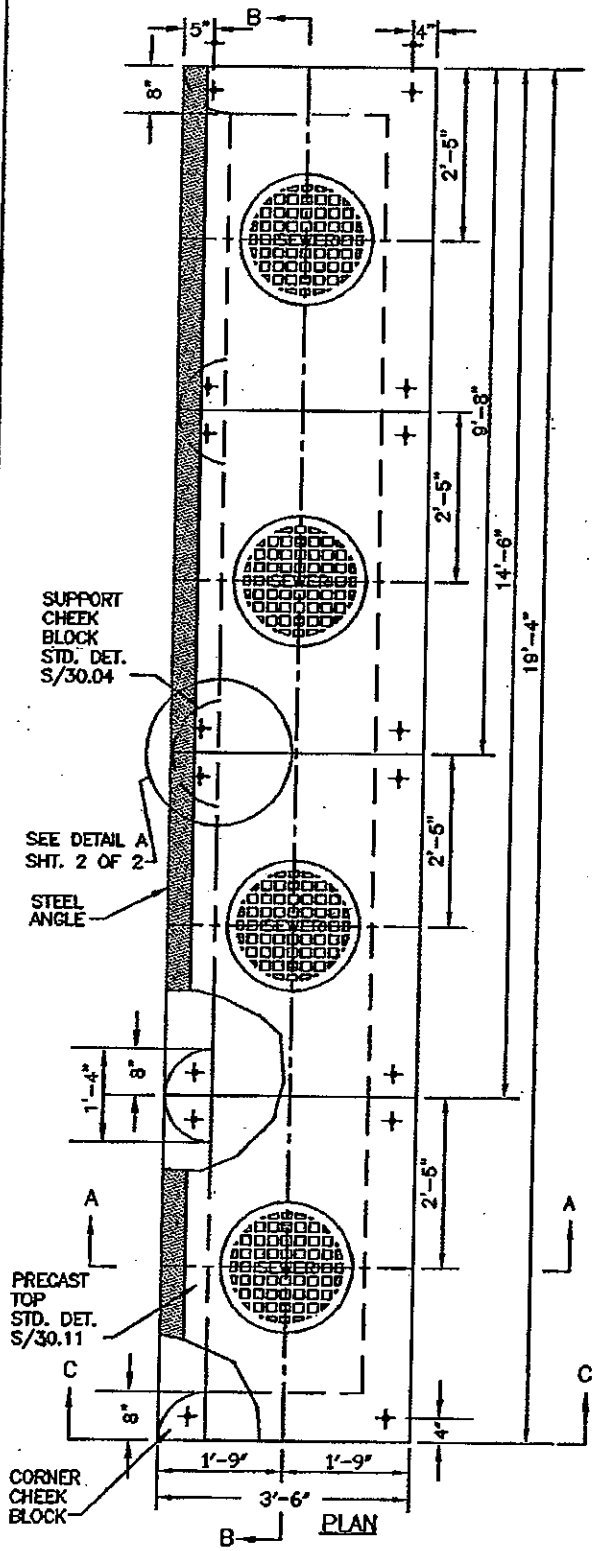


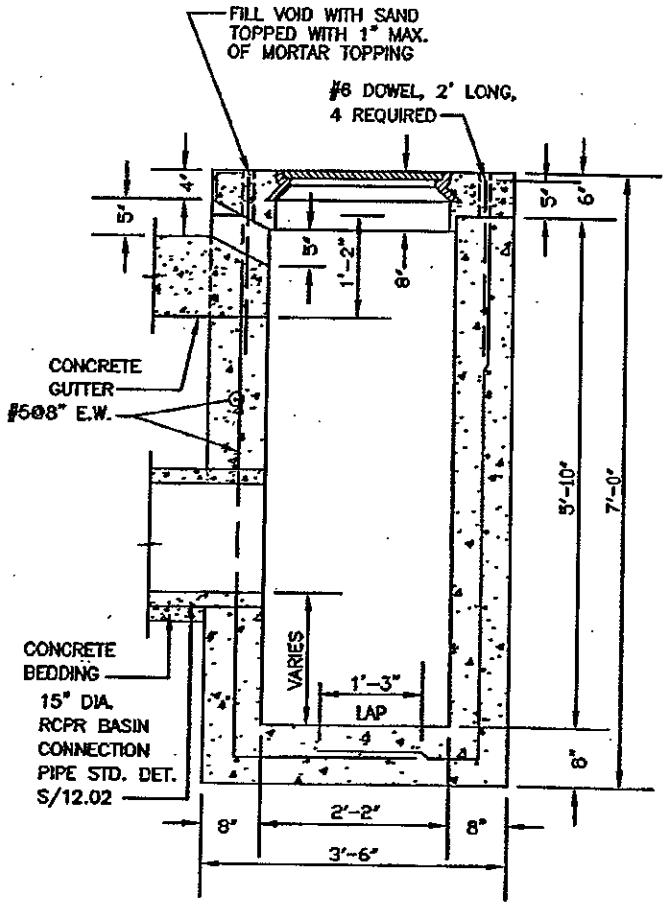
VIEW E-E

APPROVED DATE: MAY 00, 200X DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	REVISION NO.: 0 DATE: 5/00/200X PREPARED BY: I. SMITH CHECKED BY: W. DARROW	STANDARD DETAIL SINGLE THROAT WATER QUALITY CONTROL BASIN

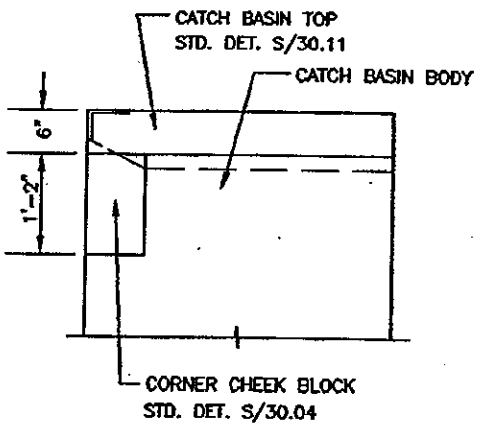
DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

S-31.02
1 OF 3





SECTION A – A



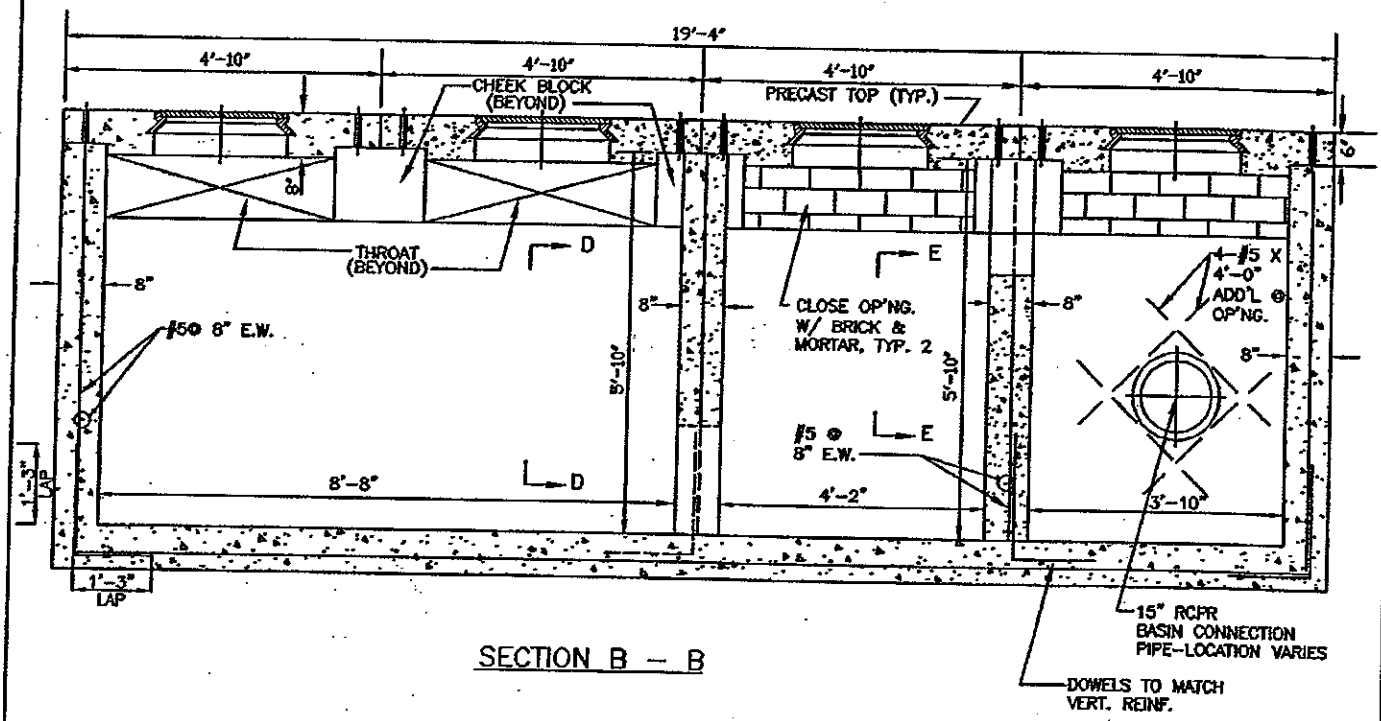
VIEW C–C

NOTES:
1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.

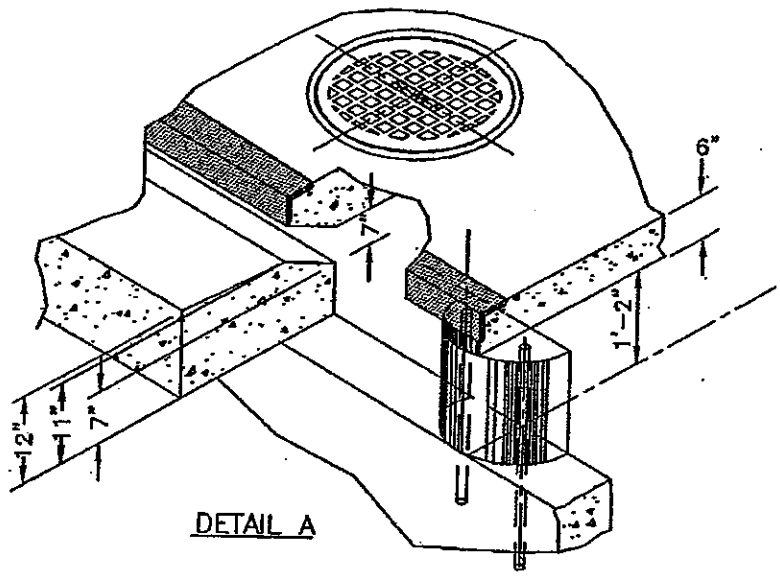
APPROVED DATE: _____	REVISION NO.: 0	STANDARD DETAIL
	DATE: 8-16-07	DUAL THROAT
DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	PREPARED BY: W. DEVAUGHN	WATER QUALITY BASIN
	CHECKED BY: W. DARROW	

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

S-31.02
2 OF 3

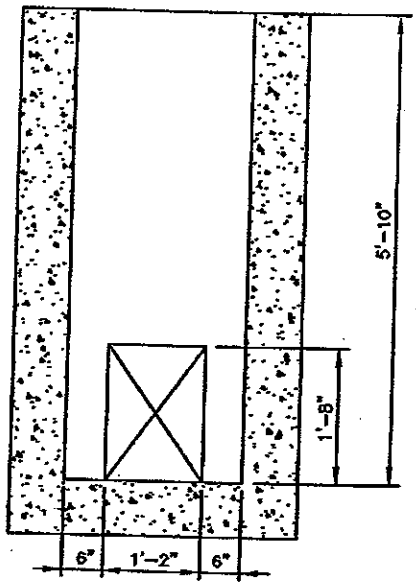


SECTION B – B

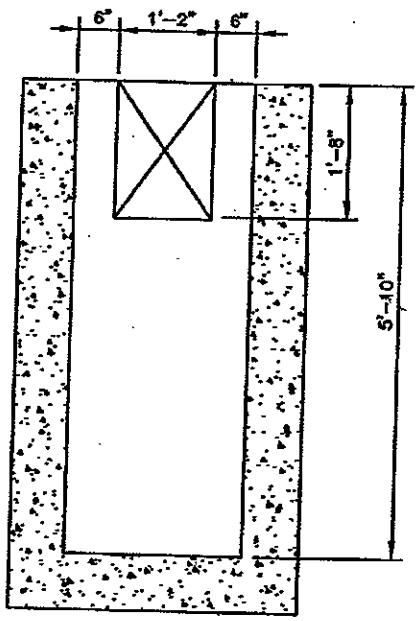


DETAIL A

APPROVED DATE: _____	REVISION NO.: 0	STANDARD DETAIL
	DATE: 5-18-07	DUAL THROAT
DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	PREPARED BY: W. DEVAUGHN	WATER QUALITY BASIN
	CHECKED BY: W. DARROW	



VIEW D-D

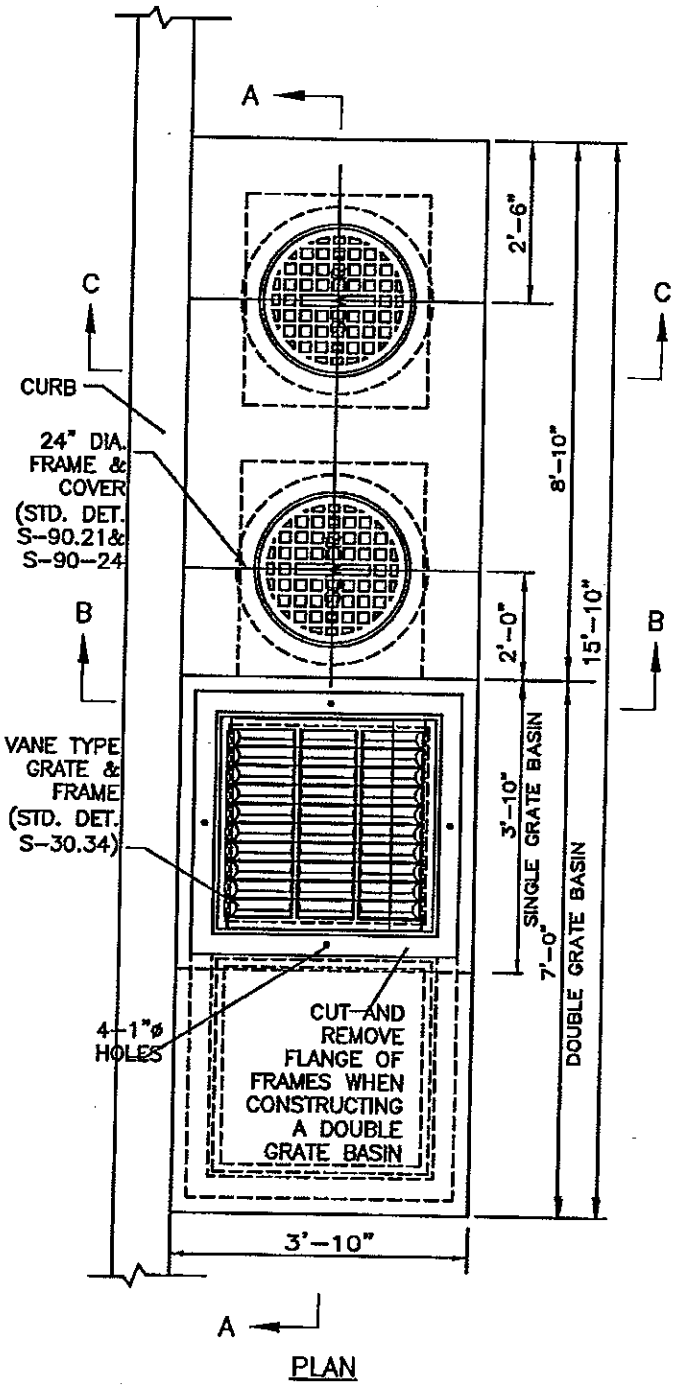


VIEW E-E

APPROVED DATE: _____	REVISION NO.: 0	STANDARD DETAIL
_____	DATE: 8-16-07	DUAL THROAT
DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	PREPARED BY: W. DEVAUGHN	WATER QUALITY BASIN
	CHECKED BY: W. DARROW	

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

S-31.03
1 OF 2



PLAN

NOTES:

1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60., CENTERED IN WALL.
3. GRAY IRON CASTINGS PER ASTM A-48, CALSS 30A OR 35.
4. ALL MACHINE FINISH TO BE A.S.A SPECIFICATION, ROUGHNESS SYMBOL 250, TOLERANCE -0", +1/16".

APPROVED DATE: _____

DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES

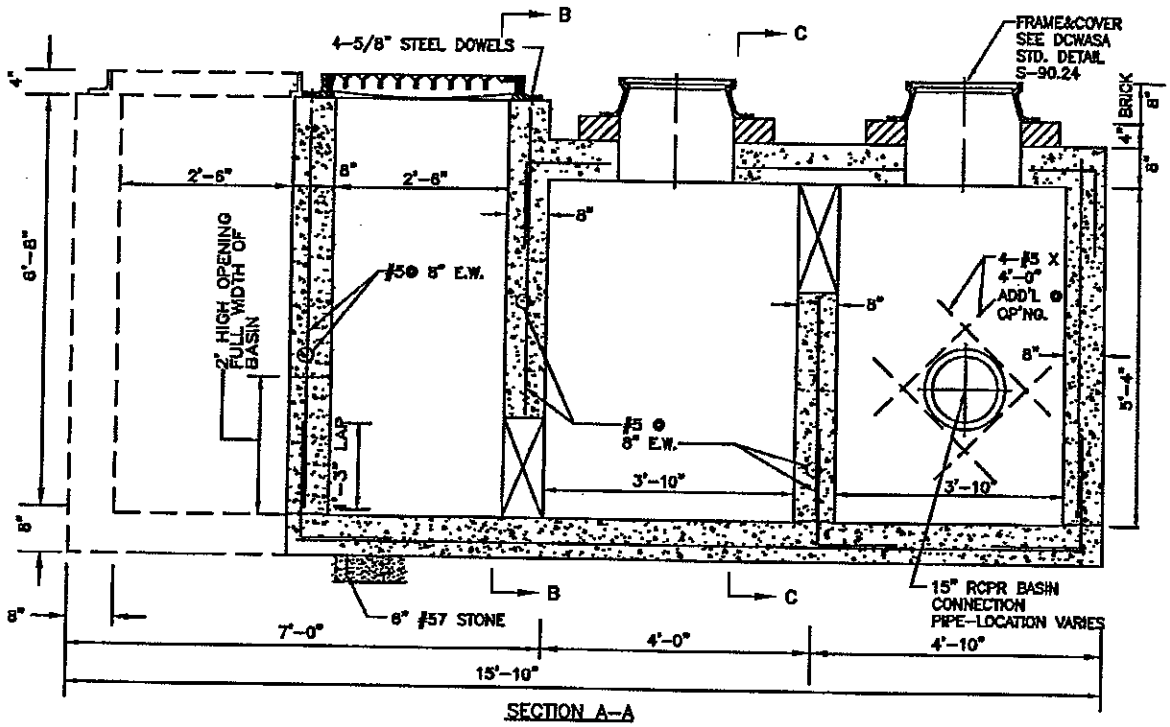
REVISION NO.: 0
DATE: 08/29/2007
PREPARED BY: S. BIAN
CHECKED BY: W.DARROW

STANDARD DETAIL

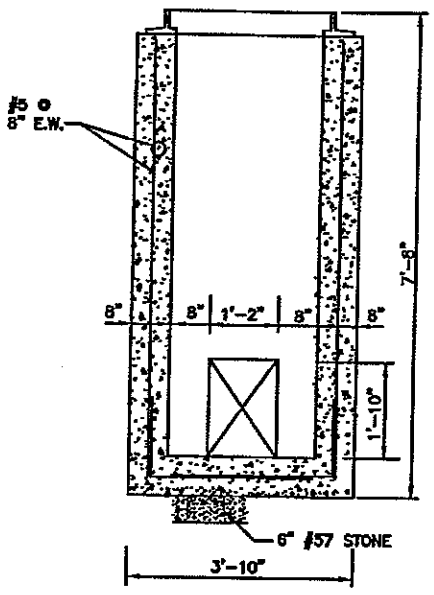
GRATE TYPE
WATER QUALITY BASIN

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

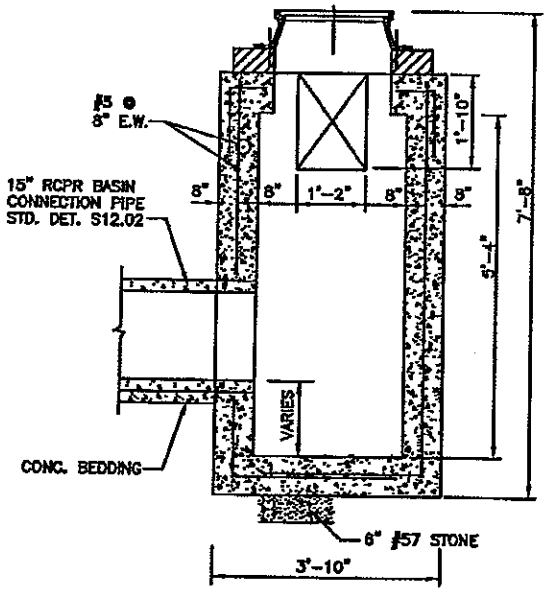
S-31.03
2 OF 2



SECTION A-A



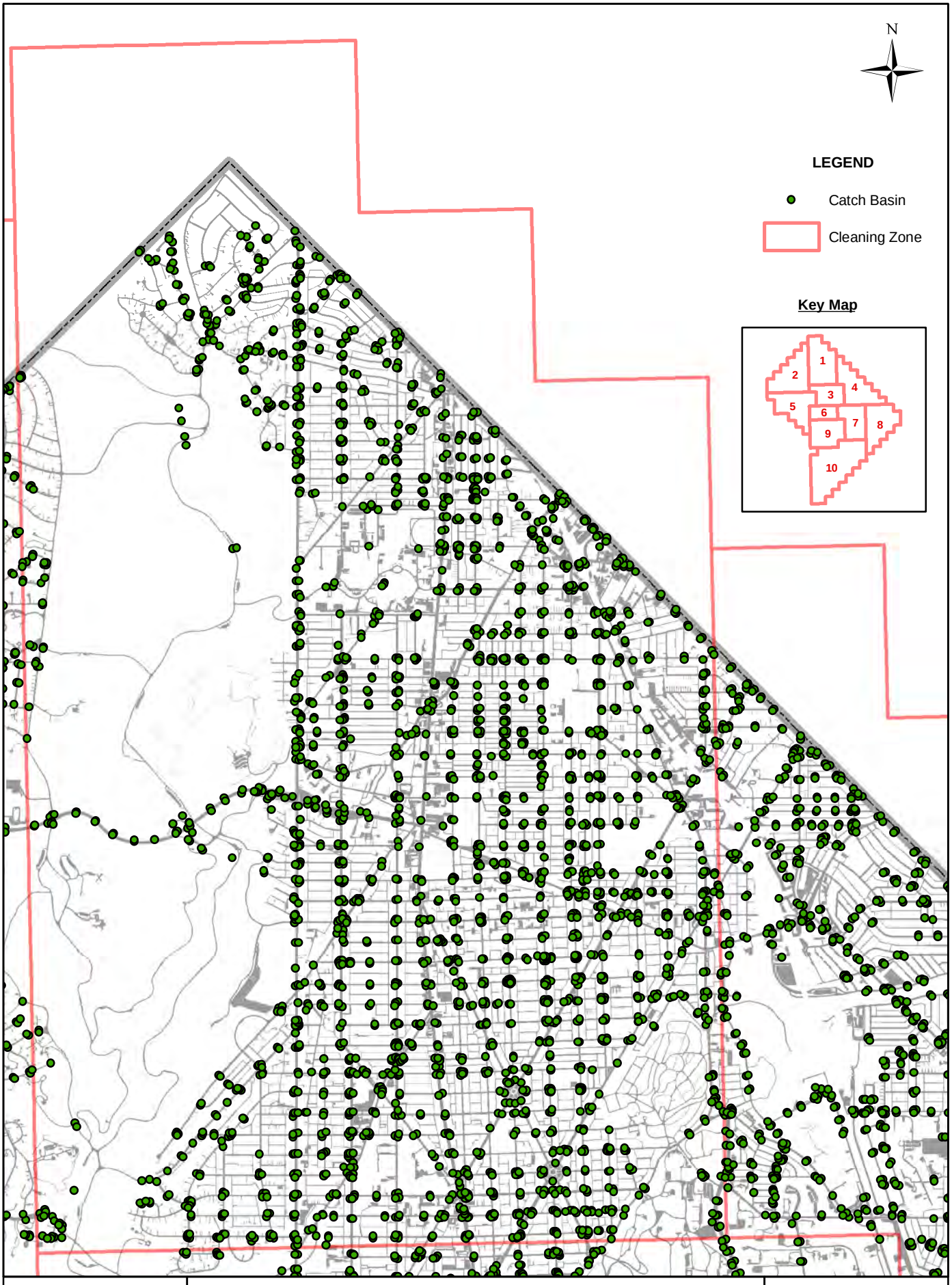
SECTION B-B



SECTION C-C

APPROVED DATE: _____	REVISION NO.: 0	STANDARD DETAIL
DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES	DATE: 6/29/2007	GRATE TYPE WATER QUALITY BASIN
	PREPARED BY: S. BIAN	
	CHECKED BY: W. DARROW	

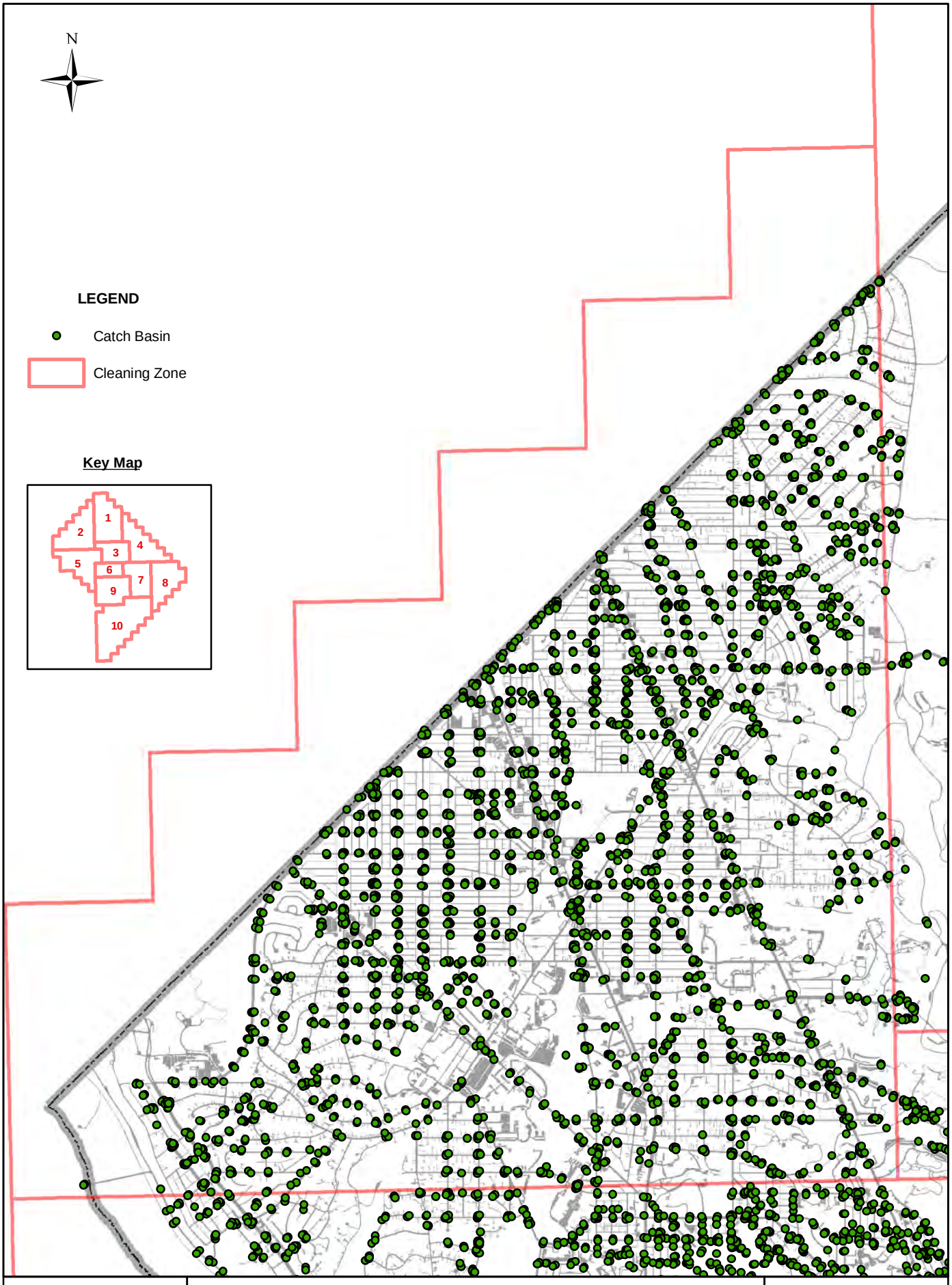
Appendix E: Catch Basin Individual Cleaning Area Maps



dc water is life

Appendix E
Catch Basin Individual Cleaning Area Maps
Area No. 1

0 0.1 0.2 0.4
Miles



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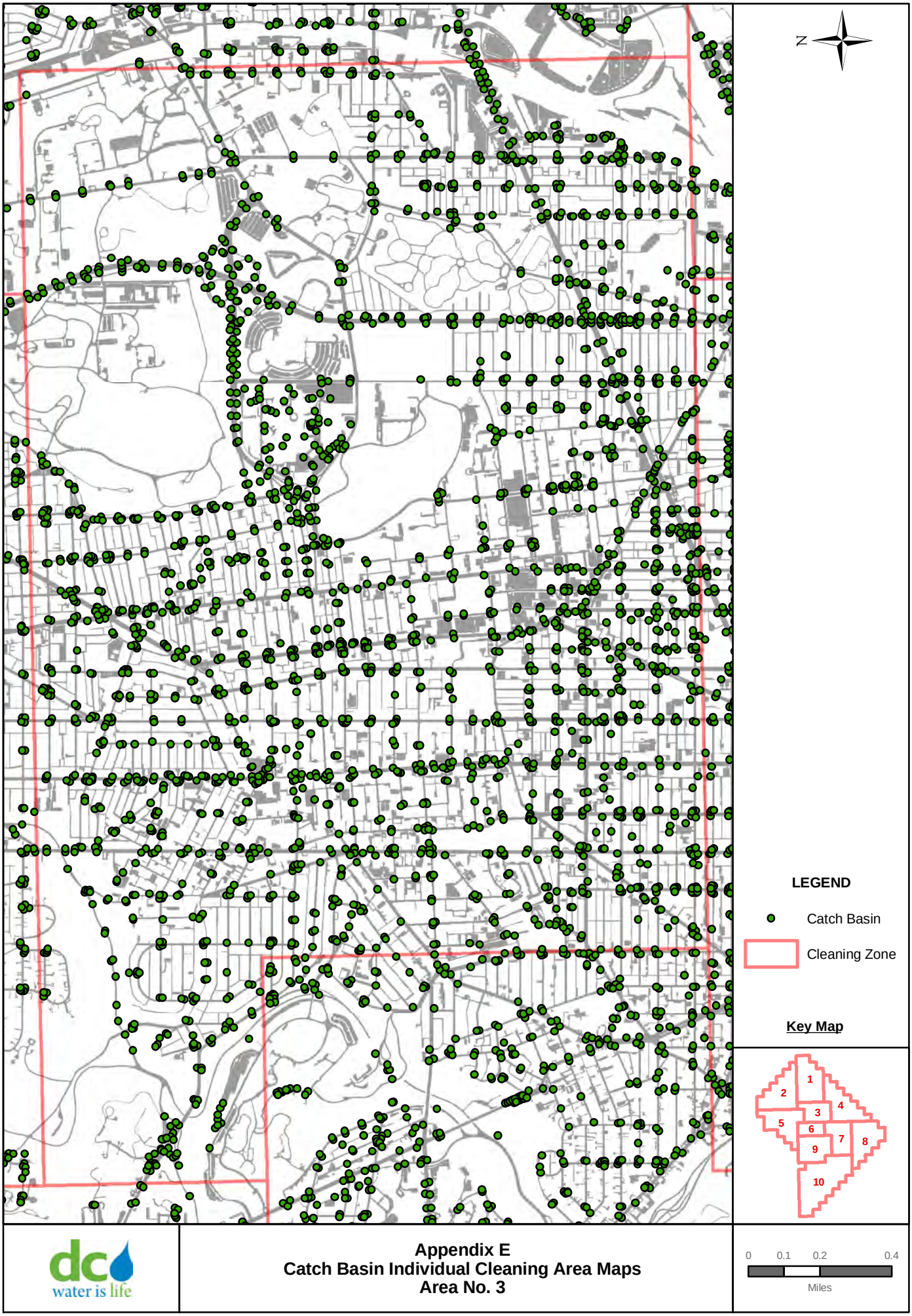
Appendix E
Catch Basin Individual Cleaning Area Maps
Area No. 2

0 0.125 0.25 0.5
Miles



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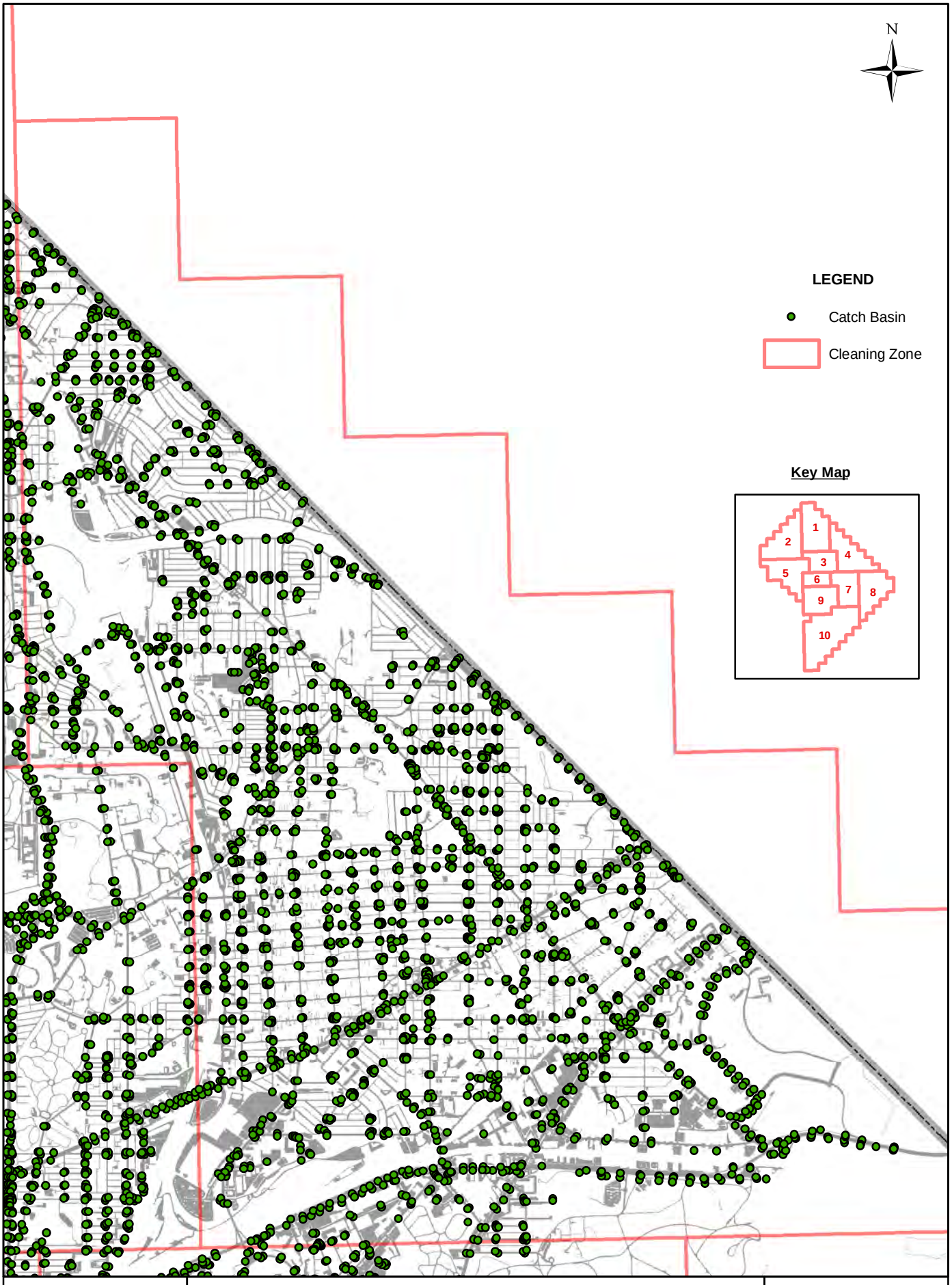
Appendix E
Catch Basin Individual Cleaning Area Maps
Area No. 3



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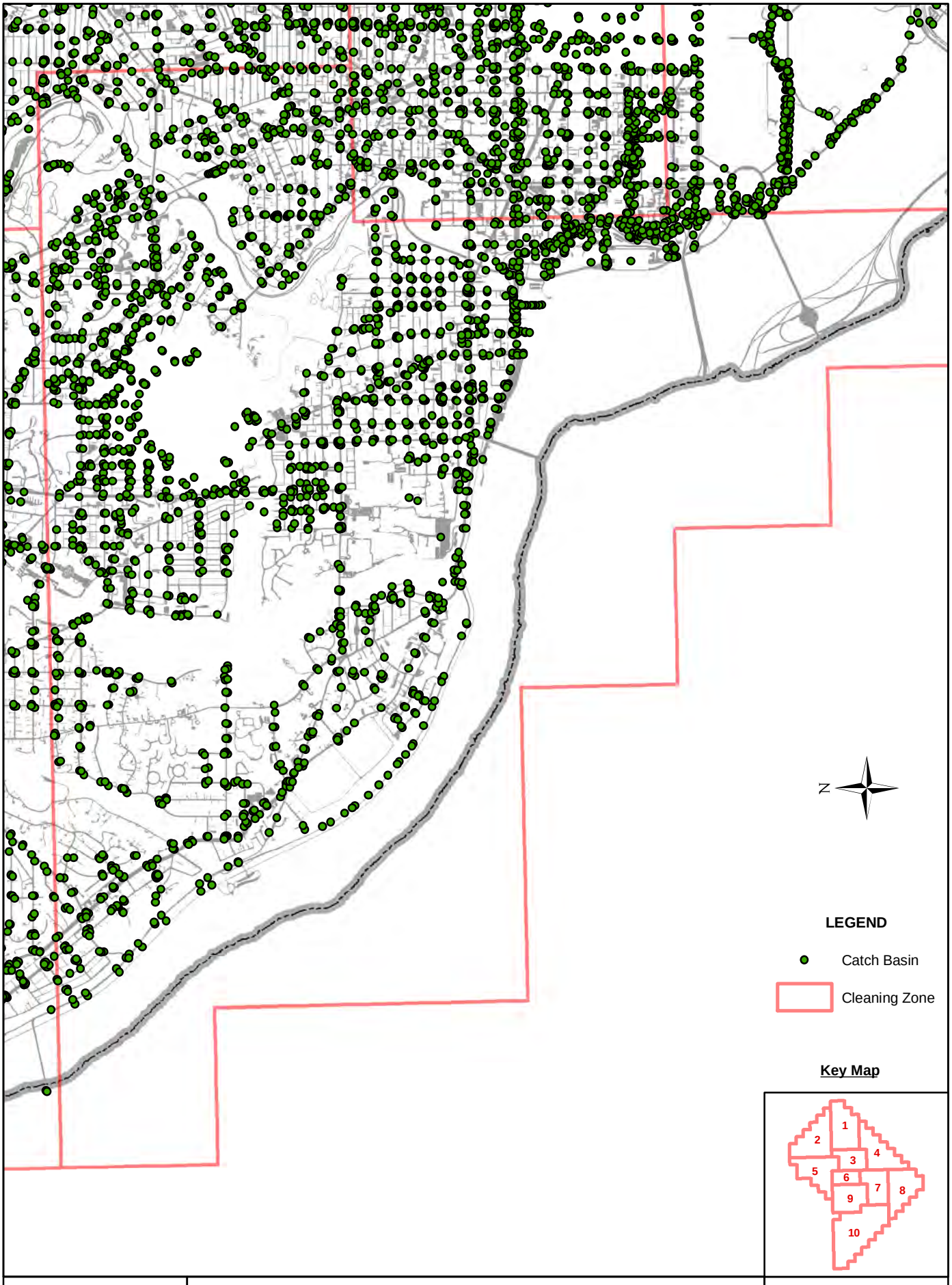
Appendix E
Catch Basin Individual Cleaning Area Maps
Area No. 4

0 0.1 0.2 0.4
Miles



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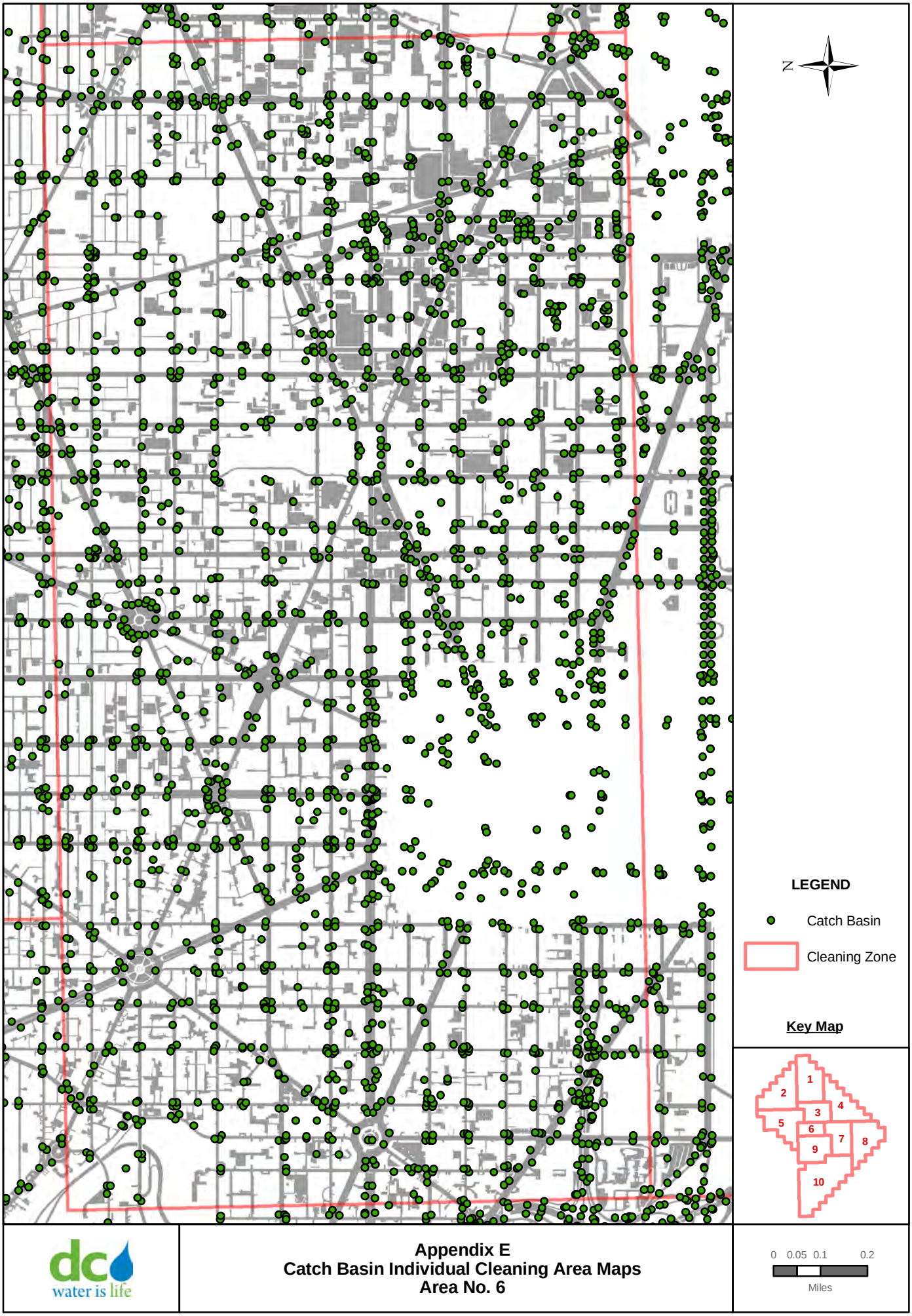
Appendix E
Catch Basin Individual Cleaning Area Maps
Area No. 5

0 0.1 0.2 0.4
Miles



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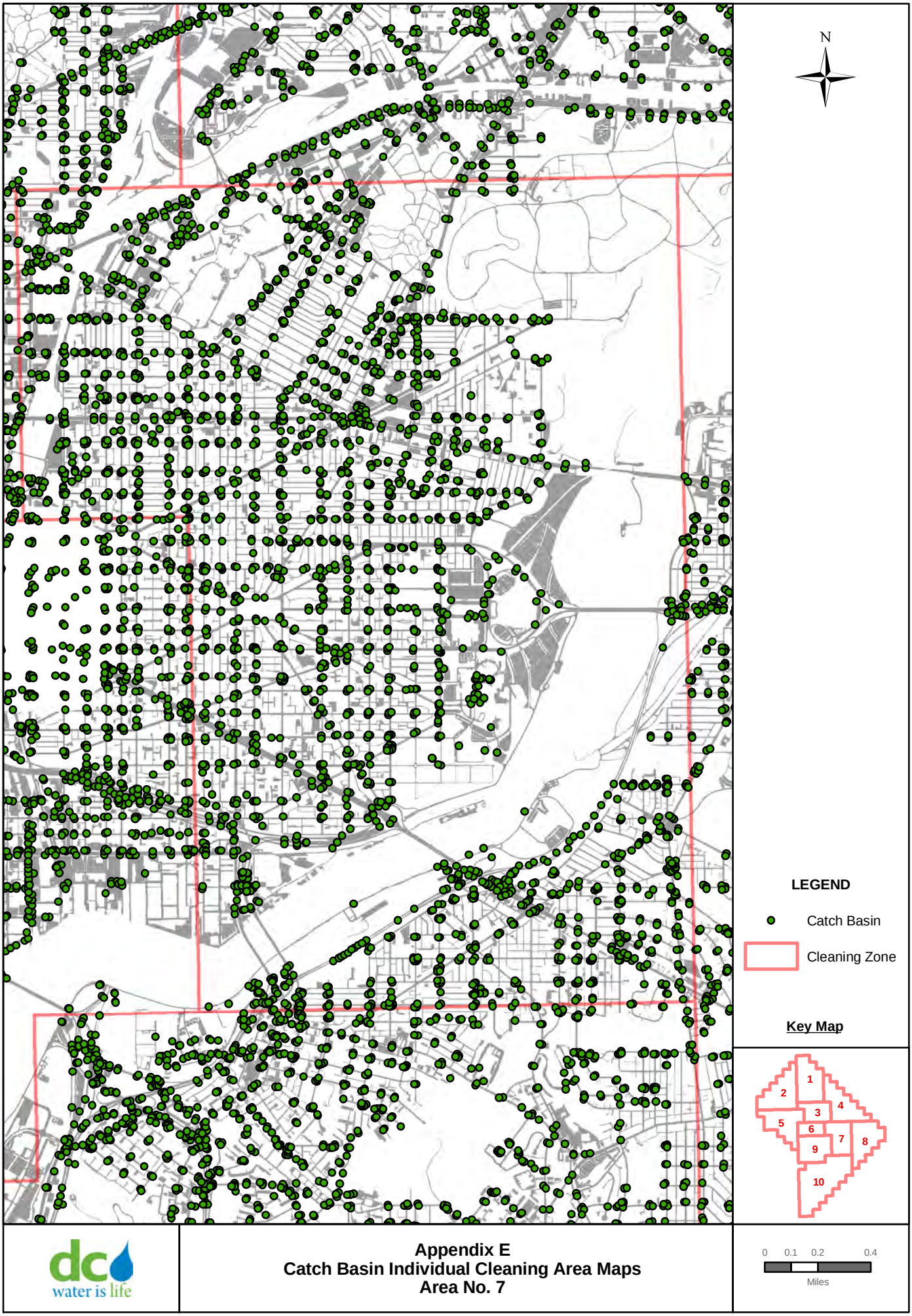
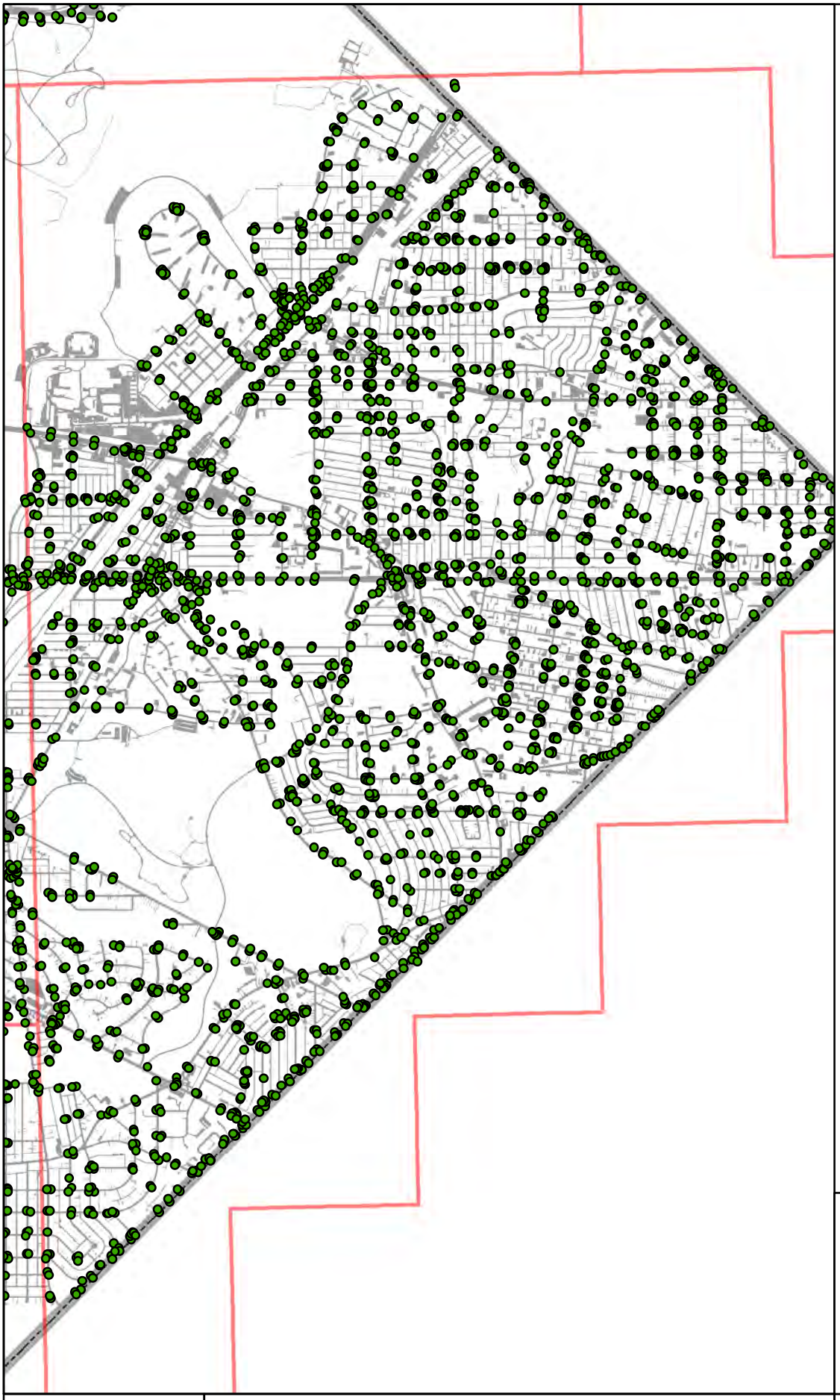
Appendix E
Catch Basin Individual Cleaning Area Maps
Area No. 6


N
LEGEND
Catch Basin
Cleaning Zone
Key Map
1
2
3
4
5
6
7
8
9
10
dc water is life
Appendix E
Catch Basin Individual Cleaning Area Maps
Area No. 7
0 0.1 0.2 0.4
Miles



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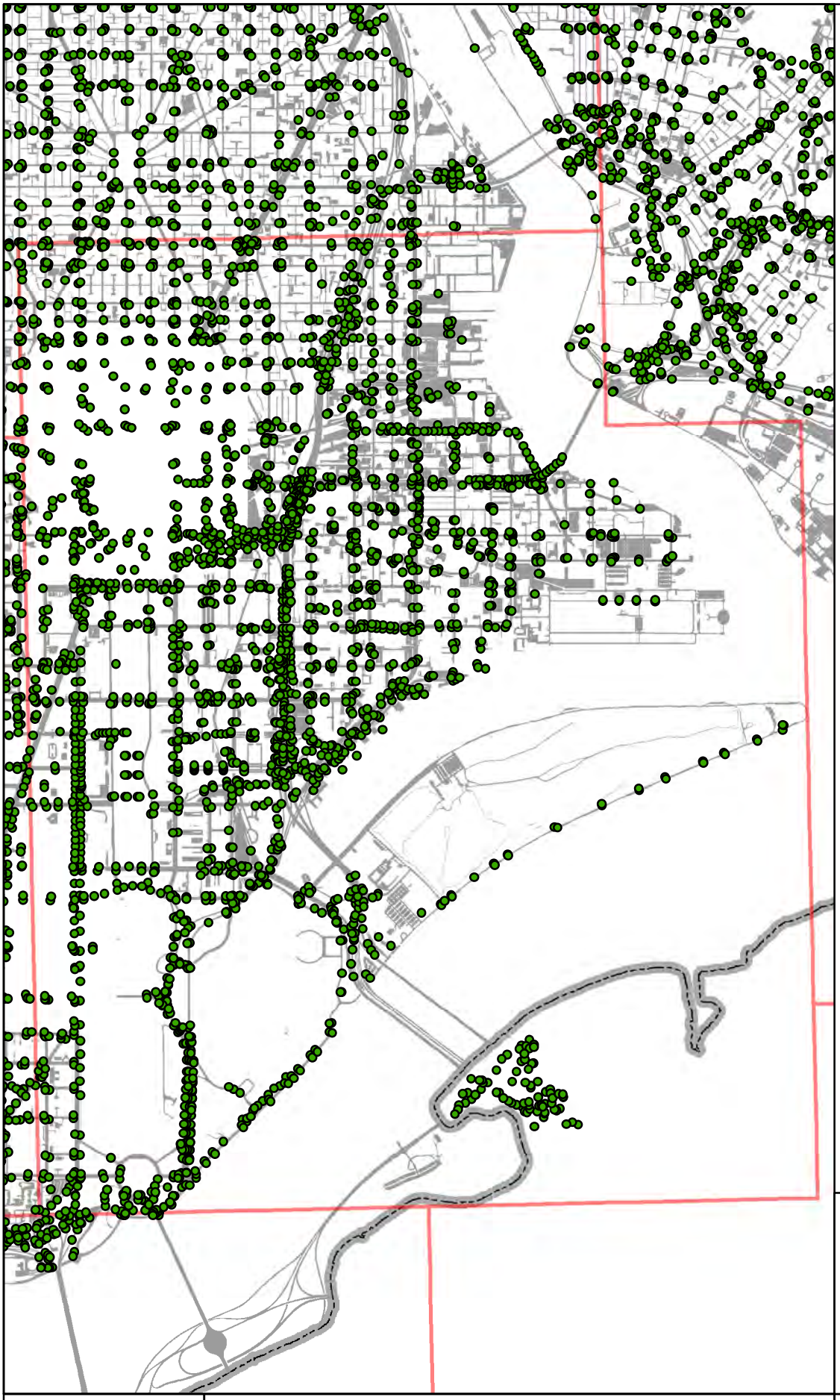
Appendix E
Catch Basin Individual Cleaning Area Maps
Area No. 8



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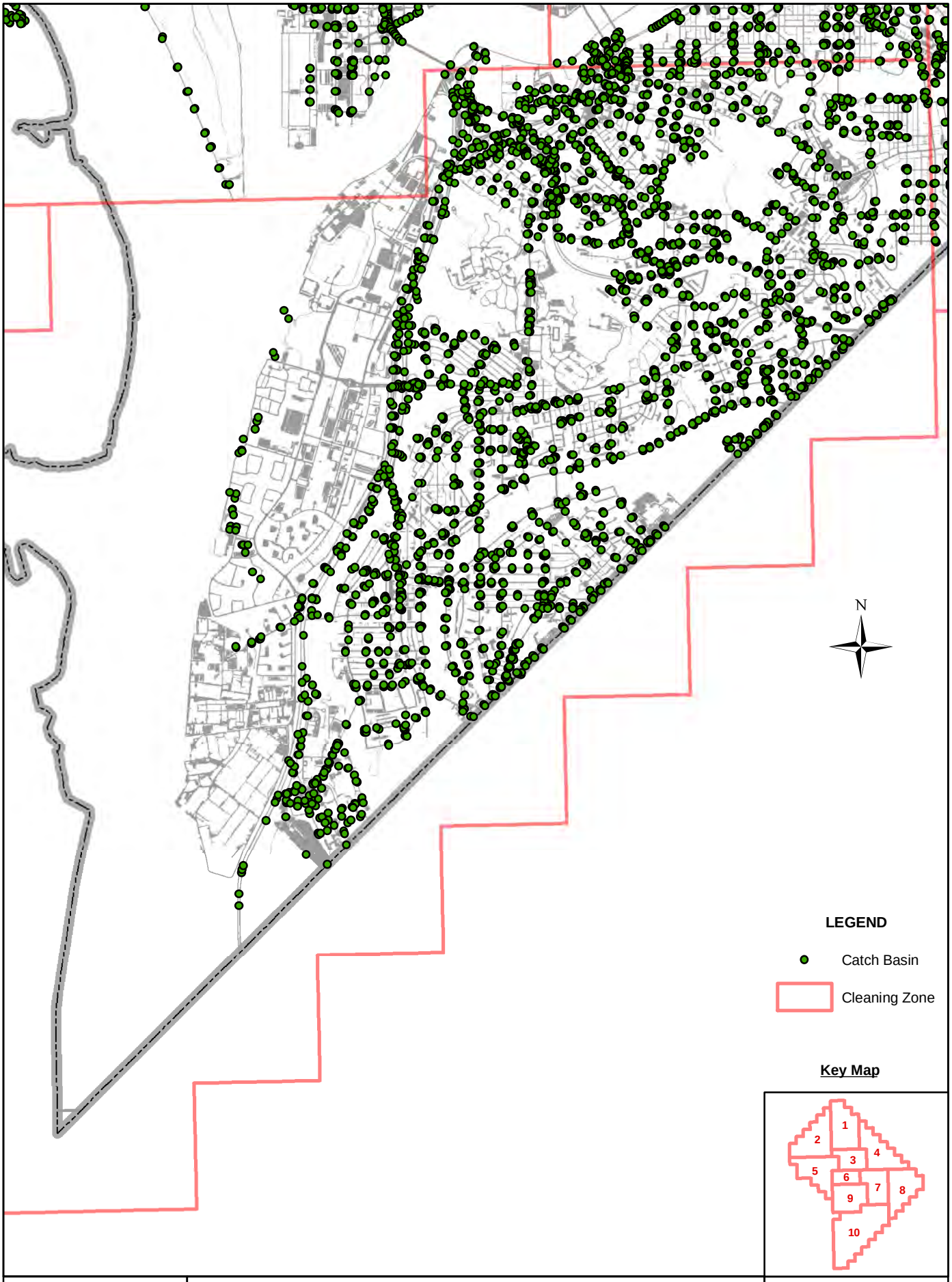
Appendix E
Catch Basin Individual Cleaning Area Maps
Area No. 9



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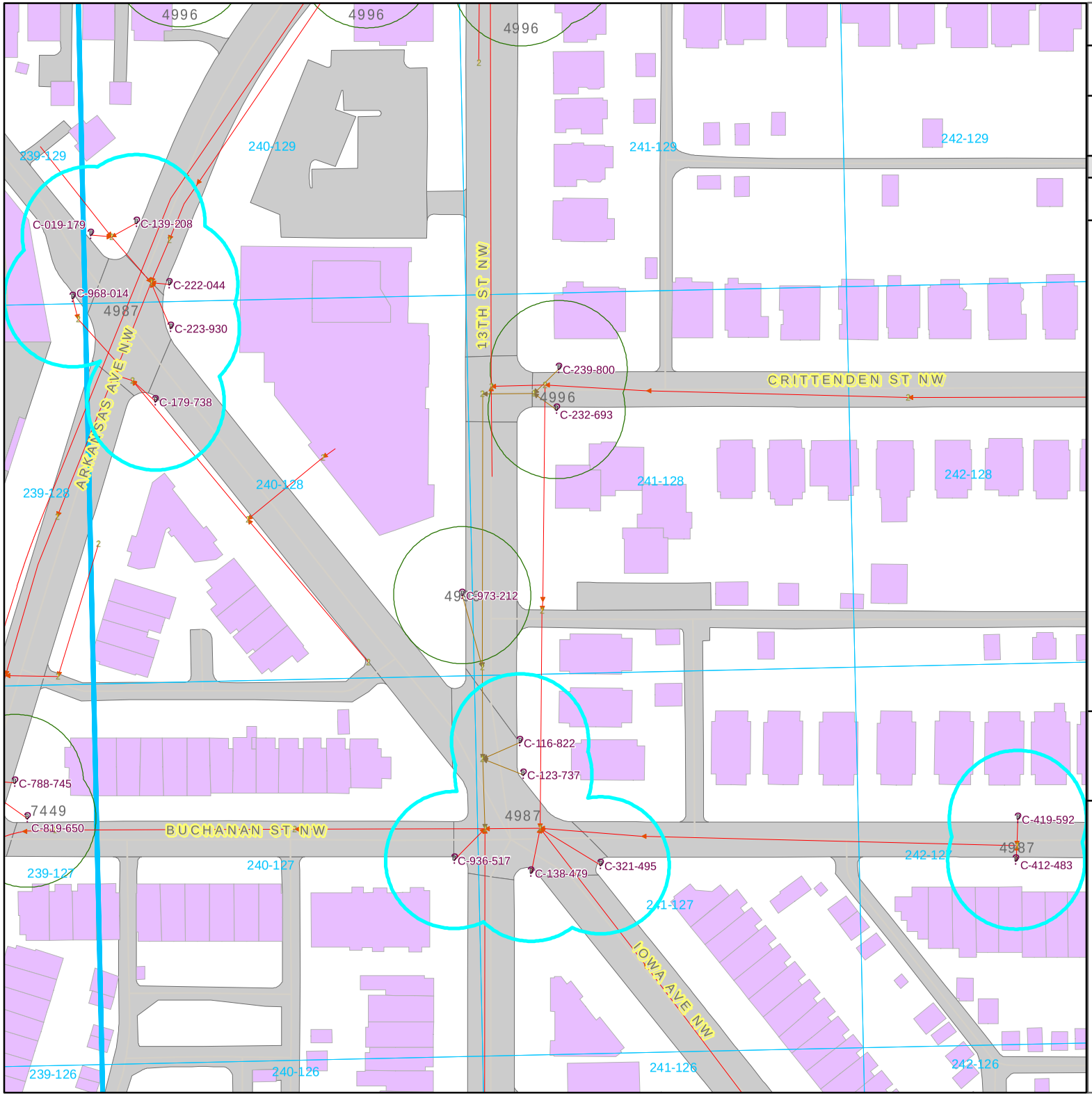
Appendix E
Catch Basin Individual Cleaning Area Maps
Area No. 10

0 0.15 0.3 0.6
Miles

Appendix F: Catch Basin Cluster Maps



Cleaning Area	UNSG 1000m Grid	Quadrant
1	24-12	NW

4987

Date: _____ Crew Chief: _____

WO#: _____ Job#: _____ Unit: _____

Catch Basin Count	
Mapped	Cleaned
13	

Legend

Sewer Catch Basin

- Non CSO
- CSO
- Cleaning Clusters
- Sewer Manhole

Sewer Gravity Main

FlowType

- Combined Storm/Wastewater
- Sanitary
- Storm
- USNG 100m

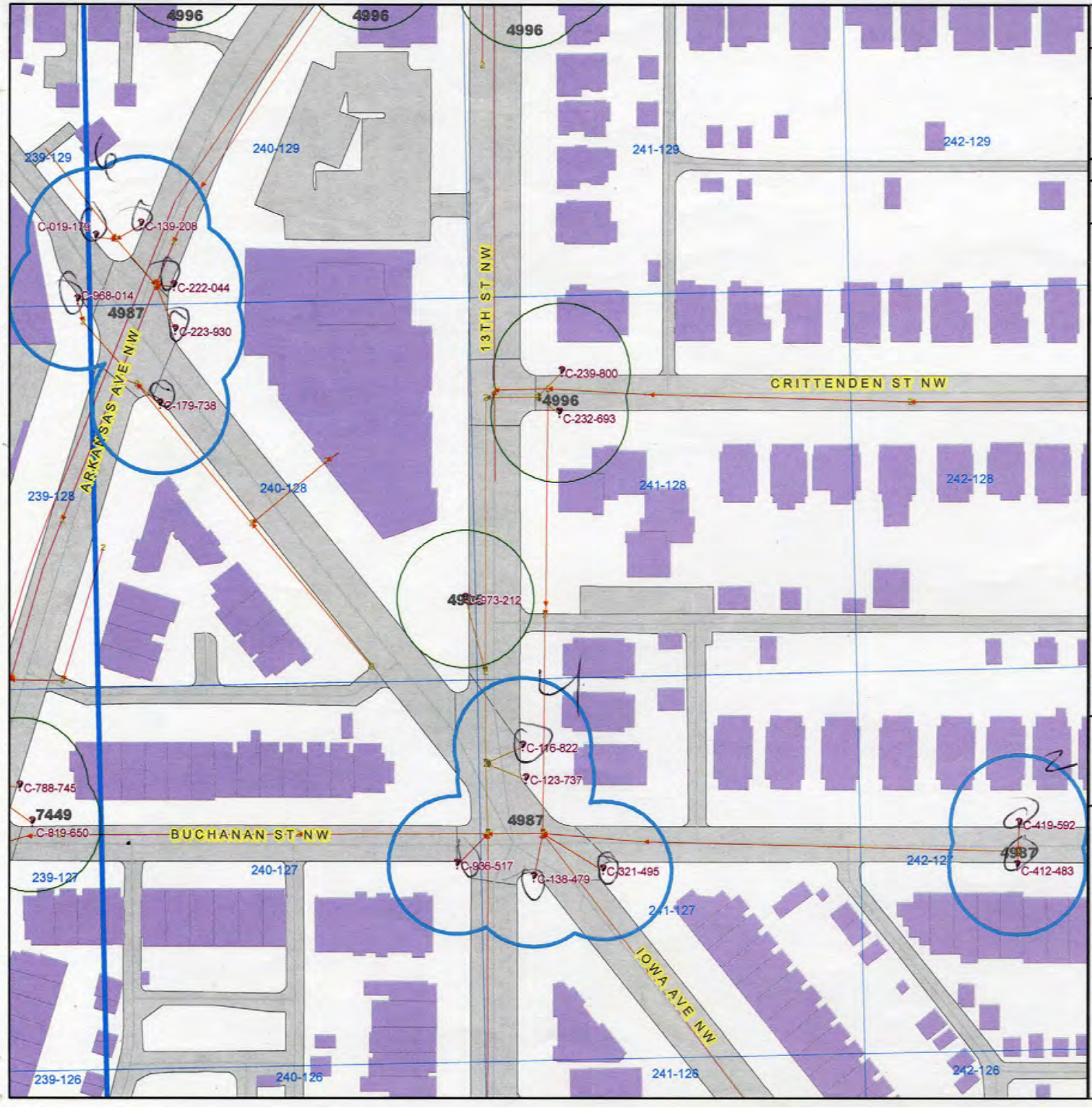
Catch Basin Codes:

S Single	NF Not Found
D Double	X Removed
T Triple	NC Not Cleaned
E Elongate	
G Grate	

Catch Basin Status:

C Cleaned	J Connection to be Jetted
I Inspected	B CB Access Blocked
F Flushed	O Oil Spill
R Reset/Broken	
V Vac	

0 50 100 200 Feet



Cleaning Area	UNSG 1000m Grid	Quadrant
1	24-12	NW

4987

Date: 02-19-11 Crew Chief:

WO#: Job#: R307 Unit: C63

Catch Basin Count	
Mapped	Cleaned
13	

Legend

Sewer Catch Basin

- Non CSO
- CSO
- Cleaning Clusters
- Sewer Manhole

Sewer Gravity Main

FlowType

- Combined Storm/Wastewater
- Sanitary
- Storm
- USNG 100m

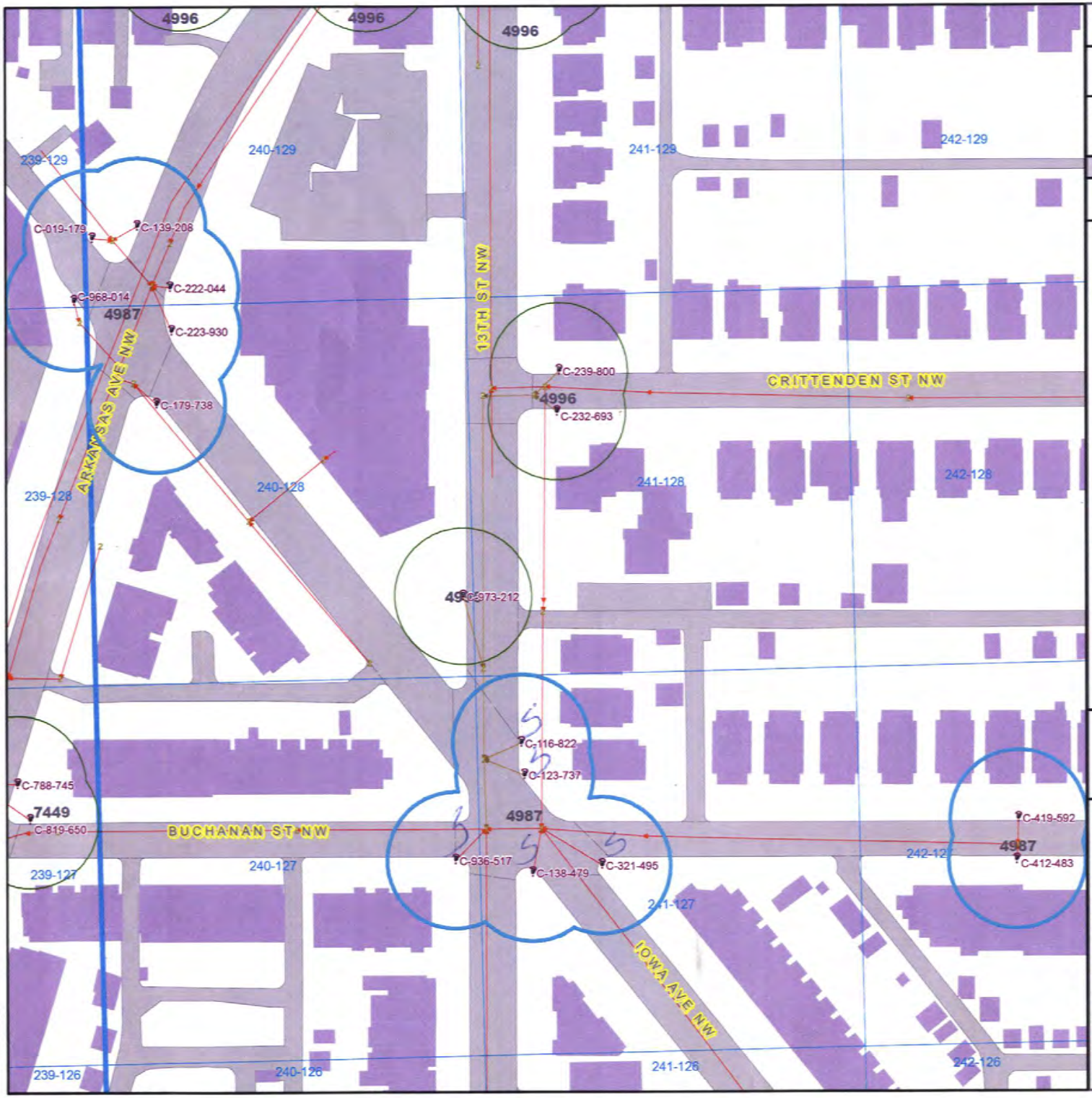
Catch Basin Codes:

S Single	NF Not Found
D Double	X Removed
T Triple	NC Not Cleaned
E Elongate	
G Grate	

Catch Basin Status:

C Cleaned	J Connection to be Jetted
I Inspected	B CB Access Blocked
F Flushed	O Oil Spill
R Reset/Broken	
V Vac	

0 50 100 200 Feet



Cleaning Area	UNSG 1000m Grid	Quadrant
1	24-12	NW

4987

Date: 2/23/12 Crew Chief: S+G

WO#: _____ Job#: E305 Unit: 873

Catch Basin Count

Mapped	Cleaned
13	

Legend

Sewer Catch Basin
- Non CSO
- CSO
- Cleaning Clusters
- 2 Sewer Manhole

Sewer Gravity Main

FlowType
- Combined Storm/Wastewater
- Sanitary
- Storm

USNG 100m

Catch Basin Codes:

S Single
D Double
T Triple
E Elongate
G Grate
NF Not Found
X Removed
NC Not Cleaned

Catch Basin Status:

C Cleaned
I Inspected
F Flushed
R Reset/Broken
V Vac
J Connection to be Jetted
B CB Access Blocked
O Oil Spill

0 50 100 200 Feet

Appendix G: Catch Basin Maintenance Report Form

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District of Columbia Water and Sewer Authority
Department of Sewer Services
Catch Basin Maintenance Report Form

Date: _____ **Crew Chief:** _____ **Work Order No.:** _____ **Job No.:** _____ **Unit:** _____

Record crew and vehicle information, including the number of hours worked, and materials used.

Name	Grade	Hours	Vehicle Type and Vehicle Number	Vehicle Operator	Vehicle Hours	Materials Used	Quantity
			Jet Vac/Combo – Number			24" Basin top Cover	
			Stetco – Number				
			Vacall – Number				

Record location information, time, and check (✓) type of work performed. Note remarks as appropriate and total columns.

Location			Time		Work Performed (✓)					Other Activities (✓)						Remarks
Description	Ward	Quadrant	Start	Finish	Basin Inspected	Basin Cleaned	Basin Flushed	Grate/Inlet Cleaned	Elongate Cleaned	Reset Top Required	Broken Top	Elongate Repair Required	Connection to be Jetted	CB Access Blocked	Oil Spill	
			Totals													

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
DEPARTMENT OF SEWER SERVICES

FORM E-1
CATCH BASIN MAINTENANCE REPORT FORM

Date: 5-25-12 Crew Chief: Hunter Work Order No.: _____ Job No.: R3005 Unit: R3005

Record crew and vehicle information, including the number of hours worked, and materials used.

Name	Grade	Hours	Vehicle Type and Vehicle Number	Vehicle Operator	Vehicle Hours	Materials Used	Quantity
T. Hunter	RW 9	8hrs	Jet Vac/Combo – Number			24" Basin top Cover	
D. Geter	RW 3	8hrs	Stetco – Number 45-1367	T. Hunter	8hrs		
			Vacall – Number				

Record location information, time, and check (✓) type of work performed. Note remarks as appropriate and total columns.

Location			Time		Write in # of Basins									
Description	Counter Map(s)	Ward	Start	Finish	Basin Inspected	Basin Cleaned	Basin Flushed	Grate/Inlet Cleaned	Elongated Cleaned	Reset/Broken Top	Connection to be Jetted	CB Access Blocked	Oil Spill	Remarks
125 "O" St		SE	7:30											Pretrip
12th & Bryant St	# 2454	NE			3	3								
Brentwood & Bryant St		NE			7	7								
13th & Brentwood Rd		NE			8	8								
1200 Blk Brentwood		NE			6	6								
Benning Rd		NE												Dump
125 "O" St		SE		4:00										Yard
			TOTALS		28	28								

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
DEPARTMENT OF SEWER SERVICES

FORM E-1
CATCH BASIN MAINTENANCE REPORT FORM

Date: 5-25-12 **Crew Chief:** J. Bowman **Work Order No.:** _____ **Job No.:** R3005 **Unit:** B-77

Record crew and vehicle information, including the number of hours worked, and materials used.

Name	Grade	Hours	Vehicle Type and Vehicle Number	Vehicle Operator	Vehicle Hours	Materials Used	Quantity
J. Bowman	9	8	Jet Vac/Combo – Number			24" Basin top Cover	
			Stetco – Number 1362	J. Bowman	8		
P Gethers	9	8	Vacall – Number				

Record location information, time, and check (✓) type of work performed. Note remarks as appropriate and total columns.

Location			Time		Write in # of Basins									Remarks
Description	Counter Map(s)	Ward	Start	Finish	Basin Inspected	Basin Cleaned	Basin Flushed	Grate/Inlet Cleaned	Elongated Cleaned	Reset/Broken Top	Connection to be Jetted	CB Access Blocked	Oil Spill	
1 25 O st		SE	7:30	8:25										Pre TRIP
1959 Elm st		NW				4								
2th & U st		NW				3								
3th & T st		NW				3								
4th & Elm st		NW				6								
8th & W st		NW				5								
9th & U st		NW				7								
Truck Full Dump		NE												
1 25 O st		SE												
			TOTALS			28								

Appendix H: Water Quality Catch Basin Cleaning Debris Summary

	Structure_	Location
23	Single Throat Water Quality Basin (S-31.01)	Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE
98	Dual Throat Water Quality Basin (S-31.02)	Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE
6	Grated Water Quality Basin	Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE

Count	Structure		Location			Ganntek Date Completed	Content
1	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/15/12	bottles, paper, leaves, cups
2	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/15/12	bottles, paper, leaves, cups
3	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/15/12	bottles, paper, leaves, cups
4	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/15/12	bottles, paper, leaves, cups
5	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/15/12	bottles, paper, leaves, cups
6	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/15/12	paper, wood, cups
7	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/15/12	paper, wood, cups
8	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/15/12	bottles, paper, leaves, cups
9	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/15/12	bottles, paper, leaves, cups
10	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/15/12	cans, bottles, cups, paper bags
11	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/15/12	cans, bottles, cups, paper bags
12	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/15/12	paper, wood, cups
13	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/16/12	bottles, paper, leaves, cups
14	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/16/12	bottles, paper, leaves, cups
15	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/16/12	bottles, paper, leaves, cups
16	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/16/12	bottles, paper, leaves, cups
17	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/16/12	bottles, paper, leaves, cups
18	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/16/12	bottles, paper,cups
19	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/16/12	bottles, paper, cups
20	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/16/12	bottles, paper, leaves, cups
21	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/16/12	bottles, paper, leaves, cups
22	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/16/12	bottles, paper, leaves, cups
23	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/16/12	bottles, paper, leaves, cups
24	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/16/12	bottles, paper, leaves, cups
25	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/16/12	bottles, paper, leaves, cups
26	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/16/12	bottles, paper, leaves, cups
27	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/16/12	bottles, paper, leaves, cups
28	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/17/12	bottles, paper,cups
29	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/17/12	bottles, paper, cups
30	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/17/12	bottles, paper, leaves, cups
31	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/17/12	bottles, paper, leaves, cups
32	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/17/12	bottles, paper, leaves, cups
33	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/17/12	bottles, paper, leaves, cups
34	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/17/12	bottles, paper, leaves, cups
35	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/17/12	bottles, paper, leaves, cups
36	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/17/12	bottles, paper, leaves, cups
37	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/17/12	bottles, paper, leaves, cups
38	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/17/12	cans, bottles, cups, paper bags
39	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/17/12	cans, bottles, cups, paper bags

40	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/17/12	cans, bottles, cups, paper bags
41	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/17/12	cans, bottles, cups, paper bags
42	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/17/12	cans, bottles, cups, paper bags

	Structure_	Location
23	Single Throat Water Quality Basin (S-31.01)	Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE
98	Dual Throat Water Quality Basin (S-31.02)	Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE
6	Grated Water Quality Basin	Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE

Count	Structure		Location			Ganntek Date Completed	Content
1	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/20/12	bottles, paper, leaves, cups
2	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/20/12	bottles, paper, leaves, cups
3	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/20/12	bottles, paper, leaves, cups
4	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/20/12	bottles, paper, leaves, cups
5	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/20/12	bottles, paper, leaves, cups
6	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/20/12	paper, wood, cups
7	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/20/12	paper, wood, cups
8	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/20/12	bottles, paper, leaves, cups
9	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/20/12	bottles, paper, leaves, cups
10	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/20/12	cans, bottles, cups, paper bags
11	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/20/12	cans, bottles, cups, paper bags
12	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/20/12	paper, wood, cups
13	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/20/12	bottles, paper, leaves, cups
14	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/20/12	bottles, paper, leaves, cups
15	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/20/12	bottles, paper, leaves, cups
16	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/21/12	bottles, paper, leaves, cups
17	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/21/12	bottles, paper, leaves, cups
18	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/21/12	bottles, paper,cups
19	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/21/12	bottles, paper, cups
20	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/21/12	bottles, paper, leaves, cups
21	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/21/12	bottles, paper, leaves, cups
22	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/21/12	bottles, paper, leaves, cups
23	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/21/12	bottles, paper, leaves, cups
24	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/21/12	bottles, paper, leaves, cups
25	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/21/12	bottles, paper, leaves, cups
26	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/21/12	bottles, paper, leaves, cups
27	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/21/12	bottles, paper, leaves, cups
28	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/21/12	bottles, paper,cups
29	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/21/12	bottles, paper, cups
30	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/21/12	bottles, paper, leaves, cups
31	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/22/12	bottles, paper, leaves, cups
32	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/22/12	bottles, paper, leaves, cups
33	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/22/12	bottles, paper, leaves, cups
34	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/22/12	bottles, paper, leaves, cups
35	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/22/12	bottles, paper, leaves, cups
36	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/22/12	bottles, paper, leaves, cups
37	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/22/12	bottles, paper, leaves, cups
38	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/22/12	cans, bottles, cups, paper bags
39	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE			08/22/12	cans, bottles, cups, paper bags

40	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/22/12	cans, bottles, cups, paper bags
41	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/22/12	cans, bottles, cups, paper bags
42	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/22/12	cans, bottles, cups, paper bags
43	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/22/12	cans, bottles, cups, paper bags
44	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/22/12	cans, bottles, cups, paper bags
45	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/22/12	cans, bottles, cups, paper bags
46	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/23/12	bottles, paper, leaves, cups
47	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/23/12	bottles, paper, leaves, cups
48	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/23/12	bottles, paper, leaves, cups
49	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/23/12	bottles, paper, leaves, cups
50	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/23/12	bottles, paper, leaves, cups
51	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/23/12	paper, wood, cups
52	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/23/12	paper, wood, cups
53	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/23/12	bottles, paper, leaves, cups
54	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/23/12	bottles, paper, leaves, cups
55	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/23/12	cans, bottles, cups, paper bags
56	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/23/12	cans, bottles, cups, paper bags
57	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/23/12	paper, wood, cups
58	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/23/12	bottles, paper, leaves, cups
59	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/23/12	bottles, paper, leaves, cups
60	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/23/12	bottles, paper, leaves, cups
61	Grated Water Quality Basin		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/24/12	leaves, paper, cups
62	Grated Water Quality Basin		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/24/12	leaves, paper, cups
63	Grated Water Quality Basin		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/24/12	leaves, paper, cups
64	Grated Water Quality Basin		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/24/12	leaves, paper, cups
65	Grated Water Quality Basin		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/24/12	leaves, paper, cups
66	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/24/12	cans, bottles, cups, paper bags
67	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/24/12	cans, bottles, cups, paper bags
68	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/24/12	cans, bottles, cups, paper bags
69	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/24/12	cans, bottles, cups, paper bags
70	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/24/12	cans, bottles, cups, paper bags
71	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/24/12	cans, bottles, cups, paper bags
72	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/24/12	cans, bottles, cups, paper bags
73	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/24/12	cans, bottles, cups, paper bags
74	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/24/12	bottles, paper, leaves, cups
75	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/24/12	bottles, paper, leaves, cups
76	Grated Water Quality Basin		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/27/12	leaves, paper, cups
77	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/27/12	bottles, paper,cups
78	Single Throat Water Quality Basin (S-31.01)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/27/12	bottles, paper, cups
79	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/27/12	bottles, paper, leaves, cups
80	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/27/12	bottles, paper, leaves, cups
81	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/27/12	bottles, paper, leaves, cups
82	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/27/12	bottles, paper, leaves, cups
83	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/27/12	bottles, paper, leaves, cups
84	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/27/12	bottles, paper, leaves, cups
85	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from 27th Street SE to Alabama Ave SE		08/27/12	bottles, paper, leaves, cups

Count	Structure		Location			Ganntek Date Completed	Content
1	Dual Throat Water Quality Basin (S-31.02)		Potomac Avenue SE east of South Capital Street to 1st Street SE			08/28/12	Cans, Bottles
2	Dual Throat Water Quality Basin (S-31.02)		Potomac Avenue SE east of South Capital Street to 1st Street SE			08/28/12	Cans, Bottles
3	Dual Throat Water Quality Basin (S-31.02)		Potomac Avenue SE east of South Capital Street to 1st Street SE			08/28/12	Cans, Bottles
4	Dual Throat Water Quality Basin (S-31.02)		Potomac Avenue SE east of South Capital Street to 1st Street SE			08/28/12	Cans, Bottles
5	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
6	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
7	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
8	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
9	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
10	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
11	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
12	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
13	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
14	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
15	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
16	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
17	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
18	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
19	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
20	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
21	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
22	Single Throat Water Quality Basin (S-31.01)		4th Street SW from M St to I Street SW			08/28/12	Cans, Bottles, Paper
23	Single Throat Water Quality Basin (S-31.01)		Shepherd Parkway SW from DPW Blue Plain Impoundment Lot to Blue P			08/29/12	Sand, Bottles, Cans, Branches
24	Dual Throat Water Quality Basin (S-31.02)		Shepherd Parkway SW from DPW Blue Plain Impoundment Lot to Blue P			08/29/12	Sand, Bottles, Cans, Branches
25	Dual Throat Water Quality Basin (S-31.02)		Shepherd Parkway SW from DPW Blue Plain Impoundment Lot to Blue P			08/29/12	Sand, Bottles, Cans, Branches
26	Dual Throat Water Quality Basin (S-31.02)		Shepherd Parkway SW from DPW Blue Plain Impoundment Lot to Blue P			08/29/12	Sand, Bottles, Cans, Branches
27	Dual Throat Water Quality Basin (S-31.02)		Shepherd Parkway SW from DPW Blue Plain Impoundment Lot to Blue P			08/29/12	Sand, Bottles, Cans, Leaves
28	Dual Throat Water Quality Basin (S-31.02)		Shepherd Parkway SW from DPW Blue Plain Impoundment Lot to Blue P			08/29/12	Sand, Bottles, Cans, Leaves
29	Dual Throat Water Quality Basin (S-31.02)		Shepherd Parkway SW from DPW Blue Plain Impoundment Lot to Blue P			08/29/12	Sand, Bottles, Cans, Leaves
30	Dual Throat Water Quality Basin (S-31.02)		Shepherd Parkway SW from Blue Plain Drive SW to Laboratory Road SW			08/29/12	Sand, Bottles, Cans, Leaves
31	Single Throat Water Quality Basin (S-31.01)		Shepherd Parkway SW from Blue Plain Drive SW to Laboratory Road SW			08/29/12	Sand, Bottles, Cans, Leaves
32	Dual Throat Water Quality Basin (S-31.02)		Shepherd Parkway SW from Blue Plain Drive SW to Laboratory Road SW			08/29/12	Sand, Bottles, Cans, Leaves
33	Single Throat Water Quality Basin (S-31.01)		Shepherd Parkway SW from Blue Plain Drive SW to Laboratory Road SW			08/29/12	Sand, Bottles, Cans, Leaves
34	Single Throat Water Quality Basin (S-31.01)		Shepherd Parkway SW from Blue Plain Drive SW to Laboratory Road SW			08/29/12	Sand, Bottles, Cans, Branches
35	Single Throat Water Quality Basin (S-31.01)		Shepherd Parkway SW from Blue Plain Drive SW to Laboratory Road SW			08/29/12	Sand, Bottles, Cans, Branches
36	Single Throat Water Quality Basin (S-31.01)		Shepherd Parkway SW from Blue Plain Drive SW to Laboratory Road SW			08/29/12	Sand, Bottles, Cans, Branches
37	Single Throat Water Quality Basin (S-31.01)		Shepherd Parkway SW from Blue Plain Drive SW to Laboratory Road SW			08/29/12	Sand, Bottles, Cans, Branches
38	Single Throat Water Quality Basin (S-31.01)		Shepherd Parkway SW from Blue Plain Drive SW to Laboratory Road SW			08/29/12	Sand, Bottles, Cans, Branches
39	Dual Throat Water Quality Basin (S-31.02)		Shepherd Parkway SW from Blue Plain Drive SW to Laboratory Road SW			08/29/12	Sand, Bottles, Cans, Branches
40	Single Throat Water Quality Basin (S-31.01)		Shepherd Parkway SW from Blue Plain Drive SW to Laboratory Road SW			08/29/12	Sand, Bottles, Cans, Leaves
41	Dual Throat Water Quality Basin (S-31.02)		Shepherd Parkway SW from Blue Plain Drive SW to Laboratory Road SW			08/29/12	Sand, Bottles, Cans, Leaves
42	Dual Throat Water Quality Basin (S-31.02)		Blue Plains Drive SW from Shepherd Parkway SW to DC Village Lane SW			08/30/12	Sand, Bottles, Cans, Branches
43	Dual Throat Water Quality Basin (S-31.02)		Blue Plains Drive SW from Shepherd Parkway SW to DC Village Lane SW			08/30/12	Sand, Bottles, Cans, Branches
44	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from Shepherd Parkway SW to DC Village Lane SW			08/30/12	Sand, Bottles, Cans, Branches
45	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from Shepherd Parkway SW to DC Village Lane SW			08/30/12	Sand, Bottles, Cans, Branches

46	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from Shepherd Parkway SW to DC Village Lane SW	08/30/12	Sand, Bottles, Cans, Leaves
47	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from Shepherd Parkway SW to DC Village Lane SW	08/30/12	Sand, Bottles, Cans, Leaves
48	Dual Throat Water Quality Basin (S-31.02)		Blue Plains Drive SW from Shepherd Parkway SW to DC Village Lane SW	08/30/12	Sand, Bottles, Cans, Leaves
49	Dual Throat Water Quality Basin (S-31.02)		Blue Plains Drive SW from Shepherd Parkway SW to DC Village Lane SW	08/30/12	Sand, Bottles, Cans, Leaves
50	Dual Throat Water Quality Basin (S-31.02)		Blue Plains Drive SW from Shepherd Parkway SW to DC Village Lane SW	08/30/12	Sand, Bottles, Cans, Leaves
51	Dual Throat Water Quality Basin (S-31.02)		Blue Plains Drive SW from Shepherd Parkway SW to DC Village Lane SW	08/30/12	Sand, Bottles, Cans, Leaves
52	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/30/12	Sand, Bottles, Cans, Leaves
53	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/30/12	Sand, Bottles, Cans, Branches
54	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/30/12	Sand, Bottles, Cans, Branches
55	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/30/12	Sand, Bottles, Cans, Branches
56	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/30/12	Sand, Bottles, Cans, Branches
57	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/30/12	Sand, Bottles, Cans, Branches
58	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/30/12	Sand, Bottles, Cans, Branches
59	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/30/12	Sand, Bottles, Cans, Leaves
60	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/30/12	Sand, Bottles, Cans, Leaves
61	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/30/12	Sand, Bottles, Cans, Branches
62	Dual Throat Water Quality Basin (S-31.02)		Potomac Avenue SE east of South Capital Street to 1st Street SE	08/31/12	Cans, Bottles
63	Dual Throat Water Quality Basin (S-31.02)		Potomac Avenue SE east of South Capital Street to 1st Street SE	08/31/12	Cans, Bottles
64	Dual Throat Water Quality Basin (S-31.02)		Potomac Avenue SE east of South Capital Street to 1st Street SE	08/31/12	Cans, Bottles
65	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/31/12	Sand, Bottles, Cans, Leaves
66	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/31/12	Sand, Bottles, Cans, Leaves
67	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/31/12	Sand, Bottles, Cans, Leaves
68	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/31/12	Sand, Bottles, Cans, Branches
69	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/31/12	Sand, Bottles, Cans, Branches
70	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/31/12	Sand, Bottles, Cans, Branches
71	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/31/12	Sand, Bottles, Cans, Branches
72	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/31/12	Sand, Bottles, Cans, Branches
73	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/31/12	Sand, Bottles, Cans, Branches
74	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/31/12	Sand, Bottles, Cans, Branches
75	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/31/12	Sand, Bottles, Cans, Branches
76	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/31/12	Sand, Bottles, Cans, Branches
77	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/31/12	Sand, Bottles, Cans, Branches
78	Single Throat Water Quality Basin (S-31.01)		Blue Plains Drive SW from DC Villiage Lane SW to Martin Luther King Jr /	08/31/12	Sand, Bottles, Cans, Leaves

Count	Structure		Location	Ganntek Date Completed	Content
1	Dual Throat Water Quality Basin (S-31.02)		Nebraska Avenue NW 193' oiuthwest of 28th Street NW	09/12/12	Cans, Bottles
2	Dual Throat Water Quality Basin (S-31.02)		Nebraska Avenue NW southwest corner at Moreland Street NW	09/12/12	Cans, Bottles
3	Dual Throat Water Quality Basin (S-31.02)		Moreland Street NW east corner at Nebraska Ave NW	09/12/12	Cans, Bottles
4	Dual Throat Water Quality Basin (S-31.02)		moreland Street NW west corner at Nebraska Ave NW	09/12/12	Cans, Bottles
5	Dual Throat Water Quality Basin (S-31.02)		Nebraska Ave NW north at Nebraska Ave NW	09/12/12	Cans, Bottles, Paper
6	Dual Throat Water Quality Basin (S-31.02)		Nebraska Ave NW southwest corner at 27th Street NW	09/12/12	Cans, Bottles, Paper
7	Dual Throat Water Quality Basin (S-31.02)		Nebraska Ave NW southwest corner at rittenhouse st NW	09/12/12	Cans, Bottles, Paper
8	Dual Throat Water Quality Basin (S-31.02)		27th Street NW east corner at Nebraska Ave NW	09/12/12	Cans, Bottles, Paper
9	Single Throat Water Quality Basin (S-31.01)		Rittenhouse Street NW north corner at Nebraska Ave NW	09/12/12	Cans, Bottles, Paper
10	Dual Throat Water Quality Basin (S-31.02)		Stephenson Lane NW southwest corner at Nebraska Ave NW	09/12/12	Cans, Bottles, Paper
11	Dual Throat Water Quality Basin (S-31.02)		stephenson Lane NW northeast corner at Nebraska Ave NW	09/12/12	Cans, Bottles, Paper
12	Dual Throat Water Quality Basin (S-31.02)		Nebraska Ave NW north spur 55' west Oregon Ave NW	09/12/12	Cans, Bottles, Paper
13	Dual Throat Water Quality Basin (S-31.02)		Nebraska Ave NW south spur 123' west of Oregon Ave NW	09/12/12	Cans, Bottles, Paper
14	Dual Grate Water Quality Basin (S-31.03)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I	09/13/12	Cans, Bottles, Paper
15	Dual Grate Water Quality Basin (S-31.03)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I	09/13/12	Cans, Bottles, Paper
16	Dual Grate Water Quality Basin (S-31.03)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I	09/13/12	Cans, Bottles, Paper
17	Dual Grate Water Quality Basin (S-31.03)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I	09/13/12	Cans, Bottles, Paper
18	Dual Grate Water Quality Basin (S-31.03)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I	09/13/12	Cans, Bottles, Paper
19	Dual Grate Water Quality Basin (S-31.03)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I	09/13/12	Cans, Bottles, Paper
20	Dual Throat Water Quality Basin (S-31.02)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I	09/13/12	Cans, Bottles, Paper
21	Dual Throat Water Quality Basin (S-31.02)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I	09/13/12	Cans, Bottles, Paper
22	Dual Throat Water Quality Basin (S-31.02)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I	09/13/12	Cans, Bottles, Paper
23	Dual Throat Water Quality Basin (S-31.02)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I	09/13/12	Sand, Bottles, Cans, Branches
24	Dual Throat Water Quality Basin (S-31.02)		NW Service Rd NE, 42nd St. NE Lane Place SE	09/13/12	Sand, Bottles, Cans, Branches
25	Dual Throat Water Quality Basin (S-31.02)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I	09/13/12	Sand, Bottles, Cans, Branches
26	Dual Throat Water Quality Basin (S-31.02)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I	09/13/12	Sand, Bottles, Cans, Branches
27	Dual Throat Water Quality Basin (S-31.02)		NW Service Rd NE, 42nd St. NE Lane Place SE	09/13/12	Sand, Bottles, Cans, Leaves
28	Dual Throat Water Quality Basin (S-31.02)		Ramp A, NE, Nannie Helen Burroughs Ave. NE and 42nd St. NE	09/13/12	Sand, Bottles, Cans, Leaves
29	Dual Throat Water Quality Basin (S-31.02)		Kenilworth Terrace NE from Nannie Helen Burroughs Ave NE to 42nd St	09/13/12	Sand, Bottles, Cans, Leaves
30	Dual Throat Water Quality Basin (S-31.02)		Kenilworth Terrace NE from Nannie Helen Burroughs Ave NE to 42nd St	09/13/12	Sand, Bottles, Cans, Leaves

Count	Structure		Location			Ganntek Date Completed	Content
1	Dual Throat Water Quality Basin (S-31.02)		Nannie Helen Burroughs Ave NE, Kenilworth Ave			09/20/12	Cans, Bottles
2	Dual Throat Water Quality Basin (S-31.02)		Nannie Helen Burroughs Ave NE, Kenilworth Ave			09/20/12	Cans, Bottles
3	Dual Throat Water Quality Basin (S-31.02)		Firth and Sterling Ave, SE			09/20/12	Cans, Bottles
4	Dual Throat Water Quality Basin (S-31.02)		Firth and Sterling Ave, SE			09/20/12	Cans, Bottles
5	Dual Throat Water Quality Basin (S-31.02)		Firth and Sterling Ave, SE			09/20/12	Cans, Bottles, Paper
6	Dual Throat Water Quality Basin (S-31.02)		Firth and Sterling Ave, SE			09/20/12	Cans, Bottles, Paper
7	Dual Throat Water Quality Basin (S-31.02)		Firth and Sterling Ave, SE			09/20/12	Cans, Bottles, Paper
8	Dual Throat Water Quality Basin (S-31.02)		Firth and Sterling Ave, SE			09/20/12	Cans, Bottles, Paper
9	Dual Throat Water Quality Basin (S-31.02)		Firth and Sterling Ave, SE			09/20/12	Cans, Bottles, Paper
10	Dual Throat Water Quality Basin (S-31.02)		Firth and Sterling Ave, SE			09/20/12	Cans, Bottles, Paper
11	Dual Throat Water Quality Basin (S-31.02)		Firth and Sterling Ave, SE			09/20/12	Cans, Bottles, Paper
12	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/21/12	Cans, Bottles, Paper
13	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/21/12	Cans, Bottles, Paper
14	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/21/12	Cans, Bottles, Paper
15	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/21/12	Cans, Bottles, Paper
16	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/21/12	Cans, Bottles, Paper
17	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/21/12	Cans, Bottles, Paper
18	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/21/12	Cans, Bottles, Paper
19	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/21/12	Cans, Bottles, Paper
20	Single Throat Water Quality Basin (S-31-01)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/21/12	Cans, Bottles, Paper
21	Single Throat Water Quality Basin (S-31-01)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/21/12	Cans, Bottles, Paper
22	Dual Grate Water Quality Basin (S-31-03)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I			09/22/12	Cans, Bottles, Paper
23	Dual Grate Water Quality Basin (S-31-03)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I			09/22/12	Sand, Bottles, Cans, Branches
24	Dual Grate Water Quality Basin (S-31-03)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I			09/22/12	Sand, Bottles, Cans, Branches
25	Dual Grate Water Quality Basin (S-31-03)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I			09/22/12	Sand, Bottles, Cans, Branches
26	Dual Grate Water Quality Basin (S-31-03)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I			09/22/12	Sand, Bottles, Cans, Branches
27	Dual Grate Water Quality Basin (S-31-03)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I			09/22/12	Sand, Bottles, Cans, Leaves
28	Dual Grate Water Quality Basin (S-31-03)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I			09/22/12	Sand, Bottles, Cans, Leaves
29	Dual Grate Water Quality Basin (S-31-03)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I			09/22/12	Sand, Bottles, Cans, Leaves
30	Dual Grate Water Quality Basin (S-31-03)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I			09/22/12	Sand, Bottles, Cans, Leaves
31	Dual Throat Water Quality Basin (S-31.02)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I			09/22/12	Sand, Bottles, Cans, Leaves
32	Dual Throat Water Quality Basin (S-31.02)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I			09/22/12	Sand, Bottles, Cans, Leaves
33	Dual Throat Water Quality Basin (S-31.02)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I			09/22/12	Sand, Bottles, Cans, Leaves
34	Dual Throat Water Quality Basin (S-31.02)		Kenilworth Ave NE from 1000ft south of Hayes Street NE to Lane Place I			09/22/12	Sand, Bottles, Cans, Leaves
35	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/24/12	Sand, Bottles, Cans, Leaves
36	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/24/12	Sand, Bottles, Cans, Leaves
37	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/24/12	Sand, Bottles, Cans, Leaves
38	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/24/12	Sand, Bottles, Cans, Leaves
39	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/24/12	Sand, Bottles, Cans, Leaves
40	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/24/12	Sand, Bottles, Cans, Leaves
41	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/24/12	Sand, Bottles, Cans, Leaves
42	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE from Fort Davis to Southern SE			09/24/12	Sand, Bottles, Cans, Leaves
43	Dual Throat Water Quality Basin (S-31.02)		Pennsylvania Ave SE on Branch (Penn Branch Shopping Center Side)			09/24/12	Sand, Bottles, Cans, Leaves
44	Single Throat Water Quality Basin (S-31-01)		Pennsylvania Ave SE on Branch (Penn Branch Shopping Center Side)			09/24/12	Sand, Bottles, Cans, Leaves

Appendix I: Performance Benchmarking Survey

District of Columbia Water and Sewer Authority
George S. Hawkins, General Manager

CATCH BASIN CLEANING & INSPECTION PROGRAM

2012 PERFORMANCE BENCHMARKING SURVEY

The District of Columbia Water and Sewer Authority is conducting a survey of metropolitan catch basin inspection and cleaning programs as a contribution to its NPDES Storm Water Compliance Program. We would appreciate your participation in the attached brief survey. *We will provide a copy of the results to all participants.*

Please complete the survey **electronically** and return it to erika.janifer@dcwater.com by **November 12, 2012.**

May we contact you with additional questions? **Yes** ☐ **No** ☐

Name and Position

Organization

Phone Number

Email

Thank you for your participation. We look forward to hearing from you!

1.	**Please check the box(es) that most accurately describe your sewer system.**	☐ Combined ☐ Separate ☐ Other:
2.	**Number of Catch Basins:**	Number in Combined Areas Number in Separate Areas Total
3.	**Number of Times each *Combined System* Catch Basin is Cleaned Per Year:**	☐ < 1 ☐ 1 ☐ 2 ☐ 3 ☐ > 3 If more than 1, please explain why:
4.	**Number of Times Each *Separate Storm* Catch Basin is Cleaned Per Year:**	☐ < 1 ☐ 1 ☐ 2 ☐ 3 ☐ > 3 If more than 1, please explain why:
5.	**Aside From Your Cleaning Program, Do You Have a Separate Catch Basin Inspection Program? (Check All That Apply)**	☐ Storm ☐ Combined ☐ No ☐ Additional Comment:
6.	**Inspection Frequency Per year (Combined System Catch Basins):**	☐ None ☐ 1 ☐ 2 ☐ 3 ☐ > 3 ☐ Other: Add <1
7.	**Inspection Frequency Per Year: (Separate Storm Catch Basin)**	☐ None ☐ 1 ☐ 2 ☐ 3 ☐ > 3 ☐ Other: Add <1
8.	**Average Age of Storm Water System:**	☐ Less Than 50 Years ☐ 50 Years ☐ 75 Years ☐ Older than 75 Years ☐ Other:
9.	**Annual Budget for Catch Basin Cleaning and Inspection Program:**	**$**
10.	**What Activities Are Included In Your Annual Budget? (Check All That Apply)**	☐ Cleaning ☐ Inspection ☐ Repairs ☐ Debris Management ☐ Other:
11.	**Do you have a Public Outreach Program for Catch Basins:**	☐ No ☐ Yes, Describe:
12.	**Approximate Number of Customer Catch Basin Complaints per Year:**	
13.	**Number of Crews per Day Assigned to Cleaning:**	☐ < 1 ☐ 1 ☐ 2 ☐ 3 ☐ > 3
14.	**Number of Crews per Day Assigned to Inspection (if you have a separate inspection program):**	☐ < 1 ☐ 1 ☐ 2 ☐ 3 ☐ > 3
15.	**Number of Employees per Crew for Cleaning:**	☐ 1 ☐ 2 ☐ 3 ☐ Other:
16.	**Number of Employees per Crew for Inspection (if you have a separate inspection program:**	☐ 1 ☐ 2 ☐ 3 ☐ Other:
17.	**Goals And Drivers For Cleaning And Inspection Program:** **(Check All That Apply)**	☐ Regulatory Compliance ☐ Regularly Scheduled Maintenance ☐ Minimize Flooding ☐ Customer Service ☐ Water Quality in Receiving Streams ☐ Other: ☐ Street Debris

18. Type of Equipment Used For Catch Basin Cleaning:

	# of Each Type	# Currently Operational	Satisfaction Rating (Select from Drop-Down)
Bucket Loaders	##	##	Choose an item.
Vacuum	##	##	Choose an item.
Clamshell	##	##	Choose an item.
Jet/Vacuum Combo	##	##	Choose an item.
Other: Describe	##	##	Choose an item.

19. What Equipment Would You Add to Your Fleet?
(Indicate No. of Each You Would Like to Add)

☐ More of the Same
☐ Have All We Need
Bucket Loader
Vacuum Truck
Clamshell
Jet/Vacuum Combo Truck
Other:

20. How Do You Measure Cleaning and Inspection Success:
(Check All That Apply)

☐ Number of Catch Basins Cleaned and Inspected
☐ Volume of Debris Removed
☐ Flooding Reduction
☐ Reduction in Customer Complaints
☐ Water Quality Improvement
☐ # of Regulatory Violations
☐ Area Free of Trash
☐ Other:

21. Do your catch basins have water quality features?
(Check All That Apply)

☐ Baffle Boxes
☐ Filter Bags
☐ Hoods
☐ Sumps
☐ Oil Grit/Separators
☐ Other:
☐ Other:

Please Explain: (i.e. how many of each, how location was chosen, etc.)

22. How Does Your Organization Manage Catch Basin Debris?

☐ Weighs It
☐ Removes Recyclables
☐ Composts It
☐ Deposits in a Landfill
☐ Laboratory Analysis
☐ Other, Describe:

Which of these (if any) are regulatory requirements:

23. What Software Does Your Organization Use to Track Cleaning and Inspection Activities?
(Check All That Apply)

☐ GIS
☐ Maximo
☐ CityWorks
☐ Other, Describe:
☐ We do not use software; instead we use:

24. How Does Your Organization Prioritize Catch Basin Repairs?
(Select From Drop Down)

Public Safety	Choose an item.
Structural Problem Not Affecting Safety	Choose an item.
Water Quality Problem	Choose an item.
Other:	Choose an item.

25. Would You Please Provide Us With a Copy of Your Cleaning, Inspection, and/or Repair Field Form(s)?

☐ Yes. Email form(s) to erika.janifer@dcwater.com
☐ Unable to Provide
☐ Don't Have

26. Comments:

Question #1: Describe your sewer system.

Type of Sewer System		
Sewer System	**No. of Cities**	**Cities**
Separate	7	Arlington; Houston; Los Angeles; Miami; Newark; Salt Lake City; San Diego;
Combined, Separate	3	Boston; Cincinnati; Portland;
Combined, Sanitary, Separate	2	Columbus; District of Columbia;
Combined	0	

Comments	
City	**Comment**
Boston	30.3 sq mi served by separate system (approx. 75%); 9.6 sq mi served by combined system (approx. 25%)
Houston	Catch basin in separate area is >100,000

Number of Catch Basins												
	Arlington	Boston	Cincinnati	Columbus	District of Columbia	Houston	Los Angeles	Miami	Newark	Portland	Salt Lake City	San Diego
Number of Catch Basins in Combined Areas	-	29,102	27,000	unknown	10,137	-	-	unknown	-	18,000	-	-
Number of Catch Basins in Separate Areas	12,000	9,701	3,000	unknown	13,861	100,000	42,000	unknown	2,600	32,000	6,500	21,509
Total Number of Catch Basins	12,000	38,803	30,000	unknown	23,998	100,000	42,000	unknown	2,600	50,000	6,500	21,509

(In Order to Least No. of Total CBs to Greatest)												
	Newark	Salt Lake City	Arlington	San Diego	District of Columbia	Cincinnati	Boston	Los Angeles	Portland	Houston	Columbus	Miami
Number of Catch Basins in Combined Areas	-	-	-	-	10,729	27,000	-	-	18,000	-	unknown	unknown
Number of Catch Basins in Separate Areas	2,600	6,500	12,000	21,509	14,947	3,000	-	42,000	32,000	100,000	unknown	unknown
Total Number of Catch Basins	2,600	6,500	12,000	21,509	25,676	30,000	38,803	42,000	50,000	100,000	unknown	unknown

Comments	
City	**Comment**
Boston	30,803 including 4,012 drop inlets; 75% are separate
Houston	Catch basin in separate area is >100,000

Combined Sewer System Catch Basin Annual Cleaning Frequency		
Cleaning Frequency (Per Year)	**No. of Cities**	**Cities**
Less than 1	1	Portland;
1	4	Boston; Columbus; District of Columbia;
2	0	
3	0	
NA	7	Arlington; Houston; Los Angeles; Miami; Newark; Salt Lake City; San Diego;

Comments	
City	**Comment**
Boston	Catch basins with a sump of 4 ft or more are scheduled to be cleaned at least once every 2 1/2 years. Shallow catch basins are scheduled to be cleaned twice as often. Operators currently inspect any basin along their route and are directed to clean any basin containing at least 20 inches of sediment. This criteria may be modifeid at any time at the discretion of managemnent. Crews typically complete two passes through the city each year.

Separate Storm Sewer System Catch Basin Annual Cleaning Frequency		
Cleaning Frequency (Per Year)	**No. of Cities**	**Cities**
Less than 1	1	Portland;
1	8	Boston; Columbus; District of Columbia; Miami; Newark; Salt Lake City; San Diego;
2	0	
3	0	
Greater than 3	1	Los Angeles;
NA	0	

Comments	
City	**Comment**
Arlington	2200 catch basins and 400 grate inlets cleaned per year; TV inspection of 4400 catch basins and 800 inlets per year; Currently on a 2 yr cycle
Boston	Catch basins with a sump of 4 ft or more are scheduled to be cleaned at least once every 2 1/2 years. Shallow catch basins are scheduled to be cleaned twice as often. Operators currently inspect any basin along their route and are directed to clean any basin containing at least 20 inches of sediment. This criteria may be modifeid at any time at the discretion of managemnent. Crews typically complete two passes through the city each year.
Los Angeles	Regulatory and internal maintenance program

Question #5: Aside From Your Cleaning Program, Do You Have a Separate Catch Basin Inspection Program?
(Check All That Apply)

Stand-Alone Catch Basin Inspection Programs		
Stand-Alone Program (Y/N)	**No. of Cities**	**Cities**
Yes	**6**	
Both (Combined and Storm)	2	Cincinnati; Columbus;
Storm	4	Arlington; Houston; Miami; San Diego;
Combined	0	
No	**6**	Boston; District of Columbia; Los Angeles; Newark; Portland; Salt Lake City;
Total	12	

Comments	
City	**Comment**
Arlington	Cleaning 2200 CB and 400 grate inlets/year; TV inspection of 4400 CB and 800 grate inlets/year
Boston	Basins are inspected and/or cleaned as part of the schedule described for Items 3 and 4 above and in response to reported problems.
Columbus	Additional programs include Neighborhood Pride, campus Partners
District of Columbia	Cleaning and inspection of catch basins are done at the same time. There is no formal inspection program.
Newark	Visually inspected at time of cleaning. Maintenance needs are noted.
San Diego	Stormwater related cleaning and inspection program are combined.

Combined Sewer System Catch Basins Inspection Frequency (only relevant for Boston, Cincinnati, Columbus and Portland)		
Inspection Frequency (Per Year)	**No. of Cities**	**Cities**
Less than 1	1	Cincinnati;
1	3	Boston; Columbus; District of Columbia;
2	0	
3	0	
Greater than 3	0	
None	0	
NA	8	Arlington; Houston; Los Angeles; Miami; Newark; Portland; Salt Lake City; San Diego;

Comments	
City	**Comment**
Boston	Catch basins with a sump of 4 ft or more are scheduled to be cleaned at least once every 2 1/2 years. Shallow catch basins are scheduled to be cleaned twice as often. Operators currently inspect any basin along their route and are directed to clean any basin containing at least 20 inches of sediment. This criteria may be modifeid at any time at the discretion of managemnent. Crews typically complete two passes through the city each year.

Storm Sewer System Catch Basins Inspection Frequency		
Inspection Frequency (Per Year)	**No. of Cities**	**Cities**
Less than 1	3	Boston; Cincinnati; Miami;
1	5	Columbus; District of Columbia; Newark; Salt Lake City; San Diego;
2	0	
3	0	
Greater than 3	1	Los Angeles;
None	1	Portland;
NA	0	

Comments	
City	**Comment**
Boston	Catch basins with a sump of 4 ft or more are scheduled to be cleaned at least once every 2 1/2 years. Shallow catch basins are scheduled to be cleaned twice as often. Operators currently inspect any basin along their route and are directed to clean any basin containing at least 20 inches of sediment. This criteria may be modifeid at any time at the discretion of managemnent. Crews typically complete two passes through the city each year.

Average Age of Storm Water System		
Average Age of Storm Water System	**No. of Cities**	**Cities**
Less than 50 Years	2	Miami; Salt Lake City;
50 Years	3	Newark; Portland; San Diego;
75 Years	3	Cincinnati; District of Columbia; Houston;
Older than 75 Years	2	Arlington; Los Angeles;
Other	2	Boston; Columbus;

Comments	
City	**Comment**
Boston	No age data is available for older portions of the system

Annual Budgets for Catch Basin Cleaning and Inspection Programs		
City	**Annual Budget ($)**	**$/Catch Basin**
Arlington	700,000	$ 58.33
Boston	1,690,000	$ 43.55
Cincinnati	700,000	$ 23.33
Columbus	Not Provided	$ -
District of Columbia	2,309,430	$ 96.23
Houston	Not Provided	$ -
Los Angeles	3,300,000	$ 78.57
Miami	Not Provided	$ -
Newark	250,000	$ 96.15
Portland	365,000	$ 7.30
Salt Lake City	Not Provided	$ -
San Diego	1,500,000	$ 69.74
Average (excl. District of Columbia)	1,215,000	$ 53.85

(Table Sorted Least to Greatest)

City	**Annual Budget ($)**	**$/Catch Basin**
Portland	365,000	$ 7
Cincinnati	700,000	$ 23
Boston	1,690,000	$ 44
Arlington	700,000	$ 58
San Diego	1,500,000	$ 70
Los Angeles	3,300,000	$ 79
District of Columbia	2,309,430	$ 96
Newark	250,000	$ 96
Columbus	Not Provided	$ -
Miami	Not Provided	$ -
Salt Lake City	Not Provided	$ -

Question #10: What Activities Are Included In Your Annual Budget?

Activities Included in Annual Budget		
Activities	No. of Cities	Cities
Cleaning	12	Arlington; Boston; Cincinnati; Columbus; District of Columbia; Houston; Los Angeles; Miami; Newark; Portland; Salt Lake City; San Diego;
Inspection	9	Arlington; Cincinnati; Columbus; District of Columbia; Houston; Los Angeles; Miami; Newark; Salt Lake City;
Repairs	10	Arlington; Boston; Columbus; District of Columbia; Houston; Los Angeles; Miami; Newark; Salt Lake City; San Diego;
Debris Management	10	Arlington; Boston; Columbus; District of Columbia; Houston; Los Angeles; Miami; Newark; Salt Lake City; San Diego;
Others	0	

Public Outreach Programs		
Public Outreach Program (Y/N)	**No. of Cities**	**Cities**
Yes	8	Arlington; Boston; Cincinnati; Columbus; District of Columbia; Los Angeles; Salt Lake City; San Diego;
No	4	Houston; Miami; Newark; Portland;

City	Comment
Arlington	Included in Chesapeake Bay Preservation Ordinance and Storm Management Initiative
Boston	Customers are encouraged to remove leaves and snow from storm grates in advance of or following storm events and to report other flooding, odor, or structural problems to the Commission. Catch basin maintenance is routinely included in material presented at regularly scheduled neighborhood meetings, in mailers included with customer's bills, and on the Commission's website at BWSC.org."
Cincinnati	Handled through county
Columbus	Neighborhood Pride focuses on specific neighborhoods for intensive City services, Stormwater basin marking program, Campus Partners focuses on OSU area, Clean Rivers initiative
District of Columbia	Stenciling catch basins - Do Not Litter decals
Los Angeles	It is part of our public outreach for the city council districts
San Diego	Flood Preparednes Tips on City of San Diego Think Blue website: http://www.sandiego.gov/thinkblue/public-education/info-for-residents.shtml

Annual No. of Catch Basin Complaints			
City	**No. of Complaints (Per Year)**	**No. of Complaints/1000 Catch Basin**	**Catch Basin/No. of Complaints**
Arlington	50	4.17	240.00
Salt Lake City	40	6.15	162.50
Los Angeles	300	7.14	140.00
Newark	24	9.23	108.33
Portland	1,100	22.00	45.45
Cincinnati	700	23.33	42.86
Boston	1,700	43.81	22.83
San Diego	5,000	232.46	4.30
Columbus	Not Provided	-	-
District of Columbia	Not Provided	-	-
Houston	Not Provided	-	-
Miami	NA	-	-
Average (excl. District of Columbia)	522.50	15.32	141.33

Comments	
City	**Comment**
Boston	There were 1,691 work orders for specific catch basin problems or complaints in 2011 including 1,313 to remove snow or leaves from grates. 1,533 work orders for specific problems or complaints have been completed to date in 2012 including 531 to remove snow or leaves from grates.
Miami	Complaints based on flooding, evidence of flooding

No. of Catch Basin Cleaning Crews

Cities	No. of Cleaning Crews (per day)	No. of Cleaning Crews (per day) (Greater than 3 = 4)	No. Catch Basins	Actual No. of CB Crew	No. of CB cleaned/crew/day	Notes
Arlington	1	1	12,000			Private contractor cleans the catch basin so production is not monitored. County has 2 crews but they are used only in emergency situation.
Boston	greater than 3	4	38,803	2-3 per day (contractor); 1-2 per day shift (in-house); 1 per night shift (in-house); 1 per overnight shift (as needed; in-house)	20-25 CB/crew/day (contractor); 4-6 CB/crew/day (in-house)	Contractor mobilizes 2-3 trucks per day. Each truck averages 20-25 CB per day cleaning any basin containing 18"or more of sediment. These trucks are assigned work within a given neighborhood. The Commision also mobilizes 1-2 trucks each day shift and 1 truck each night shift. Based on operational needs, the Commission may also mobilize 1 truck on its overnight shift. Commission trucks are primarily used to respond to specific customer requests and/or complaints citywide and average from 4-6 CB/truck
Cincinnati	greater than 3	4	30,000	2-3 crews per day	25-30 CB/day/crew	Original plan is to hire a 3-two person crew but they encountered a hiring freeze. Traffic and Road Operations Division (TROD), another City agency, was contracted to clean all inlets. For current operations, TROD may be able to provide the info.
Columbus	Not Provided		unknown		10-15 CB/day (separate area); 20-25 CB/day (combined)	Does not have a set number of crews dedicated to cleaning FB. Frequently, it is done as a fill-in between other work or when they are in the area where a need for cleaning has been identified. The number of CBs cleaned a day can vary.
District of Columbia	greater than 3	4	23,998	6 crews per day	18-22 CB/day/crew	
Houston	Not Provided		100,000			Inlets are cleaned based on citizen's request. No dedicated cleaning crews. They use combination cleaning units and schedule inlets as part of their daily duties. According to the survey, they clean on a 5-year cycle and inspect 40,000 inlets per year
Los Angeles	greater than 3	4	42,000			
Miami	NA		unknown			
Newark	1	1	2,600	1-two-person crew	30 CB/day/crew	
Portland	1	1	50,000	1.5 crew per day (based on 30 CB per day)	30 CB/day/crew	They don't have a crew dedicated to clean catch basins. They clean 12,000 CB/year. So with 12,000 CB/yeaer at 30 CB/day = 400 crew days/year. 400 crew days/260 days = 1.5 crews per day
Salt Lake City	2	2	6,500			
San Diego	greater than 3	4	21,509	5-two person crew (in-houst); 1-3 person crew (contractor)	10 CB/crew/day (min for in-house); 100 CB per day (contractor)	City forces focus on problem drains that typically contain debris. Storm water crew cleans 10+ CB/day. In addition to the box, they also clean drain pipes. If debris is found in there as well. Contractor cleans 100 drains per day. His task is to inspect and clean (if necessary) every drain annually. Approximately 50% of drains end up only needing to be inspected.

Question #14: Number of Crews per Day Assigned to Inspection (if you have a separate inspection program):

No. of Inspection Crews	
Cities	**No. of Inspection Crew**
Arlington	1
Boston	NA
Cincinnati	1
Columbus	1
District of Columbia	0
Houston	greater than 3
Miami	NA
Los Angeles	NA
Newark	NA
Portland	NA
Salt Lake City	2
San Diego	greater than 3

Catch Basin Cleaning No. of Employees per Crew	
Cities	**No. of Employees per Crew**
Arlington	3
Boston	1
Cincinnati	2
Columbus	2
District of Columbia	2
Houston	NA
Miami	NA
Los Angeles	2
Newark	2
Portland	2
Salt Lake City	2
San Diego	Other

City	Comment
San Diego	1 to 8 employees, depends on cleaning difficulty (size, location, traffic, access, etc.)

Question#16: Number of Employees per Crew for Inspection (if you have a separate inspection program)

Catch Basin Inspections No. of Employees per Crew	
Cities	**No. of Employees per Crew**
Arlington	3
Boston	NA
Cincinnati	2
Columbus	1
District of Columbia	NA
Houston	2
Miami	NA
Los Angeles	NA
Newark	NA
Portland	NA
Salt Lake City	2
San Diego	Other

Comments

City	Comment
San Diego	1 to 8 employees, depends on cleaning difficulty (size, location, traffic, access, etc.)
Boston	Inspections are typically completed as part of the catch basin cleaning operations described above and in response to other internal or customer requests or complaints.
District of Columbia	Inspections are typically completed as part of the catch basin cleaning operations described above and in response to other internal or customer requests or complaints.

Question #17: Goals And Drivers For Cleaning And Inspection Program:
(Check All That Apply)

Catch Basin Cleaning and Inspection Program Goals and Drivers		
Goals and Drivers	**No. of Cities**	**Cities**
Customer Service	12	Arlington; Boston; Cincinnati; Columbus; District of Columbia; Houston; Los Angeles; Miami; Newark; Portland; Salt Lake City; San Diego;
Regularly Scheduled Maintenance	12	Arlington; Boston; Cincinnati; Columbus; District of Columbia; Houston; Los Angeles; Miami; Newark; Portland; Salt Lake City; San Diego;
Minimize Flooding	12	Arlington; Boston; Cincinnati; Columbus; District of Columbia; Houston; Los Angeles; Miami; Newark; Portland; Salt Lake City; San Diego;
Regulatory Compliance	9	Arlington; Boston; Columbus; Los Angeles; Miami; Newark; Portland; Salt Lake City; San Diego;
Water Quality in Receiving Streams	9	Arlington; Boston; Columbus; Los Angeles; Miami; Newark; Portland; Salt Lake City; San Diego;
Street Debris	8	Arlington; Boston; Columbus; District of Columbia; Los Angeles; Newark; Salt Lake City; San Diego;
System Inventory	1	Cincinnati;

No. of Trucks in Catch Basin Cleaning Program Fleet							
			Type of Operational Trucks				
City	Total No. of Trucks	No. of Operational Trucks	Bucket Loaders	Vacuum	Clamshell	Jet/Vacuum Combo	Rodding Machine
Arlington	4	4	0	2	0	2	0
Boston	23	22	0	2	5	5	10
Cincinnati	1	1	0	0	0	1	0
Columbus	14	14	0	0	0	14	0
District of Columbia	9	9	0	0	9	0	0
Houston	29	11	0	0	2	9	0
Los Angeles	18	18	4	6	0	8	0
Miami	-	-	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
Newark	1	1	0	1	Not Provided	0	0
Portland	8	8	0	0	0	8	0
Salt Lake City	4	4	0	2	0	2	0
San Diego	4	4	0	0	0	4	0
Average (excl. District of Columbia)	10.60	8.70					

No. of Cities Using Equipment		
Equipment	No. of Cities	Cities
Bucket Loaders	1	Los Angeles;
Vacuum	5	Arlington; Boston; Los Angeles; Newark; Salt Lake City;
Clamshell	3	Boston; District of Columbia; Houston;
Jet/Vacuum Combo	8	Arlington; Boston;
Rodding Machines	1	Boston;

Equipment Satisfaction Rating

All Very Satisfied or Satisfied

Question #19: What Equipment Would You Add to Your Fleet?
(Indicate No. of Each Equipment You Would Like to Add)

Desired Catch Basin Cleaning Equipment

City	Current No. of Operational Trucks	Proposed No. Additional of Trucks	Additional Equipment that Cities Would Like to Have					
			Bucket Loaders	Vacuum	Clamshell	Jet/Vacuum Combo	Rodding Machine	Camera
Arlington	4	4		2		2		
Boston	22	0						
Cincinnati	1	1				1		
Columbus	14	14				14		
District of Columbia	7	2				2		
Houston	11	11			2	9		
Los Angeles	18	18	4	6		8		
Miami	Not Provided		Not Provided	Not Provided	Not Provided	Not Provided	Not Provided	
Newark	1	0			Not Provided			
Portland	8	0						
Salt Lake City	4	1						1
San Diego	4	4				4		

Cities Wanting Additional Equipment

Equipment	No. of Cities	Cities
Bucket Loaders	1	Los Angeles
Vacuum	2	Arlington; Los Angeles
Clamshell	1	Houston
Jet/Vacuum Combo	7	Arlington; Cincinnati; Columbus; District of Columbia; Houston; Los Angeles; San Diego
Camera	1	Salt Lake City;
Have All We Need	3	Arlington; Boston; Portland;
More of the Same	5	Arlington; Columbus; Houston; Los Angeles; San Diego;

Equipment Satisfaction Rating

All Very Satisfied or Satisfied

Question #20: How Do You Measure Cleaning and Inspection Success:
(Check All That Apply)

Metrics of Success		
Metric	**No. of Cities**	**Cities**
Number of Catch Basins Cleaned and Inspected	11	Arlington; Boston; Cincinnati; Columbus; District of Columbia; Houston; Los Angeles; Newark; Portland; Salt Lake City; San Diego;
Reduction in Customer Complaints	7	Arlington; Cincinnati; District of Columbia; Houston; Los Angeles; Salt Lake City; San Diego;
Flooding Reduction	5	Arlington; District of Columbia; Houston; Los Angeles; San Diego;
Volume of Debris Removed	4	Arlington; Boston; Los Angeles; San Diego;
Area Free of Trash	4	Columbus; District of Columbia; Los Angeles; San Diego;
Water Quality Improvement	3	Arlington; Los Angeles; San Diego;
# of Regulatory Violations	3	Arlington; Los Angeles; San Diego;

Comments

City	Comment
Columbus	Difficult to quantify number of reduced flooding or complaints

Question #21:Do your catch basins have water quality features?
(Check All That Apply)

Water Quality Features		
Feature	**No. of Cities**	**Cities**
Sumps	4	Boston; District of Columbia; Los Angeles; Miami;
Baffle Boxes and/or Oil/Grit Separtor	3	Los Angeles; Miami; San Diego;
Hoods/Snouts	3	Boston; Los Angeles; Salt Lake City;
Filter Bag/Basket/Traps	3	Columbus; Los Angeles; San Diego;
Starting Green Initiative	1	Columbus
Low Flows	1	Los Angeles
Degreaser	1	Salt Lake City

City	Feature
Arlington	none
Boston	sump; baffle box/oil grit separator
Cincinnati	none
Columbus	filter bag/basket/traps; green initiative
District of Columbia	sump
Houston	none
Los Angeles	sump; baffle box/oil grit separator; filter bag/basket/trap; low flows
Miami	sump; baffle box/oil grit separator
Newark	none
Portland	none
Salt Lake City	hood/snout; degreaser
San Diego	baffle box/oil grit separator; filter bag/basket/traps

City	Comment
Boston	Standard details specify hoods and a sump for all catch bsins excluding drop inlets which typically drain to a separate catch basin with a sump and hood.
Columbus	Traps in combined area for odor and debris control, green initiative for alternative pipe all away to river.
San Diego	Approximately 4 filter baskets have been installed for water quality mitigation associated with Clean Water Act permits; 7 filter baskets have installed for pilot studies assoicated with two bridge projects (Engineering & Capital Project), and 1 Baffle Box was installed for a pilot study associated with water quality improvement strategies.

Catch Basin Debris Management		
Disposal Method	**No. of Cities**	**Cities**
Deposits in a Landfill	11	Arlington; Boston; Cincinnati; Columbus; District of Columbia; Houston; Los Angeles; Miami; Newark; Salt Lake City; San Diego;
Weighs It	4	Boston; District of Columbia; Los Angeles; San Diego;
Remove Recyclables	2	District of Columbia; Los Angeles;
Laboratory Analysis	2	Los Angeles; Portland;
Composts It	1	Los Angeles;
To Landfill as Alternate Daily Cover	1	Portland;

Question #23: What Software Does Your Organization Use to Track Cleaning and Inspection Activities?
(Check All That Apply)

Software		
Software	**No. of Cities**	**Cities**
GIS	6	Boston; Cincinnati; Houston; Miami; Portland; San Diego;
Maximo	3	Cincinnati; District of Columbia; Portland;
MS Excel	3	Newark; Salt Lake City; District of Columbia
CASSWORKS	2	Arlington; Boston;
CityWorks	1	Houston;
SAP System for Enterprise Asset Management (EAM)	1	San Diego;
Oracle Utilities	1	Columbus
Field Automation for Sanitation Trucks	1	Los Angeles
Hansen by Infor	1	Portland
Filemaker Pro	1	Houston;

Comments

City	Comment
District of Columbia	Plan to expand Maximo use to include GIS.

Question #24: How Does Your Organization Prioritize Catch Basin Repairs?
(Select From Drop Down)

Prioritization				
	No. of Cities			
	Most Important Priority	Priority	Not a Priority	Not Provided
Public Safety	7	1	0	4
Stuctural Problem Not Affecting Safety	0	5	1	6
Water Quality Problem	0	5	1	6

Question #25: Would You Please Provide Us With a Copy of Your Cleaning, Inspection, and/or Repair Field Form(s)?

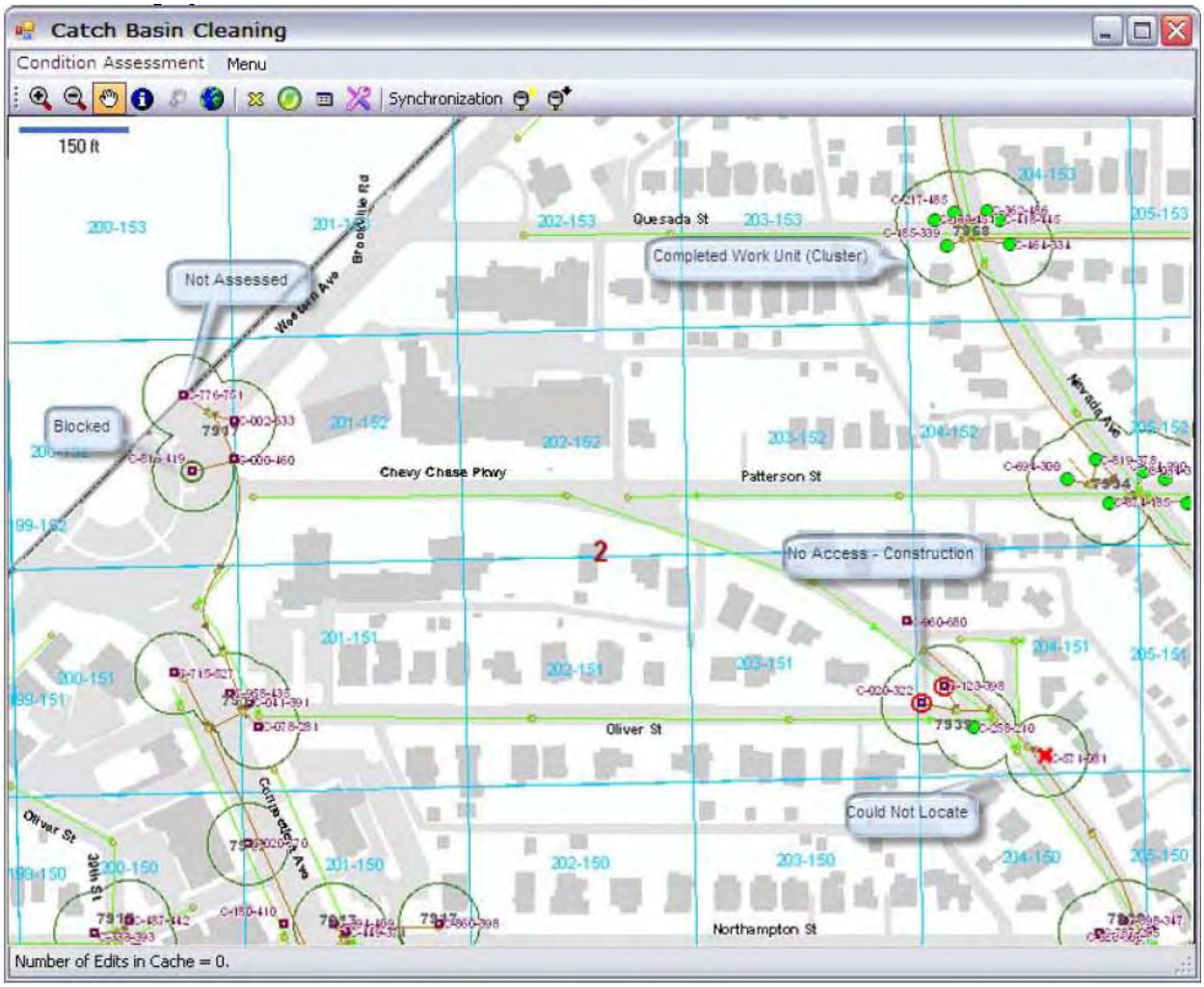
Cleaning / Inspection Form		
	No. of Cities	Cities
Yes	2	Arlington; District of Columbia;
No	1	Columbus;
No Response	9	

Comments	
City	
Arlington	DES/WSSB uses a contractor to provide catch basin cleaning & TV inspection, including pipe line segment . Approximately 4400 CBs and 800 grate inlets are slated for inspection /year which reduce the cycle from 40 yr to 20 yr cycle; and cleaning of 2200 CBs and 400 grate inlets at a 2-yr cycle. County crews are used for complaints, i.e., flooding, blocked drainage; and other sanitary sewer related work such as grid, grease and trouble spots, etc..
Boston	Annual Budget indicated for Catch Basin Cleaning and Inspection includes $600,000 for cleaning, $433,000 for waste disposal, and $657,000 for repairs under the Operations Division's 2012 maintenance and repair contracts. Work completed by Commission forces is not included since it is not budgeted specifically for those tasks. Clamshell buckets are typically used for catch basin cleaning. Jet/vacs are only occassionally used to remove sediment from catch basins with physical constraints. Use of vacuum equipment has been problematic given the coarse nature of the sediment typically found in city catch basins and the time and space required for decanting the vacuum trucks and dewatering the waste.
Cincinnati	I used rough estimates and extrapolations due to time frame of requested response. Budget figure reflects only the portion of O&M budget spent on inlet cleaning & inspection. SMU contracts cleaning of all inlets every other year; sag areas annually and others more frequently as needed. Critical areas are inspected weekly by in house staff. SMU has ordered a flush vac to begin performing in house cleaning in 2013. More staff are budgeted for 2013 as part of a new condition assessment (CA) program. Water quality in the right of way has not yet been a high priority (except for spills and sanitary connections) because our system is primarily combination. Current CA form is attached to e-mail but format for data capture will change along with software in 2013. I look forward to receiving a copy of the survey results.
Columbus	Number of crews assigned to CB cleaning varies depending on workload. CB cleaning does not have separate budget item. We used to inspect the CBs, then contract out cleaning, but we brought that back in house. staff on leave is biggest limit to getting trucks out
District of Columbia	
Houston	Storm Sewer inlets, (catch basins) are cleaned as needed. Our focus is on inspection. Our program are for inspection and based on the results, other activities are scheduled such as cleaning, repairs, etc. With over 100,000 storm sewer inlets and 80,000 manholes, wea er on a 5 year cycle and inspect 40,000 different inlets and manholes a year.
Los Angeles	Sorry, I couldn't respond to all your questions because the functionally of the form was loss when it was saved as a lower version.
Miami	None Provided
Newark	None Provided
Portland	None Provided
Salt Lake City	No combined systems. Answer to question 9: Salt Lake County Operations does not have a fixed annual budget.
San Diego	None Provided

Appendix J: Mobile Catch Basin Cleaning Tracking Application Interface

Mobile Catch Basin Cleaning Tracking Application Interface

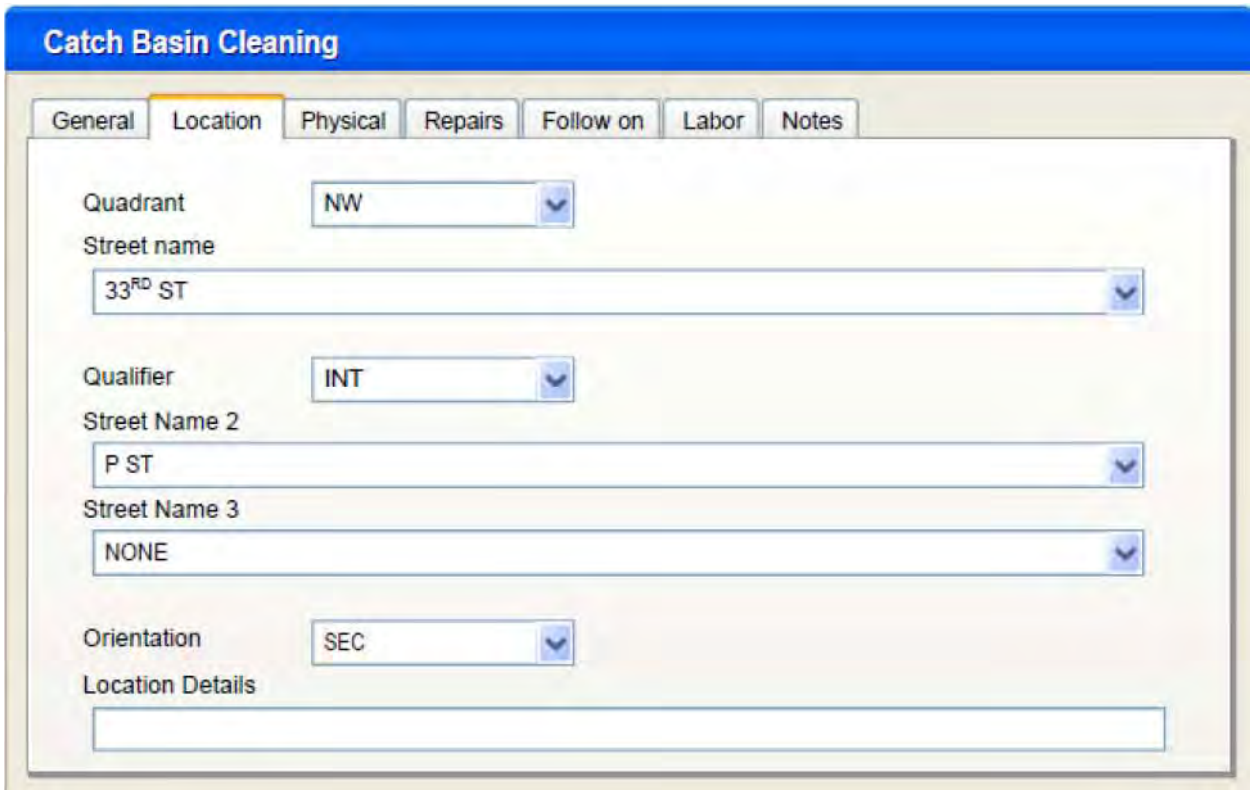
Catch basin cleaning process is tracked using symbols that allow the crew to see which catch basins that has not been cleaned due to inaccessibility. It also allows the crew to report to the office if there are changes in the inventory (i.e. new catch basins, removed catch basins) which will initiate the GIS update process.



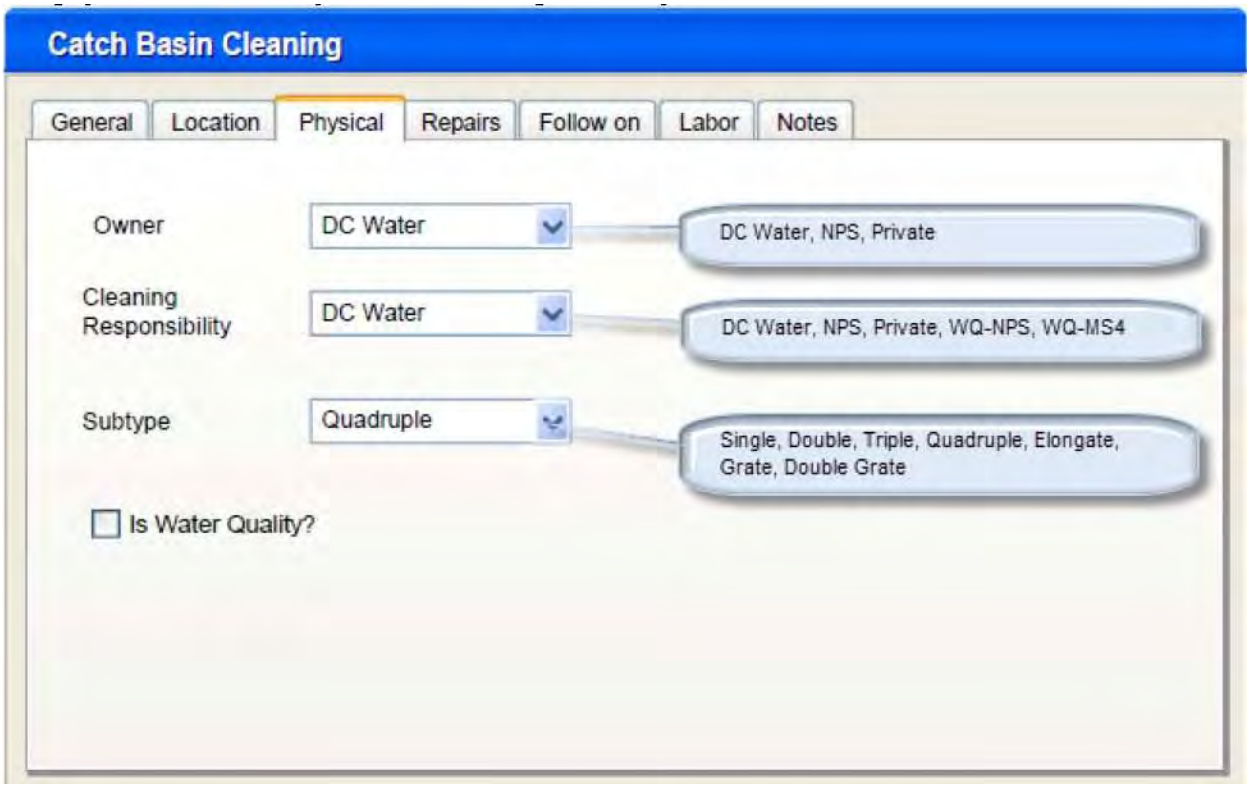
Once the cleaning process begins, the crew can input data by selecting the catch basin on the map. Once that data are input, the application will displace a form similar to the one below.

The General tab shows the unique catch basin ID, inspection date and time, crew, and the agency/owner. This is automatically generated.

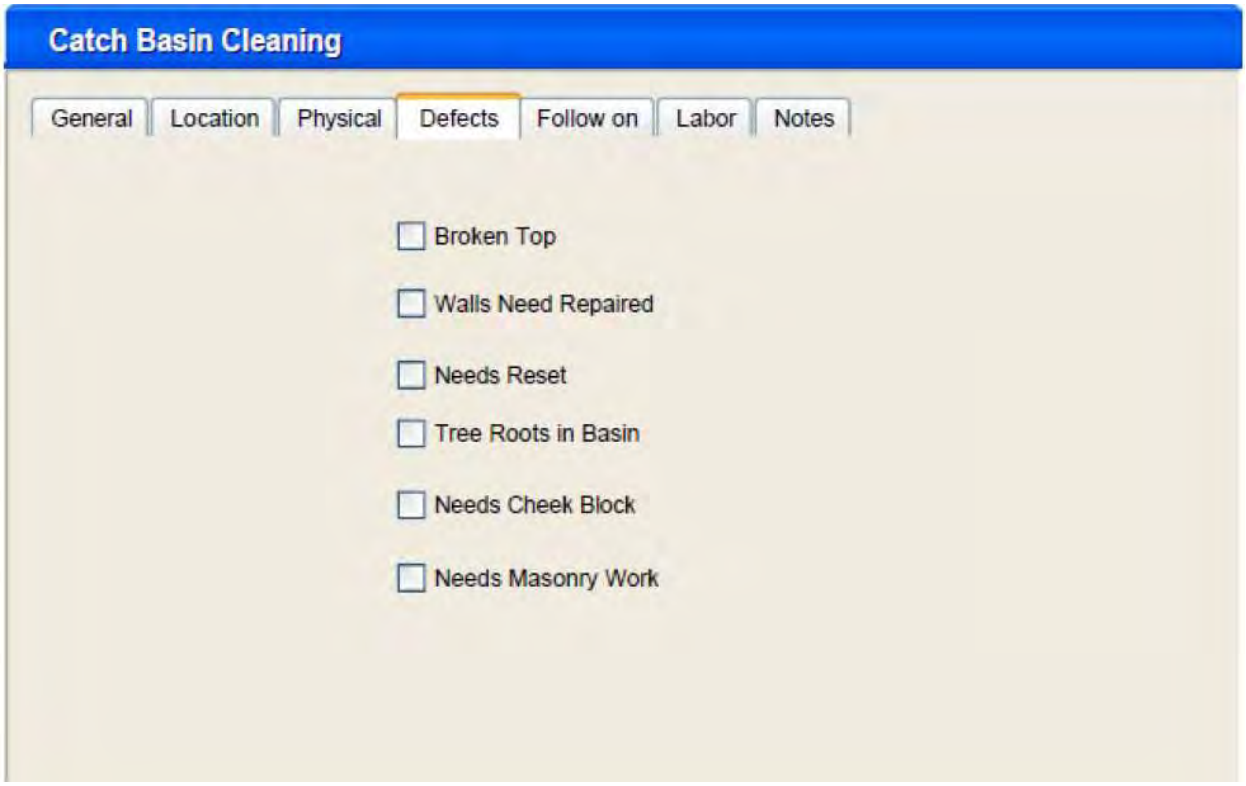
The Location tab should also be checked to ensure that it is accurate.



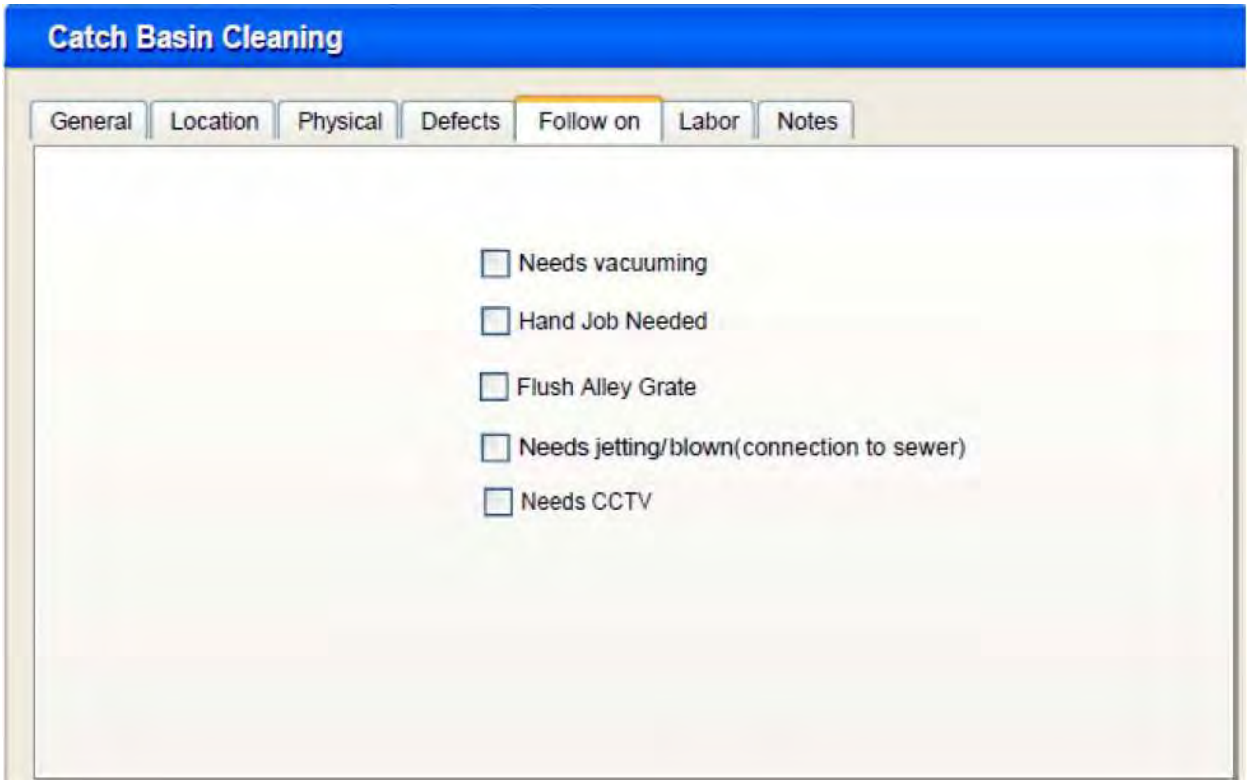
The Physical tab is used by the crew to verify the information that the database has on the asset.



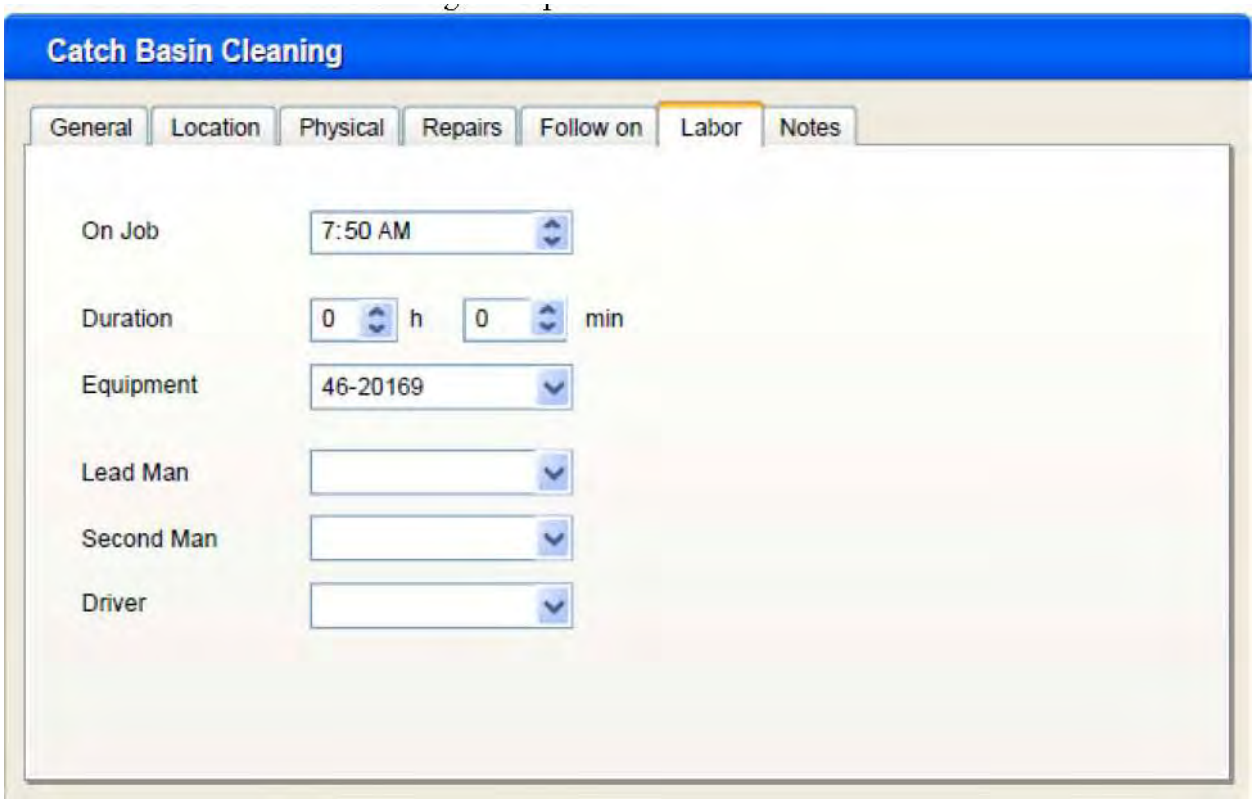
The Defects tab is used by the crew to identify any repair work required for this particular catch basin. Once this assessment is posted and verified, a repair work order will be created for the asset in Maximo.



The Follow On tab is used to request additional work that cannot be performed at the time of cleaning. Posting this request will result in a work order that will be posted in Maximo.



The Labor tab is used to collect information associated with the cleaning and inspection work order that will be created for this particular catch basin which will provide DC Water a better cost information on the catch basin management process.



The Notes tab is where the crew will capture the status of the catch basin work is done. This will include the amount of debris found and removed. Indication on whether sticker which shows the crew number and date of cleaning, was applied