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STORMWATER MANAGEMENT O&M MANUAL

FOR

PROPOSED INDUSTRIAL CONDOMINIUM DEVELOPMENT

725 LAKE ROAD, BOWMANVILLE

MUNICIPALITY OF CLARINGTON

PROJECT NO. 123081

DATE: August 2025

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1.0 INTRODUCTION

As part of the Stormwater Management (SWM) strategy for the 725 Lake Road Industrial Condominium Development, this Operations and Maintenance Manual has been prepared to provide the required information to facilitate inspection and maintenance strategies as they relate to the seamless operation of SWM features for the duration of their expected working life. The manufacturer's recommendations should be followed where applicable. Since the manufacturer may revise their operation and maintenance recommendations from time to time, reviewing the latest guidelines published from the manufacturer is recommended.

1.1 Study Area

The subject property is located on the south side of Lake Road and approximately 450m west of Bennett Road. It is composed of Blocks 3, 9, and 10 of Registered Plan 40M-1921, in the Municipality of Clarington, Regional Municipality of Durham and is within the South Bowmanville Industrial Park. The proposed development consists of two industrial condominium buildings with an associated asphalt parking area.

A Site Location Plan illustrating the subject site is attached as **Figure 1**.

1.2 Previous Documentation

This Stormwater Management (SWM) Operations and Maintenance Manual, in conformance with the guidelines prescribed in the Ontario Ministry of the Environment (MOE) Stormwater Management Planning and Design Manual (March 2003) was based on the following report:

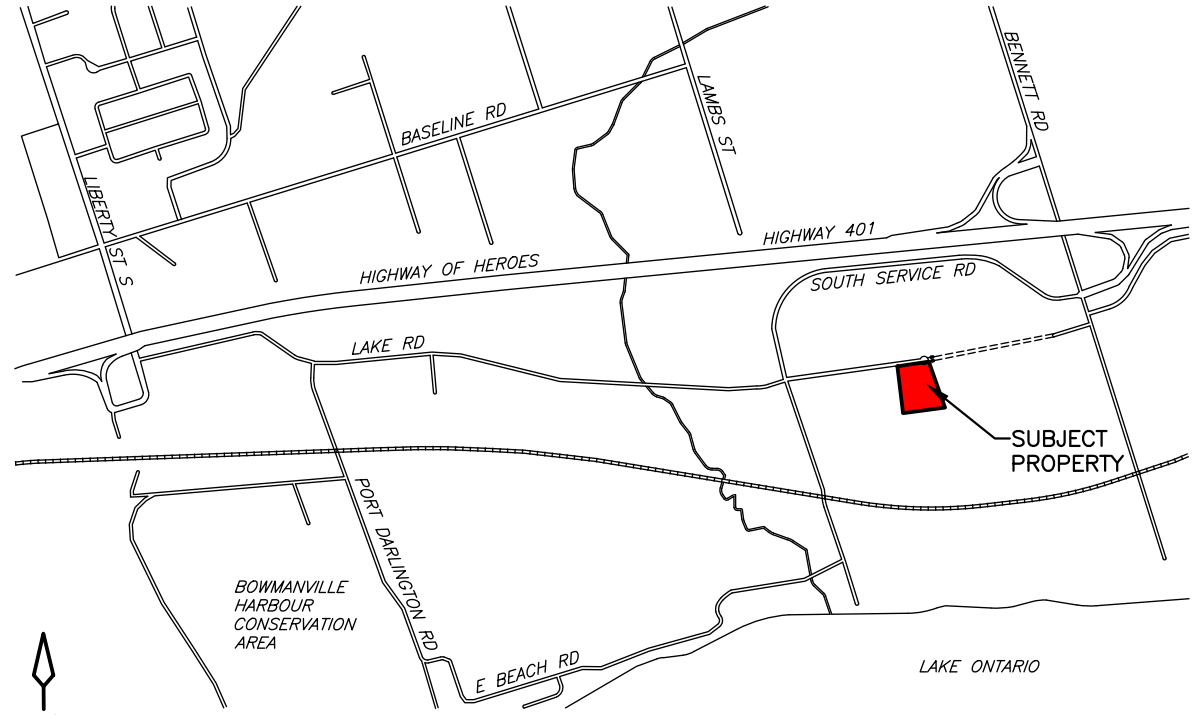
- "Functional Servicing and Stormwater Management Report for Proposed Industrial Condominium Development, 725 Lake Road, Bowmanville, Municipality of Clarington", dated August 26, 2025, prepared by D.G. Biddle and Associates Ltd.

1.3 Stormwater Management Design Elements

The stormwater management strategy for the proposed development is to capture stormwater runoff in the storm system using a minor storm system consisting of positive drainage surfaces and catchbasins throughout the site and to attenuate this captured post-development flow to pre-development levels. This is attained through on-site stormwater retention and flow restriction using a plate orifice inlet control devices (ICDs). The storm sewer system is proposed to outlet to the existing drainage easement south of the property.

Stormwater retention is provided through the Stormtech SC-800 Underground Arch Storage units capable of providing high storage volumes over a relatively small footprint.

Plate orifice inlet control devices are located on the downstream invert of Storm structures denoted as DCBMH ST-2 and MH-15 on the Site Servicing Plan, drawing **123081-SS-1**.



MUNICIPALITY OF CLARINGTON

725 LAKE ROAD, BOWMANVILLE

SITE LOCATION PLAN

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SCALE	N.T.S.
DRAWN	M.R.W.
DESIGN	M.R.W.
CHECKED	K.G.K.
DATE	APR 2024

PROJECT 123081

DWG FIG 1

Enhanced Water Treatment Quality (>80% TSS Removal) is provided per the Ministry of Environment guidelines. Stormwater treatment measures are provided upstream and downstream of the proposed inlet control device in the form of the proposed Stormtech Isolator Row Plus System and an Oil Grit Separator (OGS) unit.

Implemented in the proposed Stormtech Systems is the Isolator Row Plus system by ADS, which removes Total Suspended Solids from captured runoff and protects adjacent unit chambers from sediment accumulation, streamlining the sediment removal maintenance process. The system has the benefit of treating runoff prior to discharge downstream as well as prior to entering the proposed infiltration reservoir below the Stormtech system.

An Oil/Grit Separator System, Stormceptor Model EFO-6, is provided downstream of the Inlet Control Device to provide maximum stormwater cleansing prior to discharge to the downstream watercourse.

Furthermore, Low Impact Development features are proposed to infiltrate captured surface flows and increase groundwater recharge to minimize the effect of the development on the local groundwater table. In this case, 1.0m deep infiltration reservoirs are implemented below the proposed Stormtech SC-800 Systems.

For further information regarding the function of the proposed systems, refer to the Functional Servicing and Stormwater Management Report prepared by D.G. Biddle & Associates Ltd., dated August 26, 2025. Illustrations of the provided Stormwater Management systems can be found on the Site Servicing Plan, drawing **123081-SS-1**, appended to this report

2.0 STORMTECH SYSTEM OPERATIONS AND MAINTENANCE

The maintenance and operation of the proposed Stormtech SC-800 Systems and Isolator Row Plus units are to be undertaken as per the manufacturer maintenance and operation specifications provided by ADS Canada, appended to this manual in **Schedule 1**. The operations and maintenance criteria are summarized below:

The Isolator Row Plus system limits sediment discharge throughout the Stormtech System and captures the majority of Total Suspended Solids. The system is designed as a cost-effective means of sediment capture and drastically reduces the cost of maintenance to systems without isolation. Headed by an inspection manhole and overflow manifold, the Isolator Row Plus provides an easy access for sediment removal from the Stormtech system.

Inspection of the Isolator Row Plus should be performed, at minimum, annually and after significant rainfall events (>25mm). For the first year of operation the Isolator Row Plus should be inspected, at minimum, once every six months. Periodic inspection should be scheduled based on results of the initial inspection period.

Inspection should initially be undertaken visually from the provided inspection ports and standard maintenance hole. If sediment accumulation is apparent, a stadia rod should be inserted to determine the depth of sedimentation. Sediment accumulation in excess of 3 inches throughout the length of the Isolator Row Plus will require further maintenance by JetVac, as discussed below.

The JetVac maintenance process includes utilizing a high-pressure water nozzle to propel itself down the Isolator Row Plus while scouring and suspending sediments, flushing back water to the maintenance hole for vacuuming. Most sewer pipe maintenance companies are equipped with vacuum/JetVac combination trucks.

Upon cleaning of the Stormtech System, all catchbasins and manholes upstream of the system should also be cleaned out of excess sediment by vac-truck. A sample maintenance log is provided in the Isolator Row Plus O&M manual appended to this manual in **Schedule 1**.

3.0 OIL/GRIT SEPARATOR OPERATIONS AND MAINTENANCE

Regular inspection of the proposed Oil and Grit Separator unit, Stormceptor Model EFO-6, will ensure the longevity of the product, reduce maintenance costs, and ensure optimum stormwater cleansing efficiency to protect downstream waterways. For operations and maintenance related to the Oil and Grit separator unit, refer to the Stormceptor EF Owner's Manual provided by Imbrium Systems Inc., appended to this manual in **Schedule 1**. Operations and maintenance are summarized below:

The Stormceptor EFO-6 shall be inspected post construction prior to going into service to ensure the system is clean of any construction-related sediment or debris. Initially, inspection of the Stormceptor unit should be performed, at minimum, every 4 months to ensure proper function and determine the rate of sediment accumulation. After the first year a routine inspection/maintenance plan should be determined based on results of the initial inspection period.

Inspection is typically performed visually from grade by removing the manhole cover. Visual inspection should be carried out to determine if any debris or sedimentation is present. In the case of debris blocking inlet/outlet pipes, the debris should be removed from the unit. If visual inspection provides evidence of sedimentation, further inspection should be performed to determine the depth of sediment using a sediment probe such as a stadia rod (or Sludge Judge® as recommended by Imbrium). If the depth of sedimentation in the Stormceptor EFO-6 exceed 8 inches (200mm), maintenance should be performed on the unit by way of Vac-truck/jet wand.

Maintenance should be performed in dry weather conditions when no flow is entering the system. Inspection/maintenance of upstream manholes/catchbasins should also be performed to extend time between future maintenance cycles. A sample Stormceptor Inspection and Maintenance Log is provided in the Stormceptor EF Owner's manual appended to this manual.

4.0 INFILTRATION RESERVOIR OPERATIONS & MAINTENANCE

The maintenance and operation of the proposed infiltration reservoirs is to be completed in accordance with the Low Impact Development Stormwater Management Planning and Design Guide (2010). The maintenance and operation requirements have been summarized below:

Regular inspection is required to ensure proper function of the infiltration trench. Inspection via a monitoring well is to be performed, at minimum, annually and after every major rainfall event (>25mm) to ensure that the infiltration trench drains within the maximum allowable time of 48 hours. A monitoring well should be implemented within the provided inspection ports. If slow drainage persists, the removal and replacement of the granular material and/or geotextile may be required.

Typical maintenance for an infiltration trench includes removal of debris from stormwater inlets and outlets where required to ensure consistent flow to the reservoir. Additional maintenance can include standard Stormtech maintenance operations as outlined in Section 2 of this manual.

Should there be any questions on the above-mentioned Stormwater Management (SWM) maintenance and inspection criteria, please contact our office at your earliest convenience.

Yours Truly,
D.G. Biddle & Associates Limited

Tyler Buckley, C.E.T.
Intermediate Designer
Civil Group

Colin Flamminio, P. Eng.
Intermediate Engineer
Civil Group

CJF/TCB/tcb
Encl.
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SCHEDULE 1

STORMTECH SC-800 ISOLATOR ROW PLUS O&M SPECIFICATIONS

STORMCEPTOR EF OWNERS MANUAL

Isolator® Row Plus
O&M Manual

ADS StormTech™

The Isolator® Row Plus

Introduction

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row Plus is a technique to inexpensively enhance Total Suspended Solids (TSS) and Total Phosphorus (TP) removal with easy access for inspection and maintenance.

The Isolator Row Plus

The Isolator Row Plus is a row of StormTech chambers, either SC-160, SC-310, SC-310-3, SC-740, DC-780, MC-3500 or MC-7200 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for sediment settling and filtration as stormwater rises in the Isolator Row Plus and passes through the filter fabric. The open bottom chambers and perforated sidewalls (SC-310, SC- 310-3 and SC-740 models) allow stormwater to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row Plus protecting the adjacent stone and chambers storage areas from sediment accumulation.

ADS geotextile fabric is placed between the stone and the Isolator Row Plus chambers. The woven geotextile provides a media for stormwater filtration, a durable surface for maintenance, prevents scour of the underlying stone and remains intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the chamber's sidewall. The non-woven fabric is not required over the SC-160, DC-780, MC-3500 or MC-7200 models as these chambers do not have perforated side walls.

The Isolator Row Plus is designed to capture the "first flush" runoff and offers the versatility to be sized on a volume basis or a flow-rate basis. An upstream manhole provides access to the Isolator Row Plus and includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row Plus bypass through a manifold to the other chambers. This is achieved with an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row Plus row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row Plus. After Stormwater flows through the Isolator Row Plus and into the rest of the chamber system it is either exfiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

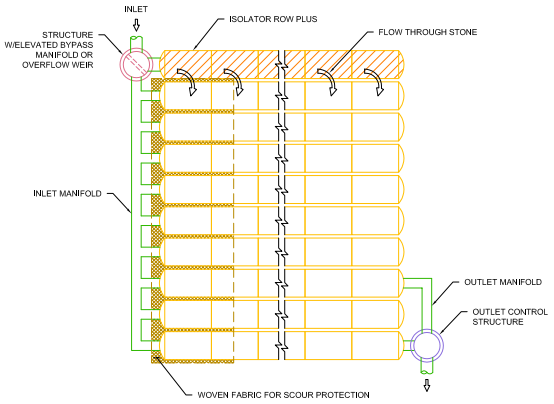
The Isolator Row FLAMP™ (patent pending) is a flared end ramp apparatus attached to the inlet pipe on the inside of the chamber end cap. The FLAMP provides a smooth transition from pipe invert to fabric bottom. It is configured to improve chamber function performance by enhancing outflow of solid debris that would otherwise collect at the chamber's end. It also serves to improve the fluid and solid flow into the access pipe during maintenance and cleaning and to guide cleaning and inspection equipment back into the inlet pipe when complete.

The Isolator Row Plus may be part of a treatment train system. The treatment train design and pretreatment device selection by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, StormTech recommend using the Isolator Row Plus to minimize maintenance requirements and maintenance costs.

Note: *See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row Plus.*

Looking down the Isolator Row PLUS from the manhole opening, ADS PLUS Fabric is shown between the chamber and stone base.

StormTech Isolator Row PLUS with Overflow Spillway (not to scale)



Isolator Row Plus Inspection/Maintenance

Inspection

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row Plus should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

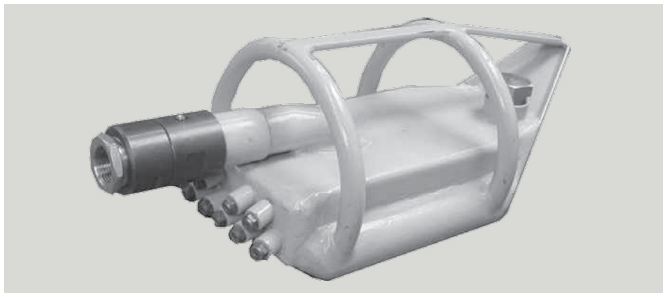
The Isolator Row Plus incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row Plus, clean-out should be performed.

Maintenance

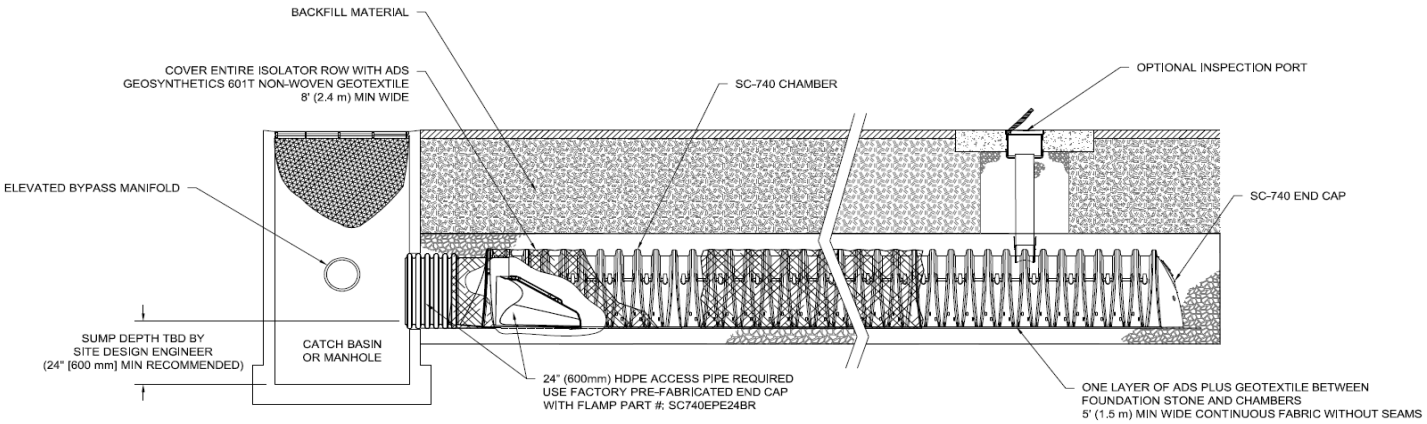
The Isolator Row Plus was designed to reduce the cost of periodic maintenance. By "isolating" sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row Plus while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45" are best. StormTech recommends a maximum nozzle pressure of 2000 psi be utilized during cleaning. JetVac reels can vary in length. For ease of maintenance, ADS recommends Isolator Row Plus lengths up to 200' (61 m). **The JetVac process shall only be performed on StormTech Isolator Row Plus that have ADS Plus Fabric (as specified by StormTech) over their angular base stone.**



StormTech Isolator Row PLUS (*not to scale*)

Note: *Non-woven fabric is only required over the inlet pipe connection into the end cap for SC-160LP, DC-780, MC-3500 and MC-7200 chamber models and is not required over the entire Isolator Row PLUS.*



Isolator Row Plus Step By Step Maintenance Procedures

Step 1

Inspect Isolator Row Plus for sediment.

A) Inspection ports (if present)
- i. Remove lid from floor box frame
- ii. Remove cap from inspection riser
- iii. Using a flashlight and stadia rod,measure depth of sediment and record results on maintenance log.
- iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.

B) All Isolator Row Plus
- i. Remove cover from manhole at upstream end of Isolator Row Plus
- ii. Using a flashlight, inspect down Isolator Row Plus through outlet pipe
  1. Mirrors on poles or cameras may be used to avoid a confined space entry
  2. Follow OSHA regulations for confined space entry if entering manhole
- iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2.
  If not, proceed to Step 3.

Step 2

Clean out Isolator Row Plus using the JetVac process.

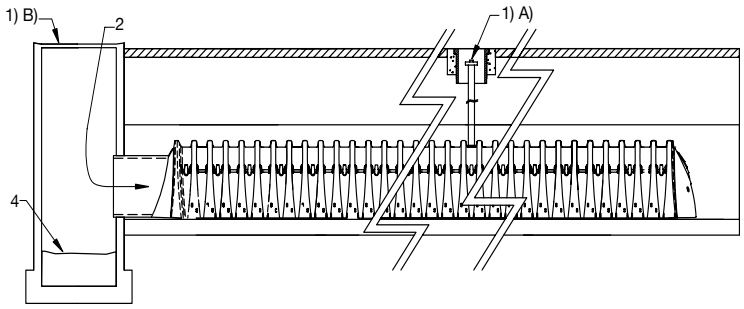
A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
B) Apply multiple passes of JetVac until backflush water is clean
C) Vacuum manhole sump as required

Step 3

Replace all caps, lids and covers, record observations and actions.

Step 4

Inspect & clean catch basins and manholes upstream of the StormTech system.



Sample Maintenance Log

Date	Stadia Rod Readings		Sedi-ment Depth (1)–(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row PLUS, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

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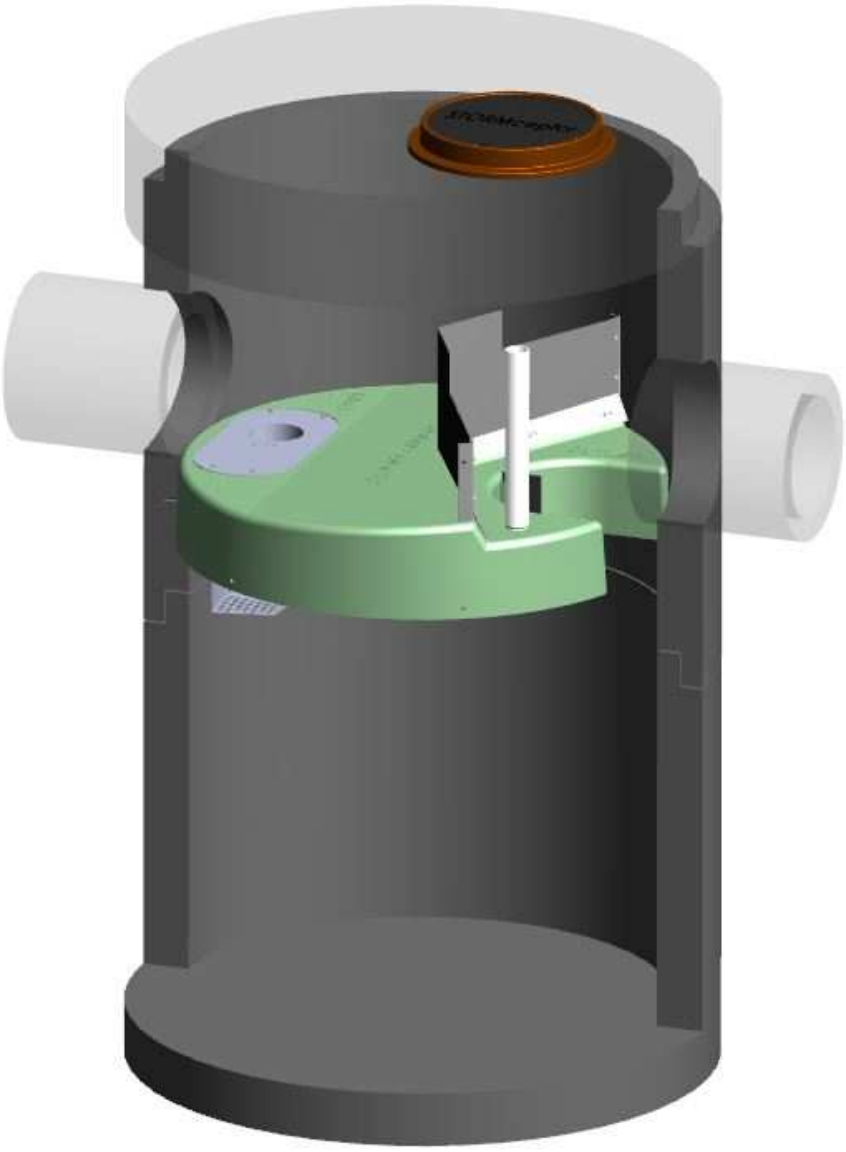
800-821-6710

Stormceptor® EF

Owner's Manual



Stormceptor is protected by one or more of the following patents:

Canadian Patent No. 2,137,942
Canadian Patent No. 2,180,305
Canadian Patent No. 2,327,768
Canadian Patent No. 2,694,159
Canadian Patent No. 2,697,287
U.S. Patent No. 6,068,765
U.S. Patent No. 6,371,690
U.S. Patent No. 7,582,216
U.S. Patent No. 7,666,303
Australia Patent No. 693.164
Australia Patent No. 729,096
Australia Patent No. 2008,279,378
Australia Patent No. 2008,288,900
Japanese Patent No. 5,997,750
Japanese Patent No. 5,555,160
Korean Patent No. 0519212
Korean Patent No. 1451593
New Zealand Patent No. 583,008
New Zealand Patent No. 583,583
South African Patent No. 2010/00682
South African Patent No. 2010/01796
Patent pending

Table of Contents:

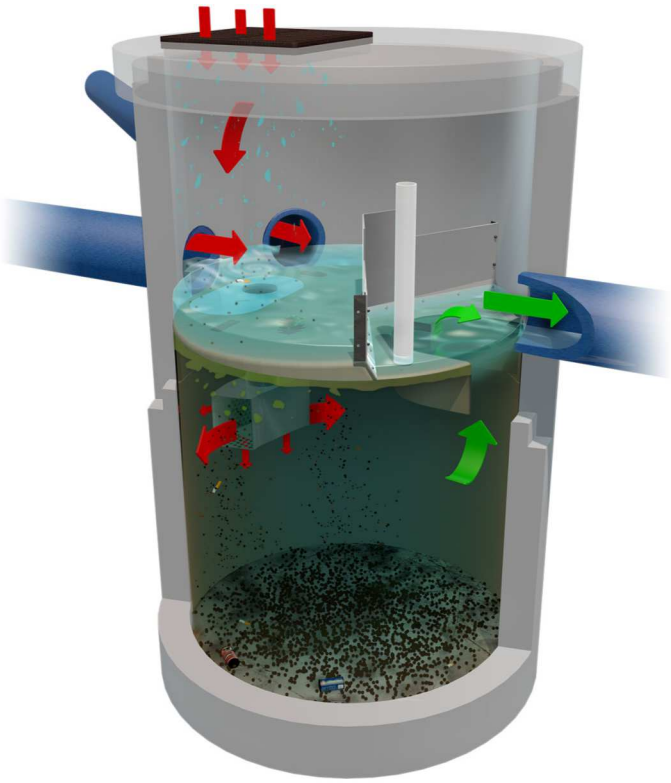
OVERVIEW

Stormceptor® EF is a continuation and evolution of the most globally recognized oil grit separator (OGS) stormwater treatment technology - ***Stormceptor®***. Also known as a hydrodynamic separator, the enhanced flow Stormceptor EF is a high performing oil grit separator that effectively removes a wide variety of pollutants from stormwater and snowmelt runoff at flow rates higher than the original Stormceptor. Stormceptor EF captures and retains sediment (TSS), free oils, gross pollutants and other pollutants that attach to particles, such as nutrients and metals. Stormceptor EF's patent-pending treatment and scour prevention platform ensures sediment is retained during all rainfall events.

Stormceptor EF offers design flexibility in one simplified platform, accepting stormwater flow from a single inlet pipe, multiple inlet pipes, and/or from the surface through an inlet grate. Stormceptor EF can also serve as a junction structure, accommodate a 90-degree inlet to outlet bend angle, and be modified to ensure performance in submerged conditions. With its scour prevention and internal bypass, Stormceptor EF can be installed online, eliminating the need for costly additional bypass structures.

OPERATION

- Stormwater enters the Stormceptor upper chamber through the inlet pipe(s) or a surface inlet grate. A specially designed insert reduces the influent velocity by creating a pond upstream of the insert's weir. Sediment particles immediately begin to settle. Swirling flow sweeps water, sediment, and floatables across the sloped surface of the insert to the inlet opening of the drop pipe, where a strong vortex draws water, sediment, oil, and debris down the drop pipe cone.
- Influent exits the cone into the drop pipe duct. The duct has two large rectangular outlet openings as well as perforations in the backside and floor of the duct. Influent is diffused through these various opening in multiple directions and at low velocity into the lower chamber.
- Free oils and other floatables rise up within the channel surrounding the central riser pipe and are trapped beneath the insert, while sediment settles to the sump. Pollutants are retained for later removal during maintenance cleaning.
- Treated effluent enters the outlet riser, moves upward, and discharges to the top side of the insert downstream of the weir, where it flows out the outlet pipe.
- During intense storm events with very high influent flow rates, the pond height on the upstream side of the weir may exceed the height of the weir, and the excess flow passes over the top of the weir to the downstream side of the insert, and exits through the outlet pipe. This internal bypass feature allows for in-line installation, avoiding the cost of additional bypass structures. During bypass, the pond separates sediment from all incoming flows, while full treatment in the lower chamber continues at the maximum flow rate.
- Stormceptor EF's patent-pending enhanced flow and scour prevention technology ensures pollutants are captured and retained, allowing excess flows to bypass during infrequent, high intensity storms.



COMPONENTS

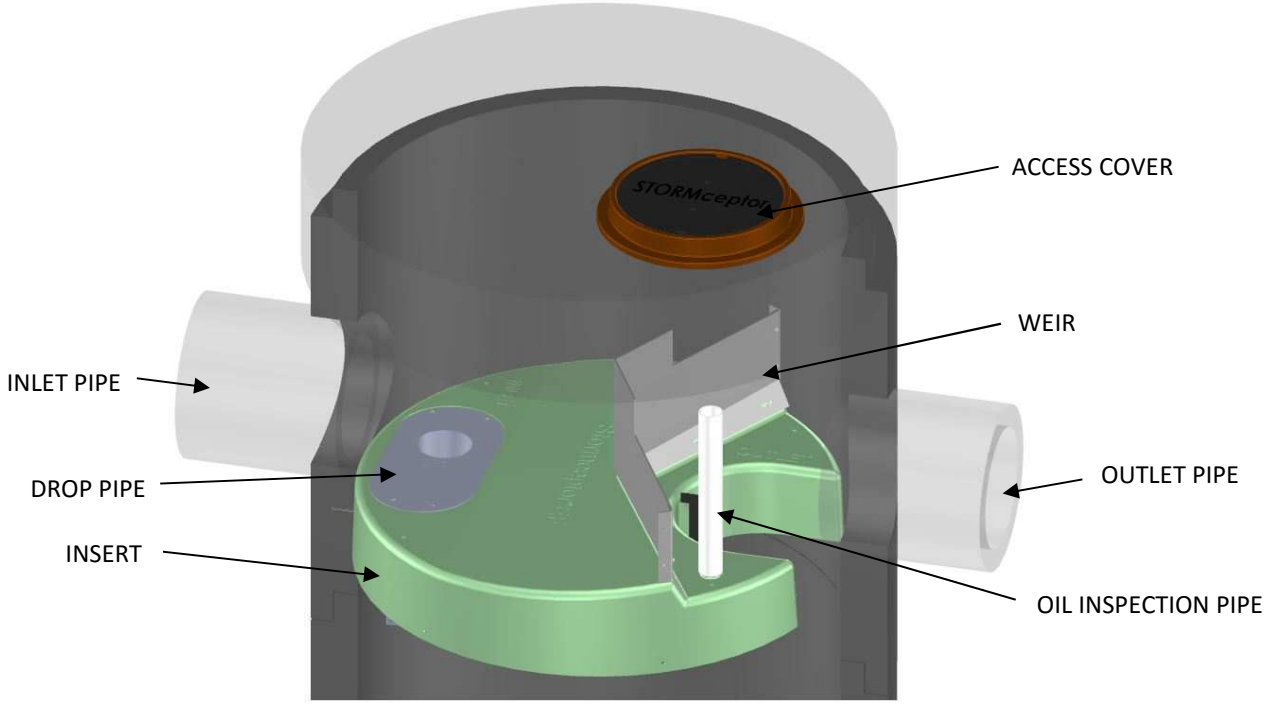


Figure 1

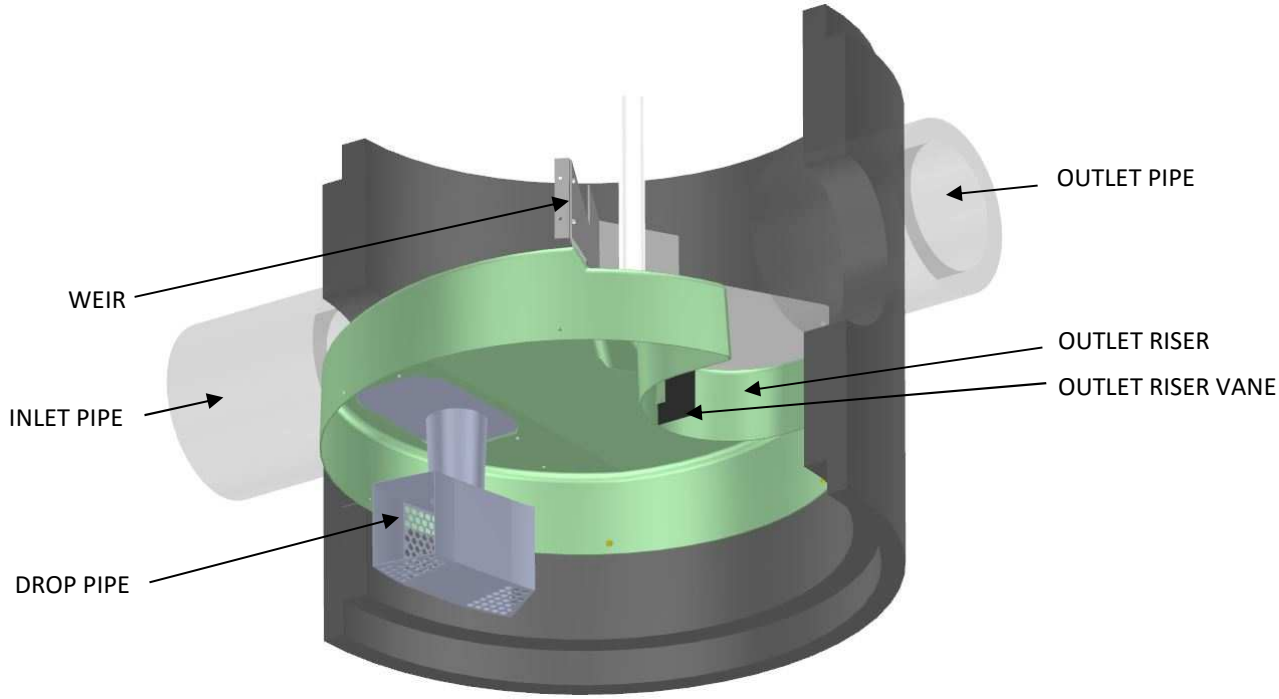


Figure 2

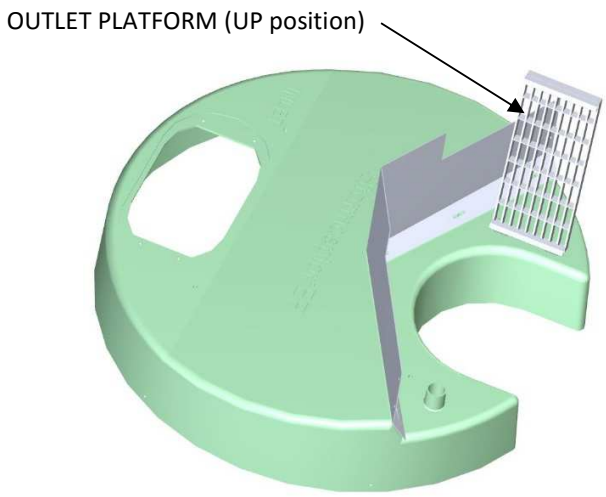


Figure 3A

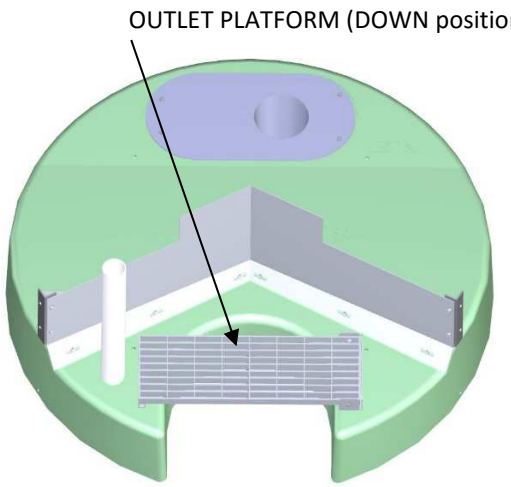


Figure 3B

- **Insert** – separates vessel into upper and lower chambers, and provides double-wall containment of hydrocarbons
- **Weir** – creates stormwater ponding and driving head on top side of insert
- **Drop pipe** – conveys stormwater and pollutants into the lower chamber
- **Outlet riser** – conveys treated stormwater from the lower chamber to the outlet pipe, and provides primary inspection and maintenance access into the lower chamber
- **Outlet riser vane** – prevents formation of a vortex in the outlet riser during high flow rate conditions
- **Outlet platform (optional)** – safety platform in the event of manned entry into the unit
- **Oil inspection pipe** – primary access for measuring oil depth

PRODUCT DETAILS

METRIC DIMENSIONS AND CAPACITIES

Table 1

Stormceptor Model	Inside Diameter (m)	Minimum Surface to Outlet Invert Depth (mm)	Depth Below Outlet Pipe Invert (mm)	Wet Volume (L)	Sediment Capacity [1] (m^3)	Hydrocarbon Storage Capacity [2] (L)	Maximum Flow Rate into Lower Chamber [3] (L/s)	Peak Conveyance Flow Rate [4] (L/s)
EF4 / EFO4	1.22	915	1524	1780	1.19	265	22.1 / 10.4	425
EF6 / EFO6	1.83	915	1930	5070	3.47	610	49.6 / 23.4	990
EF8 / EFO8	2.44	1219	2591	12090	8.78	1070	88.3 / 41.6	1700
EF10 / EFO10	3.05	1219	3251	23700	17.79	1670	138 / 65	2830
EF12 / EFO12	3.66	1524	3886	40800	31.22	2475	198.7 / 93.7	2830

[1] Sediment Capacity is measured from the floor to the bottom of the drop pipe cone. Sediment Capacity can be increased to accommodate specific site designs and pollutant loads. Contact your local representative for assistance.
[2] Hydrocarbon Storage Capacity is measured from the bottom of the outlet riser to the underside of the insert. Hydrocarbon Storage Capacity can be increased to accommodate specific site designs and pollutant loads. Contact your local representative for assistance.
[3] EF Maximum Flow Rate into Lower Chamber is based on a maximum surface loading rate (SLR) into the lower chamber of 1135 L/min/m^2.
EFO Maximum Flow Rate into Lower Chamber is based on a maximum surface loading rate (SLR) into the lower chamber of 535 L/min/m^2.
[4] Peak Conveyance Flow Rate is limited by a maximum velocity of 1.5 m/s.

U.S. DIMENSIONS AND CAPACITIES

Table 2

Stormceptor Model	Inside Diameter (ft)	Minimum Surface to Outlet Invert Depth (in)	Depth Below Outlet Pipe Invert (in)	Wet Volume (gal)	Sediment Capacity [1] (ft^3)	Hydrocarbon Storage Capacity [2] (gal)	Maximum Flow Rate into Lower Chamber [3] (cfs)	Peak Conveyance Flow Rate [4] (cfs)
EF4 / EFO4	4	36	60	471	42	70	0.78 / 0.37	15
EF6 / EFO6	6	36	76	1339	123	160	1.75 / 0.83	35
EF8 / EFO8	8	48	102	3194	310	280	3.12 / 1.47	60
EF10 / EFO10	10	48	128	6261	628	440	4.87 / 2.30	100
EF12 / EFO12	12	60	153	10779	1103	655	7.02 / 3.31	100

[1] Sediment Capacity is measured from the floor to the bottom of the drop pipe cone. Sediment Capacity can be increased to accommodate specific site designs and pollutant loads. Contact your local representative for assistance.
[2] Hydrocarbon Storage Capacity is measured from the bottom of the outlet riser to the underside of the insert. Hydrocarbon Storage Capacity can be increased to accommodate specific site designs and pollutant loads. Contact your local representative for assistance.
[3] EF Maximum Flow Rate into Lower Chamber is based on a maximum surface loading rate (SLR) into the lower chamber of 27.9 gpm/ft^2.
EFO Maximum Flow Rate into Lower Chamber is based on a maximum surface loading rate (SLR) into the lower chamber of 13.1 gpm/ft^2.
[4] Peak Conveyance Flow Rate is limited by a maximum velocity of 5 fps.

IDENTIFICATION

Each Stormceptor EF/EFO unit is easily identifiable by the trade name ***Stormceptor***® embossed on the access cover at grade as shown in **Figure 3**. The tradename ***Stormceptor***® is also embossed on the top of the insert upstream of the weir as shown in **Figure 3**.

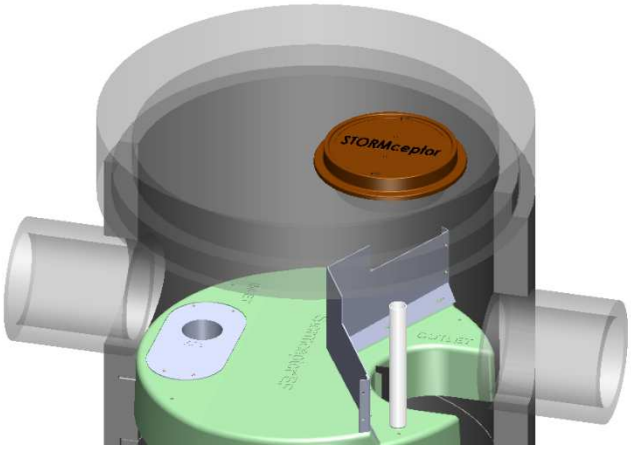


Figure 4

The specific Stormceptor EF/EFO model number is identified on the top of the aluminum Drop Pipe as shown in **Figure 4**. The unit serial number is identified on the top of the insert upstream of the weir as shown in **Figure 4**.

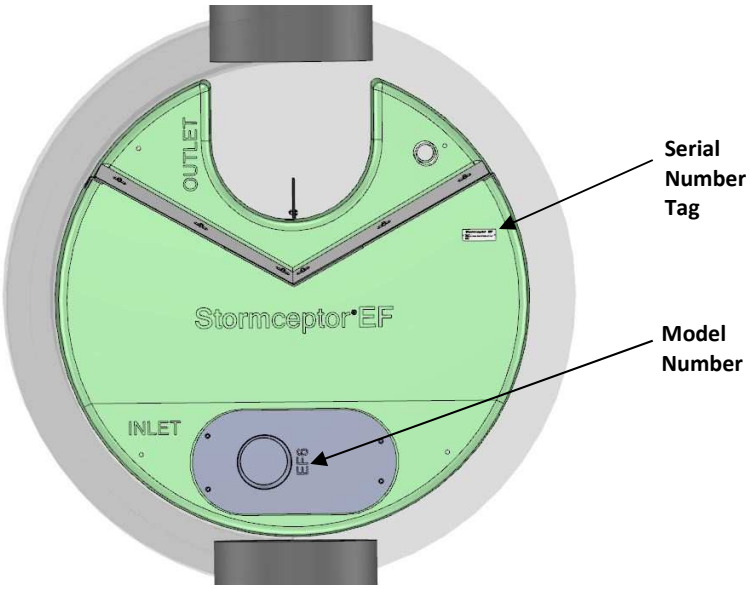


Figure 5

INSPECTION AND MAINTENANCE

It is very important to perform regular inspection and maintenance. Regular inspection and maintenance ensures maximum operation efficiency, keeps maintenance costs low, and provides continued of natural waterways.

Quick Reference

- Typical inspection and maintenance is performed from grade
- Remove manhole **cover(s)** or **inlet grate** to access insert and lower chamber
  NOTE: EF4/EFO4 requires the removal of a **flow deflector** beneath inlet grate
- Use Sludge Judge® or similar sediment probe to check sediment depth through the **outlet riser**
- Oil dipstick can be inserted through the **oil inspection pipe**
- Visually inspect the **insert** for debris, remove debris if present
- Visually inspect the **drop pipe** opening for blockage, remove blockage if present
- Visually inspect **insert** and **weir** for damage, schedule repair if needed
- Insert vacuum hose and jetting wand through the outlet riser and extract sediment and floatables
- Replace flow deflector (EF4/EFO4), inlet grate, and cover(s)
- **NOTE:** If the unit has an **outlet platform**, the outlet platform is typically in the UP position (see Figure 3A) for normal treatment conditions, and for inspection and maintenance. If manned entry into the unit is required, the outlet platform must first be placed in the DOWN position (see Figure 3B). After manned entry is completed, return the outlet platform to the UP position for treatment.

When is inspection needed?

- Post-construction inspection is required prior to putting the Stormceptor into service.
- Routine inspections are recommended during the first year of operation to accurately assess pollutant accumulation.
- Inspection frequency in subsequent years is based on the maintenance plan developed in the first year.
- Inspections should also be performed immediately after oil, fuel, or other chemical spills.

What equipment is typically required for inspection?

- Manhole access cover lifting tool
- Oil dipstick / Sediment probe with ball valve (typically ¾-inch to 1-inch diameter)
- Flashlight
- Camera
- Data log / Inspection Report
- Safety cones and caution tape
- Hard hat, safety shoes, safety glasses, and chemical-resistant gloves

When is maintenance cleaning needed?

- If the post-construction inspection indicates presence of construction sediment of a depth greater than a few inches, maintenance is recommended at that time.
- For optimum performance and normal operation the unit should be cleaned out once the sediment depth reaches the recommended maintenance sediment depth, see **Table 3**.
- Maintain immediately after an oil, fuel, or other chemical spill.

Table 3

Recommended Sediment Depths for Maintenance Service*	
MODEL	Sediment Depth (in/mm)
EF4 / EFO4	8 / 203
EF6 / EFO6	12 /305
EF8 / EFO8	24 / 610
EF10 / EFO10	24 / 610
EF12 / EFO12	24 / 610

* Based on a minimum distance of 40 inches (1,016 mm) from bottom of outlet riser to top of sediment bed

The frequency of inspection and maintenance may need to be adjusted based on site conditions to ensure the unit is operating and performing as intended. Maintenance costs will vary based on the size of the unit, site conditions, local requirements, disposal costs, and transportation distance.

What equipment is typically required for maintenance?

- Vacuum truck equipped with water hose and jet nozzle
- Small pump and tubing for oil removal
- Manhole access cover lifting tool
- Oil dipstick / Sediment probe with ball valve (typically ¾-inch to 1-inch diameter)
- Flashlight
- Camera
- Data log / Inspection Report
- Safety cones
- Hard hats, safety shoes, safety glasses, chemical-resistant gloves, and hearing protection for service providers
- Gas analyzer, respiratory gear, and safety harness for specially trained personnel if confined space entry is required (adhere to all OSHA / CCOSH standards)

What conditions can compromise Stormceptor performance?

- Presence of construction sediment and debris in the unit prior to activation
- Excessive sediment depth beyond the recommended maintenance depth
- Oil spill in excess of the oil storage capacity
- Clogging or restriction of the drop pipe inlet opening with debris
- Downstream blockage that results in a backwater condition

Maintenance Procedures

- Maintenance should be conducted during dry weather conditions when no flow is entering the unit.
- Stormceptor is maintained from grade through a standard surface manhole access cover or inlet grate.
- In the case of submerged or tailwater conditions, extra measures are likely required, such as plugging the inlet and outlet pipes prior to conducting maintenance.
- Inspection and maintenance of upstream catch basins and other stormwater conveyance structures is also recommended to extend the time between future maintenance cycles.

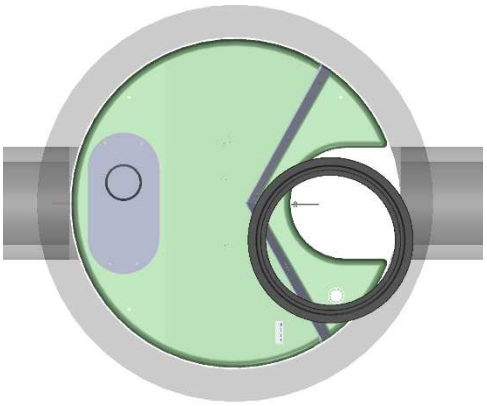


Figure 6

- Sediment depth inspections are performed through the **Outlet Riser** and oil presence can be determined through the **Oil Inspection Pipe**.
- Oil presence and sediment depth are determined by inserting a Sludge Judge® or measuring stick to quantify the pollutant depths.

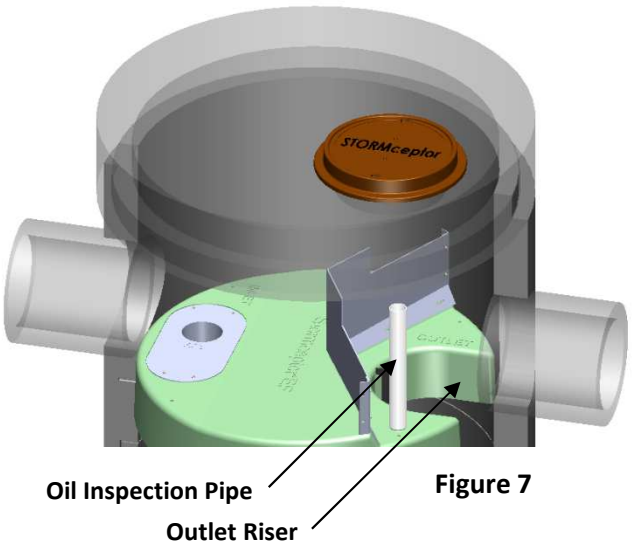


Figure 7

Figure 8

- Visually inspect the insert, weir, and drop pipe inlet opening to ensure there is no damage or blockage.
- **NOTE:** If the unit has an **outlet platform**, the outlet platform is typically in the UP position (see Figure 3A) for normal treatment conditions, and for inspection and maintenance. If manned entry into the unit is required, the outlet platform must first be placed in the DOWN position (see Figure 3B). After manned entry is completed, return the outlet platform to the UP position for treatment.

- When maintenance is required, a standard vacuum truck is used to remove the pollutants from the lower chamber of the unit through the **Outlet Riser**.

Figure 9

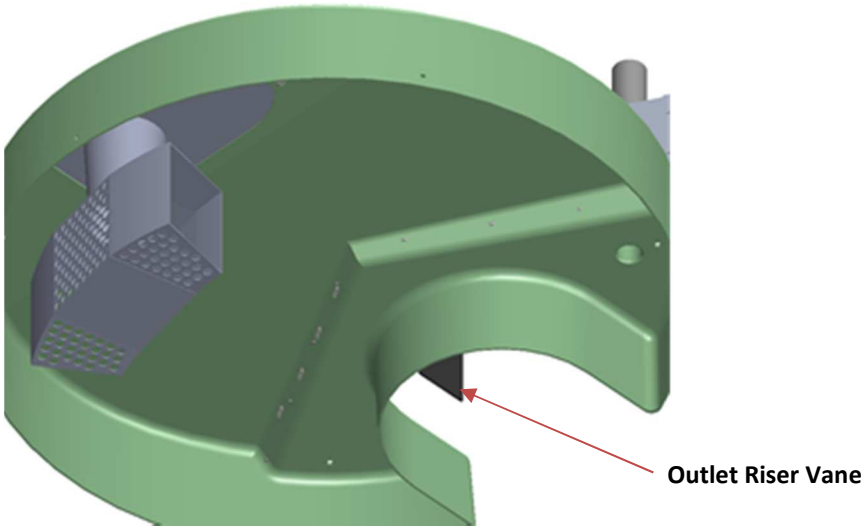
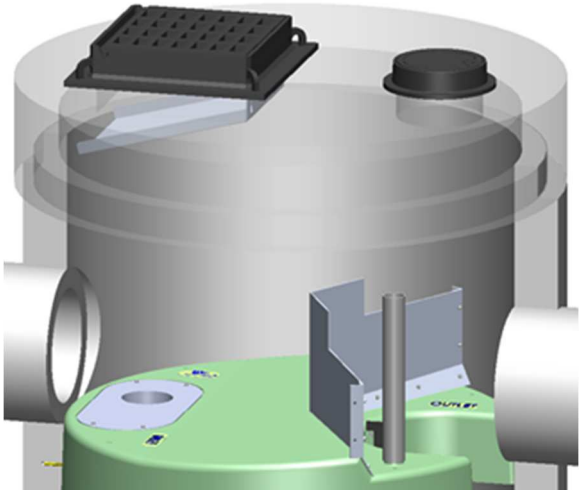


Figure 10

NOTE: The Outlet Riser Vane is durable and flexible and designed to allow maintenance activities with minimal, if any, interference.

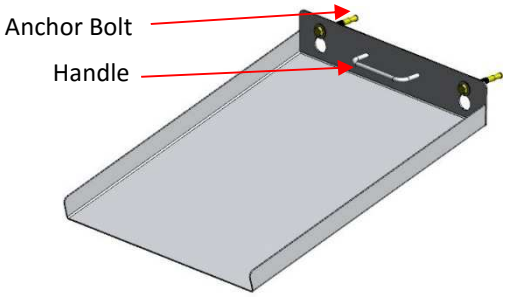
Removable Flow Deflector

- Top grated inlets for the Stormceptor EF4/EFO4 model requires a removable flow deflector staged underneath a 24-inch x 24-inch (600 mm x 600 mm) square inlet grate to direct flow towards the inlet side of the insert, and avoid flow and pollutants from entering the outlet side of the insert from grade. The EF6/EFO6 and larger models do not require the flow deflector.



How to Remove:

1. Loosen anchor bolts
2. Pull up and out using the handle



Removable Flow Deflector

Figure 11

Hydrocarbon Spills

Stormceptor is often installed on high pollutant load hotspot sites with vehicular traffic where hydrocarbon spill potential exists. Should a spill occur, or presence of oil be identified within a Stormceptor EF/EFO, it should be cleaned immediately by a licensed liquid waste hauler.

Disposal

Maintenance providers are to follow all federal, state/ provincial, and local requirements for disposal of material.

Oil Sheens

When oil is present in stormwater runoff, a sheen may be noticeable at the Stormceptor outlet. An oil rainbow or sheen can be noticeable at very low oil concentrations (< 10 mg/L). Despite the appearance of a sheen, Stormceptor EF/EFO may still be functioning as intended.

Oil Level Alarm

To mitigate spill liability with 24/7 detection, an electronic monitoring system can be employed to trigger a visual and audible alarm when a pre-set level of oil is captured within the lower chamber or when an oil spill occurs. The oil level alarm is available as an optional feature to include with Stormceptor EF/EFO as shown in **Figure 11**. For additional details about the Oil Level Alarm please visit http://www.imbriumsystems.com/stormwater-treatment-solutions/stormceptor-systems.

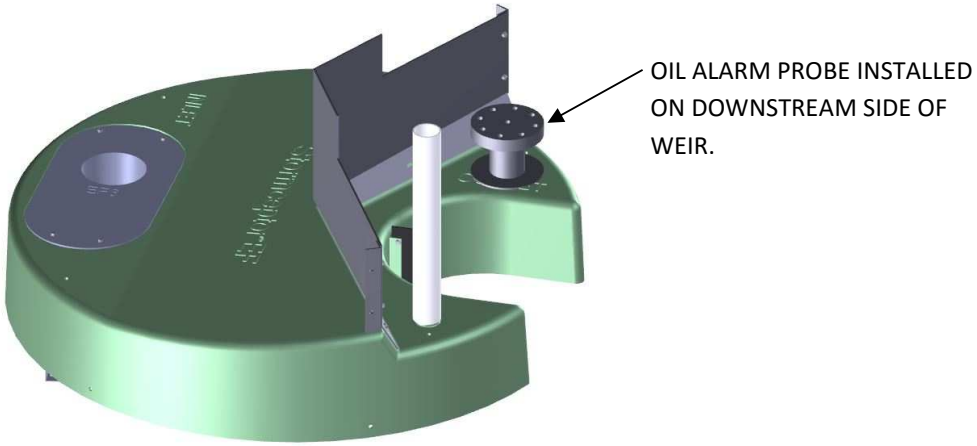


Figure 12

Replacement Parts

Stormceptor has no moving parts to wear out. Therefore inspection and maintenance activities are generally focused on pollutant removal. Since there are no moving parts during operation in a Stormceptor, broken, damaged, or worn parts are not typically encountered. However, if replacement parts are necessary, they may be purchased by contacting your local Stormceptor representative.

Stormceptor Inspection and Maintenance Log

Stormceptor Model No: _____

Serial Number: _____

Installation Date: _____

Location Description of Unit: _____

Recommended Sediment Maintenance Depth: _____

DATE	SEDIMENT DEPTH (inch or mm)	OIL DEPTH (inch or mm)	SERVICE REQUIRED (Yes / No)	MAINTENANCE PERFORMED	MAINTENANCE PROVIDER	COMMENTS

Other Comments:

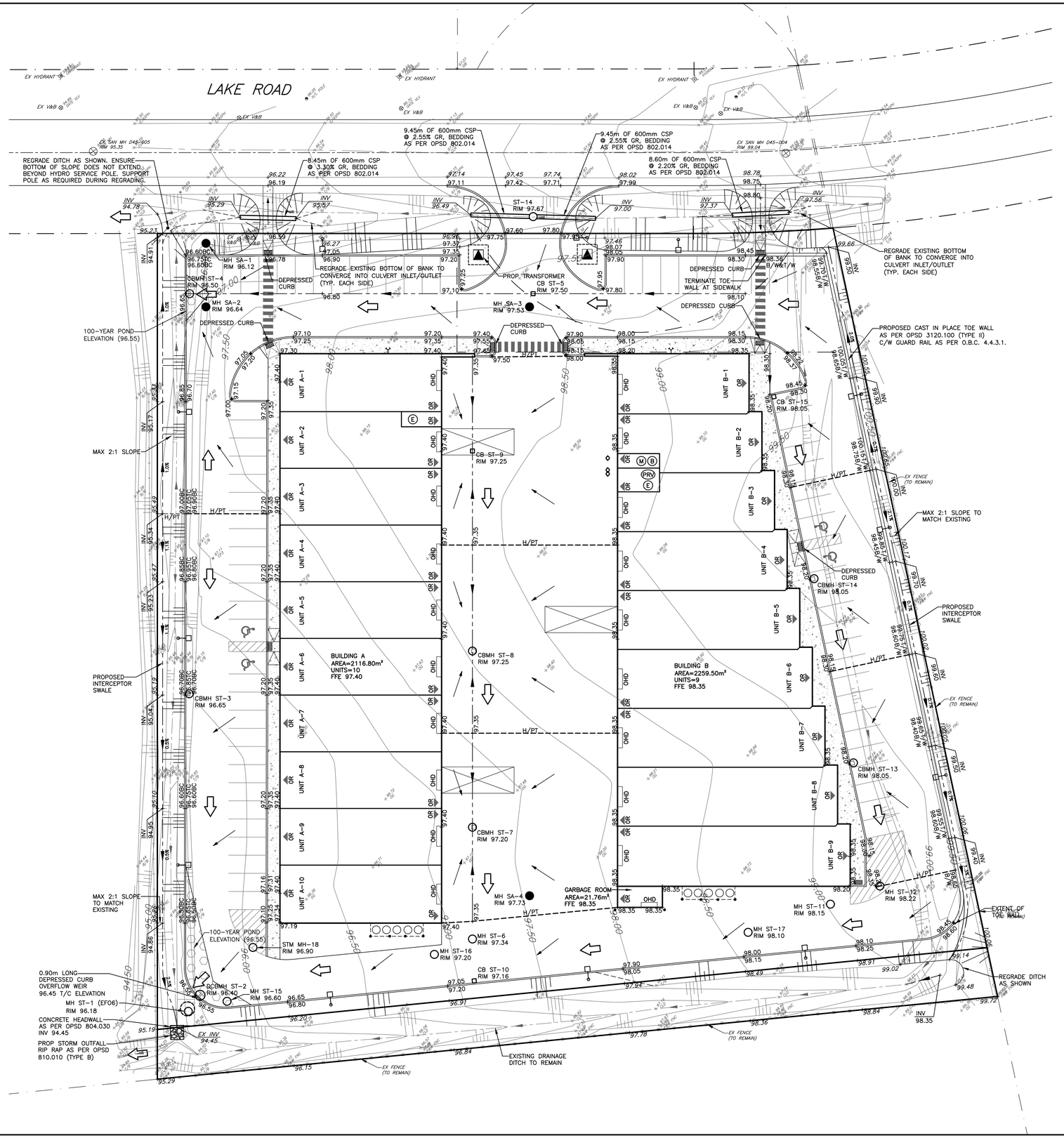
Contact Information

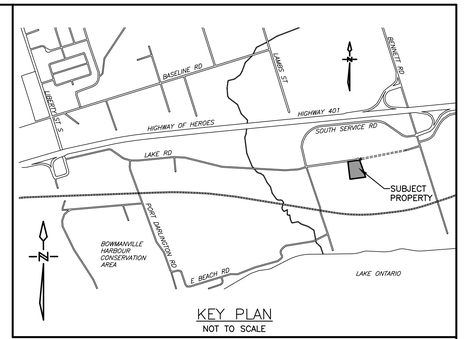
Questions regarding Stormceptor EF/EFO can be addressed by contacting your local Stormceptor representative or by visiting our website at **www.stormceptor.com.**

Imbrium Systems Inc. & Imbrium Systems LLC

Canada	1-416-960-9900 / 1-800-565-4801
United States	1-301-279-8827 / 1-888-279-8826
International	+1-416-960-9900 / +1-301-279-8827

www.imbriumsystems.com
www.stormceptor.com
info@imbriumsystems.com





KEY PLAN
NOT TO SCALE

BENCH MARK

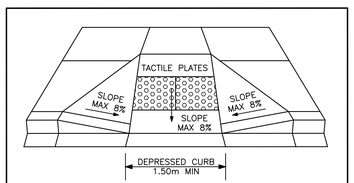
BENCHMARK 00111925U176A: BOWMANVILLE– C.N.RY., STONE ARCH SUBWAY FOR SOUTH SERVICE ROAD, 1.9 KM EAST OF STATION, BOLT IN NORTHWEST FACE OF WEST WING WALL AT NORTH END OF SUBWAY, THIRD COURSE BELOW COPING.
ELEVATION: 84.479

SITE GRADING NOTES

1. THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND SERVICES TO BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION. CONCERNED UTILITIES TO BE GIVEN ADVANCED NOTICE FOR STAKE OUT. THE CONSULTANT ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE UTILITIES SHOWN ON THE DRAWINGS.
2. QUANTITIES, DIMENSIONS AND ELEVATIONS TO BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR COMMENCING CONSTRUCTION.
3. ALL SLOPES SHALL BE CONSTRUCTED AT 3:1 (MAXIMUM) UNLESS OTHERWISE NOTED ON THE DRAWINGS.
4. ALL SWALES SHALL BE CONSTRUCTED WITH 2% MINIMUM GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
5. ALL SLOPES, SWALES AND OPEN SPACE AREAS SHALL BE SODDED ON A MINIMUM OF 300mm OF TOPSOIL.
6. ALL DISTURBED AREAS WITHIN ABUTTING MUNICIPAL RIGHT OF WAYS SHALL BE SODDED ON A MINIMUM OF 300mm OF TOPSOIL.
7. ALL MONITORING WELLS WITHIN DEVELOPMENT AREA TO BE DECOMMISSIONED AS PER MECP CRITERIA.
8. PARKING AREA SHALL CONSIST OF THE FOLLOWING UNLESS OTHERWISE APPROVED BY THE ENGINEER:
   - –200mm GRANULAR 'B'
   - –150mm GRANULAR 'A'
   - – 50mm HL3 ASPHALT
9. HEAVY DUTY PAVEMENT AREA SHALL CONSIST OF THE FOLLOWING UNLESS OTHERWISE APPROVED BY THE ENGINEER:
   - –300mm GRANULAR 'B'
   - –150mm GRANULAR 'A'
   - –75mm HL8 ASPHALT
   - –40mm HL3 ASPHALT
10. PROPOSED ENTRANCE WITHIN LAKE ROAD RIGHT OF WAY SHALL CONSIST OF:
    - – 375mm GRANULAR 'B'
    - – 150mm GRANULAR 'A'
    - – 80mm HL8 ASPHALT
    - – 40mm HL3 ASPHALT

GENERAL NOTES

1. RESPECTING ALL WORK IN THE MUNICIPAL RIGHT OF WAY, THE CONTRACTOR IS TO PROVIDE AT LEAST 48 HOURS NOTICE TO THE CLARINGTON PUBLIC WORKS DEPARTMENT STAFF AT (905)–263–2291.
2. A ROAD OCCUPANCY PERMIT WILL BE REQUIRED FOR ANY WORK DONE IN THE MUNICIPAL ROAD ALLOWANCE. EXCAVATION OF THE ROAD SURFACE IS NOT PERMITTED BETWEEN DECEMBER 1ST AND APRIL 30TH.
3. ALL RESTORATION OR WORK DONE IN THE ROAD ALLOWANCE MUST BE COMPLETED AS PER MUNICIPAL FIELD STAFF DIRECTION.
4. THE PERFORMANCE GUARANTEE WILL NOT BE REFUNDED BY THE MUNICIPALITY OF CLARINGTON UNLESS THE WORKS HAVE BEEN INSPECTED BY MUNICIPAL FORCES AND DEEMED TO BE COMPLETED AND SATISFACTORY.



NOTES:
1. DEPRESSED CURB AT RAMP SHALL BE MODIFIED TO ELIMINATED 30mm STEP AT GUTTER LINE
2. MINIMUM THICKNESS OF RAMP IS 200mm, MINIMUM THICKNESS OF SIDEWALK AND FLARED SIDES ADJACENT TO RAMP IS 150mm
3. TACTILE PLATE TO BE CONSTRUCTED AS PER OPSD 310.039
4. TACTILE PLATE TO EXTEND ENTIRE WIDTH OF THE SIDEWALK RAMP

CURB RAMP DETAIL
NOT TO SCALE

LEGEND

ORIGINAL SURVEY ELEVATION	103.15
ORIGINAL ELEVATION TO REMAIN	+101.35
PROPOSED ELEVATIONS	+101.35
PROPOSED SWALE	
DIRECTION OF DRAINAGE	
LIMIT OF PONDING **MAX PONDING ELEVATION 96.55**	
DIRECTION OF OVERLAND FLOW	

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	SUBMISSION	DATE
3.	REVISED AS PER BUILDING FLOOR PLAN REVISIONS	2025/08/19
2.	REVISED AS PER 2ND SUBMISSION COMMENT	2025/08/06
1.	REVISED AS PER 1ST SUBMISSION COMMENT	2025/02/13

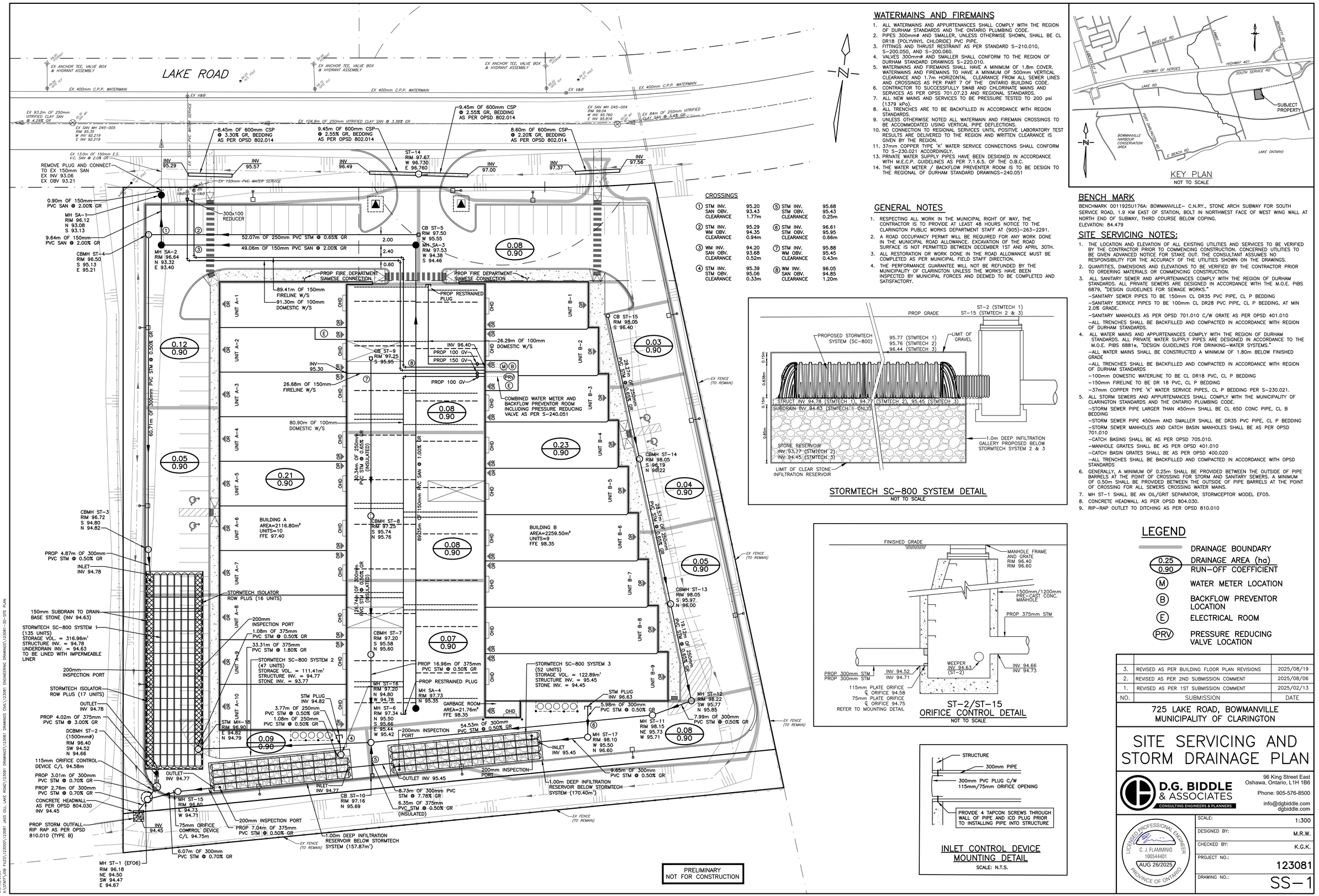
725 LAKE ROAD, BOWMANVILLE
MUNICIPALITY OF CLARINGTON

SITE GRADING PLAN

D.G. BIDDLE & ASSOCIATES
CONSULTING ENGINEERS & PLANNERS
96 King Street East
Oshawa, Ontario, L1H 1B6
Phone: 905-576-8500
info@dgbiddle.com
dgbiddle.com

LICENSED PROFESSIONAL ENGINEER
C. J. FLAMMINIO
100544401
AUG 26/2025
PROVINCE OF ONTARIO

SCALE:	1:300
DESIGNED BY:	M.R.W.
CHECKED BY:	K.G.K.
PROJECT NO.:	123081
DRAWING NO.:	SG–1



CROSSINGS

①	STM INV.	95.20	⑤	STM INV.	95.68
	SAN OBV.	93.43		STM OBV.	95.43
	CLEARANCE	1.77m		CLEARANCE	0.25m
②	STM INV.	95.29	⑥	STM INV.	96.61
	WM OBV.	94.35		STM OBV.	95.95
	CLEARANCE	0.94m		CLEARANCE	0.66m
③	WM INV.	94.20	⑦	STM INV.	95.88
	SAN OBV.	93.68		WM OBV.	95.45
	CLEARANCE	0.52m		CLEARANCE	0.43m
④	STM INV.	95.39	⑧	WM INV.	96.05
	SAN OBV.	95.06		SAN OBV.	94.85
	CLEARANCE	0.33m		CLEARANCE	1.20m

WATERMAINS AND FIREMAINS

1. ALL WATERMAINS AND APPURTENANCES SHALL COMPLY WITH THE REGION OF DURHAM STANDARDS AND THE ONTARIO PLUMBING CODE.
2. PIPES 300mmø AND SMALLER, UNLESS OTHERWISE SHOWN, SHALL BE CL DR18 (POLYVINYL CHLORIDE) PVC PIPE.
3. FITTINGS AND THRUST RESTRAINT AS PER STANDARD S-210.010, S-200.050, AND S-200.060.
4. VALVES 300mmø AND SMALLER SHALL CONFORM TO THE REGION OF DURHAM STANDARD DRAWINGS S-220.010.
5. WATERMAINS AND FIREMAINS SHALL HAVE A MINIMUM OF 1.8m COVER. WATERMAINS AND FIREMAINS TO HAVE A MINIMUM OF 500mm VERTICAL CLEARANCE AND 1.7m HORIZONTAL CLEARANCE FROM ALL SEWER LINES AND CROSSINGS AS PER PART 7 OF THE ONTARIO BUILDING CODE.
6. CONTRACTOR TO SUCCESSFULLY SWAB GR AND CHLORINATE MAINS AND SERVICES AS PER OPSS 701.07.23 AND REGIONAL STANDARDS.
7. ALL NEW MAINS AND SERVICES TO BE PRESSURE TESTED TO 200 psi (1379 kPa).
8. ALL TRENCHES ARE TO BE BACKFILLED IN ACCORDANCE WITH REGION STANDARDS.
9. UNLESS OTHERWISE NOTED ALL WATERMAIN AND FIREMAIN CROSSINGS TO BE ACCOMMODATED USING VERTICAL PIPE DEFLECTIONS.
10. NO CONNECTION TO REGIONAL SERVICES UNTIL POSITIVE LABORATORY TEST RESULTS ARE DELIVERED TO THE REGION AND WRITTEN CLEARANCE IS GIVEN BY THE REGION.
11. 37mm COPPER TYPE 'K' WATER SERVICE CONNECTIONS SHALL CONFORM TO S-230.021 ACCORDINGLY.
13. PRIVATE WATER SUPPLY PIPES HAVE BEEN DESIGNED IN ACCORDANCE WITH M.E.C.P. GUIDELINES AS PER 7.1.6.5. OF THE O.B.C.
14. THE WATER METER / BACKFLOW PREVENTER ROOM IS TO BE DESIGN TO THE REGIONAL OF DURHAM STANDARD DRAWINGS-240.051

GENERAL NOTES

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2. A ROAD OCCUPANCY PERMIT WILL BE REQUIRED FOR ANY WORK DONE IN THE MUNICIPAL ROAD ALLOWANCE. EXCAVATION OF THE ROAD SURFACE IS NOT PERMITTED BETWEEN DECEMBER 1ST AND APRIL 30TH.
3. ALL RESTORATION OR WORK DONE IN THE ROAD ALLOWANCE MUST BE COMPLETED AS PER MUNICIPAL FIELD STAFF DIRECTION.
4. THE PERFORMANCE GUARANTEE WILL NOT BE REFUNDED BY THE MUNICIPALITY OF CLARINGTON UNLESS THE WORKS HAVE BEEN INSPECTED BY MUNICIPAL FORCES AND DEEMED TO BE COMPLETED AND SATISFACTORY.

STORMTECH SC-800 SYSTEM DETAIL
NOT TO SCALE

ST-2/ST-15 ORIFICE CONTROL DETAIL
NOT TO SCALE

INLET CONTROL DEVICE MOUNTING DETAIL
SCALE: N.T.S.

KEY PLAN
NOT TO SCALE

BENCH MARK

BENCHMARK 0011925U176A: BOWMANVILLE-- C.N.RY., STONE ARCH SUBWAY FOR SOUTH SERVICE ROAD, 1.9 KM EAST OF STATION, BOLT IN NORTHWEST FACE OF WEST WING WALL AT NORTH END OF SUBWAY, THIRD COURSE BELOW COPING.
ELEVATION: 84.479

SITE SERVICING NOTES:

1. THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND SERVICES TO BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION. CONCERNED UTILITIES TO BE GIVEN ADVANCED NOTICE FOR STAKE OUT. THE CONSULTANT ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE UTILITIES SHOWN ON THE DRAWINGS.
2. QUANTITIES, DIMENSIONS AND ELEVATIONS TO BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR COMMENCING CONSTRUCTION.
3. ALL SANITARY SEWER AND APPURTENANCES COMPLY WITH THE REGION OF DURHAM STANDARDS. ALL PRIVATE SEWERS ARE DESIGNED IN ACCORDANCE WITH THE M.O.E. PIBS 6879, "DESIGN GUIDELINES FOR SEWAGE WORKS."
   - –SANITARY SEWER PIPES TO BE 150mm CL DR35 PVC PIPE, CL P BEDDING
   - –SANITARY SERVICE PIPES TO BE 100mm CL DR28 PVC PIPE, CL P BEDDING, AT MIN 2.0% GRADE.
   - –SANITARY MANHOLES AS PER OPSD 701.010 C/W GRATE AS PER OPSD 401.010
   - –ALL TRENCHES SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH REGION OF DURHAM STANDARDS.
4. ALL WATER MAINS AND APPURTENANCES COMPLY WITH THE REGION OF DURHAM STANDARDS. ALL PRIVATE WATER SUPPLY PIPES ARE DESIGNED IN ACCORDANCE TO THE M.O.E. PIBS 6881e, "DESIGN GUIDELINES FOR DRINKING-WATER SYSTEMS."
   - –ALL WATER MAINS SHALL BE CONSTRUCTED A MINIMUM OF 1.80m BELOW FINISHED GRADE
   - –ALL TRENCHES SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH REGION OF DURHAM STANDARDS
   - –100mm DOMESTIC WATERLINE TO BE CL DR18 PVC, CL P BEDDING
   - –150mm FIRELINE TO BE DR 18 PVC, CL P BEDDING
   - –37mm COPPER TYPE 'K' WATER SERVICE PIPES, CL P BEDDING PER S-230.021.
5. ALL STORM SEWERS AND APPURTENANCES SHALL COMPLY WITH THE MUNICIPALITY OF CLARINGTON STANDARDS AND THE ONTARIO PLUMBING CODE.
   - –STORM SEWER PIPE LARGER THAN 450mm SHALL BE CL 65D CONC PIPE, CL B BEDDING
   - –STORM SEWER PIPE 450mm AND SMALLER SHALL BE DR35 PVC PIPE, CL P BEDDING
   - –STORM SEWER MANHOLES AND CATCH BASIN MANHOLES SHALL BE AS PER OPSD 701.010
   - –CATCH BASINS SHALL BE AS PER OPSD 705.010.
   - –MANHOLE GRATES SHALL BE AS PER OPSD 401.010
   - –CATCH BASIN GRATES SHALL BE AS PER OPSD 400.020
   - –ALL TRENCHES SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH OPSD STANDARDS
6. GENERALLY, A MINIMUM OF 0.25m SHALL BE PROVIDED BETWEEN THE OUTSIDE OF PIPE BARRELS AT THE POINT OF CROSSING FOR STORM AND SANITARY SEWERS. A MINIMUM OF 0.50m SHALL BE PROVIDED BETWEEN THE OUTSIDE OF PIPE BARRELS AT THE POINT OF CROSSING FOR ALL SEWERS CROSSING WATER MAINS.
7. MH ST-1 SHALL BE AN OIL/GRIT SEPARATOR, STORMCEPTOR MODEL EF05.
8. CONCRETE HEADWALL AS PER OPSD 804.030.
9. RIP-RAP OUTLET TO DITCHING AS PER OPSD 810.010

LEGEND

- DRAINAGE BOUNDARY
- 0.25 / 0.90 — DRAINAGE AREA (ha) / RUN-OFF COEFFICIENT
- (M) WATER METER LOCATION
- (B) BACKFLOW PREVENTOR LOCATION
- (E) ELECTRICAL ROOM
- (PRV) PRESSURE REDUCING VALVE LOCATION

NO.	SUBMISSION	DATE
3.	REVISED AS PER BUILDING FLOOR PLAN REVISIONS	2025/08/19
2.	REVISED AS PER 2ND SUBMISSION COMMENT	2025/08/06
1.	REVISED AS PER 1ST SUBMISSION COMMENT	2025/02/13

725 LAKE ROAD, BOWMANVILLE
MUNICIPALITY OF CLARINGTON

SITE SERVICING AND STORM DRAINAGE PLAN

D.G. BIDDLE & ASSOCIATES
CONSULTING ENGINEERS & PLANNERS
96 King Street East
Oshawa, Ontario, L1H 1B6
Phone: 905-576-8500
info@dgbiddle.com
dgbiddle.com

LICENSED PROFESSIONAL ENGINEER
C. J. FLAMMINIO
100544401
AUG 26/2025
PROVINCE OF ONTARIO

SCALE:	1:300
DESIGNED BY:	M.R.W.
CHECKED BY:	K.G.K.
PROJECT NO.:	123081
DRAWING NO.:	SS-1

24/09/2025
X:\STAFF\JOB FILES\123000\123081 JASS GILL LAKE ROAD\123081 DRAWINGS\123081 DRAWINGS CIVIL\123081 ENGINEERING DRAWINGS\123081-3D-SITE PLAN