

***Long Term Operation and
Maintenance Plan (O&M Plan)***

for

Guardian Self Storage II

***151 Grove Street
Franklin, MA***

Date: April 10, 2025

Prepared By:

*Guerriere & Halnon, Inc.
55 West Central Street
Franklin, MA. 02038*

Prepared for:

*Jem Partners LLC
599 Washington Street
Franklin, MA 02038*



**Guerriere &
Halnon, Inc.**
ENGINEERING & LAND SURVEYING

Long Term O&M Plan
Guardian Self Storage II
Franklin, MA

Standard 9: A Long –Term Operation and Maintenance (O&M) Plan shall be developed and implemented to ensure that storm water management systems function as designed.

The following shall serve as the (O&M) Plan required by Standard 9, as well as the Long-Term Pollution Prevention Plan required by Standard 4.

A. Names of Persons or Entities Responsible for Plan Compliance:

Jem Partners LLC (c/o Mark Yadasernia)
599 Washington Street
Franklin, MA 02038
Tel: 310-415-6804
Email:markyada@yahoo.com

Amendments to the maintenance schedule must be made by Mutual Agreement of the Franklin DPW Director and the responsible parties. Owner must submit documentation of satisfactorily completed maintenance to the Franklin DPW on an annual basis.

It is the intent of the Applicant to have the site completed and released by the various town Departments and Boards.

B. Stormwater Management System Owner

Jem Partners LLC (c/o Mark Yadasernia)
599 Washington Street
Franklin, MA 02038
Tel: 310-415-6804
Email:markyada@yahoo.com

The property owner must notify the Franklin DPW Director of any changes in ownership or assignment of financial responsibility to a new entity. Notification must be provided to future property owners of the presence of the stormwater management system, as well as its Operation and Maintenance requirements. A copy of this Long Term O&M Plan must be provided to new owners, and a disclosure notice included within the Deed notifying the new owner of their responsibility for the Stormwater Management System and the requirements of this O&M Plan.

C. Good housekeeping practices

1. Maintain site, landscaping and vegetation.
2. Sweep and pick up litter on pavements and grounds.
3. Deliveries shall be monitored by owners or representative to ensure that if any spillage occurs, it shall be contained and cleaned up immediately.
4. Maintain pavement and curbing in good repair.

D. Requirements for routine inspections and maintenance of stormwater BMPs

1. Plans: The storm water Operation and Maintenance Plan shall consist of all Plans, documents and all local state and federal approvals as required for the subject property.
2. Record Keeping:

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- a. Maintain a log of all operation and maintenance activities for at least three years following construction, including inspections, repairs, replacement and disposal (for disposal, the log shall indicate the type of material and the disposal location);
3. Descriptions and Designs: The Best Management Practices (BMP) incorporated into the design include the following;
- a. Pavement Sweeping – Stipulated within the Construction Period Pollution Prevention Plan, the Long Term Pollution Prevention Plan, and the Operation and Maintenance Plan. As the amount of TSS removal is discretionary, no credit was taken within the calculations for this BMP.
 - b. Deep sump catch basins with hoods installed to promote TSS Removal of solids and control floatable pollutants. This BMP has a design rate of 25% TSS Removal.
 - c. Infiltration basins and sediment forebays provided to promote the required 80% TSS Removal. Refer to TSS Removal Worksheet in Standard 4 for treatment train.
 - d. Contech Water Quality Manholes - installed to promote TSS Removal of solids. These proprietary BMPs have a variable rate of TSS removal, see manufacturer calculations in attachment section of this report.
 - e. Cultec Separator Rows – Subsurface pretreatment device integral with infiltration chambers and function as a subsurface sediment forebay. Separator rows provide 25% TSS removal as pretreatment prior to discharge to the infiltration BMP by capturing the water quality volume and filtering it through a geotextile fabric which surrounds the separator row. Excess runoff is routed to the infiltration chambers via a high invert overflow header.
 - f. Infiltration Chambers – subsurface infiltration BMP provides the required groundwater recharge and has a design rate of 80% TSS Removal. Refer to TSS Removal Worksheet included in the Attachments.
 - g. Spill Containment Kit to contain and clean-up spills that could occur on site.
4. BMP Maintenance: After construction it is the responsibility of the owner to perform maintenance. The owner shall also be responsible for the maintenance of the existing stormwater BMPs on the abutting Walgreens property. The cleaning of the components of the stormwater management system shall generally be as follows:
- a. Pavement: The owner shall keep the pavement swept with a mechanical sweeper or hand swept semi-annually at a minimum.
 - b. Catch Basins: Shall be cleaned by excavating, pumping or vacuuming. The sediment shall be disposed of off-site by the Owner. Inspect quarterly, remove silt when ¼ full.
 - c. Water Quality Manholes: Inspect twice a year. Clean structure when sediment accumulation reaches a depth of 2.0ft. Cleaning is generally done with the combination of a high pressure spray jet and vacuum truck and is the most effective and convenient method. A maintenance log shall be kept for all maintenance activities
 - d. Sediment Forebay/Infiltration Basin: Preventative maintenance shall be performed at least four times per year. Inspection shall be performed after every major storm for the first three months and monthly thereafter, and when there are discharges through the high outlet orifice. Mowing of the buffer area, and bottom of basin; removal of trash and debris; removal of grass clippings and organic matter to be performed at least twice per year. Pretreatment devices shall be inspected every other month and at least twice a year and after every major storm event.

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- e. Cultec Separator Row: Inspect every six months for the first year of service, and then annually thereafter. Clean structure when sediment accumulation reaches a depth of 3 inches. Cleaning is generally done with the combination of a high pressure spray jet and vacuum truck and is the most effective and convenient method. A maintenance log shall be kept for all maintenance activities. Follow the Cultec Separator Row Inspection and Maintenance guide.
 - f. Infiltration Chambers: Inspect after 2 years of commission using the inspection port via a CCTV and inspect every year thereafter or as needed depending on rainfall and site conditions. Cleaning with high pressure water through culvert cleaning nozzle when sediment accumulation reaches a depth of 3 inches or more. A maintenance log shall be kept for all maintenance activities.
 - g. Basin outfalls and rip-rap aprons: Preventative maintenance shall be performed at least four times per year. Inspection shall be performed after every major storm for the first three months and monthly thereafter. Removal of trash and debris; removal of grass clippings and organic matter, and removal of accumulated silt to be performed at least twice per year.
5. Access Provisions: All of the components of the storm water system will be accessible by the Owner

E. Spill prevention and response plans

1. Train employees and subcontractors in prevention and clean up procedures.
2. All materials stored on site will be stored in their appropriate containers under a roof or in the approved underground storage tanks.
3. No hazardous materials are to be stored outside.
4. Follow manufacturer's recommendation for disposal of used containers.
5. On site equipment, fueling and maintenance measures:
 - a. Inspect on-site vehicles and equipment daily for leaks.
 - b. Conduct all vehicle and equipment maintenance off Site and refueling in one location, away from storm drains and wetlands. No vehicle washing is allowed on impervious surfaces draining into the stormwater management system, and is recommended for pervious vegetated areas only.
6. Clean up spills.
 - a. Never hose down "dirty" pavement or impermeable surfaces where fluids have spilled. Use dry clean-up methods (sawdust, cat litter and/or rags and absorbent pads).
 - b. Sweep up dry materials immediately. Never wash them away or bury them.
 - c. Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
 - d. Report significant spills to the Fire Department, Conservation Commission and Board of Health.
 - e. Floatables shall be promptly and completely removed from catch basins, water quality units, and other drainage structures following a spill.

F. Provisions for maintenance of lawns, gardens, and other landscaped areas

Dispose of clippings away from storm drainage, wetland resource areas, and their buffers.

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G. Requirements for storage and use of fertilizers, herbicides, and pesticides

The application of fertilizers, herbicides, or pesticides will be done by professional certified contractor. Only slow release, organic options are permitted for use within wetland jurisdictional buffer areas. Storage these chemicals is not permitted with 100' of the wetland resource area.

H. Provisions for solid waste management

1. Waste Management Plan

- a. Recycle materials whenever possible (paper, plaster cardboard, metal cans). Separate containers for material is recommended.
- b. Do not bury waste and debris on site.
- c. Certified haulers will be hired to remove the dumpster container waste as needed. Recycling products will also be removed off site weekly.
- d. No hazardous waste are to be disposed of in the on-site dumpster, and must be disposed of in accordance with all applicable regulations.

I. Snow disposal and plowing plans

Snow storage areas are designated on the site plan. No snow is to be stored within wetland resources, stormwater management areas, or parking spaces. Snow storage signs are to be provided adjacent to the wetland resource area as shown on the site plan. Excess snow that cannot be stored within the designated snow storage areas is to be removed and disposed of off-site within 72 hours.

J. Winter Road Salt and/or Sand Use and Storage restrictions

No sand, salt, or chemicals for de-icing will be stored outside. No de-icer shall be used without the authorization of the Franklin Conservation Commission. Calcium Chloride is proposed for use as the primary de-icing chemical.

K. Pavement sweeping schedules

Sweeping, the act of cleaning pavement can be done by mechanical sweepers, vacuum sweeper or hand sweeper. The quantity of sand is a direct correlation with the treatment of ice and snow and the types of chemicals and spreaders that are being used on site to manage snow. If a liquid de-icer such as calcium chloride is used as a pretreatment to new events the amount of sand is minimized. Sweeping for this site should be done semi-annually at a minimum. Collecting the particulate before it enters the catch basins is cheaper and more environmentally friendly than in a catch basin mixing with oils and greases in the surface water runoff in catch basins.

L. Provisions for prevention of illicit discharges to the stormwater management system

The discharge into the stormwater system is not being violated, see attachment for illicit discharges compliance.

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M. Training the staff or personnel involved with implementing Long-Term Pollution Prevention Plan

The owner shall develop policies and procedures for containing the illicit spilling of oils, soda, beer, paper, and litter. These wastes provide a degrading of the water quality. The placement of signs and trash barrels with lids around the site would contribute to clean water quality site conditions.

N. List of Emergency contacts for implementing Long-Term Pollution Prevention Plan:

Jem Partners LLC (c/o Mark Yadasernia)
599 Washington Street
Franklin, MA 02038
Tel: 310-415-6804
Email:markyada@yahoo.com

<u>BMP</u>	<u>Estimated Maintenance Cost</u>
Pavement sweeping	\$ 400 per year
Catch basin cleaning	\$ 200 per catch basin per cleaning
Sediment Forebay & Infiltration Basin	
Contech Hydrodynamic Separators	\$ 500 per manhole per cleaning
Separator Row & Infiltration Chambers	\$ 200 per cleaning
Spill Containment Kit	\$ 1,000 per cleaning per chamber system
	\$ 750 purchase price

Standard 10: All illicit discharges to the stormwater management system are prohibited.

Standard 10 prohibits illicit discharges to stormwater management systems. The stormwater management system is the system for conveying, treating, and infiltrating stormwater on site, including stormwater best management practices and any pipes intended to transport stormwater to the ground water, a surface water, or municipal separate storm sewer system. Illicit discharges to the stormwater management system are discharges that are not entirely comprised of stormwater. Notwithstanding the foregoing, an illicit discharge does not include discharges from the following activities or facilities: firefighting, water line flushing, landscape irrigation, uncontaminated ground water, potable water sources, foundation drains, air conditioning condensation, footing drains, individual resident car washing, flows from riparian habitats and wetlands, dechlorinated water from swimming pools, water used for street washing and water used to clean residential buildings without detergents.

Illicit Discharge Compliance Statement

It is the intent of the Applicant, JEM Partners LLC, 599 Washington Street, Franklin, MA 02038 to prevent illicit discharges to the stormwater management system, including wastewater discharges and discharges of stormwater contaminated by contact with process wastes, raw materials, toxic pollutants, hazardous substances, oil, or grease. There will be no connection to the storm water system to inadvertently direct other types of liquids, chemicals or solids into the storm drainage system. The Owner will also promote a clean Green Environment by mitigating spills onto pavements; oils, soda, chemicals, pet waste, debris and litter.

Respectfully Acknowledged,



LONG TERM OPERATION AND MAINTENANCE PLAN (O&M PLAN)

STANDARD 9: A LONG-TERM OPERATION AND MAINTENANCE (O&M) PLAN SHALL BE DEVELOPED AND IMPLEMENTED TO ENSURE THAT STORM WATER MANAGEMENT SYSTEMS FUNCTION AS DESIGNED.

THE FOLLOWING SHALL SERVE AS THE (O&M) PLAN REQUIRED BY STANDARD 9, AS WELL AS THE LONG-TERM POLLUTION PREVENTION PLAN REQUIRED BY STANDARD 4.

A. NAMES OF PERSONS OR ENTITIES RESPONSIBLE FOR PLAN COMPLIANCE

JEM PARTNERS LLC (C/O MARK YADASERNA)
599 WASHINGTON STREET
FRANKLIN, MA 02038
TEL: 303-415-6804
EMAIL: MARK.YADASERNA@JEM.COM

AMENDMENTS TO THE MAINTENANCE SCHEDULE MUST BE MADE BY MUTUAL AGREEMENT OF THE FRANKLIN DPW DIRECTOR AND THE RESPONSIBLE PARTIES. OWNER MUST SUBMIT DOCUMENTATION OF SATISFACTORILY COMPLETED MAINTENANCE TO THE FRANKLIN DPW ON AN ANNUAL BASIS.

IT IS THE INTENT OF THE APPLICANT TO HAVE THE SITE COMPLETED AND RELEASED BY THE VARIOUS TOWN DEPARTMENTS AND BOARDS.

B. STORMWATER MANAGEMENT SYSTEM OWNER

JEM PARTNERS LLC (C/O MARK YADASERNA)
599 WASHINGTON STREET
FRANKLIN, MA 02038
TEL: 303-415-6804
EMAIL: MARK.YADASERNA@JEM.COM

THE PROPERTY OWNER MUST NOTIFY THE FRANKLIN DPW DIRECTOR OF ANY CHANGES IN OWNERSHIP OR ASSIGNMENT OF FINANCIAL RESPONSIBILITY TO A NEW ENTITY. NOTIFICATION MUST BE PROVIDED TO FUTURE PROPERTY OWNERS OF THE PRESENCE OF THE

STORMWATER MANAGEMENT SYSTEM, AS WELL AS ITS OPERATION AND MAINTENANCE REQUIREMENTS. A COPY OF THIS LONG TERM O&M PLAN MUST BE PROVIDED TO NEW OWNERS, AND A DISCLOSURE NOTICE INCLUDED WITHIN THE DEED NOTIFYING THE NEW OWNER OF THEIR RESPONSIBILITY FOR THE STORMWATER MANAGEMENT SYSTEM AND THE REQUIREMENTS OF THIS O&M PLAN.

C. GOOD HOUSEKEEPING PRACTICES
1. MAINTAIN SITE, LANDSCAPING AND VEGETATION.
2. SWEEP AND PICK UP LITTER ON PAVEMENTS AND GROUNDS.
3. DELIVERIES SHALL BE MONITORED BY OWNERS OR REPRESENTATIVE TO ENSURE THAT IF ANY SPILLAGE OCCURS, IT SHALL BE CONTAINED AND CLEANED UP IMMEDIATELY.
4. MAINTAIN PAVEMENT AND CURBING IN GOOD REPAIR.

D. REQUIREMENTS FOR ROUTINE INSPECTIONS AND MAINTENANCE OF STORMWATER BMPs
1. PLANS: THE STORM WATER OPERATION AND MAINTENANCE PLAN SHALL CONSIST OF ALL PLANS, DOCUMENTS AND ALL LOCAL STATE AND FEDERAL APPROVALS AS REQUIRED FOR THE SUBJECT PROPERTY.
2. RECORD KEEPING:
a. MAINTAIN A LOG OF ALL OPERATION AND MAINTENANCE ACTIVITIES FOR AT LEAST THREE YEARS FOLLOWING CONSTRUCTION, INCLUDING INSPECTIONS, REPAIRS, REPLACEMENT AND DISPOSAL (FOR DISPOSAL, THE LOG SHALL INDICATE THE TYPE OF MATERIAL AND THE DISPOSAL LOCATION).
3. DESCRIPTIONS AND DESIGNS: THE BEST MANAGEMENT PRACTICES (BMP) INCORPORATED INTO THE DESIGN INCLUDE THE FOLLOWING:
a. PAVEMENT SWEEPING - STIPULATED WITHIN THE CONSTRUCTION PERIOD POLLUTION PREVENTION PLAN, THE LONG TERM POLLUTION PREVENTION PLAN, AND THE OPERATION AND MAINTENANCE PLAN, AS THE AMOUNT OF TSS REMOVAL IS DISCRETIONARY. NO CREDIT HAS TAKEN WHEN THE CALCULATIONS FOR THIS BMP.
b. DEEP SUMP CATCH BASINS WITH HOODS INSTALLED TO PROMOTE TSS REMOVAL OF SOLIDS AND CONTROL FLOATABLE POLLUTANTS. THIS BMP HAS A DESIGN RATE OF 25% TSS REMOVAL.
c. INFILTRATION BASINS AND SEDIMENT FOREBAYS PROVIDED TO

PROMOTE THE REQUIRED 80% TSS REMOVAL. REFER TO TSS REMOVAL WORKSHEET IN STANDARD 4 FOR TREATMENT TRAIN. CONTECH WATER QUALITY MANHOLES - INSTALLED TO PROMOTE TSS REMOVAL OF SOLIDS. THESE PROPRIETARY BMPs HAVE A VARIABLE RATE OF TSS REMOVAL. SEE MANUFACTURER CALCULATIONS IN ATTACHMENT SECTION OF THIS REPORT.
6. CULTEC SEPARATOR ROWS - SUBSURFACE PRETREATMENT DEVICE INTEGRAL WITH INFILTRATION CHAMBERS AND FUNCTION AS A SUBSURFACE SEDIMENT FOREBAY. SEPARATOR ROWS PROVIDE 25% TSS REMOVAL AS PRETREATMENT PRIOR TO DISCHARGE TO THE INFILTRATION BMP BY CAPTURING THE WATER QUALITY VOLUME AND FILTERING IT THROUGH A GEOTEXTILE FABRIC WHICH SURROUNDING THE SEPARATOR ROW. EXCESS RUNOFF IS ROUTED TO THE INFILTRATION CHAMBERS VIA A HIGH INVERT OVERFLOW HEADER.
7. INFILTRATION CHAMBERS - SUBSURFACE INFILTRATION BMP PROVIDES THE REQUIRED GROUNDWATER RECHARGE AND HAS A DESIGN RATE OF 80% TSS REMOVAL. REFER TO TSS REMOVAL WORKSHEET INCLUDED IN THE ATTACHMENTS.
8. INFILTRATION CHAMBERS: INSPECT AFTER 2 YEARS OF COMMISSION USING THE INSPECTION PORT VIA A CCTV AND INSPECT EVERY YEAR THEREAFTER OR AS NEEDED DEPENDING ON RAINFALL AND SITE CONDITIONS. CLEANING WITH HIGH PRESSURE WATER THROUGH CULVERT CLEANING NOZZLE WHEN SEDIMENT ACCUMULATION REACHES A DEPTH OF 3 INCHES OR MORE. A MAINTENANCE LOG SHALL BE KEPT FOR ALL MAINTENANCE ACTIVITIES.
9. BASIN OUTFALLS AND RIP-RAP APPROX: PREVENTATIVE MAINTENANCE SHALL BE PERFORMED AT LEAST FOUR TIMES PER YEAR. INSPECTION SHALL BE PERFORMED AFTER EVERY MAJOR STORM FOR THE FIRST THREE MONTHS AND MONTHLY THEREAFTER. REMOVAL OF TRASH AND DEBRIS, REMOVAL OF GRASS CLIPPINGS AND ORGANIC MATTER, AND REMOVAL OF ACCUMULATED SILT TO BE PERFORMED AT LEAST TWICE PER YEAR.

5. ACCESS PROVISIONS: ALL OF THE COMPONENTS OF THE STORM WATER SYSTEM WILL BE ACCESSIBLE BY THE OWNER
E. SPILL PREVENTION AND RESPONSE PLANS
1. TRAIN EMPLOYEES AND SUBCONTRACTORS IN PREVENTION AND CLEAN

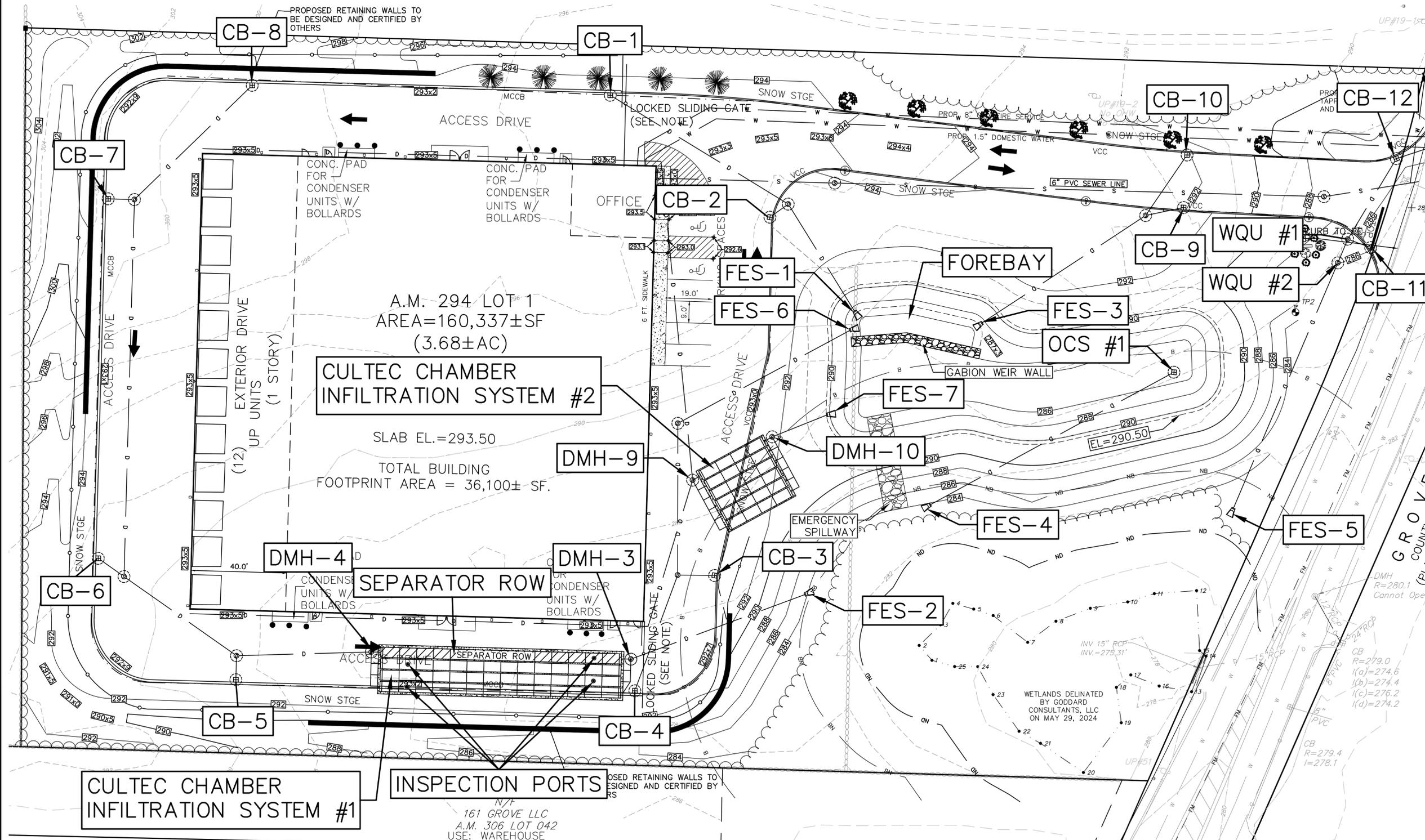
UP PROCEDURES
2. ALL MATERIALS STORED ON SITE WILL BE STORED IN THEIR APPROPRIATE CONTAINERS UNDER A ROOF OR IN THE APPROVED UNDERGROUND STORAGE TANKS.
3. NO HAZARDOUS MATERIALS ARE TO BE STORED OUTSIDE.
4. FOLLOW MANUFACTURER'S RECOMMENDATION FOR DISPOSAL OF USED CONTAINERS.
5. ON SITE EQUIPMENT, FUELING AND MAINTENANCE MEASURES:
a. INSPECT ON SITE VEHICLES AND EQUIPMENT DAILY FOR LEAKS.
b. CONDUCT ALL VEHICLE AND EQUIPMENT MAINTENANCE OFF SITE.
c. AND REFUELING IN ONE LOCATION, AWAY FROM STORM DRAINS AND WETLANDS. NO VEHICLE WASHING IS ALLOWED ON IMPERVIOUS SURFACES DRAINING INTO THE STORMWATER MANAGEMENT SYSTEM, AND IS RECOMMENDED FOR PERVIOUSLY VEGETATED AREAS ONLY.
6. CLEAN UP SPILLS
a. NEVER HOSE DOWN 'DIRTY' PAVEMENT OR IMPERMEABLE SURFACES WHERE FLUIDS HAVE SPILLED. USE DRY CLEAN-UP METHODS (SAND/ST, CAT LITTER AND/OR RAGS AND ABSORBENT PADS).
b. SWEEP UP DRY MATERIALS IMMEDIATELY. NEVER WASH THEM AWAY OR BURY THEM.
c. CLEAN UP SPILLS ON DIRT AREAS BY DIGGING UP AND PROPERLY DISPOSING OF CONTAMINATED SOIL.
d. REPORT SIGNIFICANT SPILLS TO THE FIRE DEPARTMENT, CONSERVATION COMMISSION AND BOARD OF HEALTH.
e. FLOATABLES SHALL BE PROMPTLY AND COMPLETELY REMOVED FROM CATCH BASINS, WATER QUALITY UNITS, AND OTHER DRAINAGE STRUCTURES FOLLOWING A SPILL.
F. PROVISIONS FOR MAINTENANCE OF LAWNS, GARDENS, AND OTHER LANDSCAPED AREAS
DISPOSE OF CLIPPINGS AWAY FROM STORM DRAINAGE, WETLAND RESOURCE AREAS, AND THEIR BUFFERS.
G. REQUIREMENTS FOR STORAGE AND USE OF FERTILIZERS, HERBICIDES, AND PESTICIDES
THE APPLICATION OF FERTILIZERS, HERBICIDES, OR PESTICIDES WILL BE DONE BY PROFESSIONAL CERTIFIED CONTRACTOR. ONLY SLOW RELEASE, ORGANIC OPTIONS ARE PERMITTED FOR USE WITHIN WETLAND JURISDICTIONAL BUFFER AREAS. THESE CHEMICALS IS NOT PERMITTED WITH 100' OF THE WETLAND RESOURCE AREA.

H. PROVISIONS FOR SOLID WASTE MANAGEMENT
1. WASTE MANAGEMENT PLAN
a. RECYCLE MATERIALS WHENEVER POSSIBLE (PAPER, PLASTER CARDBOARD, METAL CANS). SEPARATE CONTAINERS FOR MATERIAL IS RECOMMENDED.
b. DO NOT BURY WASTE AND DEBRIS ON SITE.
c. CERTIFIED HAULERS WILL BE HIRED TO REMOVE THE DUMPSTER. NO HAZARDOUS WASTE ARE TO BE DISPOSED OF IN THE ON-SITE DUMPSTER, AND MUST BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
I. SNOW DISPOSAL AND FLOWING PLANS
SNOW STORAGE AREAS ARE DESIGNATED ON THE SITE PLAN. NO SNOW IS TO BE STORED WITHIN WETLAND RESOURCES, STORMWATER MANAGEMENT AREAS, OR PARKING SPACES. SNOW STORAGE SIGNS ARE TO BE PROVIDED ADJACENT TO THE WETLAND RESOURCE AREA AS SHOWN ON THE SITE PLAN. EXCESS SNOW THAT CANNOT BE STORED WITHIN THE DESIGNATED SNOW STORAGE AREAS IS TO BE REMOVED AND DISPOSED OF OFF-SITE WITHIN 72 HOURS.
J. WINTER ROAD SALT AND/OR SAND USE AND STORAGE RESTRICTIONS
NO SAND, SALT, OR CHEMICALS FOR DE-ICING WILL BE STORED OUTSIDE. NO DE-ICER SHALL BE USED WITHOUT THE AUTHORIZATION OF THE FRANKLIN CONSERVATION COMMISSION. CALCIUM CHLORIDE IS PROPOSED FOR USE AS THE PRIMARY DE-ICING CHEMICAL.
K. PAVEMENT SWEEPING SCHEDULES
SWEEPING, THE ACT OF CLEANING PAVEMENT CAN BE DONE BY MECHANICAL SWEEPERS, VACUUM SWEEPER OR HAND SWEEPER. THE QUANTITY OF SAND IS A DIRECT CORRELATION WITH THE TREATMENT OF ICE AND SNOW AND THE TYPES OF CHEMICALS AND SPREADERS THAT ARE BEING USED ON SITE TO MANAGE SNOW. IF A LIQUID DE-ICER SUCH AS CALCIUM CHLORIDE IS USED AS A PRETREATMENT TO NEW EVENTS THE APPLICATION OF SAND IS MINIMIZED. SWEEPING FOR THE SITE SHOULD BE DONE SEMI-ANNUALLY AT A MINIMUM. COLLECTING THE PARTICULATE BEFORE IT ENTERS THE CATCH BASINS IS CHEAPER AND MORE ENVIRONMENTALLY FRIENDLY THAN IN A CATCH BASIN MIXING WITH OILS AND GREASES IN THE SURFACE WATER RUNOFF IN CATCH BASINS.

L. PROVISIONS FOR PREVENTION OF ILLICIT DISCHARGES TO THE STORMWATER MANAGEMENT SYSTEM
THE DISCHARGE INTO THE STORMWATER SYSTEM IS NOT BEING VIOLATED. SEE ATTACHMENT FOR ILLICIT DISCHARGES COMPLIANCE.
M. TRAINING THE STAFF OR PERSONNEL INVOLVED WITH IMPLEMENTING LONG-TERM POLLUTION PREVENTION PLAN CONDITIONS THE OWNER SHALL DEVELOP POLICIES AND PROCEDURES FOR CONTAINING THE ILLICIT SPILLING OF OILS, SOIL, BEER, PAPER, AND LITTER. THESE WASTES PROVE A DEGRADING OF THE WATER QUALITY. THE PLACEMENT OF SIGNS AND TRASH BARRELS WITH LIDS AROUND THE SITE WOULD CONTRIBUTE TO CLEAN WATER QUALITY SITE CONDITIONS.
N. LIST OF EMERGENCY CONTACTS FOR IMPLEMENTING LONG-TERM POLLUTION PREVENTION PLAN.

JEM PARTNERS LLC (C/O MARK YADASERNA)
599 WASHINGTON STREET
FRANKLIN, MA 02038
TEL: 303-415-6804
EMAIL: MARK.YADASERNA@JEM.COM

BMP ESTIMATED MAINTENANCE COST
PAVEMENT SWEEPING \$ 400 PER YEAR
CATCH BASIN CLEANING \$ 200 PER CATCH BASIN PER CLEANING
SEDIMENT FOREBAY & INFILTRATION BASIN \$ 200 PER CLEANING
CONTECH HYDRODYNAMIC \$ 500 PER MANHOLE PER CLEANING SEPARATORS
SEPARATOR ROW & INFILTRATION CHAMBERS SYSTEM \$ 1,000 PER CLEANING PER CHAMBER
SPILL CONTAINMENT KIT \$ 750 PURCHASE PRICE



LEGAL NOTES
UTILITIES ARE PLOTTED AS A COMPILATION OF RECORD DOCUMENTS, MARKINGS AND OTHER OBSERVED EVIDENCE TO DEVELOP A VIEW OF THE UNDERGROUND UTILITIES AND SHOULD BE CONSIDERED APPROXIMATE. CASKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY COMPLETELY AND RELIABLY DEPICTED. ADDITIONAL UTILITIES, NOT EVIDENCED BY RECORD DOCUMENTS OR OBSERVED PHYSICAL EVIDENCE, MAY EXIST. CONTRACTORS (IN ACCORDANCE WITH MASS.G.L. CHAPTER 82 SECTION 40 AS AMENDED) MUST CONTACT ALL UTILITY COMPANIES BEFORE EXCAVATING AND DRILLING AND CALL DIGSAFE AT 1(888)DIG-SAFE(7233).

CONSTRUCTION ON THIS LAND IS SUBJECT TO ANY EASEMENTS, RIGHTS-OF-WAY, RESTRICTIONS, RESERVATIONS, OR OTHER LIMITATIONS WHICH MAY BE REVEALED BY AN EXAMINATION OF THE TITLE.

OWNER
JEM PARTNERS LLC
599 WASHINGTON STREET
FRANKLIN, MA 02038
DEED BOOK 42015 PAGE 493
A.M. 294 LOT 1

OPERATIONS AND MAINTENANCE PLAN FOR SELF STORAGE BUILDING
151 GROVE STREET
FRANKLIN MASSACHUSETTS
O&M PLAN
JANUARY 8, 2025

DATE	REVISION DESCRIPTION
4/10/2025	PER PLANNING & CONSV. COMMENTS

GRAPHIC SCALE: 1"=30'
0 10 20 30 40 50 75 FEET
0 5 10 15 20 25 METERS

Guerriere & Halon, Inc.
ENGINEERING & LAND SURVEYING
55 WEST CENTRAL ST. PH. (508) 528-3221
FRANKLIN, MA 02038 FX. (508) 528-7921
www.gondengineering.com

CDS[®] Inspection and Maintenance Guide



Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allow both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine whether the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of a CDS system should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes.



CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	y ³	m ³
CDS1515	3	0.9	3.0	0.9	0.5	0.4
CDS2015	4	1.2	3.0	0.9	0.9	0.7
CDS2015	5	1.3	3.0	0.9	1.3	1.0
CDS2020	5	1.3	3.5	1.1	1.3	1.0
CDS2025	5	1.3	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3025	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3
CDS5640	10	3.0	6.3	1.9	8.7	6.7
CDS5653	10	3.0	7.7	2.3	8.7	6.7
CDS5668	10	3.0	9.3	2.8	8.7	6.7
CDS5678	10	3.0	10.3	3.1	8.7	6.7

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities



Support

- Drawings and specifications are available at www.contechstormwater.com.
- Site-specific design support is available from our engineers.

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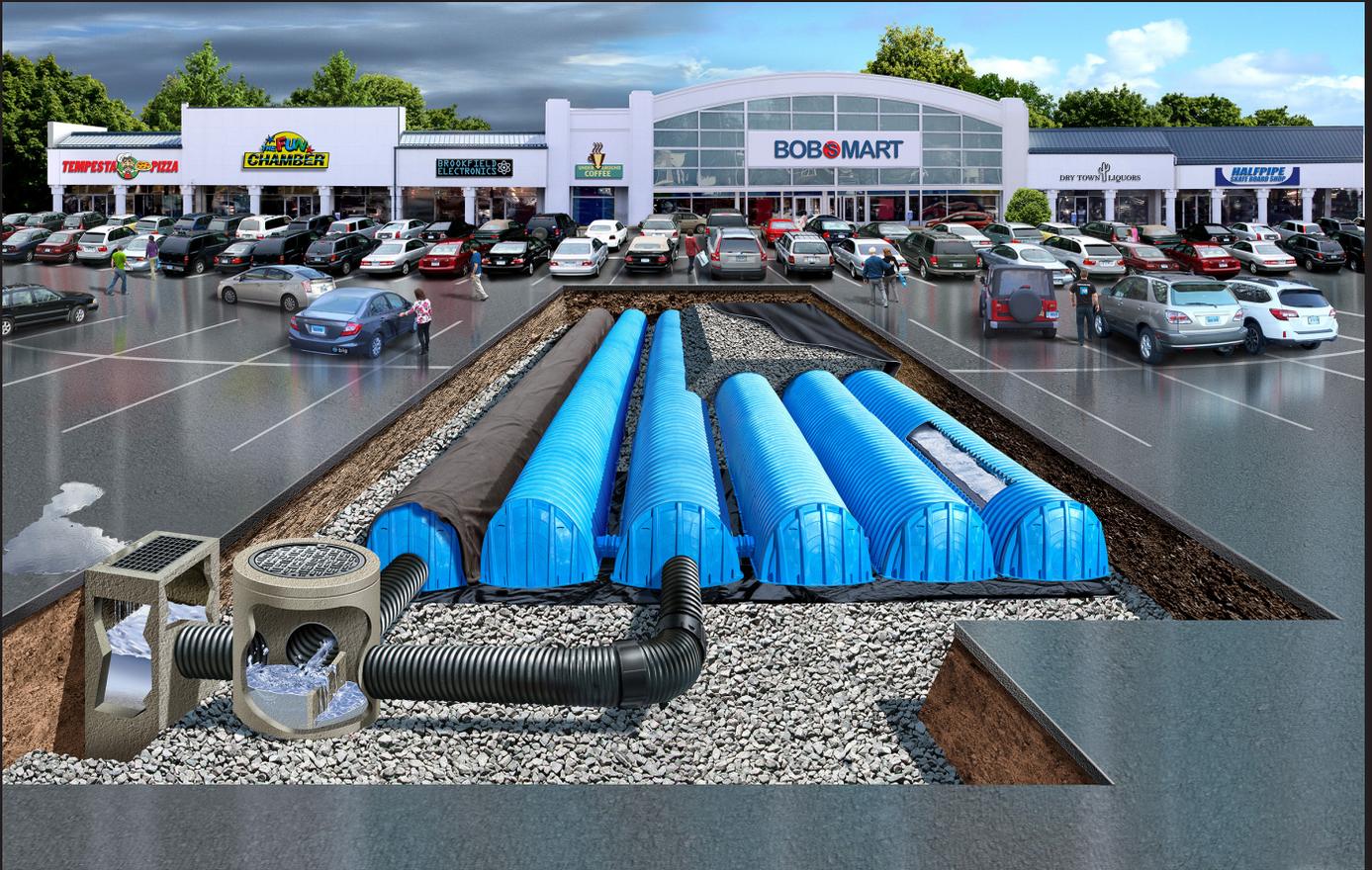
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CONTACTOR® & RECHARGER®

STORMWATER MANAGEMENT SOLUTIONS



OPERATION & MAINTENANCE GUIDELINES FOR CULTEC STORMWATER MANAGEMENT SYSTEMS



OPERATIONS AND MAINTENANCE GUIDELINES

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November 2023

These instructions are for single-layer traffic applications only. For multi-layer applications, contact CULTEC. All illustrations and photos shown herein are examples of typical situations. Be sure to follow the engineer's drawings. Actual designs may vary.

This manual contains guidelines recommended by CULTEC and may be used in conjunction with, but not to supersede, local regulations or regulatory authorities. OSHA Guidelines must be followed when inspecting or cleaning any structure.

Introduction

The CULTEC Subsurface Stormwater Management System is a high-density polyethylene (HDPE) chamber system arranged in parallel rows surrounded by washed stone. The CULTEC chambers create arch-shaped voids within the washed stone to provide stormwater detention, retention, infiltration, and reclamation. Filter fabric is placed between the native soil and stone interface to prevent the intrusion of fines into the system. In order to minimize the amount of sediment which may enter the CULTEC system, a sediment collection device (stormwater pretreatment device) is recommended upstream from the CULTEC chamber system. Examples of pretreatment devices include, but are not limited to, an appropriately sized catch basin with sump, pretreatment catchment device, oil grit separator, or baffled distribution box. Manufactured pretreatment devices may also be used in accordance with CULTEC chambers. Installation, operation, and maintenance of these devices shall be in accordance with manufacturer's recommendations. Almost all of the sediment entering the stormwater management system will be collected within the pretreatment device.

Best Management Practices allow for the maintenance of the preliminary collection systems prior to feeding the CULTEC chambers. The pretreatment structures shall be inspected for any debris that will restrict inlet flow rates. Outfall structures, if any, such as outlet control must also be inspected for any obstructions that would restrict outlet flow rates. OSHA Guidelines must be followed when inspecting or cleaning any structure.

Operation and Maintenance Requirements

I. Operation

CULTEC stormwater management systems shall be operated to receive only stormwater run-off in accordance with applicable local regulations. CULTEC subsurface stormwater management chambers operate at peak performance when installed in series with pretreatment. Pretreatment of suspended solids is superior to treatment of solids once they have been introduced into the system. The use of pretreatment is adequate as long as the structure is maintained and the site remains stable with finished impervious surfaces such as parking lots, walkways, and pervious areas are properly maintained. If there is to be an unstable condition, such as improvements to buildings or parking areas, all proper silt control measures shall be implemented according to local regulations.

II. Inspection and Maintenance Options

- A. The CULTEC system may be equipped with an inspection port located on the inlet row. The inspection port is a circular cast box placed in a rectangular concrete collar. When the lid is removed, a 6-inch (150 mm) pipe with a screw-in plug will be exposed. Remove the plug. This will provide access to the CULTEC Chamber row below. From the surface, through this access, the sediment may be measured at this location. A stadia rod may be used to measure the depth of sediment if any in this row. If the depth of sediment is in excess of 3 inches (76 mm), then this row should be cleaned with high pressure water through a culvert cleaning nozzle. This would be carried out through an upstream manhole or through the CULTEC StormFilter Unit (or other pretreatment device). CCTV inspection of this row can be deployed through this access port to determine if any sediment has accumulated in the inlet row.
- B. If the CULTEC bed is not equipped with an inspection port, then access to the inlet row will be through an upstream manhole or the CULTEC StormFilter.
 1. **Manhole Access**
This inspection should only be carried out by persons trained in confined space entry and sewer inspection services. After the manhole cover has been removed a gas detector must be lowered into the manhole to ensure that there are not high concentrations of toxic gases present. The inspector should be lowered into the manhole with the proper safety equipment as per OSHA requirements. The inspector may be able to observe sediment from this location. If this is not possible, the inspector will need to deploy a CCTV robot to permit viewing of the sediment.

2. StormFilter Access

Remove the manhole cover to allow access to the unit. Typically a 30-inch (750 mm) pipe is used as a riser from the StormFilter to the surface. As in the case with manhole access, this access point requires a technician trained in confined space entry with proper gas detection equipment. This individual must be equipped with the proper safety equipment for entry into the StormFilter. The technician will be lowered onto the StormFilter unit. The hatch on the unit must be removed. Inside the unit are two filters which may be removed according to StormFilter maintenance guidelines. Once these filters are removed the inspector can enter the StormFilter unit to launch the CCTV camera robot.

- C. The inlet row of the CULTEC system is placed on a polyethylene liner to prevent scouring of the washed stone beneath this row. This also facilitates the flushing of this row with high pressure water through a culvert cleaning nozzle. The nozzle is deployed through a manhole or the StormFilter and extended to the end of the row. The water is turned on and the inlet row is back-flushed into the manhole or StormFilter. This water is to be removed from the manhole or StormFilter using a vacuum truck.

III. Maintenance Guidelines

The following guidelines shall be adhered to for the operation and maintenance of the CULTEC stormwater management system:

- A. The owner shall keep a maintenance log which shall include details of any events which would have an effect on the system's operational capacity.
- B. The operation and maintenance procedure shall be reviewed periodically and changed to meet site conditions.
- C. Maintenance of the stormwater management system shall be performed by qualified workers and shall follow applicable occupational health and safety requirements.
- D. Debris removed from the stormwater management system shall be disposed of in accordance with applicable laws and regulations.

IV. Suggested Maintenance Schedules

A. Minor Maintenance

The following suggested schedule shall be followed for routine maintenance during the regular operation of the stormwater system:

Frequency	Action
Monthly in first year	Check inlets and outlets for clogging and remove any debris, as required.
Spring and Fall	Check inlets and outlets for clogging and remove any debris, as required.
One year after commissioning and every third year following	Check inlets and outlets for clogging and remove any debris, as required.

B. Major Maintenance

The following suggested maintenance schedule shall be followed to maintain the performance of the CULTEC stormwater management chambers. Additional work may be necessary due to insufficient performance and other issues that might be found during the inspection of the stormwater management chambers. (See table on next page)

	Frequency	Action
Inlets and Outlets	Every 3 years	<ul style="list-style-type: none"> Obtain documentation that the inlets, outlets and vents have been cleaned and will function as intended.
	Spring and Fall	<ul style="list-style-type: none"> Check inlet and outlets for clogging and remove any debris as required.
CULTEC Stormwater Chambers	2 years after commissioning	<ul style="list-style-type: none"> Inspect the interior of the stormwater management chambers through inspection port for deficiencies using CCTV or comparable technique. Obtain documentation that the stormwater management chambers and feed connectors will function as anticipated.
	9 years after commissioning every 9 years following	<ul style="list-style-type: none"> Clean stormwater management chambers and feed connectors of any debris. Inspect the interior of the stormwater management structures for deficiencies using CCTV or comparable technique. Obtain documentation that the stormwater management chambers and feed connectors have been cleaned and will function as intended.
	45 years after commissioning	<ul style="list-style-type: none"> Clean stormwater management chambers and feed connectors of any debris. Determine the remaining life expectancy of the stormwater management chambers and recommended schedule and actions to rehabilitate the stormwater management chambers as required. Inspect the interior of the stormwater management chambers for deficiencies using CCTV or comparable technique. Replace or restore the stormwater management chambers in accordance with the schedule determined at the 45-year inspection. Attain the appropriate approvals as required. Establish a new operation and maintenance schedule.
Surrounding Site	Monthly in 1 st year	<ul style="list-style-type: none"> Check for depressions in areas over and surrounding the stormwater management system.
	Spring and Fall	<ul style="list-style-type: none"> Check for depressions in areas over and surrounding the stormwater management system.
	Yearly	<ul style="list-style-type: none"> Confirm that no unauthorized modifications have been performed to the site.

For additional information concerning the maintenance of CULTEC Subsurface Stormwater Management Chambers, please contact CULTEC at 1-800-428-5832.



WQMP Operation & Maintenance (O&M) Plan

Project Name: _____

Prepared for:

Project Name: _____

Address: _____

City, State Zip: _____

Prepared on:

Date: _____

This O&M Plan describes the designated responsible party for implementation of this WQMP, including: operation and maintenance of all the structural BMP(s), conducting the training/educational program and duties, and any other necessary activities. The O&M Plan includes detailed inspection and maintenance requirements for all structural BMPs, including copies of any maintenance contract agreements, manufacturer’s maintenance requirements, permits, etc.

8.1.1 Project Information

Project name	
Address	
City, State Zip	
Site size	
List of structural BMPs, number of each	
Other notes	

8.1.2 Responsible Party

The responsible party for implementation of this WQMP is:

Name of Person or HOA Property Manager	
Address	
City, State Zip	
Phone number	
24-Hour Emergency Contact number	
Email	

8.1.3 Record Keeping

Parties responsible for the O&M plan shall retain records for at least 5 years.

All training and educational activities and BMP operation and maintenance shall be documented to verify compliance with this O&M Plan. A sample Training Log and Inspection and Maintenance Log are included in this document.

8.1.4 Electronic Data Submittal

This document along with the Site Plan and Attachments shall be provided in PDF format. AutoCAD files and/or GIS coordinates of BMPs shall also be submitted to the City.

Appendix ____

BMP SITE PLAN

Site plan is preferred on minimum 11" by 17" colored sheets, as long as legible.

Minor Maintenance

Frequency		Action
Monthly in first year		Check inlets and outlets for clogging and remove any debris, as required.
		Notes
<input type="checkbox"/> Month 1	Date:	
<input type="checkbox"/> Month 2	Date:	
<input type="checkbox"/> Month 3	Date:	
<input type="checkbox"/> Month 4	Date:	
<input type="checkbox"/> Month 5	Date:	
<input type="checkbox"/> Month 6	Date:	
<input type="checkbox"/> Month 7	Date:	
<input type="checkbox"/> Month 8	Date:	
<input type="checkbox"/> Month 9	Date:	
<input type="checkbox"/> Month 10	Date:	
<input type="checkbox"/> Month 11	Date:	
<input type="checkbox"/> Month 12	Date:	
Spring and Fall		Check inlets and outlets for clogging and remove any debris, as required.
		Notes
<input type="checkbox"/> Spring	Date:	
<input type="checkbox"/> Fall	Date:	
<input type="checkbox"/> Spring	Date:	
<input type="checkbox"/> Fall	Date:	
<input type="checkbox"/> Spring	Date:	
<input type="checkbox"/> Fall	Date:	
<input type="checkbox"/> Spring	Date:	
<input type="checkbox"/> Fall	Date:	
<input type="checkbox"/> Spring	Date:	
<input type="checkbox"/> Fall	Date:	
<input type="checkbox"/> Spring	Date:	
<input type="checkbox"/> Fall	Date:	
One year after commissioning and every third year following		Check inlets and outlets for clogging and remove any debris, as required.
		Notes
<input type="checkbox"/> Year 1	Date:	
<input type="checkbox"/> Year 4	Date:	
<input type="checkbox"/> Year 7	Date:	
<input type="checkbox"/> Year 10	Date:	
<input type="checkbox"/> Year 13	Date:	
<input type="checkbox"/> Year 16	Date:	
<input type="checkbox"/> Year 19	Date:	
<input type="checkbox"/> Year 22	Date:	

Major Maintenance

Frequency		Action
Inlets and Outlets	Every 3 years	
	Obtain documentation that the inlets, outlets and vents have been cleaned and will function as intended.	
	Notes	
	<input type="checkbox"/> Year 1	Date:
	<input type="checkbox"/> Year 4	Date:
	<input type="checkbox"/> Year 7	Date:
	<input type="checkbox"/> Year 10	Date:
	<input type="checkbox"/> Year 13	Date:
	<input type="checkbox"/> Year 16	Date:
	<input type="checkbox"/> Year 19	Date:
	<input type="checkbox"/> Year 22	Date:
	Spring and Fall	
	Check inlet and outlets for clogging and remove any debris, as required.	
	Notes	
	<input type="checkbox"/> Spring	Date:
	<input type="checkbox"/> Fall	Date:
	<input type="checkbox"/> Spring	Date:
	<input type="checkbox"/> Fall	Date:
	<input type="checkbox"/> Spring	Date:
<input type="checkbox"/> Fall	Date:	
<input type="checkbox"/> Spring	Date:	
<input type="checkbox"/> Fall	Date:	
<input type="checkbox"/> Spring	Date:	
<input type="checkbox"/> Fall	Date:	
CULTEC Stormwater Chambers	2 years after commissioning	
	<input type="checkbox"/> Inspect the interior of the stormwater management chambers through inspection port for deficiencies using CCTV or comparable technique. <input type="checkbox"/> Obtain documentation that the stormwater management chambers and feed connectors will function as anticipated.	
	Notes	
<input type="checkbox"/> Year 2	Date:	

Major Maintenance

Frequency		Action	
CULTEC Stormwater Chambers	9 years after commissioning every 9 years following		
	<ul style="list-style-type: none"> <input type="checkbox"/> Clean stormwater management chambers and feed connectors of any debris. <input type="checkbox"/> Inspect the interior of the stormwater management structures for deficiencies using CCTV or comparable technique. <input type="checkbox"/> Obtain documentation that the stormwater management chambers and feed connectors have been cleaned and will function as intended. 		
	Notes		
	<input type="checkbox"/> Year 9	Date:	
	<input type="checkbox"/> Year 18	Date:	
	<input type="checkbox"/> Year 27	Date:	
	<input type="checkbox"/> Year 36	Date:	
45 years after commissioning			
<ul style="list-style-type: none"> <input type="checkbox"/> Clean stormwater management chambers and feed connectors of any debris. <input type="checkbox"/> Determine the remaining life expectancy of the stormwater management chambers and recommended schedule and actions to rehabilitate the stormwater management chambers as required. <input type="checkbox"/> Inspect the interior of the stormwater management chambers for deficiencies using CCTV or comparable technique. <input type="checkbox"/> Replace or restore the stormwater management chambers in accordance with the schedule determined at the 45-year inspection. <input type="checkbox"/> Attain the appropriate approvals as required. <input type="checkbox"/> Establish a new operation and maintenance schedule. 			
Notes			
<input type="checkbox"/> Year 45	Date:		

Major Maintenance

Frequency		Action	
Surrounding Site	Monthly in 1st year		
	<input type="checkbox"/> Check for depressions in areas over and surrounding the stormwater management system.		
	Notes		
	<input type="checkbox"/> Month 1	Date:	
	<input type="checkbox"/> Month 2	Date:	
	<input type="checkbox"/> Month 3	Date:	
	<input type="checkbox"/> Month 4	Date:	
	<input type="checkbox"/> Month 5	Date:	
	<input type="checkbox"/> Month 6	Date:	
	<input type="checkbox"/> Month 7	Date:	
	<input type="checkbox"/> Month 8	Date:	
	<input type="checkbox"/> Month 9	Date:	
	<input type="checkbox"/> Month 10	Date:	
	<input type="checkbox"/> Month 11	Date:	
	<input type="checkbox"/> Month 12	Date:	
	Spring and Fall		
	<input type="checkbox"/> Check for depressions in areas over and surrounding the stormwater management system.		
	Notes		
	<input type="checkbox"/> Spring	Date:	
	<input type="checkbox"/> Fall	Date:	
	<input type="checkbox"/> Spring	Date:	
	<input type="checkbox"/> Fall	Date:	
	<input type="checkbox"/> Spring	Date:	
	<input type="checkbox"/> Fall	Date:	
	<input type="checkbox"/> Spring	Date:	
	<input type="checkbox"/> Fall	Date:	
	<input type="checkbox"/> Spring	Date:	
	<input type="checkbox"/> Fall	Date:	
	<input type="checkbox"/> Spring	Date:	
	<input type="checkbox"/> Fall	Date:	
	Yearly		
	<input type="checkbox"/> Confirm that no unauthorized modifications have been performed to the site.		
Notes			
<input type="checkbox"/> Year 1	Date:		
<input type="checkbox"/> Year 2	Date:		
<input type="checkbox"/> Year 3	Date:		
<input type="checkbox"/> Year 4	Date:		
<input type="checkbox"/> Year 5	Date:		
<input type="checkbox"/> Year 6	Date:		
<input type="checkbox"/> Year 7	Date:		



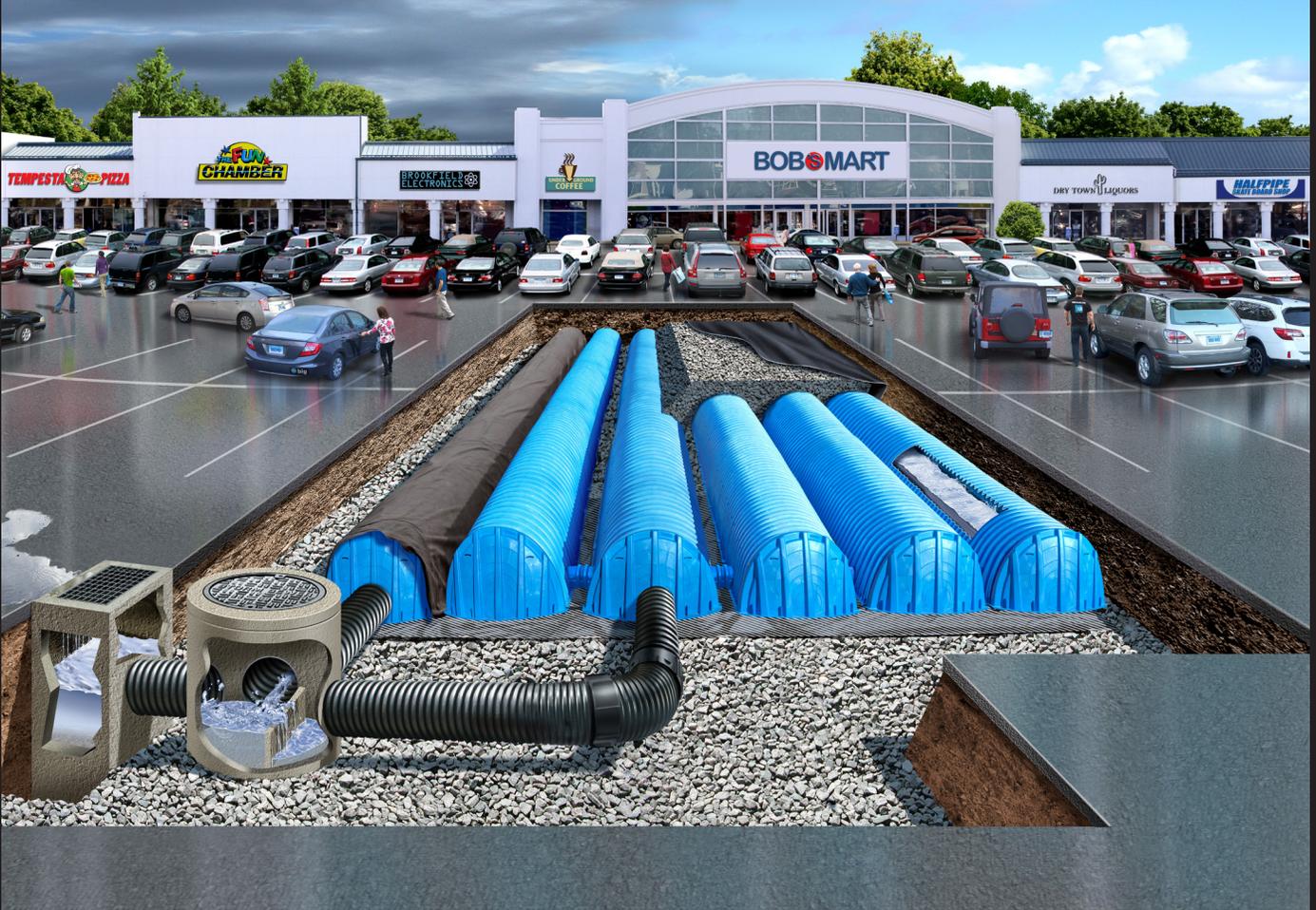
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RETENTION • DETENTION • INFILTRATION • WATER QUALITY

ADS Isolator[®] Row PLUS

WATER QUALITY SYSTEM



O&M MANUAL

FOR CULTEC STORMWATER MANAGEMENT SYSTEMS

The ADS Isolator Row Plus

Introduction

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



The ADS Isolator Row Plus

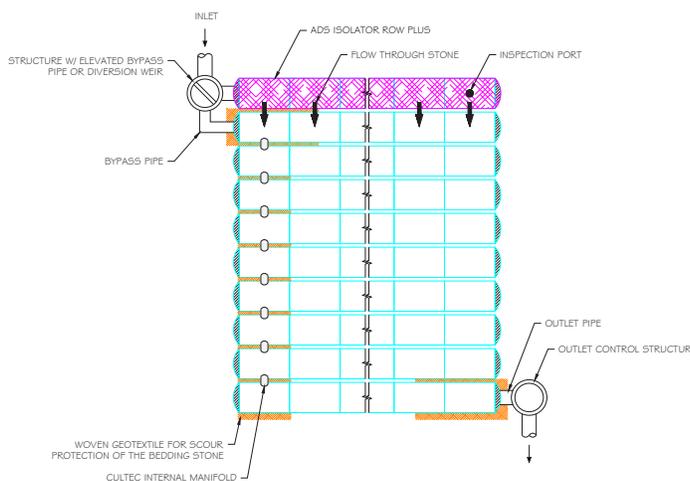
The Isolator Row Plus is a row of CULTEC chambers, either 100HD, 150XLHD, 180HD, 300HD, 330XLHD, 360HD, or 902HD models, which are lined with filter fabric and connected to a closely located manhole for easy access. The fabric lined chambers provide for sediment settling and filtration as stormwater rises in the Isolator Row Plus and passes through the filter fabric. The open bottom chambers allow stormwater to flow vertically out of the chambers. Sediments are captured in the Isolator Row Plus protecting the adjacent stone and chambers storage areas from sediment accumulation.

ADS Isolator Row Plus 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.

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 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, CULTEC recommends using the Isolator Row Plus to minimize maintenance requirements and maintenance costs.



ADS Isolator Row Plus with Overflow Structure
(not to scale)

ADS 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, CULTEC 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" (75 mm) throughout the length of the Isolator Row Plus, clean-out should be performed.

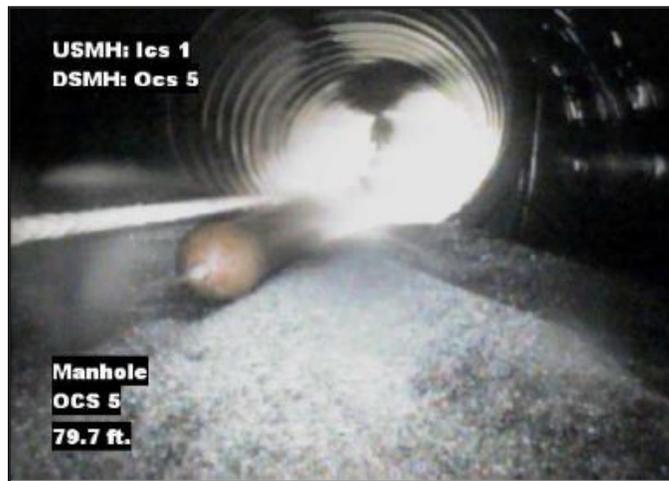


High pressure water nozzle

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 entry.

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. CULTEC recommends a maximum nozzle pressure of 2000 psi be utilized during cleaning. JetVac reels can vary in length. For ease of maintenance, CULTEC recommends Isolator Row Plus lengths up to 200' (61 m). **The JetVac process shall only be performed on ADS Isolator Row Plus that have ADS Plus Fabric (as specified by CULTEC) over their angular base stone.**



Cleaning ADS Isolator Row PLUS and pipes with high pressure water nozzle

ADS Isolator Row Plus Step By Step Maintenance Procedures

Step 1

Inspect ADS Isolator Row Plus for sediment.

- A. Inspection ports (if present)
 - i. Remove lid from floor box frame
 - ii. Remove cap from inspection port riser
 - iii. Using a flashlight and stadia rod, measure the depth of sediment and record the 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 a manhole

- iii. If sediment appears to cover the width and length of the row, proceed to Step 2. If not, proceed to Step 3.

Step 2

Clean out ADS Isolator Row Plus using the JetVac process.

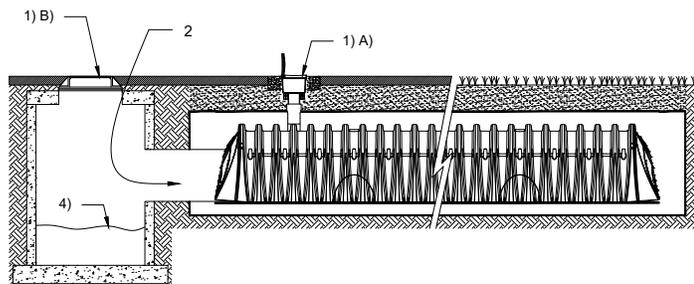
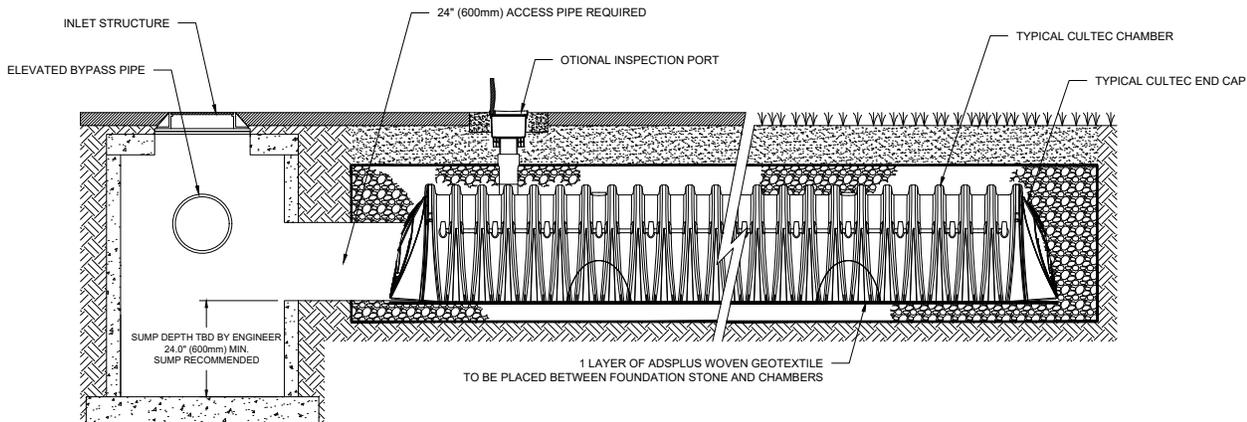
- A. A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
- B. Apply multiple passes of JetVac until backflush water is clean
- C. Vacuum manhole sump as required

Step 3

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

Step 4

Inspect and clean catchbasins and manholes upstream of the CULTEC system.



Sample Maintenance Log

Date	Stadia Rod Readings		Sediment 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.	DPG
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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