



When recorded, mail to:

Lehi City Recorder  
153 North 100 East  
Lehi City, Utah 84043

ENT 46907-2025 PG 1 of 41  
ANDREA ALLEN  
UTAH COUNTY RECORDER  
2025 Jun 24 02:05 PM FEE 0.00 BY MG  
RECORDED FOR LEHI CITY

Affects Parcel No(s): 41:840:0099, 41:840:0101

Hardman Crossing

### LONG-TERM STORMWATER MANAGEMENT AGREEMENT

This Long-Term Stormwater Management Agreement ("Agreement") is made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, by and between Lehi City, a Utah municipal corporation ("City"), and Westerly Properties LLC, a Utah limited liability company ("Owner").

#### RECITALS

WHEREAS, the City is authorized and required to regulate and control the disposition of storm and surface waters within the MS4, as set forth in the Lehi City Stormwater Ordinance, as amended ("Ordinance"), adopted pursuant to the Utah Water Quality Act, as set forth in *Utah Code Ann. §§ 19-5-101, et seq.*, as amended ("Act"); and

WHEREAS, the Owner hereby represents and acknowledges that it is the owner in fee simple of certain real property more particularly described in Exhibit "A," attached hereto and incorporated herein by this reference ("Property"); and

WHEREAS, the Owner desires to build or develop the Property and/or to conduct certain regulated construction activities on the Property which will alter existing storm and surface water conditions on the Property and/or adjacent lands; and

WHEREAS, in order to accommodate and regulate these anticipated changes in existing storm and surface water flow conditions, the Owner is required to build and maintain at Owner's expense a storm and surface water management facility or improvements ("Stormwater Facilities"); and

WHEREAS, the Stormwater Facilities are more particularly described and shown in the final site plan or subdivision approved for the Property and related engineering drawings, and any amendments thereto, which plans and drawings are on file with the City and are hereby incorporated herein by this reference ("Development Plan"); and

WHEREAS, summary description of all Stormwater Facilities, details and all appurtenance draining to and affecting the Stormwater Facilities and establishing the standard operation and routine maintenance procedures for the Stormwater Facilities, and control measures installed on the Property, ("Long Term Stormwater Management Plan") more particularly shown in Exhibit "B" on file with the City Recorder and,

WHEREAS, a condition of Development Plan approval, and as required as part of the City's Small MS4 UPDES General Permit from the State of Utah, Owner is required to enter into this Agreement establishing a means of documenting the execution of the Long Term Stormwater Management Plan and,

NOW, THEREFORE, in consideration of the benefits received and to be received by the Owner, its successors and assigns, as a result of the City's approval of the Long Term Stormwater Management Plan, and the mutual covenants contained herein, the parties agree as follows:

### **Section 1**

**Construction of Stormwater Facilities.** The Owner shall, at its sole cost and expense, construct the Stormwater Facilities in accordance with the Development Plans and specifications, and any amendments thereto which have been approved by the City.

### **Section 2**

**Maintenance of Stormwater Facilities.** The Owner shall, at its sole cost and expense, adequately maintain the Stormwater Facilities. Owner's maintenance obligations shall include all system and appurtenance built to convey stormwater, as well as all structures, improvements, and vegetation provided to control the quantity and quality of the stormwater. Adequate maintenance, for purposes of this Agreement, is defined as good working condition so that the Stormwater Facilities are performing their design functions. The Owner shall, at its sole cost and expense, perform all work necessary to keep the Stormwater Facilities in good working condition.

### **Section 3**

**Annual Maintenance Report of Stormwater Facilities.** The Owner shall, at its sole cost and expense, inspect the Stormwater Facilities and submit an inspection report and certification to the MS4 annually. The purpose of the inspection and certification is to assure safe and proper functioning of the Stormwater Facilities. The annual inspection shall cover all aspects of the Stormwater Facilities, including, but not limited to, the parking lots, structural improvements, berms, channels, outlet structure, pond areas, access roads, vegetation, landscaping, etc. Deficiencies shall be noted in the inspection report. The report shall also contain a certification as to whether adequate maintenance has been performed and whether the structural controls are operating as

designed to protect water quality. The annual inspection report and certification shall be due by June 30<sup>th</sup> of each year and shall be on forms acceptable to the City.

#### **Section 4**

**City Oversight Inspection Authority.** The Owner hereby grants permission to the City, its authorized agents and employees, to enter upon the Property and to inspect the Stormwater Facilities upon reasonable notice not less than three business days to the Owner. Such inspections shall be conducted in a reasonable manner and at reasonable times, as determined appropriate by the City. The purpose of the inspection shall be to determine and ensure that the Stormwater Facilities are being adequately maintained, are continuing to perform in an adequate manner, and are in compliance with the Act, the Ordinance, and the Stormwater Facilities Maintenance Plan.

#### **Section 5**

**Notice of Deficiencies.** If the City finds that the Stormwater Facilities contain any defects or are not being maintained adequately, the City shall send Owner written notice of the defects or deficiencies and provide Owner with a reasonable time, but not less than sixty (60) days, to cure such defects or deficiencies. Such notice shall be confirmed delivery to the Owner or sent certified mail to the Owner at the address listed on the County Tax Assessor.

#### **Section 6**

**Owner to Make Repairs.** The Owner shall, at its sole cost and expense, make such repairs, changes or modifications to the Stormwater Facilities as may be determined as reasonably necessary by the City within the required cure period to ensure that the Stormwater Facilities are adequately maintained and continue to operate as designed and approved.

#### **Section 7**

**City's Corrective Action Authority.** In the event the Owner fails to adequately maintain the Stormwater Facilities in good working condition acceptable to the City, after due notice of deficiencies as provided in Section 5 and failure to cure, then, upon Owner's failure to cure or correct within thirty days following a second notice delivered to Owner, the City may issue a Citation punishable as a Misdemeanor in addition to any State or EPA fine. The City may also give written notice that the facility storm drain connection will be disconnected. Any damage resulting from the disconnection is subject to the foregoing cure periods. It is expressly understood and agreed that the City is under no obligation to maintain or repair the Stormwater Facilities, and in no event shall this Agreement be construed to impose any such obligation on the City. The actions described in this Section are in addition to and not in lieu of any and all equitable remedies available to the City as provided by law for Owner's failure to remedy deficiencies or any other failure to perform under the terms and conditions of this Agreement.

### **Section 8**

**Reimbursement of Costs.** In the event the City, pursuant to this Agreement, incurs any costs, or expends any funds resulting from enforcement or cost for labor, use of equipment, supplies, materials, and the like related to storm drain disconnection from the City system, the Owner shall reimburse the City upon demand, within thirty (30) days of receipt thereof for all actual costs incurred by the City. After said thirty (30) days, such amount shall be deemed delinquent and shall be subject to interest at the rate of ten percent (10%) per annum. Owner shall also be liable for any collection costs, including attorneys' fees and court costs, incurred by the City in collection of delinquent payments.

### **Section 9**

**Successor and Assigns.** This Agreement shall be recorded in the County Recorder's Office and the covenants and agreements contained herein shall run with the land and whenever the Property shall be held, sold, conveyed or otherwise transferred, it shall be subject to the covenants, stipulations, agreements and provisions of this Agreement which shall apply to, bind and be obligatory upon the Owner hereto, its successors and assigns, and shall bind all present and subsequent owners of the Property described herein.

### **Section 10**

**Severability Clause.** The provisions of this Agreement shall be severable and if any phrase, clause, sentence or provision is declared unconstitutional, or the applicability thereof to the Owner, its successors and assigns, is held invalid, the remainder of this Covenant shall not be affected thereby.

### **Section 11**

**Utah Law and Venue.** This Agreement shall be interpreted under the laws of the State of Utah. Any and all suits for any claims or for any and every breach or dispute arising out of this Agreement shall be maintained in the appropriate court of competent jurisdiction in Utah County, Utah.

### **Section 12**

**Indemnification.** This Agreement imposes no liability of any kind whatsoever on the City, and the Owner agrees to hold the City harmless from any liability in the event the Stormwater Facilities fail to operate properly. The Owner shall indemnify and hold the City harmless for any and all damages, accidents, casualties, occurrences, or claims which might arise or be asserted against the City from failure of Owner to comply with its obligations under this agreement relating to the Stormwater Facilities.

### **Section 13**

**Amendments.** This Agreement shall not be modified except by written instrument executed by the City and the Owner of the Property at the time of modification, and no modification shall be effective until recorded in the Salt Lake County Recorder's Office.

#### **Section 14**

**Subordination Requirement.** If there is a lien, trust deed or other property interest recorded against the Property, the trustee, lien holder, etc., shall be required to execute a subordination agreement or other acceptable recorded document agreeing to subordinate their interest to the Agreement.

#### **Section 15**

**Exhibit B.** The Long-Term Stormwater Management Plan (LTSWMP) must adapt to change in good judgment when site conditions and operations change and when existing programs are ineffective. Exhibit B will not be filed with the agreement at County Recorder but is included by reference and kept on file with the City Recorder. Revision applications must be filed with the City Stormwater Division and amended into the LTSWMP on file with the Lehi City recorder.

## LONG-TERM STORMWATER MANAGEMENT PLAN AGREEMENT

SO AGREED this 4<sup>th</sup> day of June 2025.

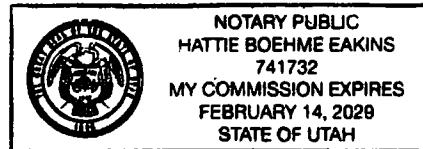
## PROPERTY OWNER

By: Kylene Pace Title: Manager  
 By: \_\_\_\_\_ Title: \_\_\_\_\_

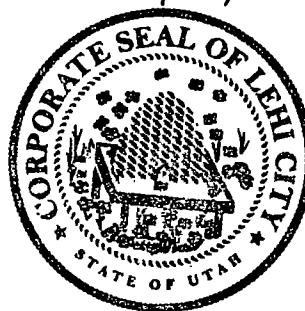
STATE OF UTAH )  
 COUNTY OF Utah ) :ss.

The above instrument was acknowledged before me by \_\_\_\_\_, this  
4<sup>th</sup> day of June, 2025.

Hattie Boehme Eakins  
 Notary Public  
 Residing in: Utah  
 My commission expires: 02/14/2029



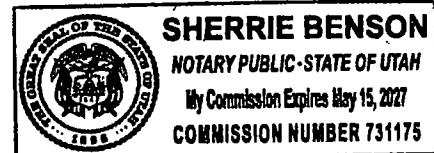
Lehi CITY  
 By: Mark Johnson Date: 6/5/25  
 Mayor Johnson  
 Attest: Leigh Wilson  
 City Recorder



STATE OF UTAH )  
 COUNTY OF Utah ) :ss.

The above instrument was acknowledged before me by Mark Johnson this  
5 day of June, 2025.

Sherrie Benson  
 Notary Public  
 Residing in: Utah  
 My commission expires: May 15, 2027 LTSWMP731175



# LONG-TERM STORMWATER MANAGEMENT PLAN AND AGREEMENT

*Project:*

**Hardman Crossing Access**  
4550 Hardman Way  
Lehi, Utah 84045

*Project Number:* 6393PP.3

*Prepared For:*

**Gardner Group**  
201 South Main Street  
Salt Lake City, Utah 84111

*Date:*

May 2025

*Prepared By:*

**Jennie Linford, EIT**

*Reviewed By:*

**Jared Ford, PE**

**Ensign Engineering**

45 West 10000 South, Suite 500  
Sandy, Utah 84070  
P: (801) 255-0529  
F: (801) 255-4449  
[ensigneng.com](http://ensigneng.com)

**EN SIGN**  
THE STANDARD IN ENGINEERING

## EXHIBIT A

### **Hardman Lehi Subdivision Plat 'B'**

Beginning at the intersection of the easterly right-of-way line of Redwood Road and the southerly right-of-way line of 2100 North Street, said point being North 89°48'50" East 978.42 feet along the section line and South 257.86 feet from the West Quarter Corner of Section 2, Township 5 South, Range 1 West, Salt Lake Base and Meridian; and running

thence along said southerly right-of-way line the following six (6) courses:

- (1) South 89°33'28" East 194.78 feet;
- (2) North 85°57'52" East 326.81 feet;
- (3) East 144.00 feet;
- (4) North 85°10'59" East 178.63 feet;
- (5) South 31.00 feet;
- (6) East 32.98 feet;

thence South 23°01'34" West 468.72 feet;

thence Southwesterly 163.01 feet along the arc of a 405.50 foot radius curve to the left (center bears South 66°58'26" East and the chord bears South 11°30'34" West 161.92 feet with a central angle of 23°02'00");

thence South 00°00'26" East 352.90 feet;

thence Southwesterly 53.52 feet along the arc of a 805.50 foot radius curve to the left (center bears North 89°59'34" East and the chord bears South 01°54'39" East 53.51 feet with a central angle of 03°48'25") to the northerly right-of-way line of Hardman Way;

thence along said northerly right-of-way line the following two (2) courses:

- (1) South 89°52'02" West 453.24 feet;
- (2) Southwesterly 28.32 feet along the arc of a 451.43 foot radius curve to the left (center bears South 00°07'16" East and the chord bears South 88°04'54" West 28.32 feet with a central angle of 03°35'40") to the easterly right-of-way line of Redwood Road;

thence along said easterly right-of-way line the following seven (7) courses:

- (1) North 13°54'43" West 52.78 feet;
- (2) North 13°42'20" West 197.07 feet;
- (3) South 89°59'13" West 17.50 feet;
- (4) North 15°41'48" West 22.83 feet;
- (5) North 12°10'33" West 68.36 feet;
- (6) North 05°06'37" West 412.93 feet;
- (7) North 10°27'07" West 254.37 feet to the point of beginning.

Contains 643,221 Square Feet or 14.766 Acres and 3 Lots

Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025

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## EXHIBIT B

### Long-Term Stormwater Management Plan for:

Hardman Crossing Access  
4550 Hardman Way  
Lehi, Utah 84045

Gardner Group  
Howard Cooke  
201 South Main Street  
Salt Lake City, Utah 84111

Site Manager, Company Representative, Property Agent, etc.  
Howard Cooke  
Phone Number: 801-664-8132  
Email: [howard@gardnercompany.net](mailto:howard@gardnercompany.net)

**Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025**

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## **PURPOSE AND RESPONSIBILITY**

As required by the Clean Water Act and resultant local regulations, including Lehi Municipal Separate Storm Sewer Systems (MS4) Permit, those who develop land are required to build and maintain systems to minimize litter and contaminants in stormwater runoff that pollute waters of the State.

This Long-Term Stormwater Management Plan (LTSWMP) describes the systems, operations and the minimum standard operating procedures (SOPs) necessary to manage pollutants originating from or generated on this property. Any activities or site operations at this property that contaminate water entering the City's stormwater system, groundwater and generate loose litter must be prohibited.

The Jordan River is impaired. The LTSWMP is aimed at addressing these impairments in addition to all other pollutants that can be generated by this property.

## **CONTENTS**

**SECTION 1: SITE DESCRIPTION, USE AND IMPACT**

**SECTION 2: TRAINING**

**SECTION 3: RECORDKEEPING**

**SECTION 4: APPENDICES**

## SECTION 1: SITE DESCRIPTION, USE AND IMPACT

Our site infrastructure is limited at controlling and containing pollutants. If our property and operations are managed improperly we will contaminate our water resources. This LTSWMP includes standard operations procedures (SOP)s intended to compensate for the limitations of our site infrastructure and direct our maintenance operations to responsibly manage our grounds. SOPs are filed in appendix B.

### **Parking, Sidewalk and flatwork**

The site has a significant amount of impervious surface, primarily concrete pavement, concrete walkways, and the buildings themselves. Any sediment, debris, fluids or other waste left or that collect on it will be carried by runoff to the storm drain inlets. This waste material will settle in our storm drain system increasing maintenance cost and any material dissolving in the runoff will pass through our system. Maintenance involves regular sweeping, but it can also involve pavement washing to remove stains, slick spots and appearance when necessary. The Sweeping and the Pavement Washing SOPs are used to manage the pollutants associated with pavements.

### **Landscaping**

This property's landscape areas will require regular maintenance. This will involve mowing, pruning, hand digging leaving grass clippings, sticks, branches, dirt, mulch, including fertilizers, pesticides and other pollutants that can fall or be left on our paved areas. It is vital that the paved areas with direct connection to the city storm drain systems remain clear and clean of landscape pollutants. The Landscape Maintenance SOP is written to control and manage this potential problem.

### **Flood and Water Quality Control System**

Our flood and water quality control system includes directing runoff into landscaping swales, open landscaping areas, and storm drain inlets. Directing runoff to our landscape areas is a low impact system intended to trap and treat our urban pollutants on the surface to protect downstream water resources. Our system includes underground detention storage, oil/sediment/trash traps and an underground infiltration system. The infiltration system is design to drain the first  $\frac{1}{2}$ " of runoff into the ground required by Clean Water Act regulation. Infiltrating some of our runoff helps keep streams and rivers clean but if we are not careful can contaminate groundwater. Anything we put or allow to be left on our pavements will eventually be carried to our oil/sediment/trash traps and underground infiltration system filling it with sediment and debris increasing maintenance cost. Also by-passing dissolved and liquid pollutants can increase the risk for contaminating groundwater for which we are responsible. In addition, very intense storm events can scour debris and silt from our system and spill to the Jordan River. It is important our flood control volume and water quality system is adequately maintained to function properly.

**Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025**

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### **Waste Management**

There will be an enclosed dumpster on-site, contained within a fenced-off area. The dumpster will have a lid intended to prevent precipitation exposure, minimizing liquids that can leak to pavements, and also ensuring that light weight trash will not be exposed to wind and blown away. The fences have an additional benefit of trapping loose trash allowing us to pick it up before it will be carried off. Good waste management systems, if managed improperly, can end up as the source of the very pollution that they were intended to control. The Waste Management SOP is written to control and manage our waste.

### **Utility System**

Our roof top utility system is exposed to our roof drains which drain to our pavements. These units contain oils and other chemicals that can harm the Jordan River if allowed to drain off our property. Liquids and other waste generated by maintenance of this system can be appropriately managed by the Spill Containment and Cleanup SOP.

### **Snow and Ice Removal Management**

Salt is a necessary pollutant and is vital to ensuring a safe parking and pedestrian walkways. However, salt and other ice management chemicals if improperly managed will unnecessarily increase our salt impact to our own vegetation and local water resources. Much of the runoff drains to our landscape swales. We need to minimize salt to maintain healthy root systems needed for optimum infiltration rates.

Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025

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## **SECTION 2: TRAINING**

Ensure that all employees and maintenance contractors know and understand the SOPs specifically written to manage and maintain the property. Maintenance contractors must use the stronger of their Company and the LTSWMP SOPs. File all training records in Appendix C.

## **SECTION 3: RECORDKEEPING**

Maintain records of operation and maintenance activities in accordance with SOPs. Mail a copy of the record to Lehi City Stormwater Division annually.

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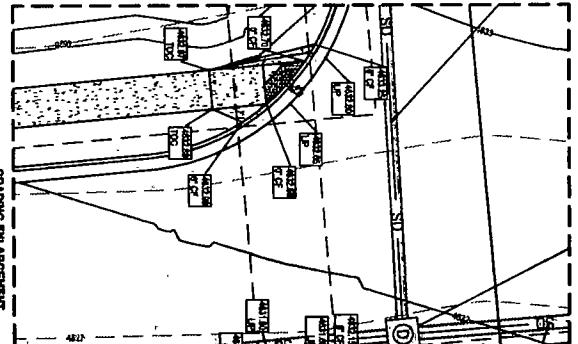
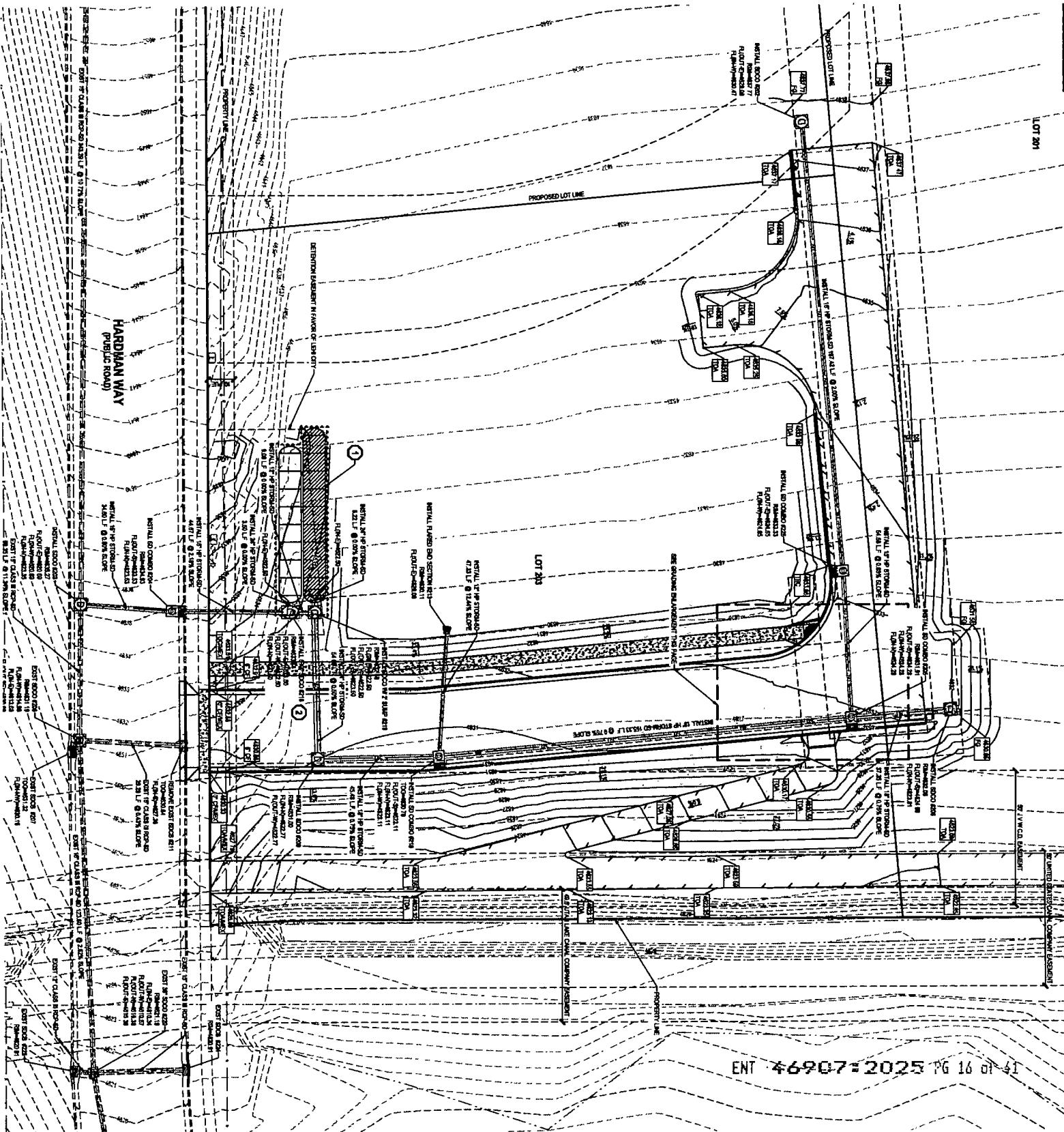
## SECTION 4: APPENDICES

- Appendix A- Site Drawings and Details
- Appendix B- SOPs
- Appendix C- Recordkeeping Documents

Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025

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**APPENDIX A – SITE DRAWINGS AND DETAILS**



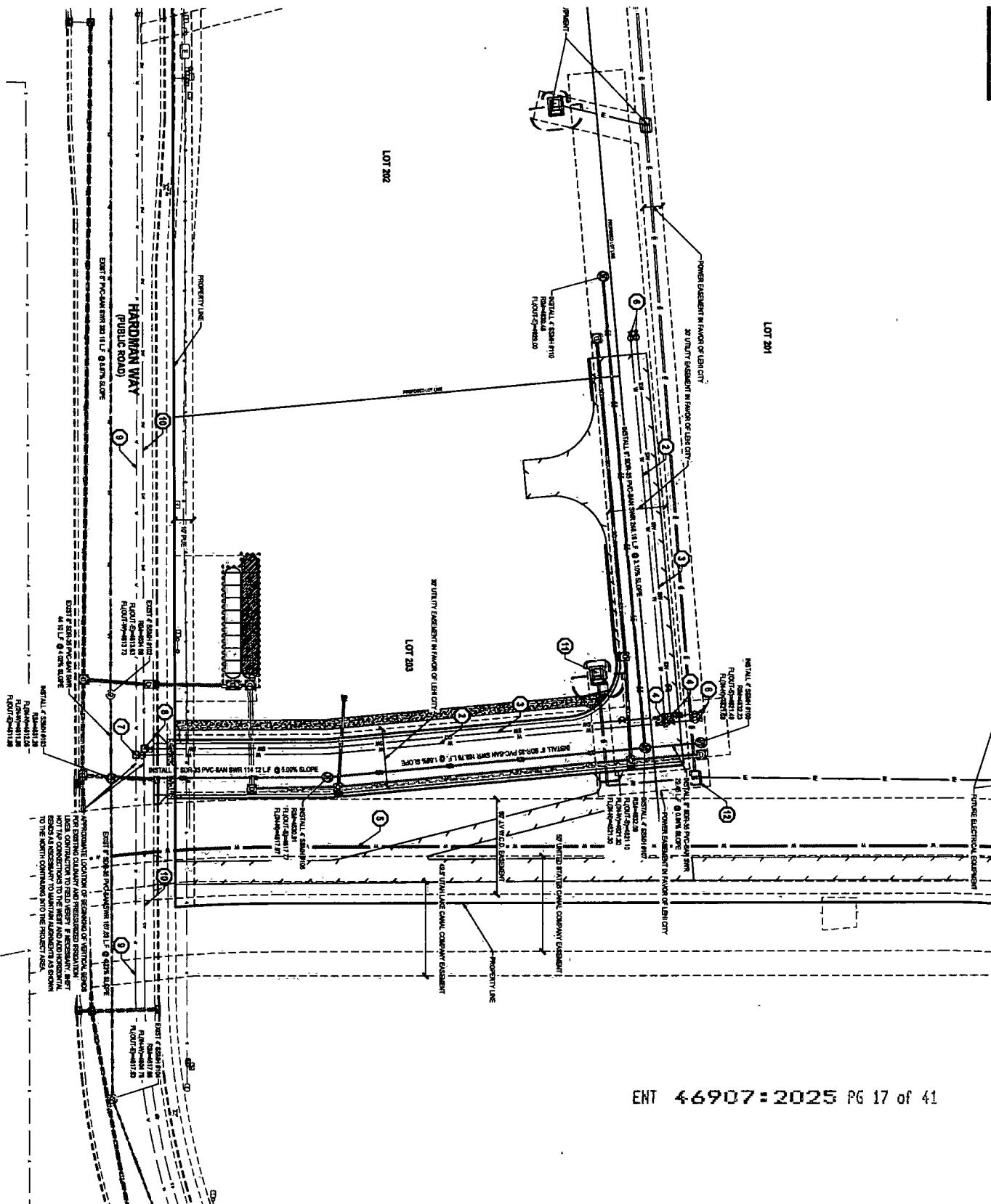
NOTIFY ENGINEER OF ANY DISCREPANCIES IN DESIGN OR STANDARDS BEFORE PLACEMENT OR STYLING DRUM STRUCTURES OR PIPES.

THE CONTRACTOR IS TO PROTECT AND PRESERVE ALL EXISTING IMPROVEMENTS UNLESS OTHERWISE NOTED ON THESE PLANS.

THE CONTRACTOR SHALL ADJUST TO GRADE ALL EXISTING IMPROVEMENTS AS NEEDED.  
AGENCY STANDARDS AND SPECIFICATIONS.

ALL STORM DRAIN INFRASTRUCTURE TO BE INSTALLED PER GOV'TENING AGENCIES  
AND SPECIFICATIONS  
NOTIFY DRAINSIDE IF STAINLESS COVER CANNOT BE ATTACHED  
ALL DRAINS TO BE PLUGGED UP FOR CONCRETE POLE DRILL LOCATIONS AND SIZE. ALL DRILLS  
MUST BE IN SLOPE.

The contractor shall be liable for damage to the property of the lessor or to the property of any other person caused by the contractor in the course of his work, except to the extent that the contractor is liable under the contract for damage to the property of the lessor or of any other person caused by the contractor in the course of his work.



ENT 46907:2025 PG 17 of 41

SCOPE OF  
PROBLEMS

**SCOPE OF WORK:** PROVIDE, INSTALL AND/or CONSTRUCT THE FOLLOWING PER THE SPECIFICATIONS GIVEN

**Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025**

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## **APPENDIX B – SOPs**

**Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025**

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## **Pavement Sweeping**

### **General:**

These SOPs are not expected to cover all necessary procedure actions. Operators are allowed to adapt SOPs to unique site conditions in good judgment when it is necessary for safety, and the proper, and effective containment of pollutants. However, any changes of routine operations must be amended in these SOPs.

### **1. Purpose:**

- a) One of the primary contaminates in the Jordan River is organic material.
- b) Any sediment, leaves, debris, spilt fluids or other waste that collects on our parking areas and sidewalks will fill in our landscaping swales, oil/sediment/trash traps and our underground infiltration system increasing our maintenance cost.

### **2. Regular Procedure:**

- a) Remain aware of minor sediment/debris and hand sweep or remove material by other means as needed. Significant deposits will likely collect in autumn with leaf fall and early spring after winter thaw. Usually sweeping machinery is the best tool for this application.
- b) Regularly manage outside activities that spread fugitive debris on our pavements. This involves outside functions including but not limited to: Yard sales, yard storage, fund raisers, etc.
- c) Do not allow car wash fund raiser or other related activities. Detergents will damage water resources and washed pollutants will fill our storm drain system and drain into the ground which we are responsible.
- d) Inform employees of proper parking and road maintenance to reinforce proper housekeeping.
- e) Restrict parking in areas to be swept prior to and during sweeping using regulations as necessary.

### **4. Disposal Procedure:**

- a) Dispose of debris and other materials removed from drive aisles and parking areas properly. Proper disposal of debris and other materials includes placing said materials in the designated dumpsters provided on site. Materials such as oil, batteries, and other hazardous waste must be disposed of at a hazardous waste facility. (Many local auto parts stores will dispose of used oil and vehicle batteries.)
- b) Use licensed facilities when haul off is necessary
- c) Do not store waste in locations where storm water could transport fines or liquids into the storm drain system.

**Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025**

**5. Documentation:**

- a) Document completed cleanup activities in “SMP Inspection Report”.

**6. Frequency:**

- a) Roadways should be swept once every three months and more frequently if inspections deem it necessary. Fall months will require street sweeping a minimum of once a month to prevent plant foliage from entering the storm drain system.
- b) Parking areas should be swept when inspections deem it necessary.

**7. Inspections:**

- a) Inspections should occur once a month. Fall months will require a weekly inspection to ensure no plant foliage is in danger of entering or blocking the storm drain system.
- b) Inspections should identify any debris, trash or sediment on roadways and parking areas.
- c) Use inspections to ensure all SOPs are being followed.
- d) Use inspection results to alter maintenance frequency if necessary.

**8. Training:**

- a) Annually and at hire
- b) Inform staff and service contractors when incorrect SOP implementation is observed.

Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025

## Landscape Maintenance

### General:

This SOP is not expected to cover all necessary procedure actions. Operators are allowed to adapt SOPs to unique site conditions in good judgment when it is necessary for safety, and the proper, and effective containment of pollutants. However, any changes of routine operations must be amended in this SOP.

### 1. Purpose:

- a) One of the primary contaminates in the Jordan River is organic material.
- b) Grass clippings, sticks, branches, dirt, mulch, fertilizers, pesticides and other pollutants will fill our landscaping swales, sediment/trash traps and underground infiltration system requiring future dredging and cleaning increasing our maintenance cost. Removing these debris after they have washed to our flood and water quality system will in very expensive.

### 2. Maintenance Procedure:

- a) Maintain healthy vegetation root systems. Healthy root systems will help improve permeable soils maintaining more desirable infiltration rates of our landscape areas receiving runoff from our pavements.
- b) Grooming
  - Lawn Mowing – Immediately following operation sweep or blow clippings onto vegetated ground.
  - Fertilizer Operation – Prevent overspray. Sweep or blow granular fertilizer onto vegetated ground immediately following operation.
  - Herbicide Operation – Prevent overspray. Sweep or blow granular herbicide onto vegetated ground immediately following operation.
- c) Remove or contain all erodible or loose material prior forecast wind and precipitation events, before any non-stormwater will pass through the property and at end of work period. Light weight debris and landscape materials can require immediate attention when wind or rain is expected.
- d) Landscape project materials and waste can usually be contained or controlled by operational best management practices.
  - Operational; including but not limited to:
    - Strategic staging of materials eliminating exposure, such as not staging on pavement
    - Avoiding multiple day staging of landscaping backfill and spoil on pavements
    - Haul off spoil as generated and daily
    - Scheduling work when weather forecast are clear.

**Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025**

**e) Cleanup:**

- Use dry cleanup methods, e.g. square nose shovel and broom. Conditions are usually sufficient when no more material can be swept onto the square nosed shovel.
- Power blowing tools
- Sweep or blow small clippings into landscape areas, or collect and properly dispose of in designated dumpsters provided on site.
  1. Dispose of large clippings in approved locations or containers per waste management sop.
  2. Sweep or blow pavements or sidewalks where fertilizers or other solid chemicals have fallen, back onto grassy areas before applying irrigation water. Ensure that all fertilizers or other solid chemicals are completely cleaned off pavements or sidewalks following every application.
- Triple rinse pesticide and herbicide containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste. Do not rinse onto pavements or hardscape areas which may cause a downstream impact
  1. Always follow all federal and state regulations governing use, storage and disposal of fertilizers, herbicides or pesticides and their containers. (“Read the Label”)
  2. Document completed cleanup activities in “SMP Inspection Report”.
  3. Keep copies of MSDS sheets for all pesticides, fertilizers and other hazardous products used.

**3. Waste Disposal:**

- a) Dispose of waste according to General Waste Management SOP, unless superseded by specific SOPs for the operation.

**4. Equipment:**

- a) Tools sufficient for proper containment of pollutants and removal.

**5. Frequency:**

- a) Landscaping maintenance should occur weekly during spring and summer months or whenever inspections deem it necessary
- b) During fall months leaves and foliage should be collected when inspections deem it necessary.

**6. Inspections:**

- a) Inspections should occur on a seasonal weekly basis when maintenance is occurring.

**Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025**

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- b) Inspections should identify any leaves, clippings, or trimmings left in runoff areas.
- c) Inspections should identify any possible fertilizers, pesticides or chemicals that may enter storm water system.
- d) Use inspections to ensure all SOPs are being followed
- e) Use inspection results to alter maintenance frequency if necessary.

**7. Training:**

- a) Annually and at hire
- b) Inform staff and service contractors when incorrect SOP implementation is observed.
- c) Landscape Service Contractors must use equal or better SOPs.
- d) Make sure your state Chemical Handling Certification is complete and up-to-date before handling any chemicals.

## Waste Management

### General:

This SOP is not expected to cover all necessary procedure actions. Operators are allowed to adapt SOPs to unique site conditions in good judgment when it is necessary for safety, and the proper, and effective containment of pollutants. However, any changes of routine operations must be amended in this SOP.

### 1. Purpose:

- a) Trash can easily blow out of our dumpster and trash receptacles.
- b) Liquids can leak from our dumpster polluting waterways, subsurface soils, stain our pavement and cause smell.

### 2. Procedure:

- a) Remain aware of the lids and keep them closed.
- b) Remain aware of leaking and fix. Minimize allowing disposal of liquids in our receptacles and dumpster. Also liquids can leak from the waste haul trucks.
- c) Beware of dumpster capacity. Solve capacity issues. Leaving bags outside of dumpster is not acceptable.

### 3. Waste Disposal Restrictions for all waste Scheduled for the North Pointe Solid Waste Landfill:

- a) Generally most waste generated at this property, and waste from spill and clean up operations can be disposed in our dumpsters under the conditions listed in this SOP. Unless specific disposal requirements are identified by the product SDS or otherwise specified in other SOPs.
- b) Know the facility disposal requirements and restrictions. It should not be assumed that all waste disposed in collection devices will be disposed at the North Pointe Solid Waste Landfill.
- c) Review North Pointe Solid Waste Landfill regulations for additional restrictions and understand what waste is prohibited in the North Pointe Solid Waste Landfill. Ensure the SDS and North Pointe Solid Waste Landfill regulations are not contradictory.

Generally, the waste prohibited by the North Pointe Solid Waste Landfill is:

- Asbestos
- Dead Animals
- Liquid Loads
- Septic Loads
- Unopened drums
- Firearms or Explosives

Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025

- Any item, or part of an item, that has been registered

North Pointe Solid Waste Landfill Contact – 801-225-8538

**4. Training:**

- a) Annually and at hire
- b) Inform staff and service contractors when incorrect SOP implementation is observed.

Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025

## **Flood and Water Quality System**

### **General:**

These SOPs are not expected to cover all necessary procedure actions. Operators are allowed to adapt SOPs to unique site conditions in good judgment when it is necessary for safety, and the proper, and effective containment of pollutants. However, any changes of routine operations must be amended in these SOPs.

### **1. Purpose:**

- a) Our storm drain system will collect anything we leave in the way of runoff which will fill our underground StormTech Chamber system increasing maintenance cost.
- b) Any liquids or dissolved pollutants can increase the risk for contaminating groundwater for which we are responsible.
- c) During very intense storm events pollutants in excess runoff can by-pass our system increasing risk of contaminating groundwater and the Jordan River.

### **2. Inspections:**

- a) Inspection and Maintenance of the StormTech Chamber System is outlined in following detail.
- b) Regularly remove trash and debris from above ground detention/retention and low impact flood control swale and landscape infrastructure. Remove accumulations with regular grooming operations.

### **3. Disposal Procedure:**

- a) StormTech Chamber System debris is removed utilizing a Jetvac and vacuum. See StormTech detail for more information.
- b) Remove and dispose sediment and debris at licensed facilities. Also dry waste can be disposed in your dumpster as permitted by the North Pointe Solid Waste Landfill.
- c) Dispose of hazardous waste at regulated disposal facilities. Follow SDS Sheets. Also see Waste Management and Spill Control SOP

### **4. Documentation:**

- a) Document completed cleanup activities in “SMP Inspection Report”.
- b) Record the amount of waste collected and number of catch basins cleaned and the area they were cleaned in. Keep any notes or comments of any problems encountered.

### **5. Training:**

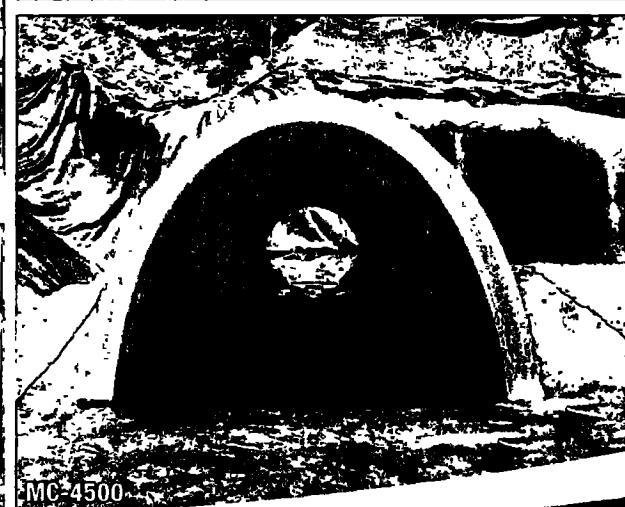
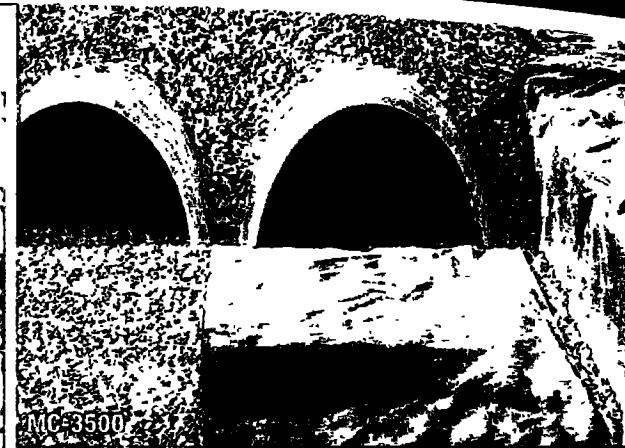
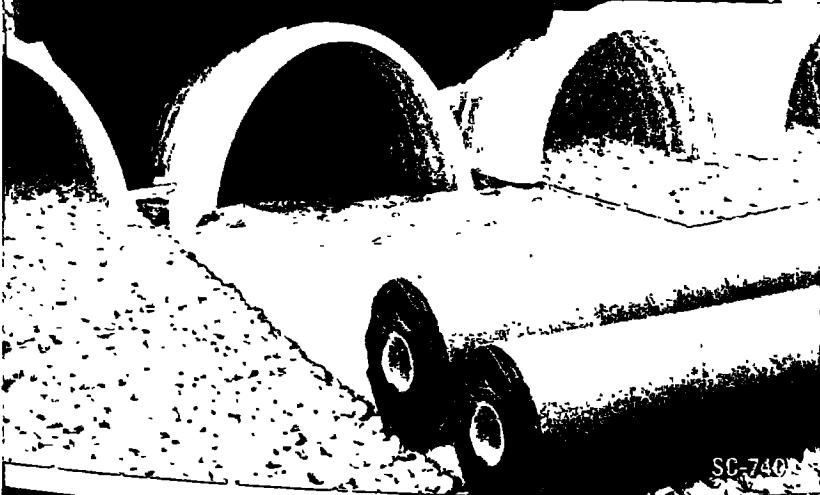
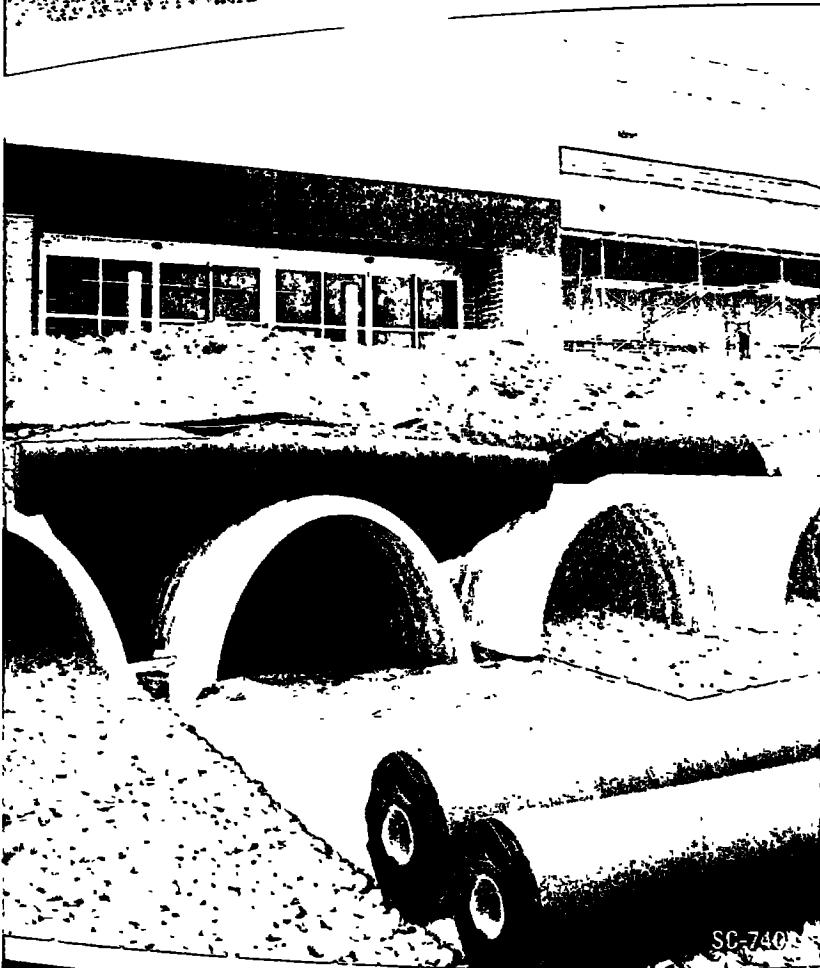
- a) Annually and at hire

Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025

- b) Inform staff and service contractors when incorrect SOP implementation is observed.



# *Isolator® Row* O&M Manual



SC-740

MC-4500

THE MOST ADVANCED NAME IN WATER MANAGEMENT SOLUTIONS™



## THE ISOLATOR® ROW

### INTRODUCTION

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

### THE ISOLATOR ROW

The Isolator Row is a row of StormTech chambers, either SC-160LP, SC-310, SC-310-3, SC-740, DC-780, MC-3500 or MC-4500 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for settling and filtration of sediment as storm water rises in the Isolator Row and ultimately passes through the filter fabric. The open bottom chambers and perforated sidewalls (SC-310, SC-310-3 and SC-740 models) allow storm water to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row protecting the storage areas of the adjacent stone and chambers from sediment accumulation.

Two different fabrics are used for the Isolator Row. A woven geotextile fabric is placed between the stone and the Isolator Row chambers. The tough geotextile provides a media for storm water filtration and provides a durable surface for maintenance operations. It is also designed to prevent scour of the underlying stone and remain intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the perforations in the sidewall of the chamber. The non-woven fabric is not required over the SC-160LP, DC-780, MC-3500 or MC-4500 models as these chambers do not have perforated side walls.

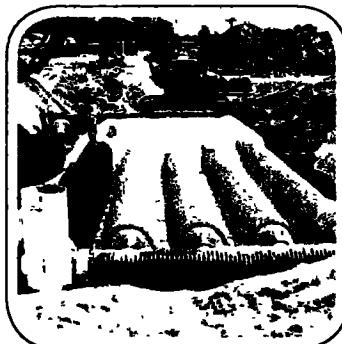
The Isolator Row is typically designed to capture the "first flush" and offers the versatility to be sized on a volume basis or flow rate basis. An upstream manhole not only provides access to the Isolator Row but typically includes a high flow weir such that storm water flowrates or volumes that exceed the capacity of the Isolator Row overtop the overflow weir and discharge through a manifold to the other chambers.

The Isolator Row may also be part of a treatment train. By treating storm water prior to entry into the chamber system, the service life can be extended and pollutants such as hydrocarbons can be captured. Pre-treatment best management practices can be as simple as deep sump catch basins, oil-water separators or can be innovative storm water treatment devices. The design of the treatment train and selection of pretreatment devices by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, the Isolator Row is recommended by StormTech as an effective means to minimize maintenance requirements and maintenance costs.

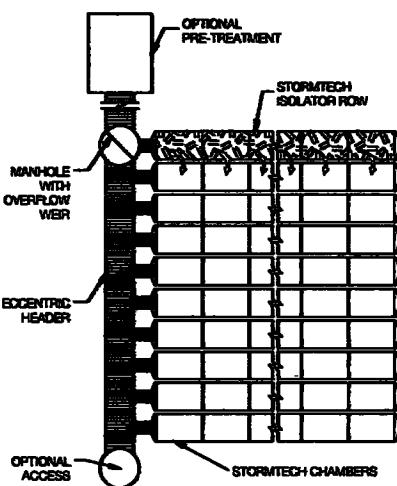
**Note:** See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row.

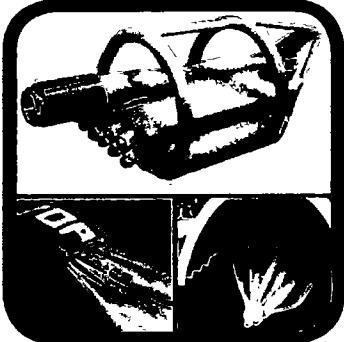


Looking down the Isolator Row from the manhole opening, woven geotextile is shown between the chamber and stone base



StormTech Isolator Row with Overflow Spillway (not to scale)





## ISOLATOR ROW 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 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 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, clean-out should be performed.

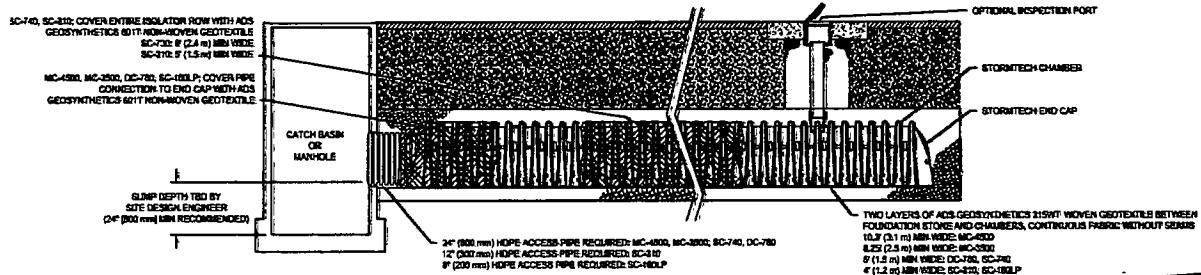
### MAINTENANCE

The Isolator Row 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 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. Most JetVac reels have 400 feet of hose allowing maintenance of an Isolator Row up to 50 chambers long. The JetVac process shall only be performed on StormTech Isolator Rows that have AASHTO class 1 woven geotextile (as specified by StormTech) over their angular base stone.

### StormTech Isolator Row (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-4500 chamber models and is not required over the entire Isolator Row.*



## ISOLATOR ROW STEP BY STEP MAINTENANCE PROCEDURES

### STEP 1

Inspect Isolator Row 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 Rows

- i. Remove cover from manhole at upstream end of Isolator Row
- ii. Using a flashlight, inspect down Isolator Row 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 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

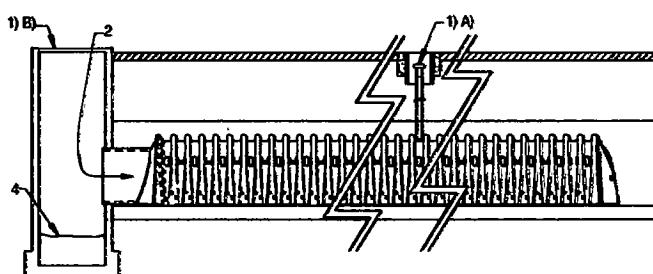
C) Vacuum manhole sump as required

### 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		Sediment Depth (in.)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top w/ 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
6/20/12		6.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

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Advanced Drainage Systems, Inc.  
4640 Freeman St., Hilliard, OH 43026  
1-800-221-6710 [www.ads-pipe.com](http://www.ads-pipe.com)

Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025

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## **Pavement Washing**

### **General:**

These SOPs are not expected to cover all necessary procedure actions. Operators are allowed to adapt SOPs to unique site conditions in good judgment when it is necessary for safety, and the proper, and effective containment of pollutants. However, any changes of routine operations must be amended in these SOPs.

### **1. Purpose:**

- a) Pavement washing involving detergents can potentially contaminate groundwater with phosphates and with whatever we are washing.
- b) Pavement washing can fill our low impact flood control swale and landscape area, oil/sediment/trash traps and infiltration system with detergents, including sediment and debris increasing our maintenance cost.

### **2. Procedure:**

- a) Prevent waste fluids and any detergents if used from entering storm drain system. The following methods are acceptable for this operation.
  - Dam the inlet using a boom material that seals itself to the pavement and pick up the wastewater with shop-vacuum or absorbent materials.
  - Collect wastewater with shop-vacuum simultaneous with the washing operation.
  - Collect wastewater with vacuum truck or trailer simultaneous with the washing operation.
- b) This procedure must not be used to clean the initial spills. First apply the Spill Containment and cleanup SOP following by pavement washing when desired or necessary.

### **3. Disposal Procedure:**

- a) Small volumes of diluted washing waste can usually be drained to the local sanitary sewer. Contact the Lehi City.
- b) Large volumes must be disposed at regulated facilities.

### **4. Pavement Cleaning Frequency:**

- a) There is no regular pavement washing regimen. Pavement washing is determined by conditions that warrant it, including but not limited to: prevention of slick or other hazardous conditions or restore acceptable appearance of pavements.

### **5. Training:**

- a) Annually and at hire
- b) Inform staff and service contractors when incorrect SOP implementation is observed.

**Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025**

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## **Snow and Ice Removal Management**

### **General:**

This SOP is not expected to cover all necessary procedure actions. Operators are allowed to adapt SOPs to unique site conditions in good judgment when it is necessary for safety, and the proper, and effective containment of pollutants. However, any changes of routine operations must be amended in this SOP.

### **1. Purpose:**

- a) Salt and other ice management chemicals if improperly managed will unnecessarily increase our salt impact to our own vegetation and local water resources.
- b) We need to maintain healthy root systems to help maintain optimum infiltration rates.

### **2. De-Icing Procedure:**

- a) Do not store or allow salt or equivalent to be stored on outside paved surfaces.
- b) Minimize salt use by varying salt amounts relative to hazard potential.
- c) Sweep excessive piles left by the spreader.
- d) Watch forecast and adjust salt amounts when warm ups are expected the same day.

### **3. Training:**

- a) Annually and at hire.
- b) Require snow and ice service contractors to follow the stronger this SOP and their company SOPs.

## General Construction Maintenance

### General:

This SOP is not expected to cover all necessary procedure actions. Operators are allowed to adapt SOPs to unique site conditions in good judgment when it is necessary for safety, and the proper, and effective containment of pollutants. However, any changes of routine operations must be amended in this SOP.

### 1. Purpose:

- a) Any sediment, debris, or construction waste will fill in our landscaping swales, sediment/trash traps and our underground infiltration system increasing our maintenance cost.

### 2. Construction Procedure:

- a) Remove or contain all erodible or loose material prior forecast wind and precipitation events or before non-stormwater will pass through the project site. For light weight debris maintenance can require immediately attention for wind and runoff events. Many times daily maintenance is necessary or as needed per random, precipitation or non-stormwater events.
- b) Project materials and waste can be contained or controlled by operational or structural best management practices.
  - Operational; including but not limited to:
    - Strategic staging of materials eliminating exposure, such as not staging on pavement
    - Avoiding multiple day staging of backfill and spoil
    - Haul off spoil as generated or daily
    - Schedule work during clear forecast
  - Structural; including but not limited to:
    - Inlet protection, e.g. wattles, filter fabric, drop inlet bags, boards, planks
    - Gutter dams, e.g. wattles, sandbags, dirt dams
    - Boundary containment, e.g. wattles, silt fence
    - Dust control, e.g. water hose,
    - Waste control, e.g. construction solid or liquid waste containment, dumpster, receptacles
- c) Inspection often to insure the structural best management practices are in good operating condition and at least prior to the workday end. Promptly repair damaged best management practices achieving effective containment.
- d) Cleanup:
  - Use dry cleanup methods, e.g. square nose shovel and broom.

**Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025**

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- Wet methods are allowed if wastewater is prevented from entering the stormwater system, e.g. wet/dry vacuum, disposal to our landscaped areas.
- e) Cleanup Standard:
  - When a broom and a square nosed shovel cannot pick any appreciable amount of material.

**3. Waste Disposal:**

- a) Dispose of waste according to General Waste Management SOP, unless superseded by specific SOPs for the operation.
- b) Never discharge waste material to storm drains

**4. Equipment:**

- a) Tools sufficient for proper containment of pollutants and cleanup.
- b) Push broom and square blade shovel should be a minimum.

**5. Training:**

- c) Annually and at hire.
- d) Require snow and ice service contractors to follow the stronger this SOP and their company SOPs.

**Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025**

## **Spill Control**

### **General:**

This SOP is not expected to cover all necessary procedure actions. Operators are allowed to adapt SOPs to unique site conditions in good judgment when it is necessary for safety, and the proper, and effective containment of pollutants. However, any changes of routine operations must be amended in this SOP.

### **1. Purpose:**

- a) Spilt liquids and solids will reach our low impact flood control landscaping areas, oil/sediment/trash traps and infiltration system potentially contaminating groundwater which we are responsible.
- b) It is vital we contain all spills on the surface. Spills reaching our underground flood control storage system can result in expensive spill mitigation, including potential tear out and replacement.

### **2. Containment Procedure:**

- a) Priority is to dam and contain flowing spills.
- b) Use spill kits booms if available or any material available to stop flowing liquids; including but not limited to, nearby sand, dirt, landscaping materials, etc.
- c) Hazardous or unknown waste material spills
  1. Critical Emergency constitutes large quantities of flowing uncontained liquid that people at risk or reach storm drain systems. Generally burst or tipped tanks and containment is still critical. Call HAZMAT, DWQ, Utah County Health Department, Lehi City.  
Also report spills to DWQ of quantities of 25 gallons and more and when the spill of lesser quantity causes a sheen on downstream water bodies.
  2. Minor Emergency constitutes a spill that is no longer flowing but has reached a storm drain and adequate cleanup is still critical. Call SLVHD, Lehi City
  3. Spills that are contained on the surface, typically do not meet the criteria for Critical and Minor Emergencies and may be managed by the responsible implementation of this SOP.
  4. Contact Numbers:  
HAZMAT - 911  
DWQ – 801-231-1769, 801-536-4123, 801-536-4300  
Utah County Health Department – 801-851-7331  
Lehi City – 385-201-1000

### **3. Cleanup Procedure:**

- a) NEVER WASH SPILLS TO THE STORM DRAIN SYSTEMS.
- b) Clean per SDS requirements but generally most spills can be cleaned up according to the following:

**Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025**

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- Absorb liquid spills with spill kit absorbent material, sand or dirt until liquid is sufficiently converted to solid material.
- Remove immediately using dry cleanup methods, e.g. broom and shovel, or vacuum operations.
- Cleanup with water and detergents may also be necessary depending on the spilled material. However, the waste from this operation must be vacuumed or effectively picked up by dry methods or vacuum machinery. See Pavement Washing SOP.
- Repeat process when residue material remains.

**4. Disposal:**

- a) Follow SDS requirements but usually most spills can be disposed per the following b. & c.
- b) Generally most spills absorbed into solid forms can be disposed to the dumpster and receptacles. Follow Waste Management SOP.
- c) Generally liquid waste from surface cleansing processes may be disposed to the sanitary sewer system after the following conditions have been met:
  - Dry cleanup methods have been used to remove the bulk of the spill and disposed per the Waste Management SOP.
  - The liquid waste amounts are small and diluted with water. This is intended for spill cleanup waste only and never for the disposal of unused or spent liquids.

**5. Documentation:**

- a) Document all spills in Appendix C.

**6. SDS sheets:**

- a) SDS Manual is filed in break room.

**7. Materials:**

- a) Generally sand or dirt will work for most cleanup operations and for containment. However, it is the responsibility of the owner to select the absorbent materials and cleanup methods required by the SDS Manuals for chemicals used by the company.

**8. Training:**

- a) Annually and at hire.
- b) Require snow and ice service contractors to follow the stronger this SOP and their company SOPs.

Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025

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## APPENDIX C – PLAN RECORDKEEPING DOCUMENTS

**Long-Term Stormwater Management Plan  
Hardman Crossing Access – May 2025**

**MAINTENANCE/INSPECTION SCHEDULE**

Frequency	Site Infrastructure
M	Impervious areas, roadways, parking areas, sidewalks and patios
M	Pavement Washing
U	Landscape Maintenance (Inspections should occur after each maintenance event)
M	Waste Management
A	Stormwater Storage and Conveyance Systems
U	Stormwater Storage and Conveyance Systems (Inspections should occur after large storm events)
U	Spill Response (Inspections should occur after each spill to ensure SOP was followed correctly)
U	Secondary Water after Flush Inspections

Inspection Frequency Key: A=annual, Q=Quarterly, M=monthly, W=weekly,  
S=following appreciable storm event, U=Unique infrastructure specific (specify)

**RECORD INSPECTIONS IN THE MAINTENANCE LOG**

Inspection Means: Either; Traditional walk through, Awareness/Observation, and during regular maintenance operations while noting efficiencies/inefficiencies/concerns found, etc.

## Long-Term Stormwater Management Plan Hardman Crossing Access – May 2025

## MAINTENANCE LOG

## Annual Summary of LTSWMP effectiveness, inefficiencies, problems, necessary changes etc.

\*You may create your own form that provides this same information or request a word copy of this document.

## Long-Term Stormwater Management Plan Hardman Crossing Access – May 2025

## Annual SOP Training Log per Section 2

\*You may create your own form that provides this same information or request a word copy of this document.