Appendix C Stormwater Operations, Maintenance & Source Control Manual

Retention Requirement

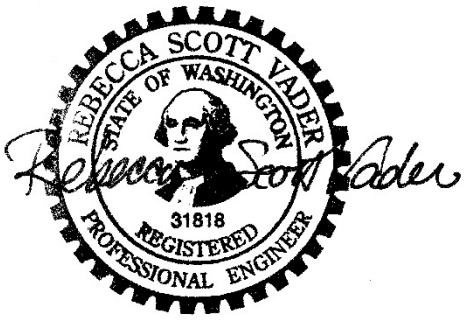
A copy of this Manual shall be retained onsite or within reasonable access to the site, and shall be transferred with the property to the new owner. To facilitate retention and transmission, this document is published as a stand-alone text titled Operations, Maintenance, and Source Control Manual.

A log of maintenance activity that indicates what actions were taken shall also be kept and be available for inspection.

Cascade Christian School – Elementary Portables
811 21st ST SE
Puyallup, WA 98372
Parcel #: 0420352148
Owner: Cascade Christian Schools

Stormwater Operations, Maintenance & Source Control Manual

Stormwater Owner's designated Facility Manager:
_____
Address: _____
_____
Phone Cell: _____
Email: _____



VaderENGINEERING

© REBECCA SCOTT VADER, PE
6817 27TH ST W, #65353 UNIVERSITY PLACE, WA 98464
RVADER@VADERENGINEERING.COM

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Introduction to Maintenance and Source Control Manuals

This Stormwater Operations, Maintenance, and Source Control Manual is a required element of the overall Stormwater Drainage Narrative submitted as supporting documentation for permits required by the jurisdiction for the construction of the proposed Project, and as an aid and a reference to the property owner and future facility manager. The manual and appendices contain forms, checklists, and other aids for use after construction and throughout the operations period.

To keep stormwater quality intact and infrastructure in good condition, new projects use both Operational and Source Control Best Management Practices (BMPs) to preclude damage to the stormwater systems and Maintenance practices to preserve the function of the stormwater components. Routine, scheduled maintenance extends the time between major repairs or replacements.

This manual describes what maintenance conditions to check for, and how often to check, for the various facilities that make up the stormwater system on this site. Private facility owners are responsible for ensuring that their stormwater facilities are maintained and continue to function as designed. Maintenance may be done in-house, by a maintenance contractor, or a mix of parties.

Stormwater management facilities are most effective coupled with good operations procedures. Good operations, such as educating facility users of proper storage and disposal of chemicals and potential pollutants, procedures for spill cleanup, proper use of fertilizers and other vegetation management products, and maintenance of equipment to prevent release of pollutants to the stormwater system, are termed Source Control BMPs.

If the use of the site changes, the selection of source controls will need to be updated to match.

This is completed using the format set forth in Volume V of the *2019 Department of Ecology (DOE) Stormwater Management Manual for Western Washington,* as adopted and amended by the City of Puyallup. Maintenance checklists are from *City of Puyallup Site Management Plan for Stormwater Operations and Maintenance (SMP),* unless otherwise noted.
Since these reports draw heavily on reference documents, lists, and standards, in certain areas of the report, typical items may be included in the text to indicate that they were considered but ~~struck through~~ to show that they are not applicable to this project. Correspondingly, lists may also have <u>underlined</u> or **Bold** text to indicated selected items.

1. Maintenance Importance and Intent

Private facility owners are responsible for ensuring that their stormwater facilities are maintained and continue to function as designed. This section addresses the operations, maintenance, and source control deriving from the areas of concern constructed by the proposed project, and is intended to be a living document used by both the facility owner, the tenant/site operator, and the individuals performing the work, even if a third party.

> "The importance of maintenance for the proper functioning of stormwater control facilities cannot be over-emphasized. A substantial portion of failures (clogging of filters, resuspension of sediments, loss of storage capacity, etc.) are due to inadequate maintenance. Stormwater BMP maintenance is essential to ensure that BMPs function as intended throughout their full life cycle."

The fundamental goal of maintenance activities is to ensure the entire flow regime designed for this site continues to function as designed. For this site these include:

- Maintain ability to safely convey design stormwater flows.
- Maintain stormwater runoff quality.
- Clearly identify systems so they can be protected.
- Keep maintenance costs low.
- Prevent large-scale or expensive stormwater system failures.
- Prevent water quality violations or damage to downstream features.

The intent of this section and manual is to pass on to the responsible party(s) all the information critical to understand the design of the system, risks and considerations for proper use, suggestions for maintenance frequencies, and cost so that realistic budgets can be established.

Annual Cost of Maintenance

Costs to maintain the facilities vary by type, but the budgeting rule of thumb is that annual costs will be 5 to 10% of the Stormwater facility's total capital cost if provided by contractors. Once vegetation is established (where used), routine measures are estimated to have an annual cost of $200 to $600 per acre of facility, with the remaining costs credited toward funding eventual replacement of decayed stormwater features.

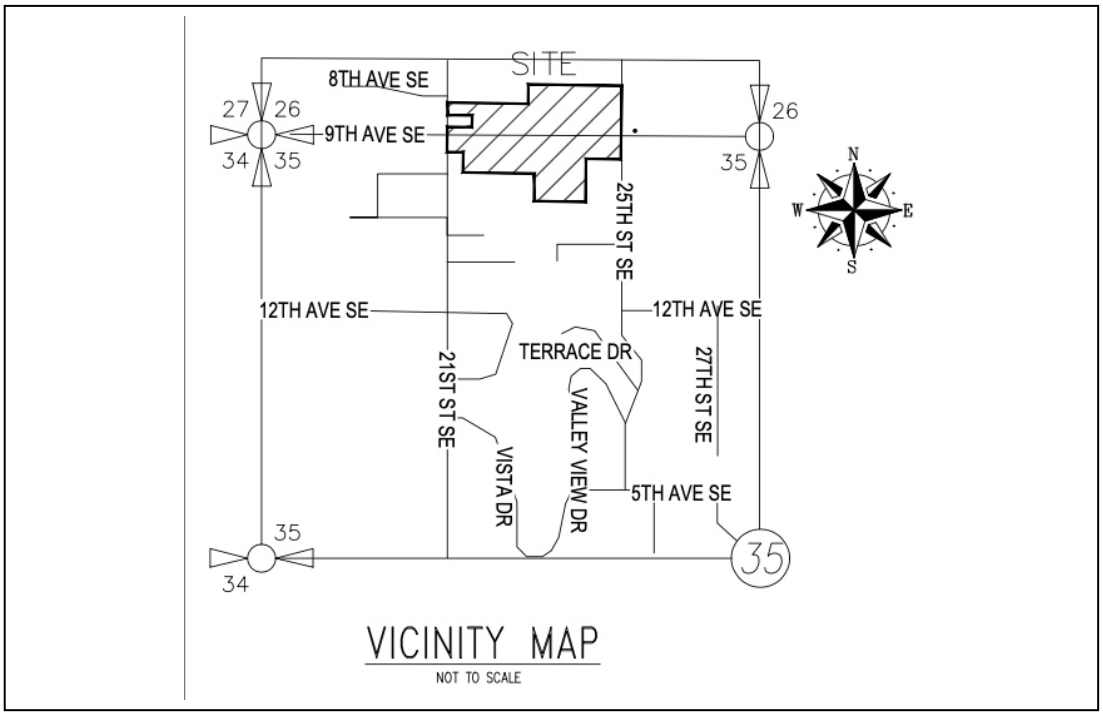
Routine, scheduled maintenance extends the time between major repairs or replacements. Most facilities have life expectancies of 25 to 50 years, with longer life spans achievable by conscientious maintenance.

2. Project Location and Access Description

This project is an addition to a larger campus with a completed drainage facility.

Addresses:	811 21st ST SE, Puyallup, WA 98372
Cross Street	21st ST SE
Directions to Facilities	Use Internal Drive aisles
Parcel Number:	0420352148
Outfall:	Infiltration in detention pond, overflow to Deer Creek

Figure 1 Vicinity Map



The project intends to add parking, paving work, landscaping, and series of temporary wet and dry portable outlying buildings to support elementary and junior high classrooms near the junior high and high school buildings on the existing school site located at 811 21st ST SE in the jurisdiction of Puyallup, Washington. This project will be on-site work only, retaining current access from the public road and served by existing public water, sewer, and power, with onsite service extensions. Stormwater will continue to be collected on-site, and additional on-site conveyance will be provided with drain connections for the annexed property to discharge to the existing stormwater infrastructure available on the school site.

The project area totals about 17.37 acres of a larger, combined developed campus. The balance of the campus that drains to distinct onsite basins will not be modified in the SW management design. No work within a ROW is proposed.

The proponent intends to provide stormwater facilities and conveyance systems above and below ground for the new and replaced areas and retain the use of the existing collection system in the areas remaining unchanged. The project projects no impacts to critical areas so includes no mitigation on or adjacent to the site.

Improvements, if proposed in the Right of Way, will be maintained by the City of Puyallup and therefore are not addressed here.

3. Facility Purpose and Performance Mechanisms

The following chart describes the stormwater BMPs and conveyance systems, and how these systems are designed to manage the volume, rate, and quality of stormwater runoff from the project.

Table: BMPs and Conveyance Purposes

BMP or Conveyance	Volume Management	Rate Management	Quality Management
Soil Amendment **Mulch**	Absorbs more precipitation than compacted or organic poor soils.	Increases time to first runoff and Decreases overall runoff volume.	Increases Biological activity – Caution, also leaches excess nutrients.
Dispersion, Partial or Full	Promotes evaporation and transpiration by Spreading volume over large area.	Increases time to first runoff and Decreases overall runoff volume.	Increases Biological activity – Caution, also leaches excess nutrients.
Catch Basins	Collects excess surface water.	None.	Settles out sediment and traps floating debris so discharge is cleaner.
Pipe	Carries flows to suitable discharge structure.	Pipe size and slope selected to carry volumes.	None.
Detention Assembly (Pond, ~~Vault, Pipe Array~~**)**	Temporarily stores volume.	Controls release rate.	Only if wet pool is included or soils achieve quality.
~~Treatment Assembly **(filters,** separators, dead storage, etc)~~	~~None.~~	~~None.~~	~~Traps sediment and floating debris, filters and absorbs some dissolved elements.~~
~~Pervious Pavements~~	~~Absorbs Precipitation.~~	~~Increases time to first runoff and Decreases overall runoff volume.~~	~~Depends mostly on underlying native soils. Some Filtration.~~
~~**Infiltration Trenches** Pond Drywell~~	~~Absorbs precipitation.~~	~~Increases time to first runoff and Decreases overall runoff volume.~~	~~Depends mostly on underlying native soils. Some Filtration.~~
~~Bioretention, Rain Gardens~~	~~Absorbs precipitation.~~	~~Increases time to first runoff~~	~~Promotes biological sorption and filtration.~~

4. Description of Facilities Requiring Maintenance

A list of all stormwater structures and BMPs requiring maintenance is provided below, and shown graphically on sheets C6 and C7 in the associated project's current civil drawings. All of the stormwater structures and BMPs requiring maintenance are the responsibility of the landowner.

Table: Facilities Requiring Maintenance

BMP or Stormwater Structure	Purpose	Functions by	Maintenance Requirement
Soil Amendment Mulch	Reduce runoff quantity and improve quality.	Gravity, storage capacity, and biological activity.	Keep Porosity and organic content high.
Roof Gutters and Downspouts	Carries flows to suitable discharge structure.	Gravity and channelization.	Keep Clean and free flowing.
Catch Basins (CB) and Storm Drain Man Holes (SDMH)	Collects excess surface water, settles out sediment and traps floating debris.	Still water over sump capacity.	Keep Clean and free flowing.
Pipes	Carries flows to suitable discharge structure.	Gravity and channelization.	Keep Clean and free flowing.
Treatment	Improve water quality	Gravity, biologic action, filtration.	Keep Clean and free flowing.
~~**Infiltration Trenches** And/or Permeable Paving~~	~~Reduce runoff quantity and/or improve quality~~	~~Gravity, storage capacity, and infiltration~~	~~Keep clean and retain porosity.~~
Detention Assembly	Reduce runoff rate by storing water temporarily.	Gravity and storage capacity.	Keep clean and retain volume.

Maintenance checklists for stormwater structures and BMPs requiring maintenance are attached as a list at the end of this text.

Table: Stormwater Additions Schedule

Stormwater Additions Schedule							
Pipes – PVC SDR 35, Infiltration- Aluminized CMP ALTA2 -16 gauge, or A-2000 PVC							
Designation	**Dia.**	**Material**	**Discharge**	**From**	**To**	**Slope**	**Remarks**
Landscape Area Grassy Swale	Surface Grades and Landscaping			Sheet Flow	YD#1 Beehive Grate	0.5%	
Portable Roof	6”	PVC	Splash-block	Roof	Veg. Swale	1.0%	
Perforated Stub-out Connection	6”	PVC	Pipe Flow	YD#4	YD#3	0.0%	

5. Ownership and Responsible Parties

This section of the Maintenance and Source Control Manual identifies the party (or parties) the owner has made responsible for maintenance and operation of all stormwater structures and BMPs requiring maintenance. When the facility is in operation, keep the following up to date.

Stormwater Facility Manager:
Address:
Phone
Email:

Name of Maintenance Contractor:
Address:
Phone: Cell:
Email:
Contact Person:

Space for Update Name of Maintenance Contractor:
Address:
Phone: Cell:
Email:
Contact Person:

Space for Update Name of Maintenance Contractor:
Address:
Phone: Cell:
Email:
Contact Person:

The ultimate responsibility rests with the owner:
Cascade Christian Schools
811 21st ST Se
Puyallup, WA 98372
253-606-1854

6. Project History

This project is an addition to the existing school, comprising of new elementary school portables and improved parking areas. The new stormwater system will connect to the existing system, and overflows, if any, will discharge to Deer Creek. Please see the existing and new stormwater drainage system in the associated drainage report and attached site plans.

7. Maintenance and Inspection Plan and Instructions

This plan and instructions outline conditions for determining if maintenance actions are required, as identified through inspection. However, they are not intended to be measures of the facility's required condition at all times between inspections. Exceedance of these conditions at any time between inspections or maintenance activity does not automatically constitute a violation of these standards. However, based upon inspection observations, the inspection and maintenance presented in the checklists shall be adjusted to minimize the length of time that a facility is in a condition that requires a maintenance action.

The purpose of the items in the Stormwater Structures list is to collect runoff and excess subsurface drainage and, if necessary, move it to a treatment BMP so that the acceptable quality is attained before discharge. These structures all function by gravity flow, and do not require active processes to function. Maintenance is needed to keep them clean and free-draining. Stormwater Structures on this project will consist of:

- Gutters & Downspouts,
- Catch Basins,
- Conveyance Pipes,
- Detention
- Track Interceptor

The purpose of items in the BMP list is to control outlet flow rates and/or to restore the water quality by removing natural sediment, deposited particles, liquid drips, and other substances from the runoff before it leaves the site. For this site, the BMPs are a mix of constructed and natural functions. They are passive and function by a combination of gravity, filtration, and microbial action. Maintenance is needed to prevent them from being overtaken by other uses. BMPs on this project will consist of:

- Existing Bioswale
- Mulch beds in soil areas

A. Pollution Source Control Measures

Pollution source control is the application of pollution prevention practices on a developed site to reduce contamination of stormwater runoff at its source. BMPs and resource management systems are designed to reduce the amount of contaminants used, and potentially discharged to the environment, so that stormwater is of good quality.

Potential Pollutant Generating Sources

This section of the Maintenance and Source Control Manual contains pollution source controls that are specifically applicable to the proposed uses on site.

- S411 BMPs for Landscaping and Lawn/ Vegetation Management
- S417 BMPs for Maintenance of Stormwater Drainage and Treatment Systems
- S421 BMPs for Parking and Storage of Vehicles and Equipment
- S424 BMPs for Roof/ Building Drains at Manufacturing and Commercial Buildings

S411 BMPs for Landscaping and Lawn/ Vegetation Management

Operational BMPS

• Install engineered soil/landscape systems to improve the infiltration and regulation of stormwater in landscaped areas.

• Do not dispose of collected vegetation into waterways or storm sewer systems.

• Conduct mulch-mowing whenever practicable.

• Dispose of grass clippings, leaves, sticks, or other collected vegetation, by composting, if feasible.

• Use mulch or other erosion control measures on soils exposed for more than one week during the dry season or two days during the rainy season.

• Store and maintain appropriate oil and chemical spill cleanup materials in readily accessible locations when using oil or other chemicals. Ensure that employees are familiar with proper spill cleanup procedures.

• Till fertilizers into the soil rather than dumping or broadcasting onto the surface. Determine the proper fertilizer application rate for the types of soil and vegetation encountered.

• Till a topsoil mix or composted organic material into the soil to create a well-mixed transition layer that encourages deeper root systems and drought-resistant plants.

• Use manual and/or mechanical methods of vegetation removal rather than applying herbicides, where practical.

• Post notices and delineate the spray area prior to the application, as required by the local jurisdiction or by Ecology.

• Conduct spray applications during weather conditions as specified in the label direction and applicable local and state regulations. Do not apply during rain or immediately before expected rain.

Recommended Additional Operational BMPs for the use of pesticides:

• Consider alternatives to the use of pesticides such as covering or harvesting weeds, substitute vegetative growth, and manual weed control/moss removal.

• Consider the use of soil amendments, such as compost, that are known to control some common diseases in plants, such as Pythium root rot, ashy stem blight, and parasitic nematodes. The following are three possible mechanisms for disease control by compost addition (USEPA Publication 530-F-9-044):

1. Successful competition for nutrients by antibiotic production;
2. Successful predation against pathogens by beneficial microorganism; and
3. Activation of disease-resistant genes in plants by composts.

Installing an amended soil/landscape system can preserve both the plant system and the soil system more effectively. This type of approach provides a soil/landscape system with adequate depth, permeability, and organic matter to sustain itself and continue working as an effective stormwater infiltration system and a sustainable nutrient cycle.

• Once a pesticide is applied, evaluate its effectiveness for possible improvement. Records should be kept showing the effectiveness of the pesticides considered.

• Rinse it from equipment cleaning and/or triple-rinsing of pesticide containers should be used as product or recycled into product.

S417 BMPs for Maintenance of Stormwater Drainage and Treatment Systems

Pollutant Control Approach: Provide maintenance and cleaning of debris, sediments, and oil from stormwater collection, conveyance, and treatment systems to obtain proper operation.

Operational BMPS

Maintain stormwater treatment facilities per the operations and maintenance (O&M) procedures presented in Section 4.6 of Volume V in addition to the following BMPs:

• Inspect and clean treatment BMPs, conveyance systems, and catch basins as needed, and determine necessary O&M improvements.

• Promptly repair any deterioration threatening the structural integrity of stormwater facilities. These include replacement of clean-out gates, catch basin lids, and rock in emergency spillways. Ensure adequacy of storm sewer capacities and prevent heavy sediment discharges to the sewer system.

• Regularly remove debris and sludge from BMPs used for peak-rate control, treatment, etc. and discharge to a sanitary sewer if approved by the sewer authority, or truck to an appropriate local or state government approved disposal site.

• Clean catch basins when the depth of deposits reaches 60 percent of the sump depth as measured from the bottom of basin to the invert of the lowest pipe into or out of the basin.

However, in no case should there be less than six inches clearance from the debris surface to the invert of the lowest pipe. Some catch basins (for example, WSDOT Type 1L basins) may have as little as 12 inches sediment storage below the invert. These catch basins need frequent inspection and cleaning to prevent scouring. Where these catch basins are part of a stormwater collection and treatment system, the system owner/operator may choose to concentrate maintenance efforts on downstream control devices as part of a systems approach.

• Clean woody debris in a catch basin as frequently as needed to ensure proper operation of the catchbasin.

• Post warning signs; "Dump No Waste - Drains to Ground Water," "Streams," "Lakes," or emboss on or adjacent to all storm drain inlets where possible.

• Disposal of sediments and liquids from the catch basins must comply with "Recommendations for Management of Street Wastes" described in Appendix IV-G of this volume.

S421 BMPs for Parking and Storage of Vehicles and Equipment

Of the Potential Pollutant Generating Sources listed for S421 Parking and Storage of Vehicles and Equipment, the following pollutant sources are not expected at this site:

- Not a Defined "High-Use" site
    - < 100 ADT/1,000 SF for gross building area
    - < 25 diesel vehicles over 10 tones gross weight.

Operational BMPS

Clean parking lot by sweeping. Do not hose down into stormwater system.

Storage of Solid Wastes

Improper storage of recycling, yard waste, and trash can lead not only to water pollution problems, but problems with neighborhood pets and vermin as well. Following the BMPs listed below can help keep the property a clean and healthy place.

All recycling and waste containers kept outside should have lids. If the lid is damaged, repair or replace it as soon as possible. If the container is supplied by your hauler, please call to have the lid repaired or replaced

- Leaking containers should be replaced. If your container is supplied by your hauler, contact the hauler to have damaged containers replaced.

- Store containers under cover if possible, or on grassy areas.
- Inspect the storage area regularly to pick up loose scraps of material and dispose of them properly.
- Reduce waste where possible.

S424 BMPs for Roof/ Building Drains at Manufacturing and Commercial Buildings

Pollutant Control Approach: Evaluate the potential sources of stormwater pollutants and apply source control BMPs where feasible.

Operational BMPS

- If leachates and/or emissions from buildings are suspected sources of stormwater pollutants, then sample and analyze the stormwater draining from the building.
- Sweep the area routinely to remove any zinc residuals.
- If a roof/building stormwater pollutant source is identified, implement appropriate source control measures such as air pollution control equipment, selection of materials, operational changes, material recycle, process changes, etc.

Structural Source Control BMPs:

- Paint/coat the galvanized surfaces as described in Ecology Publication # 08-10-025.

O & M Appendix A: Maintenance Checklists

Maintenance instructions are intended to explain to future property owners the purpose of each flow control element (BMP) and how it must be maintained and operated. A set of minimum maintenance instructions is provided for each flow control BMP selected. Maintenance checklists are from *City of Puyallup Site Management Plan for Stormwater Operations and Maintenance (SMP),* unless otherwise noted.

Support information is supplied in this section from Volume V of Department of Ecology *Stormwater Management Manual for Western Washington,* issued December 2024

Maintenance timelines vary according to the severity of the impact.

Emergency Action:
Where maintenance and repair is necessary to correct health or safety problems, to prevent harmful materials from entering the stormwater system, or to remove harmful materials that have entered the stormwater system, such work shall be completed by the owner or operator of the stormwater system or stormwater facility within 24 hours of discovery of the need for maintenance or repair.

See section 5 for the emergency contact phone number.

Triggered Maintenance:
When maintenance and repair is found necessary to prevent water quality degradation, such work shall be completed within 14 calendar days of discovery of the need for maintenance or repair.

Routine Maintenance:
For other related problems, maintenance or repairs shall be completed within 30 calendar days of discovery or repair.

Maintenance and Inspection Record Keeping:
Maintenance performed shall be logged either on this document and its copies, or in an electronic format that may be printed or transmitted to another party.

A template Stormwater Maintenance Checklist Form is provided at the end of this document.

Annual Inspection Report

City of Puyallup – Stormwater BMP Facilities Inspection and Maintenance Log

Return Form to:
Stormwater Engineer/ City of Puyallup
333 South Meridian
Puyallup, WA 98371

Facility Name: _____

Address: _____

Begin Date: _____ End Date: _____

Date	BMP ID#	BMP facility Description	Inspected By	Cause for Inspection	Exceptions Noted	Notes / Actions Taken

Instructions:

Record all inspections and maintenance for all treatment BMP's on this form. Use additional log sheets and/or attach extended comments or documentation as necessary. Submit a copy of the completed log with the Annual Independent Inspector Report to the City, and start a new log at that time. Checklists provided should be used prior to filling out this form. If you have any questions on how to complete your inspection, please contact City staff.

BMP ID #- always use ID# from the Operation and Maintenance Manual.
Inspected by- Note all Inspections and maintenance on this form, including the required independent annual inspection.
Cause for Inspection- Note if the inspection is routine, pre-rainy season, post storm, annual, or in response to a noted problem or complaint.
Exceptions Noted- Note any condition that requires correction or indicates a need for maintenance.
Notes / Actions Taken- Describe any maintenance done and need for follow up.

Catch Basin

Catch Basin			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
			Note: table spans multiple pages.
General	Trash and Debris	Trash or debris which is located immediately in front of the catch basin opening or is blocking inletting capacity of the basin by more than 10%.	No trash or debris located immediately in front of catch basin or on grate opening.
		Trash or debris (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of six inches clearance from the debris surface to the invert of the lowest pipe.	No trash or debris in the catch basin.
		Trash or debris in any inlet or outlet pipe blocking more than 1/3 of its height.	Inlet and outlet pipes free of trash or debris.
		Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane).	No dead animals or vegetation present within the catch basin.
	Sediment	Sediment (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of 6 inches clearance from the sediment surface to the invert of the lowest pipe.	No sediment in the catch basin.
	Structure Damage to Frame and/or Top Slab	Top slab has holes larger than 2 square inches or cracks wider than 1/4 inch. (Intent is to make sure no material is running into basin.)	Top slab is free of holes and cracks.
		Frame not sitting flush on top slab, i.e., separation of more than 3/4 inch of the frame from the top slab. Frame not securely attached.	Frame is sitting flush on the riser rings or top slab and firmly attached.
	Fractures or Cracks in	Maintenance person judges that structure is unsound.	Basin replaced or repaired to design standards.

	Basin Walls/ Bottom	Grout fillet has separated or cracked wider than 1/2 inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering catch basin through cracks.	Pipe is regrouted and secure at basin wall.
	Settlement/ Misalignment	Catch basin has settled more than 1 inch or has rotated more than 2 inches out of alignment.	Basin replaced or repaired to design standards.
	Vegetation Inhibiting System	Vegetation growing across and blocking more than 10% of the basin opening.	No vegetation blocking opening to basin.
		Vegetation growing in inlet/outlet pipe joints that is more than six inches tall and less than six inches apart.	No vegetation or root growth present.
	Contaminants and Pollution	Any evidence of oil, gasoline, contaminants, or other pollutants. Sheen, obvious oil, or other contaminants present. • Identify and remove source	No contaminants or pollutants present.
Catch Basin Cover	Cover Not in Place	Cover is missing or only partially in place. Any open catch basin requires maintenance.	Catch basin cover is closed.
	Locking Mechanism Not Working	Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread. One or more bolts are missing.	Mechanism opens with proper tools. All bolts are seated and no bolts are missing. Cover is secure.
	Cover Difficult to Remove	One maintenance person cannot remove lid after applying normal lifting pressure (Intent is to keep cover from sealing off access to maintenance).	Cover can be removed by one maintenance person.
Metal Grates (If Applicable)	Grate Opening Unsafe	Grate with opening wider than 7/8 inch.	Grate opening meets design standards.
	Trash and Debris	Trash and debris that is blocking more than 20% of grate surface inletting capacity.	Grate free of trash and debris.
	Damaged or Missing	Grate missing or broken member(s) of the grate.	Grate is in place and meets design standards.
Oil/Debris Trap (If Applicable)	Dislodged	Oil or debris trap is misaligned with or dislodged from the outlet pipe.	Trap is connected to and aligned with outlet pipe.

Compost-Amended Soil

Compost-Amended Soil			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
Soil Media	Soils Waterlogged or Not Infiltrating	Soils become waterlogged, or otherwise do not appear to be infiltrating.	Soils have been aerated or amended such that infiltration occurs and soils to not remain completely saturated, per design specifications.
	Erosion/Scouring	Areas of potential erosion are visible, such as gullies or scouring.	Any eroded areas have been repaired, and sources of erosion addressed to prevent further soil erosion.
Vegetation	Vegetation in Poor Health	Less than 75% of planted vegetation is healthy with a generally good appearance.	At least 75% of planted vegetation is healthy with generally good appearance. Any conditions found that were deleterious to plant health have been corrected where possible. Routine maintenance schedule has been updated as necessary to ensure continued plant health and satisfactory appearance.
	Poisonous Plants and Noxious Weeds	Any poisonous plants or nuisance vegetation which may constitute a hazard to maintenance personnel or the public. Any evidence of noxious weeds as defined by State or local regulations.	No danger of poisonous vegetation where maintenance personnel or the public might normally be. Eradication of Class A weeds as required by State law. Control of other listed weeds as directed by local policies. Apply requirements of adopted IPM policy for the use of herbicides.
	Other Weeds Present	Other weeds (not listed on City/State noxious weed lists) are present on site.	Weeds have been removed per the routine maintenance schedule, following IPM protocols.

Conveyance Pipe

Conveyance Pipe			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
General	Contaminants and Pollution	Any evidence of oil, gasoline, contaminants, or other pollutants. Sheen, obvious oil, or other contaminants present. • Identify and remove source.	No contaminants or pollutants present.
	Obstructions, Including Roots	Root enters or deforms pipe, reducing flow.	Roots have been removed from pipe (using mechanical methods; do not put root-dissolving chemicals in storm sewer pipes). If necessary, vegetation over the line removed.
	Sediment and Debris	Sediment depth is greater than 20% of pipe diameter.	Pipe has been cleaned and is free of sediment/ debris. (Upstream debris traps installed where applicable.)
	Debris Barrier or Trash Rack Missing	Stormwater pipes > than 18 inches need debris barrier.	Debris barrier present on all stormwater pipes 18 inches and greater.
	Damage to protective coating or corrosion	Protective coating is damaged; rust or corrosion is weakening the structural integrity of any part of pipe.	Pipe repaired or replaced.
	Damaged	Any dent that decreases the cross section area of pipe by more than 20% or is determined to have weakened structural integrity of the pipe.	Pipe repaired or replaced.

Detention Pond

Detention Pond			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
			Note: table spans multiple pages.
General	Trash and Debris	Any trash and debris which exceed 1 cubic foot per 1,000 square feet. In general, there should be no visual evidence of dumping. If less than threshold all trash and debris will be removed as part of next scheduled maintenance.	Site is free of trash and debris.
	Poisonous Plants and Noxious Weeds	Any poisonous plants or nuisance vegetation which may constitute a hazard to maintenance personnel or the public. Any evidence of noxious weeds as defined by State or local regulations.	No danger of poisonous vegetation where maintenance personnel or the public might normally be. Eradication of Class A weeds as required by State law. Control of other listed weeds as directed by local policies. Apply requirements of adopted IPM policy for the use of herbicides.
	Vegetation Growth and Hazard Trees	Vegetation growth does not allow maintenance access or interferes with maintenance activity (i.e., slope mowing, silt removal, vacuuming, or equipment movements). If trees are not interfering with access or maintenance, do not remove. Dead, diseased, or dying trees are identified. (Use a certified Arborist to determine health of tree or removal requirements.)	Vegetation does not hinder maintenance activities. Harvested vegetation should be recycled into mulch or other beneficial uses (e.g., alders for firewood). Remove hazard trees.
	Contaminants and Pollution	Any evidence of oil, gasoline, contaminants, or other pollutants. (Coordinate removal/cleanup with local water quality response agency.)	No contaminants or pollutants present.
	Rodent Holes	Any evidence of rodent holes if facility is acting as a dam or berm, or any evidence of water piping through dam or berm via rodent holes.	Rodents destroyed and dam or berm repaired.
	Beaver Dams	Dam results in change or function of the facility.	Facility is returned to design function. (Coordinate trapping of beavers and removal of dams with appropriate permitting agencies.)
	Insects	When insects such as wasps and hornets interfere with maintenance activities.	Insects destroyed or removed from site. Apply insecticides in compliance with adopted IPM Plan.

Side Slopes of Pond	Erosion	Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion. Any erosion observed on a compacted berm embankment.	Slopes have been stabilized using appropriate erosion control measure(s); e.g., rock reinforcement, planting of grass, compaction. If erosion is occurring on compacted berms a licensed civil engineer should be consulted to resolve source of erosion.
Storage Area	Sediment	Accumulated sediment that exceeds 10% (typically 6" to 12") of the designed pond depth unless otherwise specified or affects inletting or outletting condition of the facility.	Sediment cleaned out to designed pond shape and depth; pond reseeded if necessary to control erosion.
	Liner (If Applicable)	Liner is visible and has more than three 1/4-inch holes in it.	Liner repaired or replaced. Liner is fully covered.
Pond Berms (Dikes)	Settlements	Any part of berm which has settled 4 inches lower than the design elevation. If settlement is apparent, measure berm to determine amount of settlement. Settling can be an indication of more severe problems with the berm or outlet works. A licensed civil engineer should be consulted to determine the source of the settlement.	Dike is built back to the design elevation.
	Piping	Discernible water flow through pond berm. Ongoing erosion with potential for erosion to continue. (Recommend a Geotechnical engineer be called in to inspect and evaluate condition and recommend repair of condition.	Piping eliminated. Erosion potential resolved.
	Tree Growth	Tree growth on berms over 4 feet in height may lead to piping through the berm which could lead to failure of the berm.	Trees removed. If root system is small (base less than 4 inches) the root system may be left in place. Otherwise the roots should be removed and the berm restored. A licensed civil engineer should be consulted for proper berm/spillway restoration.
	Erosion	Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion. Any erosion observed on a compacted berm embankment.	Slopes have been stabilized using appropriate erosion control measure(s); e.g., rock reinforcement, planting of grass, compaction. If erosion is occurring on compacted berms a licensed civil engineer should be consulted to resolve source of erosion.

Emergency Overflow/ Spillway	Tree Growth	Tree growth on emergency spillways creates blockage problems and may cause failure of the berm due to uncontrolled overtopping.	Trees removed. If root system is small (base less than 4 inches) the root system may be left in place. Otherwise the roots should be removed and the berm restored. A licensed civil engineer should be consulted for proper berm/spillway restoration.
	Rock Missing	Only one layer of rock exists above native soil in area five square feet or larger, or any exposure of native soil at the top of flow path of spillway.	Rocks and pad depth are restored to design standards.

Energy Dissipater / Outfall Protection

Energy Dissipaters			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
External:			
Rock Pad	Missing or Moved Rock	Only one layer of rock exists above native soil in area five square feet or larger, or any exposure of native soil.	Rock pad has been replaced to design function.
	Erosion	Soil erosion in or adjacent to rock pad.	Rock pad has been replaced to design function.
	Sediment	Sediment on top of rock pad exceeds 10% of the surface.	Rock pad has been cleared of sediment.
	Poisonous Plants and Noxious Weeds	Any poisonous plants or nuisance vegetation which may constitute a hazard to maintenance personnel or the public. Any evidence of noxious weeds as defined by State or local regulations.	No danger of poisonous vegetation where maintenance personnel or the public might normally be. Eradication of Class A weeds as required by State law. Control of other listed weeds as directed by local policies. Apply requirements of adopted IPM policy for the use of herbicides.
	Other Weeds	Other weeds (not listed on State noxious weed lists) are present on the rock pad.	Weeds have been removed per the routine maintenance schedule, following IPM protocols.
Dispersion Trench	Pipe Plugged with Sediment	Accumulated sediment that exceeds 20% of the design depth.	Pipe is free of sediment and meets design specifications.
	Not Discharging Water Property	Visual evidence of water discharging at concentrated points along trench (normal condition is a "sheet flow" of water along trench). Intent is to prevent erosion damage.	Trench has been repaired or modified such that it does not discharge at concentrated points and meets design function.
	Perforations Plugged	Over 1/2 of perforations in pipe are plugged with debris and sediment.	Perforated pipe has been cleaned or replaced and <25% of perforations are plugged.
	Water Flows Out Top of "Distributor" Catch Basin	Maintenance person observes or receives credible report of water flowing out during any storm less than the design storm or its causing or appears likely to cause damage.	Facility rebuilt per design specifications or redesigned to meet approved City standards.
	Receiving Area Over-Saturated	Water in receiving area is causing or has potential of causing landslide problems.	No danger of landslides.
Gabions	Damaged Mesh	Mesh of gabion broken, twisted or deformed so structure is weakened or rock may fall out.	Mesh is intact, no rock missing.
	Corrosion	Gabion mesh shows corrosion through more than 1/4 of its gage.	All gabion mesh capable of containing rock and retaining designed form.

Energy Dissipaters			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
	Collapsed or Deformed Baskets	Gabion basket shape deformed due to any cause.	All gabion baskets intact, structure stands as designed.
	Missing Rock	Any rock missing that could cause gabion to lose structural integrity.	No rock missing.
Internal:			
Manhole/ Chamber	Worn or Damaged Post, Baffles, Side of Chamber	Structure dissipating flow deteriorates to 1/2 of original size or any concentrated worn spot exceeding one square foot which would make structure unsound.	Structure replaced to design standards.

Facility Discharge Points (Outfall)

Facility Discharge Point (Outfall)			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
Monitoring	Contaminants in Discharge Water	Any evidence of oil, gasoline, contaminants, or other pollutants. Sheen, obvious oil, or other contaminants present. • Identify and remove source.	Effluent discharge from facility is clear.
	Receiving Area Saturated	Water in receiving area is causing substrate to become saturated and unstable.	Receiving area is sound and not saturated.
	Ditch or Stream Banks Eroding (via Off Site Assessment)	Erosion, scouring, or headcuts in ditch or stream banks downstream of facility discharge point due to flow channelization or higher flows.	Ditch or stream banks are stable.
	Access	Vegetation is overgrown and there is no access to the outfall.	Vegetation is removed and/or path is cleared to access the outfall.
	Stains or Deposits	Stains or deposits present within the discharge area that are not natural occurring.	No stains or deposits exist and the source has been eliminated, unless the source is determined to be natural occurring.
	Stormwater Flow	Flow exists during the summer dry months when no flows should be present.	Source of the flows has been eliminated or source has been determined to be groundwater interflow.
General	Missing or Moved Rock	Only one layer of rock exists above native soil in area five square feet or larger, or any exposure of native soil.	Rock pad replaced to design function.
	Erosion	Soil erosion in or adjacent to rock pad.	Rock pad replaced to design function.
	Obstructions, Including Roots	Roots or debris enters pipe or deforms pipe, reducing flow.	Roots have been removed from pipe (using mechanical methods; do not put root-dissolving chemicals in storm sewer pipes). If necessary, vegetation over the line removed.
	Pipe Rusted or Deteriorated	Any part of the pipe that is broken, crushed, or deformed more than 20% or any other failure to the piping.	Pipe repaired or replaced to design standards.

Field Inlet

Field Inlet			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
			Note: table spans multiple pages.
General	Trash and Debris	Trash or debris which is located immediately in front of the catch basin opening or is blocking inletting capacity of the field inlet by more than 10%.	No trash or debris located immediately in front of field inlet or on grate opening.
		Trash or debris (in the field inlet) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of six inches clearance from the debris surface to the invert of the lowest pipe.	No trash or debris in the field inlet.
		Trash or debris in any inlet or outlet pipe blocking more than 1/3 of its height.	Inlet and outlet pipes free of trash or debris.
		Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane).	No dead animals or vegetation present within the field inlet.
	Sediment	Sediment (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of 6 inches clearance from the sediment surface to the invert of the lowest pipe.	No sediment in the field inlet.
	Structure Damage to Frame and/or Top Slab	Top slab has holes larger than 2 square inches or cracks wider than 1/4 inch. (Intent is to make sure no material is running into basin).	Top slab is free of holes and cracks.
		Frame not sitting flush on top slab, i.e., separation of more than 3/4 inch of the frame from the top slab. Frame not securely attached.	Frame is sitting flush on the riser rings or top slab and firmly attached.
	Fractures or Cracks in Basin Walls/ Bottom	Maintenance person judges that structure is unsound.	Basin replaced or repaired to design standards.
		Grout fillet has separated or cracked wider than 1/2 inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering field inlet through cracks.	Pipe is regrouted and secure at basin wall.
	Settlement/ Misalignment	Basin has settled more than 1 inch or has rotated more than 2 inches out of	Basin replaced or repaired to design standards.

Field Inlet			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
			Note: table spans multiple pages.
	Vegetation Inhibiting System	Vegetation growing across and blocking more than 10% of the basin opening.	No vegetation blocking opening to basin.
		Vegetation growing in inlet/outlet pipe joints that is more than six inches tall and less than six inches apart.	No vegetation or root growth present.
	Contaminants and Pollution	Any evidence of oil, gasoline, contaminants, or other pollutants. Sheen, obvious oil, or other contaminants present. • Identify and remove source.	No contaminants or pollutants present.
Metal Grates	Grate Not in Place	Cover is missing or only partially in place. Any open field inlet requires maintenance.	Field inlet cover is closed.
	Grate Opening Unsafe	Grate with opening wider than 3 inches.	Grate opening meets design standards.
	Trash and Debris	Trash and debris that is blocking more than 20% of grate surface inletting capacity.	Grate free of trash and debris.
	Damaged or Missing	Grate missing or broken member(s) of the grate.	Grate is in place and meets design standards.

Grounds

Grounds (Landscaping)			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
Site	Trash or litter	Any trash and debris which exceed 1 cubic foot per 1,000 square feet (this is about equal to the amount of trash it would take to fill up one standard size office garbage can). In general, there should be no visual evidence of dumping.	Trash and debris cleared from site.
	Noxious weeds	Any noxious or nuisance vegetation which may constitute a hazard to County personnel or the public.	Noxious and nuisance vegetation removed according to applicable regulations. No danger of noxious vegetation where County personnel or the public might normally be.
	Contaminants and pollution	Any evidence of contaminants or pollution such as oil, gasoline, concrete slurries or paint.	Materials removed and disposed of according to applicable regulations. Source control BMPs implemented if appropriate. No contaminants present other than a surface oil film.
	Grass/groundcover	Grass or groundcover exceeds 18 inches in height.	Grass or groundcover mowed to a height no greater than 6 inches.
Trees and Shrubs	Hazard	Any tree or limb of a tree identified as having a potential to fall and cause property damage or threaten human life. A hazard tree identified by a qualified arborist must be removed as soon as possible.	No hazard trees in facility.
	Damaged	Limbs or parts of trees or shrubs that are split or broken which affect more than 25% of the total foliage of the tree or shrub.	Trees and shrubs with less than 5% of total foliage with split or broken limbs.
		Trees or shrubs that have been blown down or knocked over.	No blown down vegetation or knocked over vegetation. Trees or shrubs free of injury.
		Trees or shrubs which are not adequately supported or are leaning over, causing exposure of the roots.	Tree or shrub in place and adequately supported; dead or diseased trees removed.

Perforated Stub-Out			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
Preventative	Blocking, obstructions	Debris or trash limiting flow into perforated pipe system or outfall of BMP is plugged or otherwise nonfunctioning.	Outfall of BMP is receiving designed flows from perforated pipe connection.
Inflow	Inflow impeded	Inflow into the perforated pipe is partially or fully blocked or altered to prevent flow from getting into the pipe.	Inflow to the perforated pipe is unimpeded.
Pipe Trench Area	Surface compacted	Ground surface over the perforated pipe trench is compacted or covered with impermeable material.	Ground surface over the perforated pipe is not compacted and free of any impervious cover.
Outflow	Outflow impeded	Outflow from the perforated pipe into the public drainage system is blocked.	Outflow to the public drainage system is unimpeded.
Outfall Area	Erosion or landslides	Existence of the perforated pipe is causing or exasperating erosion or landslides.	Perforated pipe system is sealed off and an alternative BMP is implemented.
Inspection	Frequency	Annually and prior to and following significant storms.	Perforated pipe system is operating as designed.

Roadside Ditch Maintenance			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
General	Trash and debris	Any trash and debris which exceed 1 cubic foot per 1,000 square feet. In general, there should be no visual evidence of dumping. If less than threshold all trash and debris will be removed as part of next scheduled maintenance.	Ditches are free of trash and debris.
	Poisonous Plants and Noxious Weeds	Any poisonous plants or nuisance vegetation which may constitute a hazard to maintenance personnel or the public. Any evidence of noxious weeds as defined by State or local regulations.	No danger of poisonous vegetation where maintenance personnel or the public might normally be. Eradication of Class A weeds as required by State law. Control of other listed weeds as directed by local policies. Apply requirements of adopted IPM policy for the use of herbicides.
	Vegetation Growth and Hazard Trees	Vegetation is impeding flow of water through the ditch, causing line of sight issues, does not allow maintenance access, or interferes with maintenance activity (i.e., slope mowing, silt removal, vacuuming, or equipment movements). If trees are not interfering with access or maintenance, do not remove. Dead, diseased, or dying trees are identified. (Use a certified Arborist to determine health of tree or removal requirements.)	Vegetation does not hinder maintenance activities. Harvested vegetation should be recycled into mulch or other beneficial uses (e.g., alders for firewood). Remove hazard trees.
	Poor Vegetation Coverage	When grass is sparse or bare or eroded patches occur in more than 10% of the ditch bottom.	Grass coverage has been restored to good condition and meets design function.
	Contaminants and Pollution	Any evidence of oil, gasoline, contaminants, or other pollutants. (Coordinate removal/cleanup with local water quality response agency.)	No contaminants or pollutants present.
	Rodent Holes	Any evidence of rodent holes if facility is acting as a dam or berm, or any evidence of water piping through dam or berm via rodent holes.	Rodents destroyed and dam or berm repaired.
	Beaver Dams	Dam results in change or function of the facility.	Facility is returned to design function. (Coordinate trapping of beavers and removal of dams with appropriate permitting agencies.)

Roadside Ditch Maintenance			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
General	Insects	When insects such as wasps and hornets interfere with maintenance activities.	Insects destroyed or removed from site. Apply insecticides in compliance with adopted City O&M policies.
	Side Slope Erosion	Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion. Any erosion observed on a compacted berm embankment.	Slopes have been stabilized using appropriate erosion control measure(s); e.g., rock reinforcement, planting of grass, compaction. If erosion is occurring on compacted berms a licensed civil engineer should be consulted to resolve source of erosion.
	Sediment	Sediment depth exceeds 2 inches in 10% of the ditch or affects inletting or outletting condition of the ditch.	Sediment cleaned out to designed ditch shape and depth; ditch reseeded if necessary to control erosion.
	Ponding	Standing water present for more than 48 hrs. and no inflow observed.	Ditch line is regraded to ensure positive grade in the direction of flow.
	Rock lining out of place or missing (if applicable)	One layer or less of rock exists above native soil area 5 square feet or more, any exposed native soil.	Replace rocks to design standards.

Sheet Flow and Concentrated Flow Dispersion			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
General	Pests	Signs of pest infestations (IPM protocol threshold(s) are exceeded), including rodent holes or mounds that disturb dispersion flow paths.	Pests are not present or engaged in activities that present a significant public health risk or compromise to the intended design function of the facility. Pests that have exceeded acceptable thresholds have been addressed using appropriate IPM measures.
Dispersion Trench	Concentrated Discharge	Visual evidence of water discharging at concentrated points along trench (normal condition is a "sheet flow" from edge of trench; intent is to prevent erosion damage).	Water is discharging as a sheet flow and any disruptive material (e.g. trash, debris, sediment accumulation) has been removed from trench surface.
	Surface of Trench	Accumulated trash, debris, or sediment on drain rock surface impedes sheet flow from facility. Vegetation/moss present on drain rock surface impedes sheet flow from facility.	Surface of drain rock is free of trash, debris, and sediment accumulation. Rock surface is open, free of vegetation buildup, and drains freely.
	Damage to or Trash/Sediment Accumulation Around Pipes	Accumulation of trash, debris, or sediment in driveway drains and area drains, etc. Pipe from sump to trench has accumulated sediment or is plugged. Cracked, collapsed, broken, or misaligned drain pipes.	Trash, debris, and sediment is cleared from dispersion trench components Pipes are free of damage or defects that hinder system from functioning according to design.
Rock Pad	General	Only one layer of rock exists above native soil in area 6 square feet or larger, or any exposure of native soil. Soil erosion in or adjacent to rock pad.	Rock pad has been repaired or replaced to meet design standards.
Dispersal Area	Erosion or Sediment Accumulation	Erosion (gullies/ rills) greater than 2 inches deep in dispersal area. Accumulated sediment or debris to extent that blocks or channelizes flow path.	Cause of erosion has been eliminated and the damaged area has been repaired and stabilized.
	Standing Water After Storm Event	Standing surface water in dispersion area remains for more than 3 days after the end of a storm event.	Standing water drains within 72 hours of a storm event.
	Transition Zone Erosion and Sizing	Adjacent soil erosion; uneven surface creating concentrated flow discharge; or less than two feet of width.	Transition zone meets design criteria and does not exhibit erosion or other evidence of concentrated flows.
	Poor Vegetation Cover	Poor vegetation cover such that erosion is occurring.	Vegetation has been properly watered and established to meet facility design specifications.
	Excessive Vegetation Cover	Vegetation inhibits dispersed flow along flow path.	Vegetation has been weeded, trimmed, pruned, or thinned to meet facility design criteria.

Downspout Splash Block

Downspout Splash Block			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
			Note: table spans multiple pages.
General	Pests	Signs of pest infestations (IPM protocol threshold(s) are exceeded), including rodent holes or mounds that disturb dispersion flow paths.	Pests are not present or engaged in activities that present a significant public health risk or compromise to the intended design function of the facility. Pests that have exceeded acceptable thresholds have been addressed using appropriate IPM measures.
	Inspection Frequency	Annually and after large storms.	Rain harvesting equipment is functioning normally.
Splash Block	Water Directed Towards Building	Water is being directed towards building structure.	Water is directed away from foundations and other building structures.
	Downspout water misdirected	Water coming from the downspout is not discharging to the dispersal area.	Water is discharging normally to the dispersal area.
	Dislodged	Splash block moved from outlet of downspout.	Splash block correctly positioned to catch discharge from downspout.
	Trash and Debris	Trash and debris accumulated on the splash block.	Splash block site free of any trash or debris.
	Erosion	Water coming off the splash block causing erosion.	No erosion occurs from the splash block.
		Water disrupts soil media.	Water is dispersed into soil/mulch/plantings in a manner that does not create erosion or other issues due to concentrated flows.

Dispersal Area	Erosion or Sediment Accumulation	Erosion (gullies/ rills) greater than 2 inches deep in dispersal area. Accumulated sediment or debris to extent that blocks or channelizes flow path.	Cause of erosion has been eliminated and the damaged area has been repaired and stabilized.
	Standing Water After Storm Event	Standing surface water in dispersion area remains for more than 3 days after the end of a storm event.	Standing water drains within 72 hours of a storm event.
	Transition Zone Erosion and Sizing	Adjacent soil erosion; uneven surface creating concentrated flow discharge; or less than two feet of width.	Transition zone meets design criteria and does not exhibit erosion or other evidence of concentrated flows.
	Poor Vegetation Cover	Poor vegetation cover such that erosion is occurring.	Vegetation has been properly watered and established to meet facility design specifications.
	Excessive Vegetation Cover	Vegetation inhibits dispersed flow along flow path.	Vegetation has been weeded, trimmed, pruned, or thinned to meet facility design criteria.

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