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**Permanent Stormwater Control Facilities
Operation and Maintenance (O&M) Manual**

for:

THREE LOT SHORT PLAT

Located at:

**1537 N. Fruitdale Rd.
Sedro Woolley, WA 98284**

Prepared for:

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September 14, 2021

Grantor –	<i>In the Zone Real Estate, LLC, Rob Davis</i>
Grantee –	<i>Sedro-Woolley Public</i>
Parcel Number –	<i>P39353</i>
Assessor Number –	<i>350518-0-0000</i>
Sec/Twp/Rng –	<i>Section 18, Township 35N, Range 05E</i>

**3-LOT SHORT PLAT
O & M MANUAL**

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1. INTRODUCTION

This Operations and Maintenance Manual (Manual) has been prepared for use by the Owners for the operation and maintenance of stormwater facilities with the 3-Lot Short Plat. The Manual has been prepared in accordance with the 2012 Stormwater Management Manual for Western Washington (SWMWW 2012), as amended in 2014, maintenance Standards for Drainage Facilities (Volume V, Section 4.6). The record drawings should be consulted during inspection, maintenance, and repair activities, a copy of which is available at the City of Sedro Woolley Public Works Department AND in the APPENDICES of this manual.

This manual describes each of the stormwater system components, how they are intended to operate, and what maintenance activities are applicable. The system can best be described as having three main components: the stormwater conveyance system, and the stormwater infiltration system, and the stormwater detention system. Each component is designed to operate with minimal maintenance; however, some maintenance will be required. Inspection and maintenance requirements may change in the future and this manual does not exempt the responsible party from providing adequate maintenance of all facilities.

1.1. Drainage Narrative

Drainage from the development is broken up into four (4) drainage areas. See Figure 1 for a map showing the different drainage areas, flow directions, and outlet.

Area A (Yellow): Stormwater runoff from the hammerhead, access drive between Lots 1 & 2, and the driveways for Lots 1 & 2 flow east and south into a grassy swale. The lot 1 roof runoff is captured via gutters and downspouts and piped to this swale as well. The swale flows south to a 12" pipe that flows under the access drive to the detention pond. All runoff from the access road flow south from Lots 1 & 2 flow south to this pond as well. From there the runoff flows through an 8" pipe, into a new catch basin, then through an 8" pipe into existing catch basin #14 on the existing City of Sedro storm drain system at Fruitdale Road.

Area B (Green): Roof runoff from the gutters on the south side of the residence on Lot 3 is collected and piped to a dispersion trench at the north east corner of the development. The runoff from the northern side yard and front yard of Lot 3 flows east, maintaining the established drainage pattern from the predeveloped condition.

Area C (Orange): runoff from a portion of Lot 3's backyard, the access road between lots 1 & 3, the west portion of Lot 1 behind the planned residence, and the southern portion of lot 2 flow southeast, maintaining the previous drainage pattern pre-development.

Area D (Purple): Stormwater runoff from the western portion of Lot 3, the yard and driveway of Lot 2 flow southeast toward Wetland A, maintaining the drainage pattern pre-development. The roof runoff from the north portion of the planned residence of Lot 3 and the full roof of the planned residence on Lot 2 are captured and conveyed to dispersion tranches in this area as well.

1.2. Facility Maintenance Responsibility

The Home Owners Association (HOA) is responsible for the maintenance of Catch Basin 1, the detention pond, the 12" PVC conveyance pipe and rock arrestor pads, and the grass-line swale.

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The individual Lot Owners shall be responsible for any individual roof drain dispersion trenches, roof downspouts, and roof drains. The roof drains connect the roof downspouts to the infiltration trench.

1.3. Facility Description

The following describes the drainage system components and functions in use with the 3-Lot Short Plat.

Storm drainage pipe:

Storm drainage systems are gravity operated underground conveyance systems. On this site, storm drainage piping ranges in sizes from 6" for roof drain collector systems and 12" for pipe within the roadway.

Catch basin/Cleanout:

A catch basin is a concrete structure with an iron grate typically located within a roadway. Catch basins are used to collect roadway runoff and are located at all changes in direction when 12" or larger pipe is used. Catch basins have a built-in sump for sediment to encourage sedimentation within the structure instead of flowing downstream. The sumps should be cleaned regularly with a vactor truck. A cleanout is used on smaller diameter systems most often on roof drain conveyance systems. Cleanouts do not have a sump for sedimentation. Both catch basins and cleanouts serve as access points for inspection, maintenance, and cleaning of the underground pipe system.

Dispersion Trench:

A dispersion trench is a rock filled trench with a notched grade board used to prevent erosion and disperse drainage into vegetated areas which helps prevent erosion that would occur at a typical pipe outfall.

2. HOME OWNERS ASSOCIATION (HOA) MAINTENANCE REQUIREMENTS

The following are general guidelines for maintenance of Home Owners Association stormwater facilities. Maintenance standards are referenced from the 2012 SWMMWW Manual and included in Appendix A.

General:

1. Proper maintenance of private stormwater facilities is necessary to ensure they serve their intended function.
2. Drainage systems shall be inspected at least annually. A representative of the local government should also inspect private facilities at least annually to ensure compliance by the owner of the following maintenance requirements.
3. Any deterioration threatening the structural integrity of the facilities shall be immediately repaired. These include such things as replacement of catch basin grates and lids, and dispersion trench rock.
4. Warning signs (e.g. "Dump No Waste – Drains to Puget Sound") shall be painted or embossed on or adjacent to all storm drain inlets and repainted as needed.
5. Trash debris shall be regularly removed from grate inlets to maintain adequate drainage

2.1. Description

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The run-off from the Northeastern portions of the property and the roof of Lot 1 flow to a grass swale on the east side of the access drive from the hammer head south to where the water is collected and ran under the drive through a 12" pipe to the detention pond. Both the start and end of the dwale have energy dissipaters (rock pads) as does the outlet on the 12" pipe under the drive. Once in the detention pond, the stormwater flows south into a new catch basin, followed by a 8" line to an existing city batch basin at Fruitdale. It is the HOA's responsibility to maintain the new catch basin, the detention pond, the grassy swale, and the conveyance pipes in between.

2.2. Operation

Regular inspections and maintenance will insure proper operation of the stormwater conveyance and dispersion system for many years.

2.3. Maintenance

Grass Swale

Detention Pond

General maintenance of a detention pond includes: keeping trash and debris cleared from the site, controlling/removing poisonous, nuisance, and noxious weeds that may cause hazards to personnel and public, coordinate removal/cleanup of pollutants/contaminants, and control/repair damage to pond from rodents. Refer to the maintenance standards in the appendixes for more information.

Catch Basin

Catch basins have a lengthy list of maintenance requirements involving care for the structure and regular cleaning of the sump. Please refer to List No. 5 in the Maintenance standards for more details.

Energy Dissipaters

Rock pads occur at either end of the grass swale and on the outlet of the 12" stormwater conveyance pipe to the detention pond. Maintenance on a rock pad mainly deals with preventing erosion by maintain the design pad thickness.

3. INDIVIDUAL LOT OWNERS MAINTENANCE REQUIREMENTS

The following are general guidelines for maintenance of individual Lor Owners stormwater facilities. Maintenance standards are reference from the 2012 SWMMWW (as amended in 2014) and included in Appendix A

1. Proper maintenance of private stormwater facilities is necessary to ensure they serve their intended function.
2. Drainage systems shall be inspected at least annually.
3. Any deterioration threatening the structural integrity of the facilities shall be immediately repaired. These include such things as replacement of catch basin grates and lids, and dispersion trench rock.
4. Warning signs (e.g. "Dump No Waste – Drains to Puget Sound") shall be painted or embossed

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- on or adjacent to all storm drain inlets and repainted as needed.
5. Trash debris shall be regularly removed from roof gutter and inlets to prevent clogging of the roof dispersion trenches. Backyard swales and grates shall also remain free of debris and yard waste to prevent clogging of the trench drains

3.1. Description

Lots 2 & 3 have individual roof drainage dispersion trenches. Lot one pipes the southern roof runoff to the grassy swale across the access road and catches the northern half of the roof runoff in a grassy trench on the lot that is direct to a collection pipe and directed towards the larger grassy swale east of the access drive. Maintenance of the roof dispersion trenches is the Lot Owner's responsibility.

3.2. Operation

Regular inspections and maintenance will insure proper operation of the stormwater conveyance and dispersion systems for many years.

3.3. Maintenance*Dispersion System:*

The best maintenance of the dispersion systems is regular vector truck service of upstream catch basins. Regular vector truck maintenance will prevent sediment from entering the dispersion trench and lowering the capacity of the facility. If more than one-inch of sediment is observed within bottom of the perforate dispersion pipes, then the sediments shall be removed through cleaning. The perforated pipes shall be cleaned with a vector truck.

1. All sediment shall be removed using a vacuum truck.
2. Flushing of a perforated drain line without a vector truck is prohibited. This is to avoid the potential of sediment laden water being allowed to enter the surrounding gravel and soils and diminish the function of the dispersion system.
3. After inspecting and/or cleaning each dispersion trench pipe, reinstall the cleanouts.

4. FINANCIAL LIABILITY, MAINTENANCE, & REPORTING

All on-site permanent stormwater facilities (catch basin, grassy swale, detention pond) shall be maintained in perpetuity in a manner that allows them to function as originally designed. The owner of the property, association or its designated representative, is solely responsible for the inspection, maintenance, repair and replacement of all permanent stormwater facilities located on site and any and all costs associated therewith. The City of Sedro-Woolley is under no obligation to maintain or repair permanent stormwater facilities located on this site.

The owner, association or its designated representative shall submit an annual operation and maintenance report for the permanent stormwater facilities to the City of Sedro-Woolley Public Works Department on or before March 31st of each year for the previous year's inspection and maintenance activities. The report shall include any remedial actions taken, how the actions were completed, who performed them, any problems encountered, and any required

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follow-up actions such as maintenance, repair or replacement. Annual report and other maintenance records shall be maintained on-site and available to the City upon request.

The City shall have the right to enter onto the property for inspection and compliance purposes. Should inspection reports (either by the property owner, association or by the City) indicate the permanent stormwater facilities are not being properly maintained or show signs of failure and the property owner has not remedied any maintenance standards exceedances, the City of Sedro-Woolley reserves the right but not the obligation to perform work that is necessary to maintain the permanent stormwater facilities that has not been performed by the property owner, and recover any and all costs so incurred by the City from the property owner. Failure to properly maintain the permanent stormwater facilities may also result in City levied fines in accordance with Sedro-Woolley Municipal Code Title 13, Chapter 13.40

APPENDIX A

OPERATION & MAINTENANCE

STANDARDS FROM SWWMM 2012 (2014)

UNOFFICIAL DOCUMENT

V-4.6 Maintenance Standards for Drainage Facilities

The facility-specific maintenance standards contained in this section are intended to be conditions for determining if maintenance actions are required as identified through inspection. They are not intended to be measures of the facility's required condition at all times between inspections. In other words, exceedence of these conditions at any time between inspections and/or maintenance does not automatically constitute a violation of these standards. However, based upon inspection observations, the inspection and maintenance schedules shall be adjusted to minimize the length of time that a facility is in a condition that requires a maintenance action.

Table V-4.5.2(1) Maintenance Standards - Detention Ponds

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
General	Trash & Debris	Any trash and debris which exceed 1 cubic feet 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.	Trash and debris cleared from site
	Poisonous Vegetation and noxious weeds	Any poisonous 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. (Apply requirements of adopted IPM policies for the use of herbicides).	No danger of poisonous vegetation where maintenance personnel or the public might normally be. (Coordinate with local health department) Complete eradication of noxious weeds may not be possible. Compliance with State or local eradication policies required
	Contaminants	Any evidence of oil,	No contaminants or pol-

Table V-4.5.2(1) Maintenance Standards - Detention Ponds (continued)

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
	and Pollution	gasoline, contaminants or other pollutants (Coordinate removal/cleanup with local water quality response agency).	lutants 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. (Coordinate with local health department; coordinate with Ecology Dam Safety Office if pond exceeds 10 acre-feet.)
	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 policies
	Tree Growth and Hazard Trees	Tree growth does not allow maintenance access or interferes with maintenance activity (i.e., slope mowing, silt removal, vactoring, or equipment movements). If trees are not interfering with access or maintenance, do not remove	Trees do not hinder maintenance activities. Harvested trees should be recycled into mulch or other beneficial uses (e.g., alders for firewood). Remove hazard Trees

Table V-4.5.2(1) Maintenance Standards - Detention Ponds (continued)

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
		If dead, diseased, or dying trees are identified (Use a certified Arborist to determine health of tree or removal requirements)	
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 should be 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% 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.
Ponds 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	Dike is built back to the design elevation.

Table V-4.5.2(1) Maintenance Standards - Detention Ponds (continued)

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
		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.	
	Piping	Discernable 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.
Emergency Overflow/ Spillway and Berms over 4 feet in height	Tree Growth	Tree growth on emergency spillways creates blockage problems and may cause failure of the berm due to uncontrolled overtopping. 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 should be 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.
	Piping	Discernable water flow through pond berm. Ongoing erosion with	Piping eliminated. Erosion potential resolved.

Table V-4.5.2(1) Maintenance Standards - Detention Ponds (continued)

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
		potential for erosion to continue. (Recommend a Geotechnical engineer be called in to inspect and evaluate condition and recommend repair of condition.)	
Emergency Overflow/Spillway	Emergency Overflow/Spillway	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 out flow path of spillway. (Rip-rap on inside slopes need not be replaced.)	Rocks and pad depth are restored to design standards.
	Erosion	See "Side Slopes of Pond"	

Table V-4.5.2(4) Maintenance Standards - Control Structure/Flow Restrictor

Maintenance Component	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Trash and Debris (Includes Sediment)	Material exceeds 25% of sump depth or 1 foot below orifice plate.	Control structure orifice is not blocked. All trash and debris removed.
	Structural Damage	Structure is not securely attached to manhole wall. Structure is not in upright position (allow up to 10% from plumb). Connections to outlet pipe	Structure securely attached to wall and outlet pipe. Structure in correct position. Connections to outlet pipe are water tight; structure repaired or replaced and works as

Table V-4.5.2(4) Maintenance Standards - Control Structure/Flow Restrictor (continued)

Maintenance Component	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
		are not watertight and show signs of rust. Any holes - other than designed holes - in the structure.	designed. Structure has no holes other than designed holes.
Cleanout Gate	Damaged or Missing	Cleanout gate is not watertight or is missing. Gate cannot be moved up and down by one maintenance person. Chain/rod leading to gate is missing or damaged. Gate is rusted over 50% of its surface area.	Gate is watertight and works as designed. Gate moves up and down easily and is watertight. Chain is in place and works as designed. Gate is repaired or replaced to meet design standards.
Orifice Plate	Damaged or Missing	Control device is not working properly due to missing, out of place, or bent orifice plate.	Plate is in place and works as designed.
	Obstructions	Any trash, debris, sediment, or vegetation blocking the plate.	Plate is free of all obstructions and works as designed.
Overflow Pipe	Obstructions	Any trash or debris blocking (or having the potential of blocking) the overflow pipe.	Pipe is free of all obstructions and works as designed.
Manhole	See "Closed Detention Systems" (No. 3).	See "Closed Detention Systems" (No. 3).	See "Closed Detention Systems" (No. 3).
Catch Basin	See "Catch Basins" (No. 5).	See "Catch Basins" (No. 5).	See "Catch Basins" (No. 5).

Table V-4.5.2(5) Maintenance Standards - Catch Basins

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is performed
General	Trash & Debris	<p>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%.</p> <p>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.</p> <p>Trash or debris in any inlet or outlet pipe blocking more than 1/3 of its height.</p> <p>Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane).</p>	<p>No Trash or debris located immediately in front of catch basin or on grate opening.</p> <p>No trash or debris in the catch basin.</p> <p>Inlet and outlet pipes free of trash or debris.</p> <p>No dead animals or vegetation present within the catch basin.</p>
	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 is sit-

Table V-4.5.2(5) Maintenance Standards - Catch Basins (continued)

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is performed
		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	ting 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. 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.	Basin replaced or repaired to design standards. Pipe is regouted and secure at basin wall.
	Settlement/ Misalignment	If failure of basin has created a safety, function, or design problem.	Basin replaced or repaired to design standards.
	Vegetation	Vegetation growing across and blocking more than 10% of the basin opening. Vegetation growing in inlet/outlet pipe joints that is more than six inches tall and less than six inches apart.	No vegetation blocking opening to basin. No vegetation or root growth present.
	Contamination and Pollution	See "Detention Ponds" (No. 1).	No pollution 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	Mechanism cannot be opened by one maintenance person with proper tools. Bolts into	Mechanism opens with

Table V-4.5.2(5) Maintenance Standards - Catch Basins (continued)

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is performed
	Working	frame have less than 1/2 inch of thread.	proper tools.
	Cover Difficult to Remove	One maintenance person cannot remove lid after applying normal lifting pressure. (Intent is keep cover from sealing off access to maintenance.)	Cover can be removed by one maintenance person.
Ladder	Ladder Rungs Unsafe	Ladder is unsafe due to missing rungs, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges.	Ladder meets design standards and allows maintenance person safe access.
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.

Table V-4.5.2(6) Maintenance Standards - Debris Barriers (e.g., Trash Racks)

Maintenance Components	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Trash and Debris	Trash or debris that is plugging more than 20% of the openings in the barrier.	Barrier cleared to design flow capacity.
Metal	Damaged/ Missing	Bars are bent out of shape more than 3 inches.	Bars in place with no bends more than 3/4

Table V-4.5.2(6) Maintenance Standards - Debris Barriers (e.g., Trash Racks) (continued)

Maintenance Components	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
Bars.		Bars are missing or entire barrier missing.	inch. Bars in place according to design.
		Bars are loose and rust is causing 50% deterioration to any part of barrier.	Barrier replaced or repaired to design standards.
Inlet/Outlet Pipe		Debris barrier missing or not attached to pipe	Barrier firmly attached to pipe

Table V-4.5.2(7) Maintenance Standards - Energy Dissipaters

Maintenance Components	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed
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 replaced to design standards.
	Erosion	Soil erosion in or adjacent to rock pad.	Rock pad replaced to design standards.
Dispersion Trench	Pipe Plugged with Sediment	Accumulated sediment that exceeds 20% of the design depth.	Pipe cleaned/flushed so that it matches design.
	Not Discharging Water Properly	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 redesigned or rebuilt to standards.
	Perforations Plugged.	Over 1/2 of perforations in pipe are plugged with debris and sediment.	Perforated pipe cleaned or replaced.

**Table V-4.5.2(7) Maintenance Standards - Energy Dissipaters
(continued)**

Maintenance Components	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed
	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 or redesigned to standards.
	Receiving Area Over-Saturated	Water in receiving area is causing or has potential of causing landslide problems.	No danger of landslides.
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.
	Other Defects	See "Catch Basins" (No. 5).	See "Catch Basins" (No. 5).

Pollutant Control Approach: Maintain roadside ditches to preserve the condition and capacity for which they were originally constructed, and to minimize bare or thinly vegetated ground surfaces. Maintenance practices should provide for erosion and sediment control (Refer to S411 BMPs for Landscaping and Lawn/ Vegetation Management (p.634)).

Applicable Operational BMPs:

- Inspect roadside ditches regularly to identify sediment accumulations and localized erosion.
- Clean ditches on a regular basis, as needed. Keep ditches free of rubbish and debris.
- Vegetation in ditches often prevents erosion and cleanses runoff waters. Remove vegetation only when flow is blocked or excess sediments have accumulated. Conduct ditch maintenance (seeding, fertilizer application, harvesting) in late spring and/or early fall, where possible. This allows re-establishment of vegetative cover by the next wet season thereby minimizing erosion of the ditch as well as making the ditch effective as a biofilter.
- In the area between the edge of the pavement and the bottom of the ditch, commonly known as the "bare earth zone," use grass vegetation, wherever possible. Establish vegetation from the edge of the pavement, if possible, or at least from the top of the slope of the ditch.
- Maintain diversion ditches on top of cut slopes constructed to prevent slope erosion by intercepting surface drainage to retain their diversion shape and capability.
- Do not leave ditch cleanings on the roadway surfaces. Sweep, collect, and dispose of dirt and debris remaining on the pavement at the completion of ditch cleaning operations.
- Consider screening roadside ditch cleanings, not contaminated by spills or other releases and not associated with a stormwater treatment system such as a bioswale, to remove litter. Separate screenings into soil and vegetative matter (leaves, grass, needles, branches, etc.) categories. Compost or dispose of the vegetative matter in a municipal waste landfill. Consult with the jurisdictional health department to discuss use or disposal options for the soil portion. For more information, please see Appendix IV-G: Recommendations for Management of Street Wastes (p.743).
- Roadside ditch cleanings contaminated by spills or other releases known or suspected to contain dangerous waste must be handled following the Dangerous Waste Regulations (Chapter 173 303 WAC). If testing determines materials are not dangerous waste but contaminants are present, consult with the jurisdictional

health department for disposal options.

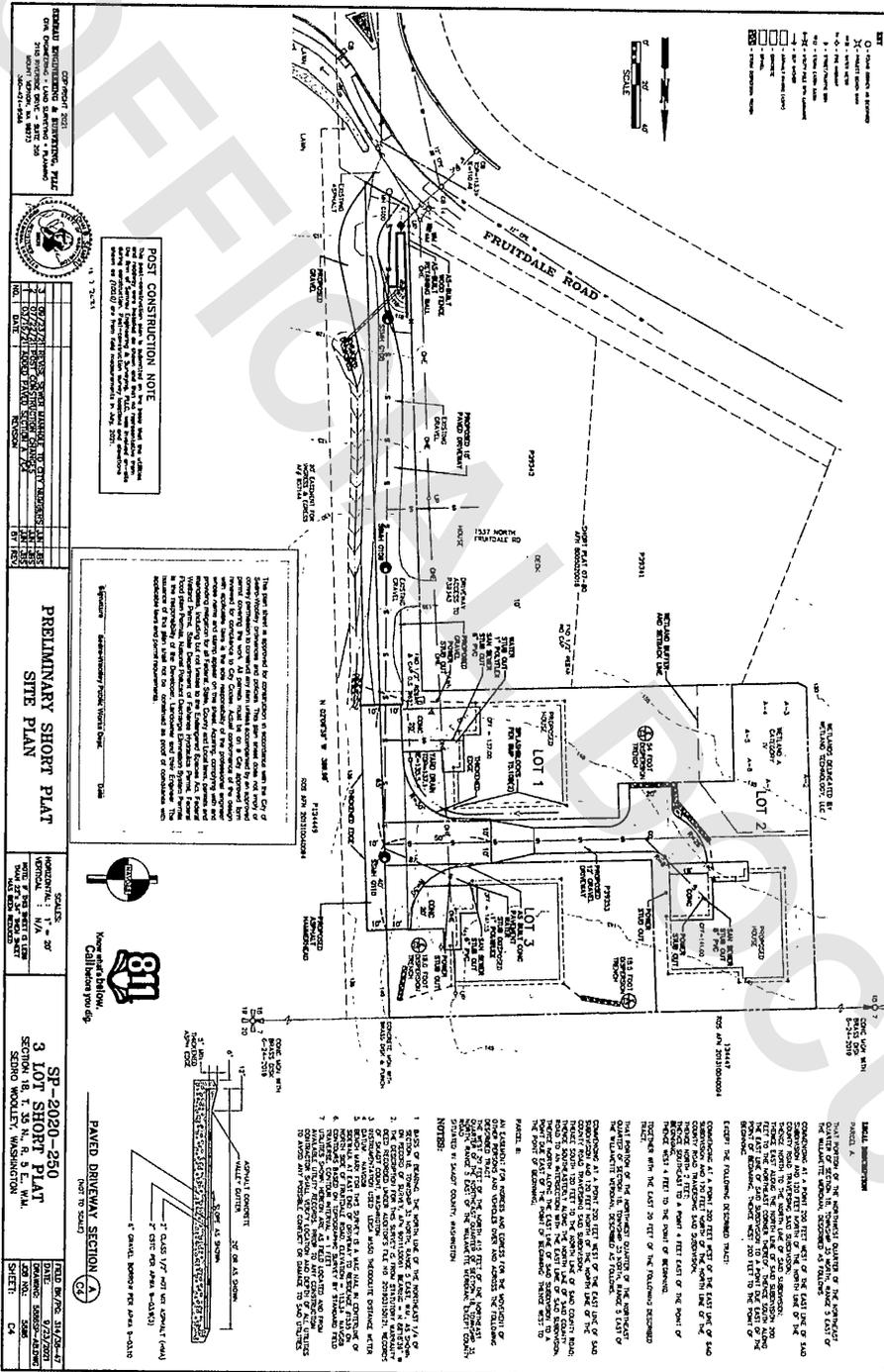
- Examine culverts on a regular basis for scour or sedimentation at the inlet and outlet, and repair as necessary. Give priority to those culverts conveying perennial and/or salmon-bearing streams and culverts near streams in areas of high sediment load, such as those near subdivisions during construction.

Table 5-23 Maintenance standards for dispersion areas (natural and engineered).

Maintenance Component	Defect or Problem	Condition When Maintenance is Needed	Recommended Maintenance to Correct Problem
General	Sediment accumulation on dispersion area	Sediment depth exceeds 2 inches.	Remove sediment deposits while minimizing compaction of soils in dispersion area. Relevel so slope is even and flows pass evenly over/through dispersion area. Handwork is recommended rather than use of heavy machinery.
	Vegetation	Vegetation is sparse or dying; significant areas are without ground cover.	Control nuisance vegetation. Add vegetation, preferably native ground cover, bushes, and trees (where consistent with safety standards) to bare areas or areas where the initial plantings have died.
	Trash and debris	Trash and debris have accumulated on the dispersion area.	Remove trash and debris from filter. Handwork is recommended rather than use of heavy machinery.
	Erosion/scouring	Eroded or scoured areas due to flow channelization, or high flows are observed.	For ruts or bare areas less than 12 inches wide, repair the damaged area by filling with crushed gravel/compost mix (see Section 5-4.3.2 for the compost specifications). The grass will creep in over the rock mix in time. If bare areas are large (generally greater than 12 inches wide), the dispersion area should be reseeded. For smaller bare areas, overseed when bare spots are evident. Look for opportunities to locate flow spreaders, such as dispersion trenches and rock pads.
	Flow spreader	Flow spreader is uneven or clogged so that flows are not uniformly distributed over entire filter width.	Level the spreader and clean so that flows are spread evenly over entire filter width.

APPENDIX B
DESIGN PLANS

UNOFFICIAL DOCUMENT



DETAILED ENGINEERING & SURVEYING, PLLC
 ONE COMMERCIAL - 1400 EASTING ST. ANNAPOLIS, MD 21403
 TEL: 410-291-1234 FAX: 410-291-1235
 WWW.DESAIGN.COM



POST CONSTRUCTION NOTE
 THE POST CONSTRUCTION NOTE IS A REQUIREMENT OF THE CITY OF ANNAPOLIS. IT IS TO BE SUBMITTED TO THE CITY ENGINEER FOR REVIEW AND APPROVAL. THE CITY ENGINEER'S REVIEW IS LIMITED TO THE TECHNICAL ASPECTS OF THE PLAN AND DOES NOT CONSTITUTE A GUARANTEE OF THE ACCURACY OF THE INFORMATION PROVIDED HEREON.

This plan was prepared in accordance with the City of Annapolis Ordinance 17-01, which requires that all preliminary site plans be submitted to the City Engineer for review and approval. The City Engineer's review is limited to the technical aspects of the plan and does not constitute a guarantee of the accuracy of the information provided hereon. The City Engineer's review is also limited to the information provided on this plan and does not extend to any other information that may be required for the development of the project. The City Engineer's review is also limited to the information provided on this plan and does not extend to any other information that may be required for the development of the project.

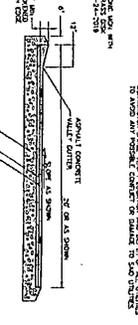
PRELIMINARY SHORT PLAT SITE PLAN

SCALE: 1" = 20'
 1/4" = 5'
 1/8" = 2.5'



SP-2020-250
 3 LOT SHORT PLAT
 SECTION 18, T. 33 N. R. 3 E. W.M.
 SEBORG WOODLEY, WASHINGTON

PAVED DRIVEWAY SECTION
 (SEE PLAN FOR DETAILS)



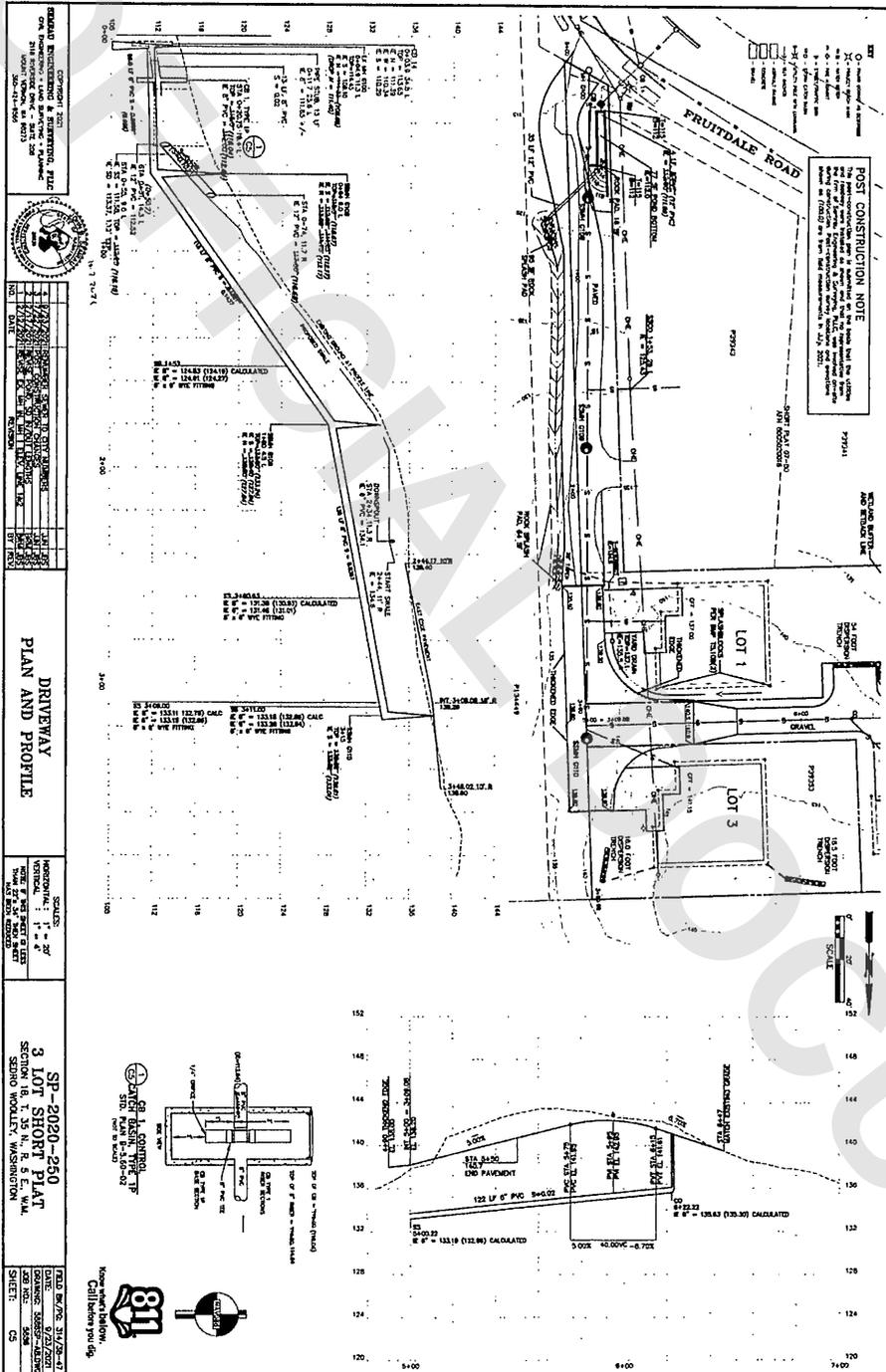
1. 10' SETBACK FROM LOT LINE OF THE PROPOSED LOT 1.
2. 5' SETBACK FROM LOT LINE OF THE PROPOSED LOT 2.
3. 5' SETBACK FROM LOT LINE OF THE PROPOSED LOT 3.
4. 5' SETBACK FROM LOT LINE OF THE PROPOSED LOT 4.
5. 5' SETBACK FROM LOT LINE OF THE PROPOSED LOT 5.
6. 5' SETBACK FROM LOT LINE OF THE PROPOSED LOT 6.
7. 5' SETBACK FROM LOT LINE OF THE PROPOSED LOT 7.
8. 5' SETBACK FROM LOT LINE OF THE PROPOSED LOT 8.
9. 5' SETBACK FROM LOT LINE OF THE PROPOSED LOT 9.
10. 5' SETBACK FROM LOT LINE OF THE PROPOSED LOT 10.

NOTES:
 1. ALL DIMENSIONS ARE IN FEET AND INCHES.
 2. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE DRIVEWAY.
 3. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE LOT LINE.
 4. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE LOT LINE.
 5. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE LOT LINE.

LEGEND:
 - - - - - EASEMENT
 - - - - - SETBACK
 - - - - - PROPERTY LINE
 - - - - - LOT LINE
 - - - - - DRIVEWAY

PAVED DRIVEWAY SECTION
 6" DEPTH CONCRETE
 4" DEPTH ASPHALT
 2" DEPTH SAND
 10' WIDTH
 6' SETBACK FROM LOT LINE

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APPENDIX C

CITY OF SEDRO-WOOLLEY
ANNUAL REPORTING FORM

UNOFFICIAL DOCUMENT



**PERMANENT STORMWATER FACILITY PERMIT
ANNUAL REPORTING FORM**

City of Sedro-Woolley
Public Works Department
RE: Permanent Stormwater Facilities Permit – Annual Reporting
325 Metcalf Street, Sedro-Woolley, WA 98284
Phone: 360-855-0771

This form must be completed and the certification signed by the Owner, its administrator, executor, successor, heir or assign. One signed copy of the completed Annual Report, including attachments, shall be submitted to the Public Works Department by March 31st for the year prior.

GENERAL INFORMATION	
Owner Name (<input type="checkbox"/> check if new):	Reporting Period:
Facility Address:	Jan. 1 st to Dec 31 st
Contact Person (<input type="checkbox"/> check if new) Name: Phone Number (<input type="checkbox"/> check if new): Mailing Address (<input type="checkbox"/> check if new):	* Reports for each year are due to the City by Mar. 31 st of the following year.
Have there been any major changes to or maintenance on the BMPs?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Does the BMP have any major deficiencies?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Do you have an updated Inspection and Maintenance Plan?	<input type="checkbox"/> YES <input type="checkbox"/> NO

"I certify that to the best of my knowledge and belief the maintenance and inspection of the permanent BMPs is being implemented in accordance to the Stormwater Facility Operation and Maintenance Plan for this property or that a notice of any deficiencies has been provided."

Signature

Date

ATTACHMENTS:

Inspection Log/Certification

[Attach additional information as needed. Remedial actions taken, how they were completed, and who performed them. Deficiencies to the BMPs, or problems encountered.]