

# CONSTRUCTION STORMWATER POLLUTION PREVENTION (CSWPP) PLAN

## Maple Valley Asphalt Facility

18825 Renton-Maple Valley SE, King County, Washington

### Prepared for:

Lakeside Industries, Inc.  
6505 226<sup>th</sup> Place SE, Suite 200  
Issaquah, WA 98027

Issued: October 2, 2018

### Submitted by:

Triad, a Division of David Evans and Associates, Inc.  
20300 Woodinville Snohomish Road NE, Suite A  
Woodinville, WA 98072

### Prepared By:

Travis J. Wageman, EIT  
Danielle M. Pitcher, EIT

### Reviewed By:

Rick A. Tomkins, PE



## Table of Contents

1	Project Information.....	5
1.1	Existing Conditions.....	5
1.2	Proposed Construction Activities.....	6
2	Construction Stormwater Best Management Practices (BMPs).....	8
2.1	The 13 Elements.....	8
2.1.1	Element 1: Preserve Vegetation / Mark Clearing Limits.....	8
2.1.2	Element 2: Establish Construction Access .....	9
2.1.3	Element 3: Control Flow Rates.....	10
2.1.4	Element 4: Install Sediment Controls.....	11
2.1.5	Element 5: Stabilize Soils .....	12
2.1.6	Element 6: Protect Slopes .....	14
2.1.7	Element 7: Protect Drain Inlets.....	15
2.1.8	Element 8: Stabilize Channels and Outlets .....	16
2.1.9	Element 9: Control Pollutants .....	17
2.1.10	Element 10: Control Dewatering .....	21
2.1.11	Element 11: Maintain BMPs.....	22
2.1.12	Element 12: Manage the Project .....	23
2.1.13	Element 13: Protect Low Impact Development (LID) BMPs .....	24
3	Pollution Prevention Team .....	25
3.1	Roles and Responsibilities.....	25
3.2	Team Members .....	26
4	Monitoring and Sampling Requirements.....	27
4.1	Site Inspection.....	27
4.2	Stormwater Quality Sampling.....	28
4.2.1	Turbidity Sampling .....	28
4.2.2	pH Sampling .....	30
5	Discharges to 303(d) or Total Maximum Daily Load (TMDL) Waterbodies .....	31
	APPENDIX A – Site Plans .....	32
	APPENDIX B – BMP Detail List.....	33
	Construction Stormwater BMPs .....	33
	Alternate BMPs .....	34
	APPENDIX C – Site Inspection Form .....	36

## List of Tables

Table 1 - Summary of Site Pollutant Constituents .....	6
Table 2 - Pollutants .....	17
Table 3 - pH-Modifying Sources .....	20
Table 4 - Dewatering BMPs.....	21
Table 5 - Management .....	23
Table 6 - Team Information .....	26
Table 7 - Turbidity Sampling Method .....	28
Table 8 - pH Sampling Method .....	30

## LIST OF ACRONYMS AND ABBREVIATIONS

Acronym / Abbreviation	Explanation
<b>303(d)</b>	Section of the Clean Water Act pertaining to Impaired Waterbodies
<b>BFO</b>	Bellingham Field Office of the Department of Ecology
<b>BMP(s)</b>	Best Management Practice(s)
<b>CESCL</b>	Certified Erosion and Sediment Control Lead
<b>CO<sub>2</sub></b>	Carbon Dioxide
<b>CRO</b>	Central Regional Office of the Department of Ecology
<b>CSWGP</b>	Construction Stormwater General Permit
<b>CWA</b>	Clean Water Act
<b>DMR</b>	Discharge Monitoring Report
<b>DO</b>	Dissolved Oxygen
<b>Ecology</b>	Washington State Department of Ecology
<b>EPA</b>	United States Environmental Protection Agency
<b>ERO</b>	Eastern Regional Office of the Department of Ecology
<b>ERTS</b>	Environmental Report Tracking System
<b>ESC</b>	Erosion and Sediment Control
<b>GULD</b>	General Use Level Designation
<b>NPDES</b>	National Pollutant Discharge Elimination System
<b>NTU</b>	Nephelometric Turbidity Units
<b>NWRO</b>	Northwest Regional Office of the Department of Ecology
<b>pH</b>	Power of Hydrogen
<b>RCW</b>	Revised Code of Washington
<b>SPCC</b>	Spill Prevention, Control, and Countermeasure
<b>su</b>	Standard Units
<b>SWMMEW</b>	Stormwater Management Manual for Eastern Washington
<b>SWMMWW</b>	Stormwater Management Manual for Western Washington
<b>SWPPP</b>	Stormwater Pollution Prevention Plan
<b>TESC</b>	Temporary Erosion and Sediment Control
<b>SWRO</b>	Southwest Regional Office of the Department of Ecology
<b>TMDL</b>	Total Maximum Daily Load
<b>VFO</b>	Vancouver Field Office of the Department of Ecology
<b>WAC</b>	Washington Administrative Code
<b>WSDOT</b>	Washington Department of Transportation
<b>WWHM</b>	Western Washington Hydrology Model

## 1 Project Information

**Project/Site Name:** Maple Valley Asphalt Facility

**Street/Location:** 18825 Renton-Maple Valley SE

**City:** King County

**State:** Washington

**Zip code:** 98058

**Subdivision:** NA

**Receiving waterbody:** Cedar River / Ground Water

Because this project will result in excess of 1-acre of site disturbance, coverage under the NPDES Construction Stormwater General Permit (CSWGP) must be obtained. Coverage is administered by the Washington State Department of Ecology. A Notice of Intent to discharge must be filed with Ecology and a Storm Water Pollution Prevention Plan (SWPPP) must be prepared. The SWPPP includes Temporary Erosion and Sedimentation Control Plans, identifying Best Management Practices (BMPs) to be employed during construction, together with a Narrative description of the BMPs and discharge monitoring requirements. The material contained herein comprises the Narrative portion of the SWPPP, and is intended to also serve as the Construction Storm Water Pollution Prevention (CSWPP) plan required by King County development review.

Post-construction, because of this project's use (asphalt production plant), a Sand and Gravel General Permit is also required by Ecology for ongoing discharge activities. Discharge Monitoring Reports are required to be filed quarterly and routine monitoring is to be performed in accordance with the conditions of the permit. It should be noted that post construction, discharge to surface water is proposed to be eliminated in favor of onsite infiltration of stormwater.

### 1.1 Existing Conditions

Total acreage (including support activities such as off-site equipment staging yards, material storage areas, borrow areas).

**Total acreage:** 25

**Disturbed acreage:** 12.6

**Existing structures:** Well house

**Landscape topography:** The project site is generally flat with a slope of approximately 1%, while the portions outside of the project area contain wetlands, streams and steep slopes in excess of 75%.

**Drainage patterns:** Currently, stormwater runoff sheet flows into the surrounding critical areas or the SR 169 roadside ditch system. All runoff is then piped under SR 169, eventually outfalling into the Cedar River.

**Existing Vegetation:** Forested slopes and grasses

**Critical Areas:** Steep slopes, wetlands and streams are located on the site

**List of known impairments for 303(d) listed or Total Maximum Daily Load (TMDL) for the receiving waterbody:** None

Table 1 includes a list of suspected and/or known contaminants onsite associated with historical releases.

**Table 1 - Summary of Site Pollutant Constituents**

Constituent (Pollutant)	Location	Depth	Concentration
Petroleum	On-Site	Varies	Above MTCA Method A Cleanup Level

## 1.2 Proposed Construction Activities

### Description of site development:

The Maple Valley Asphalt Facility Project (the Project) proposes to construct and asphalt production facility along with frontage improvements to SR 169. The facility will include an office building, asphalt plant structures and machinery, several large covered storage bins and parking areas, along with onsite sewer, water, dry utilities and stormwater facilities.

### Description of construction activities:

Excavation of petroleum-contaminated soil will be performed under the supervision of Farallon Consulting, LLC. Farallon will prepare an environmental media management plan (EMMP) / construction management plan (CMP) which will include soil segregation and handling to prevent spread of contamination.

Construction activities will include site preparation, TESC installation, site grading, utility installation, installation of stormwater facilities, site walls, paving, landscaping and final site stabilization.

**Description of site drainage including flow from and onto adjacent properties:**

The project site is located on a section of flat terrain surrounded by steep hills and SR 169. The hillside channels a large area of runoff towards the project site. Most of this area, approximately 37.6 acres (Upstream Basin A), is intercepted and conveyed around the project by the intervening onsite streams and wetlands, which will remain the case after development. The remaining 5.04 acres of upstream area is comprised of two basins, Upstream Basin B and C. Both consist almost entirely of steep forest. The proposed grading will create a swale to intercept runoff from Upstream Basin B and direct it into a gravel-filled trench with a perforated underdrain, and eventually to the SR 169 ditch system. Runoff from Upstream Basin C will sheet flow overland towards Wetland B, which drains to Stream B via Wetland C.

Onsite runoff sheet flows towards the northwest corner of the site where it is collected by two grass-lined swales. From there stormwater is treated and conveyed by the onsite drainage and treatment facilities. The stormwater is eventually infiltrated onsite via an underground ADS StromTech chamber system designed to infiltrate 100% of the collected drainage.

**Description of final stabilization:**

Final site stabilization will include mitigation of any disturbed critical area buffers, seeding for proposed landscaped areas, and removal of any non-permeant TESC measures.

**Contaminated Site Information. Proposed activities regarding contaminated soils or groundwater:**

The project site underwent a Phase I and II Environmental Site Assessment (ESAs). The ESAs identified petroleum-contaminated soils resulting from historical petroleum handling operations that included the use of underground storage tanks. The total amount of soil contamination is unknown and depends upon the level and depth of contamination. There are four areas that require remediation. The largest area could be as big as 12,000 square feet. In total, about 30,000 square feet of area will be excavated.

Once excavated, the contaminated soil will be hauled offsite and disposed of in accordance with state and federal regulations. The excavation areas will be backfilled with clean soils prior to construction of the proposed asphalt facility. Onsite material, if suitable, could be used to fill the disturbed areas.

## **2 Construction Stormwater Best Management Practices (BMPs)**

The SWPPP is a living document reflecting current conditions and changes throughout the life of the project. These changes may be informal (i.e. hand-written notes and deletions). Update the SWPPP when the CESCL has noted a deficiency in BMPs or deviation from original design.

### **2.1 The 13 Elements**

#### **2.1.1 Element 1: Preserve Vegetation / Mark Clearing Limits**

To protect adjacent properties and to reduce the area of soil exposed to construction, the limits of construction will be clearly marked before land-disturbing activities begin. The onsite sensitive areas and associated buffers shall be clearly delineated, both in the field and on the plans. Buffers will be restored/enhanced in accordance with a Mitigation Plan prepared by The Watershed Company. Where feasible, natural vegetation and native topsoil will be retained in an undisturbed state.

The specific Best Management Practices (BMPs) related to preserving vegetation/mark clearing limits to be used on this project include:

- Preserving Natural Vegetation (BMP C101)
- Buffer Zones (BMP C102)
- High Visibility Plastic or Metal Fence (BMP C103)
- Silt Fence (BMP C233)

Installation Schedules: Beginning at start of clearing to final stabilization.

Inspection and Maintenance plan: Per BMP Recommendations, See Appendix B

Responsible Staff: Project CESCL



### **2.1.2 Element 2: Establish Construction Access**

Construction access or activities occurring on unpaved areas shall be minimized, yet where necessary, access points shall be stabilized to minimize the tracking of sediment onto public roads, and wheel washing, street sweeping, and street cleaning shall be employed to prevent sediment from entering state waters. All wash wastewater shall be controlled on-site. Construction access to the Maple Valley Asphalt Facility project from the public right of way will be from SR 169 via an existing paved approach.

The specific BMPs related to establishing construction access to be used on this project include:

- Stabilized Construction Entrance/Exit (BMP C105)
- Wheel Wash (BMP C106)
- Construction Road/Parking Area Stabilization (BMP C107)

Installation Schedules: Beginning at start of clearing to final stabilization.

Inspection and Maintenance plan: Per BMP Recommendations, See Appendix B

Responsible Staff: Project CESCL

### 2.1.3 Element 3: Control Flow Rates

Under existing conditions, the only downstream surface water to receive stormwater from the project site is the Cedar River. During construction, this project proposes to use swales with rock check dams, terminating in a temporary sediment sump, to intercept and collect runoff. Collected runoff will be pumped from the sump to portable storage/settling tanks located in the lower northwest portion of the site. Prior to discharge, drainage will be polished by pumping through a sand filter or chitosan enhanced sand filter.

Under developed conditions, surface discharge (to the Cedar River) will be replaced with facilities to accommodate onsite infiltration.

Will you construct stormwater retention and/or detention facilities?

☒ Yes ☐ No

Will you use permanent infiltration ponds or other low impact development (example: rain gardens, bio-retention, porous pavement) to control flow during construction?

☐ Yes ☒ No

The specific BMPs to be used on this project related to controlling flow rates:

- Check Dams (BMP C207)
- Sediment Sump
- Portable Water Storage Tanks (e.g. “Baker Tanks” or equivalent) for sedimentation

Installation Schedules: Beginning at start of clearing to final stabilization.

Inspection and Maintenance plan: Per BMP Recommendations, See Appendix B

Responsible Staff: Project CESCL

#### **2.1.4 Element 4: Install Sediment Controls**

All stormwater runoff from disturbed areas shall pass through an appropriate sediment removal BMP before leaving the construction site or prior to being discharged to an infiltration facility. This project proposes to use a sediment sump and portable water storage tanks in combination with a portable sand filter to remove sediment from stormwater leaving the site. Once the Pre-Settling Vault is available, it will replace the portable water storage tanks. In the event that the gravity settling and sand filtration alone cannot maintain turbidity below acceptable limits, chitosan enhanced sand filtration (CESF) will be implemented. Obtain written approval from Ecology prior to using CESF (considered a chemical treatment).

Silt fence will be used to control small amounts of sediment in areas that are unable to be captured by proposed interceptor swales and conveyed to the sediment sump. Silt fence will be located along the project limits, around critical areas, or anywhere along a downhill flow path of runoff leaving the site.

In addition, sediment will be removed from paved areas on-site and adjacent to construction work areas, as needed, either manually or by mechanical sweepers to minimize the tracking of sediment by vehicles away from the site.

In some cases, sediment discharge in concentrated runoff can be controlled using permanent stormwater BMPs (e.g., infiltration swales, ponds, trenches). Sediment loads can limit the effectiveness of some permanent stormwater BMPs, such as those used for infiltration or biofiltration; however, those BMPs designed to remove solids by settling (sediment traps, sediment fencing) can be used during the construction phase. When permanent stormwater BMPs will be used to control sediment discharge during construction, the structure will be protected from excessive sedimentation with adequate erosion and sediment control BMPs. Any accumulated sediment shall be removed after construction is complete and the permanent stormwater BMP will be stabilized with vegetation per applicable design requirements once the remainder of the site has been stabilized.

The specific Sediment Control BMPs to be used on this project include:

- Grass-Lined Channels (BMP C201)
- Silt Fence (BMP C233)
- Construction Stormwater Chemical Treatment (BMP 250)
- Construction Stormwater Filtration (BMP C251)
- Sediment Sump
- Portable Water Storage Tanks (e.g. “Baker Tanks” or equivalent) for sedimentation

Installation Schedules: Beginning at start of clearing to final stabilization.

Inspection and Maintenance plan: Per BMP Recommendations, See Appendix B

Responsible Staff: Project CESCL

### 2.1.5 Element 5: Stabilize Soils

Exposed and unworked soils shall be stabilized with the application of effective BMPs (Sodding, Plastic Covering, Mulching, Hydroseeding, or approved equivalent) to prevent erosion throughout the life of the project. The project site is located west of the Cascade Mountains crest. As such, no soils shall remain exposed and unworked for more than 7 days during the dry season (May 1 to September 30) and 2 days during the wet season (October 1 to April 30). Regardless of the time of year, all soils shall be stabilized at the end of the shift before a holiday or weekend if needed based on weather forecasts.

In general, cut and fill slopes will be stabilized as soon as possible and soil stockpiles will be temporarily covered with plastic sheeting. All stockpiled soils shall be stabilized from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, sensitive areas, and external property lines. Dust control measures should be implemented to prevent wind transport of dust from disturbed soil surfaces onto roadways, drainage ways, and surface waters.

Grasses shall conform to the standards for “certified” grade seed or better as outlined by the Washington State Department of Agriculture “Rules for Seed Certification”, latest edition. All seed installers and vendors must have a business license issued by the Washington State Department of Licensing with a “Seed Dealer” endorsement. Seeding shall occur between September 1 and October 1. The contractor shall be responsible to ensure a healthy stand of grass within 2 months, otherwise the contractor shall reapply the hydroseed at no additional cost.

#### **West of the Cascade Mountains Crest**

Season	Dates	Number of Days Soils Can be Left Exposed
During the Dry Season	May 1 – September 30	7 days
During the Wet Season	October 1 – April 30	2 days

Soils must be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast.

**Anticipated project dates:**    **Start date:** 6/15/19

**End date:** 6/15/20

Will you construct during the wet season?

☒ Yes ☐ No

The specific Soil Stabilization BMPs to be used on this project include:

- Temporary and Permanent Seeding (BMP C120)
- Mulching (BMP C121)
- Nets and Blankets (BMP C122)
- Plastic Covering (BMP C123)
- Sodding (BMP C124)
- Topsoiling / Composting (BMP C125)
- Surface Roughening (BMP C130)
- Dust Control (BMP C 140)
- Materials On Hand (BMP C150)

Installation Schedules: Beginning at start of clearing to final stabilization.

Inspection and Maintenance plan: Per BMP Recommendations, See Appendix B

Responsible Staff: Project CESCL

### 2.1.6 Element 6: Protect Slopes

All cut and fill slopes will be designed, constructed, and protected in a manner that minimizes erosion. Interceptor swales, check dams (not dikes) and temporary culverts will be used throughout the site to capture construction runoff and convey it to the interceptor swales. Runoff from the site will sheet flow across cleared areas into temporary interceptor swales with check dams spaced approximately every 100 to 200 feet depending on the slope and into the temporary sediment sump.

Will steep slopes be present at the site during construction?

☒ Yes ☐ No

The specific slope protection BMPs to be used on this project include:

- Temporary and Permanent Seeding (BMP C120)
- Surface Roughening (BMP C130)
- Interceptor Dike and Swale (BMP C200)
- Check Dams (BMP C207)

Installation Schedules: Beginning at start of clearing to final stabilization.

Inspection and Maintenance plan: Per BMP Recommendations, See Appendix B

Responsible Staff: Project CESCL

### **2.1.7 Element 7: Protect Drain Inlets**

All storm drain inlets and culverts made operable during construction shall be protected to prevent unfiltered or untreated water from entering the drainage conveyance system. However, the first priority is to keep all access roads clean of sediment and keep street wash water separate from entering storm drains until treatment can be provided. Storm Drain Inlet Protection will be implemented for all drainage inlets and culverts that could potentially be impacted by sediment-laden runoff on and near the project site. Inlets will be inspected weekly at a minimum and daily during storm events. All TESC measures will be implemented at the beginning of the project before any clearing or grading takes place.

The specific drain inlet protection BMP to be used on this project is:

- Storm drain Inlet Protection (BMP C220)

Installation Schedules: Beginning at start of clearing to final stabilization.

Inspection and Maintenance plan: Per BMP Recommendations, See Appendix B

Responsible Staff: Project CESCL

### 2.1.8 Element 8: Stabilize Channels and Outlets

Where site runoff is to be conveyed in onsite swales and channels, efforts will be taken to prevent erosion. The project site is located west of the Cascade Mountains crest. As such, all temporary onsite conveyance swales shall be designed, constructed, and stabilized to prevent erosion from the expected peak 10-minute velocity flow rate from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate indicated by an approved continuous runoff simulation model, increased by a factor of 1.6, may be used. Stabilization, including armoring material, adequate to prevent erosion of outlets, slopes, and downstream reaches shall be provided at the outlets of all conveyance systems.

Provide stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches, will be installed at the outlets of all conveyance systems.

The specific channel and outlet stabilization BMPs to be used on this project include:

- Channel Lining (BMP C202)
- Nets and Blankets (BMP C122)
- Check Dams (BMP C207)
- Outlet Protection (BMP C209)
- Materials on Hand (BMP C150)

Installation Schedules: Beginning at start of clearing to final stabilization.

Inspection and Maintenance plan: Per BMP Recommendations, See Appendix B

Responsible Staff: Project CESCL

Alternate BMPs for Elements 1-8 are included in Appendix B as a quick reference tool for the onsite inspector in the event the BMP(s) listed above are deemed ineffective or inappropriate during construction to satisfy the requirements set forth in RCW 90.48. To avoid potential erosion and sediment control issues that may cause a violation(s) of RCW 90.48, the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of one or more of the alternative BMPs listed in Appendix B after the first sign that existing BMPs are ineffective or failing.



## 2.1.9 Element 9: Control Pollutants

The following pollutants are anticipated to be present on-site:

**Table 2 - Pollutants**

<b>Pollutant (List pollutants and source, if applicable)</b>
Turbidity – from exposed earth
pH – Concrete byproduct
Fuel/Oil – from construction equipment
Petroleum – from contaminated soil

All pollutants, including waste materials and demolition debris, that occur onsite shall be handled and disposed of in a manner that does not cause contamination of stormwater. Good housekeeping and preventative measures will be taken to ensure that the site will be kept clean, well-organized, and free of debris. If required, BMPs to be implemented to control specific sources of pollutants are discussed below.

### **Chemical Storage:**

- Any chemicals stored in the construction areas will conform to the appropriate source control BMPs listed in Volume IV of the Ecology stormwater manual. In Western Washington, all chemicals shall have cover, containment, and protection provided onsite per Material Delivery, Storage and Containment measures (BMP C153).
- Application of agricultural chemicals, including fertilizers and pesticides, shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Manufacturers' recommendations for application procedures and rates shall be followed.
- Structural Source Control BMPs will be implemented during and after construction. Concrete secondary containment structures will be engineered and constructed for placement of permanent above ground storage tanks (ASTs) in accordance with BMP S428. The ASTs will be used for bulk storage of petroleum products including asphalt cement, emulsified asphalt and diesel fuel. Permanent containment structures will be designed to contain 110% of the volume contained in the largest tank.

### **Raw Material Storage:**

- Stockpiles of aggregate products will be stored under cover to minimize turbidity in stormwater runoff (BMP S429).

**Excavation and tunneling spoils dewatering waste:**

- Dewatering BMPs and BMPs specific to the excavation and tunneling (including handling of contaminated soils) are discussed under Element 10.

**Demolition:**

- Dust released from demolished sidewalks, buildings, or structures will be controlled using Dust Control measures (BMP C140).
- Storm drain inlets vulnerable to stormwater discharge carrying dust, soil, or debris will be protected using Storm Drain Inlet Protection (BMP C220 as described above for Element 7).
- Process water and slurry resulting from sawcutting and surfacing operations will be prevented from entering the waters of the State by implementing Sawcutting and Surfacing Pollution Prevention measures (BMP C152).

**Concrete and grout:**

- Process water and slurry resulting from concrete work will be prevented from entering the waters of the State by implementing Concrete Handling measures (BMP C151) and specifying a designated Concrete Washout Area (BMP C154).

**Sanitary wastewater:**

- Portable sanitation facilities will be firmly secured, regularly maintained, and emptied when necessary.
- Wheel wash or tire bath wastewater shall be discharged to a separate onsite treatment system as part of Wheel Wash implementation (BMP C106).

**Solid Waste:**

- Solid waste will be stored in secure, clearly marked containers.

**Other:**

- Other BMPs will be administered as necessary to address any additional pollutant sources on-site.

Will maintenance, fueling, and/or repair of heavy equipment and vehicles occur on-site?

☒ Yes ☐ No

Vehicles, construction equipment, and/or petroleum product storage/dispensing:

- All vehicles, equipment, and petroleum product storage/dispensing areas will be inspected regularly to detect any leaks or spills, and to identify maintenance needs to prevent leaks or spills.
- On-site fueling tanks and petroleum product storage containers shall include secondary containment.
- Spill prevention measures, such as drip pans, will be used when conducting maintenance and repair of vehicles or equipment.
- In order to perform emergency repairs on-site, temporary plastic will be placed beneath and, if raining, over the vehicle.
- Contaminated surfaces shall be cleaned immediately following any discharge or spill incident.

Will wheel wash or tire bath system BMPs be used during construction?

☒ Yes ☐ No

Discharge wheel wash or tire bath wastewater to a separate onsite treatment system that prevents discharge to surface water. Do not discharge untreated wastewater to the adjacent wetlands.

The specific BMPs to be implemented on this project to control specific sources of pollutants (spill/source control) include:

- Wheel Wash (BMP C106)
- Concrete Handling (BMP C151)
- Sawcutting and Surfacing Pollution Prevention (BMP C152)
- Material Delivery, Storage and Containment (BMP C153)
- Concrete Washout Area (BMP C154)
- Dust Control measures (BMP C140).
- Storm Drain Inlet Protection (BMP C220)
- High pH Neutralization Using CO<sub>2</sub> (BMP C252)
- pH Control for High pH Water (BMP C253)

Installation Schedules: Beginning at start of clearing to final stabilization.

Inspection and Maintenance plan: Per BMP Recommendations, See Appendix B

Responsible Staff: Project CESCL

Will pH-modifying sources be present on-site?

☒ Yes ☐ No

**Table 3 - pH-Modifying Sources**

<input type="checkbox"/>	None
<input type="checkbox"/>	Bulk cement
<input type="checkbox"/>	Cement kiln dust
<input type="checkbox"/>	Fly ash
<input type="checkbox"/>	Other cementitious materials
<input checked="" type="checkbox"/>	New concrete washing or curing waters
<input type="checkbox"/>	Waste streams generated from concrete grinding and sawing
<input checked="" type="checkbox"/>	Exposed aggregate processes
<input checked="" type="checkbox"/>	Dewatering concrete vaults
<input checked="" type="checkbox"/>	Concrete pumping and mixer washout waters
<input checked="" type="checkbox"/>	Recycled concrete
<input checked="" type="checkbox"/>	Recycled concrete stockpiles
<input type="checkbox"/>	Other (i.e., calcium lignosulfate)

Adjust pH of stormwater if outside the range of 6.5 to 8.5 su. Obtain written approval from Ecology before using chemical treatment with exception of CO<sub>2</sub> or dry ice to modify pH.

Specific BMPs that will be employed to control pH:

- High pH Neutralization Using CO<sub>2</sub> (BMP C252)
- pH Control for High pH Water (BMP C253)

Installation Schedules: Beginning at start of clearing to final stabilization.

Inspection and Maintenance plan: Per BMP Recommendations, See Appendix B

Responsible Staff: Project CESCL

Concrete trucks must not be washed out onto the ground, or into storm drains, open ditches, streets, or streams. Excess concrete must not be dumped on-site, except in designated concrete washout areas with appropriate BMPs installed.

### 2.1.10 Element 10: Control Dewatering

Dewatering is anticipated as part of this construction project.

All dewatering water from open cut excavation, tunneling, foundation work, trench, or underground structures shall be discharged into a controlled conveyance system prior to discharge to a sedimentation/filtration facility. Channels will be stabilized, per Element #8. Clean, non-turbid dewatering water may be discharged to temporary dispersal systems onsite in native vegetation. Highly turbid dewatering water from soils known or suspected to be contaminated, or from use of construction equipment, will require additional monitoring and treatment as required for the specific pollutants based on the receiving waters into which the discharge is occurring. Such monitoring is the responsibility of the contractor.

**Table 4 - Dewatering BMPs**

<input type="checkbox"/>	Infiltration
X <input type="checkbox"/>	Transport off-site in a vehicle (vacuum truck for legal disposal) Filtration Dispersal
<input checked="" type="checkbox"/>	Ecology-approved onsite chemical treatment or other suitable treatment technologies
<input type="checkbox"/>	Sanitary or combined sewer discharge with local sewer district approval (last resort)
<input type="checkbox"/>	Use of sedimentation bag with discharge to ditch or swale (small volumes of localized dewatering)

Specific dewatering control BMPs to be used on this project:

- Dispersion
- Vegetative Filtration (BMP C236)
- Sand Filtration
- Chitosan Enhance Sand Filtration

Installation Schedules: Beginning at start of excavation work to final stabilization.

Inspection and Maintenance plan: Per BMP Recommendations, See Appendix B

Responsible Staff: Project CESCL

### **2.1.11 Element 11: Maintain BMPs**

All temporary and permanent Erosion and Sediment Control (ESC) BMPs shall be maintained and repaired as needed to ensure continued performance of their intended function.

Maintenance and repair shall be conducted in accordance with each particular BMP specification (see *Volume II of the SWMMWW* or *Chapter 7 of the SWMMEW*).

Visual monitoring of all BMPs installed at the site will be conducted at least once every calendar week and within 24 hours of any stormwater or non-stormwater discharge from the site. If the site becomes inactive and is temporarily stabilized, the inspection frequency may be reduced to once every calendar month.

All temporary ESC BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed.

Trapped sediment shall be stabilized on-site or removed. Disturbed soil resulting from removal of either BMPs or vegetation shall be permanently stabilized.

Additionally, protection must be provided for all BMPs installed for the permanent control of stormwater from sediment and compaction. BMPs that are to remain in place following completion of construction shall be examined and restored to full operating condition. If sediment enters these BMPs during construction, the sediment shall be removed and the facility shall be returned to conditions specified in the construction documents.

Specific BMP maintenance measures to be employed on this project:

- Materials on Hand (BMP C150)
- Certified Erosion and Sediment Control Lead (BMP C160)

Installation Schedules: Beginning at start of clearing to final stabilization.

Inspection and Maintenance plan: Per BMP Recommendations, See Appendix B

Responsible Staff: Project CESCL

### 2.1.12 Element 12: Manage the Project

The project will be managed based on the following principles:

- Projects will be phased to the maximum extent practicable and seasonal work limitations will be taken into account.
- Inspection and monitoring:
  - Inspection, maintenance and repair of all BMPs will occur as needed to ensure performance of their intended function.
  - Site inspections and monitoring will be conducted in accordance with Special Condition S4 of the CSWGP. Sampling locations are indicated on the Site Map. Sampling station(s) are located in accordance with applicable requirements of the CSWGP.
- Maintain an updated SWPPP.
  - The SWPPP will be updated, maintained, and implemented as necessary to comply with Special Conditions S3, S4, and S9 of the CSWGP.

As site work progresses the SWPPP will be modified routinely to reflect changing site conditions. The SWPPP will be reviewed monthly to ensure the content is current.

**Table 5 - Management**

<input checked="" type="checkbox"/>	Design the project to fit the existing topography, soils, and drainage patterns
<input checked="" type="checkbox"/>	Emphasize erosion control rather than sediment control
<input checked="" type="checkbox"/>	Minimize the extent and duration of the area exposed
<input checked="" type="checkbox"/>	Keep runoff velocities low
<input checked="" type="checkbox"/>	Retain sediment on-site
<input checked="" type="checkbox"/>	Thoroughly monitor site and maintain all ESC measures
<input checked="" type="checkbox"/>	Schedule major earthwork during the dry season
<input type="checkbox"/>	Other (please describe)

Specific project management BMPs to be used on the project:

- Materials on Hand (BMP C150)
- Certified Erosion and Sediment Control Lead (BMP C160)
- Scheduling (BMP C162)

Installation Schedules: Beginning at start of clearing to final stabilization.

Inspection and Maintenance plan: Per BMP Recommendations, See Appendix B

Responsible Staff: Project CESCL

### 2.1.13 Element 13: Protect Low Impact Development (LID) BMPs

Proposed Low Impact Development BMPs (StormTech Chamber infiltration gallery) shall be protected from sedimentation through installation and maintenance of erosion and sediment control BMPs. All LID BMPs shall be restored to their fully functioning condition if they accumulate sediment during the construction process. The restoration includes the removal of sediment and any sediment-laden soils, and replacing with soils meeting the design specification.

**To prevent compaction and to retain the infiltration rate of soils beneath the StormTech Chamber infiltration gallery, all heavy equipment and foot traffic shall be kept away and off areas that have been excavated to final grade.**

Specific LID protection BMPs to be used on this project:

- Protect infiltrative soils
- High Visibility Fence (BMP C103)

Installation Schedules: Beginning at start of clearing to final stabilization.

Inspection and Maintenance plan: Per BMP Recommendations, See Appendix B

Responsible Staff: Project CESCL



### **3 Pollution Prevention Team**

#### **3.1 Roles and Responsibilities**

The pollution prevention team consists of personnel responsible for implementation of the SWPPP, including the following:

- Certified Erosion and Sediment Control Lead (CESCL) – primary contractor contact, responsible for site inspections (BMPs, visual monitoring, sampling, etc.); to be called upon in case of failure of any ESC measures.
- Resident Engineer – For projects with engineered structures only (sediment ponds/traps, sand filters, etc.): site representative for the owner that is the project's supervising engineer responsible for inspections and issuing instructions and drawings to the contractor's site supervisor or representative.
- Emergency Ecology Contact – individual to be contacted at Ecology in case of emergency.
- Emergency Owner Contact – individual that is the site owner or representative of the site owner to be contacted in the case of an emergency.
- Non-Emergency Contact – individual that is the site owner or representative of the site owner than can be contacted if required.
- Monitoring Personnel – personnel responsible for conducting water quality monitoring; for most sites, this person is also the Certified Erosion and Sediment Control Lead.

### 3.2 Team Members

Names and contact information for those identified as members of the pollution prevention team are provided in the following table.

**Table 6 - Team Information**

<b>Title</b>	<b>Name(s)</b>	<b>Phone Number</b>
<b>Certified Erosion and Sediment Control Lead (CESCL)</b>	TBD	
<b>Resident Engineer</b>	Richard A Tomkins, PE Triad, a Division of David Evans and Associates, Inc.	(425) 415-2000
<b>Emergency Ecology Contact</b>	RaChelle Stane Washington DOE Rachelle.stane@ecy.wa.gov	(360) 407-6556
<b>Emergency Permittee/ Owner Contact</b>	Bill Dempsey Lakeside Industries, Inc.	(425) 864-0844
<b>Non-Emergency Owner Contact</b>	Karen Deal Lakeside Industries, Inc.	(425) 313-2660
<b>Monitoring Personnel</b>	Amanda Neice Lakeside Industries, Inc.	(425) 313-2630
<b>Ecology Regional Office</b>	Josh Klimek Northwest Regional Office	(360) 407-7451

## 4 Monitoring and Sampling Requirements

Monitoring includes visual inspection, sampling for water quality parameters of concern, and documentation of the inspection and sampling findings in a site log book. A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements
- Site inspections
- Stormwater sampling data

See Appendix C for Site Log Book Form to be used to record monitoring and sampling data.

The site log book must be maintained on-site within reasonable access to the site and be made available upon request to Ecology or the local jurisdiction.

### 4.1 Site Inspection

Site inspections will be conducted at least once every calendar week and within 24 hours following any discharge from the site. For sites that are temporarily stabilized and inactive, the required frequency is reduced to once per calendar month.

The discharge point(s) are indicated on the Site Map (see Appendix A) and in accordance with the applicable requirements of the CSWGP.

Monitoring shall occur at the entrance to the existing 30" concrete culvert crossing under SR169 situated near the northwest corner of the project site.

## 4.2 Stormwater Quality Sampling

### 4.2.1 Turbidity Sampling

Requirements include calibrated turbidity meter or transparency tube to sample site discharges for compliance with the CSWGP. Sampling will be conducted at all discharge points at least once per calendar week.

Method for sampling turbidity:

**Table 7 - Turbidity Sampling Method**

<input checked="" type="checkbox"/>	Turbidity Meter / Turbidimeter (required for disturbances 5 acres or greater in size)
<input type="checkbox"/>	Transparency Tube (option for disturbances less than 1 acre and up to 5 acres in size)

The benchmark for turbidity value is 25 nephelometric turbidity units (NTU) and a transparency less than 33 centimeters.

If the discharge's turbidity is 26 to 249 NTU or the transparency is less than 33 cm but equal to or greater than 6 cm, the following steps will be conducted:

1. Review the SWPPP for compliance with Special Condition S9. Make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.
2. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible. Address the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.
3. Document BMP implementation and maintenance in the site log book.

If the turbidity exceeds 250 NTU or the transparency is 6 cm or less at any time, the following steps will be conducted:

1. Telephone or submit an electronic report to the applicable Ecology Region's Environmental Report Tracking System (ERTS) within 24 hours.  
<https://www.ecology.wa.gov/About-us/Get-involved/Report-an-environmental-issue>
  - **Northwest Region** (King, Kitsap, Island, San Juan, Skagit, Snohomish, Whatcom): (425) 649-7000
2. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible. Address the problems within 10 days

of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period

3. Document BMP implementation and maintenance in the site log book.
4. Continue to sample discharges daily until one of the following is true:
  - Turbidity is 25 NTU (or lower).
  - Transparency is 33 cm (or greater).
  - Compliance with the water quality limit for turbidity is achieved.
    - 1 - 5 NTU over background turbidity, if background is less than 50 NTU
    - 1% - 10% over background turbidity, if background is 50 NTU or greater
  - The discharge stops or is eliminated.

### 4.2.2 pH Sampling

pH monitoring is required for “Significant concrete work” (i.e., greater than 1,000 cubic yards poured concrete over the life of the project). The use of recycled concrete or engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD] or fly ash) also requires pH monitoring.

For significant concrete work, pH sampling will start the first day concrete is poured and continue until it is cured, typically three (3) weeks after the last pour.

For engineered soils and recycled concrete, pH sampling begins when engineered soils or recycled concrete are first exposed to precipitation and continues until the area is fully stabilized.

If the measured pH is 8.5 or greater, the following measures will be taken:

1. Prevent high pH water from entering storm sewer systems or surface water.
2. Adjust or neutralize the high pH water to the range of 6.5 to 8.5 su using appropriate technology such as carbon dioxide (CO<sub>2</sub>) sparging (liquid or dry ice).
3. Written approval will be obtained from Ecology prior to the use of chemical treatment other than CO<sub>2</sub> sparging or dry ice.

Method for sampling pH:

**Table 8 - pH Sampling Method**

<input type="checkbox"/>	pH meter
<input checked="" type="checkbox"/>	pH test kit
<input type="checkbox"/>	Wide range pH indicator paper

## 5 Discharges to 303(d) or Total Maximum Daily Load (TMDL) Waterbodies

Is the receiving water 303(d) (Category 5) listed for turbidity, fine sediment, phosphorus, or pH?

☐ Yes ☒ No

List the impairment(s): N/A

Is the receiving water listed for Total Maximum Daily Load (TMDL)?

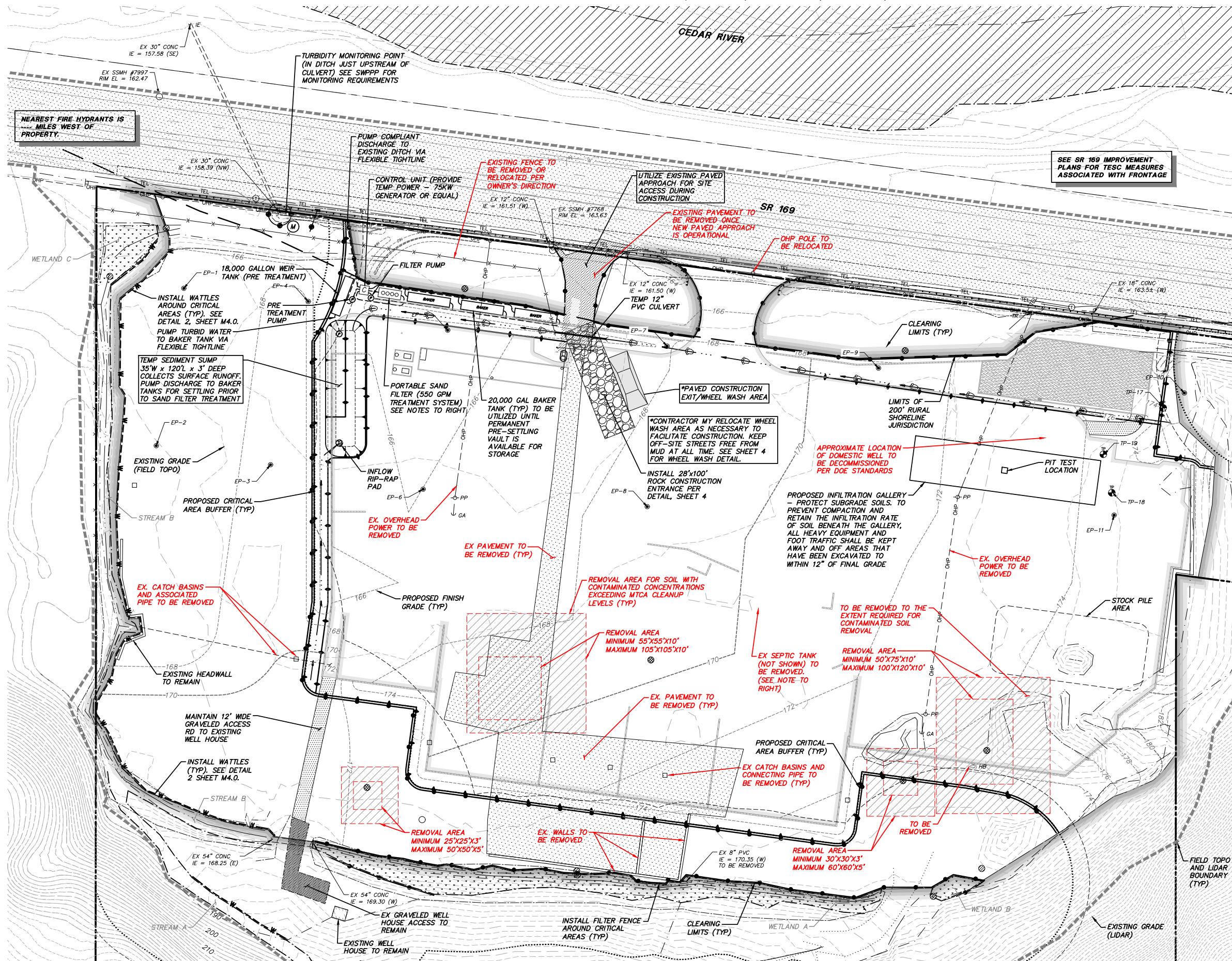
☐ Yes ☒ No

List the impairment(s): N/A

Discharges to TMDL receiving waterbodies will meet in-stream water quality criteria at the point of discharge.

## **APPENDIX A – Site Plans**





ORANGE CONSTRUCTION FENCING SHALL BE PLACED ALONG PROPOSED BUFFERLINE TO DISCOURAGE INTRUSION/DISTURBANCE FOLLOWING MITIGATION. TEMPORARY FENCING SHALL REMAIN UNTIL ALL CONSTRUCTION ACTIVITY IS COMPLETED.

SEE SEPARATE BUFFER MITIGATION PLANS  
PREPARED BY THE WATERSHED COMPANY  
FOR APPROVED WORK WITHIN THE BUFFER

SEE SHEET 3 FOR CONSTRUCTION  
SEQUENCE FOR EROSION AND SEDIMENT  
CONTROL NOTES

RED TEXT/CALLOUTS INDICATE ITEMS TO BE REMOVED, SOIL REMEDIATION REQUIREMENTS

CONTRACTOR MAY RELOCATE TEMPORARY  
SWALES, SUMPS, AND STOCK PILE AREAS AS  
NECESSARY TO FACILITATE CONSTRUCTION

CAUTION  
LOCATION OF EXISTING UTILITIES SHOWN IS APPROXIMATE AND MAY NOT BE  
ACCURATE OR ALL INCLUSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD  
VERIFY LOCATION OF UTILITIES PRIOR TO PROCEEDING WITH CONSTRUCTION. YOU  
MUST CALL 1-800-424-5555 NOT LESS THAN 2 FULL BUSINESS DAYS BEFORE  
BEGINNING EXCAVATION WHERE ANY UNDERGROUND UTILITIES MAY BE LOCATED.  
FAILURE TO DO SO COULD MEAN BEARING SUBSTANTIAL REPAIR COSTS.

LAKESIDE INDUSTRIES WILL PERFORM EXCAVATION OF PETROLEUM CONTAMINATED SOIL UNDER THE DIRECT SUPERVISION OF FARALLON CONSULTING. FARALLON WILL PREPARE AN ENVIRONMENTAL MEDIA MANAGEMENT PLAN (EMMP)/CONSTRUCTION MANAGEMENT PLAN (CMP) WHICH WILL INCLUDE SOIL SEGREGATION AND HANDLING TO PREVENT SPREAD OF CONTAMINATION.

**LIDAR CONTOURS FOR  
CONTEXT ONLY.**

KING COUNTY DDES APPROVAL	
Review Engineer	Date
Senior Engineer	Date
Wally Archuketa, P.E. DEVELOPMENT ENGINEER	Date

Plot Date: 9/26/2018 8:15 AM  
 Save Date: 9/25/2018 4:57 PM  
 By: Dave Dapelo  
 Bv: Tw File: \\WDVFS1\PROJECT\UKSD00000002\0400CAD\EC\SHEETS\Final\Site Engineering Plans\TP-F-I-KSD00002-RU.dwg



Plo Date: 9/26/2018 8:15 AM By: Dave Dugado  
Save Date: 9/26/2018 4:57 PM By: TW  
File: \\WDVFS1\PROJECT\LLKSD000000\02\0400\CAD\EC'S\H&E\TS\Final\Site Engineering Plans\TP-F-LKSD00002-RU.dwg

GENERAL NOTES

1. ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH PERMIT CONDITIONS, THE KING COUNTY CODE (KCC), THE KING COUNTY ROAD DESIGN AND CONSTRUCTION STANDARDS (KCRDCS), WASHINGTON STATE DOT (WSDOT) STANDARD SPECIFICATIONS AND THE CONDITIONS OF PRELIMINARY APPROVAL. IT SHALL BE THE SOLE RESPONSIBILITY OF THE APPLICANT AND THE PROFESSIONAL CIVIL ENGINEER TO CORRECT ANY ERROR, OMISSION, OR VARIATION FROM THE ABOVE REQUIREMENTS FOUND IN THESE PLANS. ALL CORRECTIONS SHALL BE AT NO ADDITIONAL COST OR LIABILITY TO KING COUNTY.
2. THE DESIGN ELEMENTS WITHIN THESE PLANS HAVE BEEN REVIEWED ACCORDING TO THE KING COUNTY DEPARTMENT OF PERMITTING AND ENVIRONMENTAL REVIEW (DPER) ENGINEERING REVIEW CHECKLIST. SOME ELEMENTS MAY HAVE BEEN OVERLOOKED OR MISSED BY THE DPER PLAN REVIEWER. ANY VARIANCE FROM ADOPTED STANDARDS IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY KING COUNTY PRIOR TO CONSTRUCTION.
3. APPROVAL OF THIS ROAD, GRADING, PARKING AND DRAINAGE PLAN DOES NOT CONSTITUTE AN APPROVAL OF ANY OTHER CONSTRUCTION (E.G. DOMESTIC WATER CONVEYANCE, SEWER CONVEYANCE, GAS, ELECTRICAL, ETC.).
4. BEFORE ANY CONSTRUCTION OR DEVELOPMENT ACTIVITY, A PRECONSTRUCTION MEETING MUST BE HELD BETWEEN THE DPER'S DEVELOPMENT INSPECTOR, THE APPLICANT, AND THE APPLICANT'S CONSTRUCTION REPRESENTATIVE.
5. A COPY OF THESE APPROVED PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
6. GRADING ACTIVITIES (SITE ALTERATION) ARE LIMITED TO THE HOURS OF 7 A.M. TO 7 P.M. MONDAY THROUGH SATURDAY AND 10 A.M. TO 5 P.M. ON SUNDAY, UNLESS OTHERWISE APPROVED WITH A WRITTEN DECISION BY THE REVIEWING AGENCY.
7. IT SHALL BE THE APPLICANT'S/CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL CONSTRUCTION EASEMENTS NECESSARY BEFORE INITIATING OFF-SITE WORK. EASEMENTS REQUIRE REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
8. FRANCHISED UTILITIES OR OTHER INSTALLATIONS THAT ARE NOT SHOWN ON THESE APPROVED PLANS SHALL NOT BE CONSTRUCTED UNLESS AN APPROVED SET OF PLANS THAT MEET ALL REQUIREMENTS OF KCRDCS CHAPTER 8 ARE SUBMITTED TO THE DPER'S DEVELOPMENT INSPECTOR THREE DAYS PRIOR TO CONSTRUCTION.
9. DATUM SHALL BE NAVD88 UNLESS OTHERWISE APPROVED BY DPER.
10. DEWATERING SYSTEM (UNDERDRAIN) CONSTRUCTION SHALL BE WITHIN A RIGHT-OF-WAY OR APPROPRIATE DRAINAGE EASEMENT, BUT NOT UNDERNEATH THE ROADWAY SECTION. ALL UNDERDRAIN SYSTEMS MUST BE CONSTRUCTED IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATIONS.
11. ALL UTILITY TRENCHES AND ROADWAY SUBGRADE SHALL BE BACKFILLED AND COMPACTED TO 95 PERCENT MAXIMUM DENSITY PER WSDOT STANDARD SPECIFICATIONS 2-03.3(14)D, METHOD C.
12. OPEN CUTTING OF EXISTING ROADWAYS FOR NON-FRANCHISED UTILITY OR STORM WORK IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY DPER AND NOTED ON THESE APPROVED PLANS. ANY OPEN CUT SHALL BE RESTORED IN ACCORDANCE WITH KCRDCS.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR. ANY WORK WITHIN THE TRAVELED RIGHT-OF-WAY THAT MAY INTERRUPT NORMAL TRAFFIC FLOW SHALL REQUIRE AT LEAST ONE FLAGGER FOR EACH LANE OF TRAFFIC AFFECTED. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SHALL APPLY. WORK IN RIGHT-OF-WAY IS NOT AUTHORIZED UNTIL A TRAFFIC CONTROL PLAN IS APPROVED BY KING COUNTY.

EROSION AND SEDIMENT CONTROL NOTES

1. APPROVAL OF THIS EROSION AND SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).
2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/ESC SUPERVISOR UNTIL ALL CONSTRUCTION IS APPROVED.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED BY SURVEY TAPE OR FENCING, IF REQUIRED, PRIOR TO CONSTRUCTION (KING COUNTY SWDM APPENDIX D). DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE CLEARING LIMITS SHALL BE MAINTAINED BY THE APPLICANT/ESC SUPERVISOR FOR THE DURATION OF CONSTRUCTION.
4. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES, SUCH AS CONSTRUCTED WHEEL WASH SYSTEMS OR WASH PADS, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN AND TRACK OUT TO ROAD RIGHT OF WAY DOES NOT OCCUR FOR THE DURATION OF THE PROJECT.
5. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, FLOW CONTROL BMP LOCATIONS (EXISTING AND PROPOSED), AND ADJACENT PROPERTIES IS MINIMIZED.
6. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G. ADDITIONAL COVER MEASURES, ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES AND SILT FENCES, PERIMETER PROTECTION ETC.).
7. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/ESC SUPERVISOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE ESC FACILITIES.
8. ANY AREAS OF EXPOSED SOILS, INCLUDING ROADWAY EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR TWO DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC COVER METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).
9. ANY AREA NEEDING ESC MEASURES, NOT REQUIRING IMMEDIATE ATTENTION, SHALL BE ADDRESSED WITHIN SEVEN (7) DAYS.
10. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH (MORE FREQUENTLY AS REQUIRED BY THE DPER SITE INSPECTOR) OR WITHIN 24 HOURS FOLLOWING A STORM EVENT.
11. AT NO TIME SHALL MORE THAN ONE (1) FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
12. ANY PERMANENT RETENTION/DETENTION FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY. IF THE PERMANENT FACILITY IS TO FUNCTION ULTIMATELY AS AN INFILTRATION SYSTEM, THE TEMPORARY FACILITY MUST BE ROUGH GRADED SO THAT THE BOTTOM AND SIDES ARE AT LEAST THREE FEET ABOVE THE FINAL GRADE OF THE PERMANENT FACILITY. FLOW CONTROL BMP FACILITY AREAS (EXISTING OR PROPOSED) SHALL NOT BE USED AS TEMPORARY FACILITIES AND SHALL BE PROTECTED FROM SEDIMENTATION AND INTRUSION.
13. COVER MEASURES WILL BE APPLIED IN CONFORMANCE WITH APPENDIX D OF THE KING COUNTY SURFACE WATER DESIGN MANUAL.
14. PRIOR TO THE BEGINNING OF THE WET SEASON (OCT. 1), ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH ONES CAN BE SEEDED IN PREPARATION FOR THE WINTER RAINS. DISTURBED AREAS SHALL BE SEEDED WITHIN ONE WEEK OF THE BEGINNING OF THE WET SEASON. A SKETCH MAP OF THOSE AREAS TO BE SEEDED AND THOSE AREAS TO REMAIN UNCOVERED SHALL BE SUBMITTED TO THE DPER INSPECTOR FOR REVIEW.

PTN OF THE EAST 1/2 OF THE NE 1/4, SEC. 16, TWP. 24N., RGE. 6E., W.M.

DRAINAGE NOTES

1. PROOF OF LIABILITY INSURANCE SHALL BE SUBMITTED TO DPER PRIOR TO THE CONSTRUCTION OF THE DRAINAGE FACILITIES, PREFERABLY AT THE PRECONSTRUCTION MEETING.
2. ALL PIPE AND APPURTENANCES SHALL BE LAID ON A PROPERLY PREPARED FOUNDATION IN ACCORDANCE WITH WSDOT SPECIFICATIONS. THIS SHALL INCLUDE LEVELING AND COMPACTING THE TRENCH BOTTOM, THE TOP OF THE FOUNDATION MATERIAL, AND ANY REQUIRED PIPE BEDDING, TO A UNIFORM GRADE SO THAT THE ENTIRE PIPE IS SUPPORTED BY A UNIFORMLY DENSE UNYIELDING BASE.
3. STEEL PIPE SHALL BE ALUMINIZED, OR GALVANIZED WITH ASPHALT TREATMENT #1 OR BETTER INSIDE AND OUTSIDE.
4. ALL DRAINAGE STRUCTURES, SUCH AS CATCH BASINS AND MANHOLES, NOT LOCATED WITHIN A TRAVELED ROADWAY OR SIDEWALK, SHALL HAVE SOLID LOCKING LIDS. ALL DRAINAGE STRUCTURES ASSOCIATED WITH A PERMANENT RETENTION/DETENTION FACILITY SHALL HAVE SOLID LOCKING LIDS.
5. ALL CATCH BASIN GRATES SHALL CONFORM TO KCRDCS, WHICH INCLUDES THE STAMPING "OUTFALL TO STREAM, DUMP NO POLLUTANTS" AND "PROPERTY OF KING COUNTY", EXCEPT THAT PRIVATE DRAINAGE SYSTEMS SHALL NOT HAVE THE WORDS "PROPERTY OF KING COUNTY".
6. ALL DRIVEWAY CULVERTS LOCATED WITHIN KING COUNTY RIGHT-OF-WAY SHALL BE OF SUFFICIENT LENGTH TO PROVIDE A MINIMUM 3:1 SLOPE FROM THE EDGE OF THE DRIVEWAY TO THE BOTTOM OF THE DITCH. CULVERTS SHALL HAVE BEVELED END SECTIONS TO MATCH THE SIDE SLOPE PER KCRDCS.
7. ROCK FOR EROSION PROTECTION OF ROADWAY DITCHES, WHERE REQUIRED, MUST BE OF SOUND QUARRY ROCK, PLACED TO A DEPTH OF 1 FOOT, AND MUST MEET THE FOLLOWING SPECIFICATIONS: 4"-8"/40%-70% PASSING; 2"- 4" ROCK/30%-40% PASSING; AND -2" ROCK/10%-20% PASSING. INSTALLATION SHALL BE IN ACCORDANCE WITH KCRDCS.
8. DRAINAGE OUTLETS (STUB-OUTS) SHALL BE PROVIDED FOR EACH INDIVIDUAL LOT, EXCEPT FOR THOSE LOTS APPROVED FOR INFILTRATION BY KING COUNTY. STUB-OUTS SHALL CONFORM TO THE FOLLOWING:
  - 8.A. EACH OUTLET SHALL BE SUITABLY LOCATED AT THE LOWEST ELEVATION ON THE LOT, SO AS TO SERVICE ALL FUTURE ROOF DOWNSPOUTS AND FOOTING DRAINS, DRIVEWAYS, YARD DRAINS, AND ANY OTHER SURFACE OR SUBSURFACE DRAINS NECESSARY TO RENDER THE LOTS SUITABLE FOR THEIR INTENDED USE. EACH OUTLET SHALL HAVE FREE-FLOWING, POSITIVE DRAINAGE TO AN APPROVED STORMWATER CONVEYANCE SYSTEM OR TO AN APPROVED OUTFALL LOCATION.
  - 8.B. OUTLETS ON EACH LOT SHALL BE LOCATED WITH A FIVE-FOOT-HIGH, 2" X 4" STAKE MARKED "STORM" OR "DRAIN". THE STUB-OUT SHALL EXTEND ABOVE SURFACE LEVEL, BE VISIBLE, AND BE SECURED TO THE STAKE.
  - 8.C. PIPE MATERIAL SHALL CONFORM TO UNDERDRAIN SPECIFICATIONS DESCRIBED IN KCRDCS AND, IF NON-METALLIC, THE PIPE SHALL CONTAIN WIRE OR OTHER ACCEPTABLE DETECTION.
  - 8.D. DRAINAGE EASEMENTS ARE REQUIRED FOR DRAINAGE SYSTEMS DESIGNED TO CONVEY FLOWS THROUGH INDIVIDUAL LOTS.
  - 8.E. THE APPLICANT/CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATIONS OF ALL STUB-OUT CONVEYANCE LINES WITH RESPECT TO THE UTILITIES (E.G. POWER, GAS, TELEPHONE, TELEVISION).
  - 8.F. ALL INDIVIDUAL STUB-OUTS SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE LOT HOME OWNER.
9. ALL DISTURBED PVIOUS AREAS (COMPACTED, GRADED, LANDSCAPED, ETC.) OF THE DEVELOPMENT SITE MUST DEMONSTRATE ONE OF THE FOLLOWING, IN ACCORDANCE WITH KCC AND THE LOW IMPACT DEVELOPMENT (LID) COMPONENTS OF THE APPROVED SITE PLAN: THE EXISTING DUFF LAYER SHALL BE STAGED AND REDISTRIBUTED TO MAINTAIN THE MOISTURE CAPACITY OF THE SOIL, OR; AMENDED SOIL SHALL BE ADDED TO MAINTAIN THE MOISTURE CAPACITY.
10. SEASONAL CLEARING IS LIMITED BETWEEN OCTOBER 1 AND APRIL 30 INCLUSIVE, UNLESS OTHERWISE APPROVED WITH A WRITTEN DECISION BY THE REVIEWING AGENCY.
11. IMPROVEMENTS AND/OR BUILDINGS SHALL NOT BE INSTALLED UNTIL DRAINAGE FACILITIES ARE "IN OPERATION", (KCC 9.04).

CONSTRUCTION STORMWATER DISCHARGE REQUIREMENTS

1. TURBIDITY IN RUNOFF LEAVING THE CONSTRUCTION AREA SHALL NOT EXCEED 25 NTU
2. RUNOFF LEAVING THE CONSTRUCTION AREA THAT REACHES RECEIVING WATERS SHALL NOT EXCEED 5 NTU ABOVE BACKGROUND AS A RESULT OF PROJECT RUNOFF.

TURBIDITY MONITORING REQUIREMENTS

1. REQUENCY OF MONITORING SHALL BE AS FOLLOWS:
  - AFTER EACH SIGNIFICANT STORM, DEFINED AS AN EVENT PRODUCING GREATER THAN 0.5" OF RAINFALL IN A 24-HOUR PERIOD, OR AS OTHERWISE REQUIRED/APPROVED BY DPER.

TESC FACILITY INSPECTION REQUIREMENTS

1. FREQUENCY OF INSPECTION SHALL BE AS FOLLOWS OR AS OTHERWISE APPROVED BY KING COUNTY:
  - AFTER EACH DAY OF SITE WORK (NOT LESS THAN 3 TIMES PER WEEK)
  - AFTER EACH SIGNIFICANT STORM, DEFINED AS AN EVENT PRODUCING GREATER THAN 0.5" OF RAINFALL IN A 24-HOUR PERIOD, OR AS OTHERWISE REQUIRED/APPROVED BY KING COUNTY
2. IF DISCHARGE IS APPROACHING 25 NTU, BEGIN TO IMPLEMENT SECONDARY TREATMENT.

TESC OPERATION - SECONDARY TREATMENT

1. IF DISCHARGE IS APPROACHING 25 NTU, CHITOSAN BATCH WATER QUALITY TREATMENT SHALL BE ADDED TO THE SAND FILTER. CONTRACTOR TO SECURE CHEMICAL TREATMENT PERMIT FROM DEPARTMENT OF ECOLOGY, IN ADVANCE OF NEED.
  - IMPLEMENT CHEMICAL ENHANCED SAND FILTRATION (CEFS) SYSTEM BY CLEARWATER SERVICES, SIZED FOR 10-YR STORM RUNOFF (APPROX 300 GPM).
  - PUMP WATER FROM TEMPORARY SUMP / TANK STORAGE TO CEFS WHEN SECONDARY TREATMENT IS REQUIRED. PUMP WATER FROM PRE-SETTLING VAULT WHEN AVAILABLE FOR TEMPORARY STORAGE.
2. IF DISCHARGE CANNOT BE MAINTAINED BELOW 25 NTU WITH THE ADDED CHITOSAN TREATMENT, THEN DISCHARGE FROM THE SITE SHALL BE SUSPENDED UNTIL TERTIARY TREATMENT MEASURES ARE ESTABLISHED AND IMPLEMENTED.

STRUCTURAL NOTES

1. THESE PLANS ARE APPROVED FOR STANDARD ROAD AND DRAINAGE IMPROVEMENTS ONLY. PLANS FOR STRUCTURES SUCH AS BRIDGES, VAULTS, AND RETAINING WALLS REQUIRE A SEPARATE REVIEW AND APPROVAL BY DPER PRIOR TO CONSTRUCTION (KCC 16.04 16.70, 14.20).
2. ROCKERIES ARE CONSIDERED TO BE A METHOD OF BANK STABILIZATION AND EROSION CONTROL. ROCKERIES SHALL NOT BE CONSTRUCTED TO SERVE AS RETAINING WALLS. ALL ROCKERIES IN COUNTY ROAD RIGHT-OF-WAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH KCRDCS. ROCKERIES OUTSIDE OF ROAD RIGHT-OF-WAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE.
2. THE SURVEYOR SHALL FLAG ALL CLEARING AND GRADING LIMITS, WHICHEVER CONTROLS THE LIMITS OF CONSTRUCTION.
3. INSTALL THE STABILIZED CONSTRUCTION ENTRANCE, PERIMETER SILT FENCING, AND OTHER TESC MEASURES AS SHOWN ON THE APPROVED PLANS.
4. INSTALL TEMPORARY STORAGE TANKS (BAKER TANKS), SAND FILTER AND TEMPORARY SEDIMENT SUMP.
5. CONSTRUCT THE INTERCEPTOR SWALES DIRECTING DRAINAGE TO THE TEMPORARY SEDIMENT SUMP. THESE SWALES WILL NEED TO BE RECONSTRUCTED, AS NEEDED, AS SITE GRADING PROCEEDS.
6. DEMOLISH EXISTING FEATURES PER SHEET 2, PERFORM SOIL REMEDIATION.
7. CLEAR AND GRADE LOGICAL PHASES OF THE SITE. ATTEMPT RESTORATION OF CLEARED AREAS BEFORE PROCEEDING TO SUBSEQUENT PHASES.
8. EXCAVATE FOR AND INSTALL THE PRE-SETTLING VAULT, SAND FILTER VAULT, AND INFILTRATION GALLERY AND INLET AND OUTLET PIPES AS SHOWN.
9. INSTALL PROPOSED SITE WALLS AND AGGREGATE STORAGE BIN FOUNDATIONS (UNDER SEPARATE PERMIT) PER GEOTECH'S DESIGNS AND RECOMMENDATIONS.
10. GRADE PAVEMENT AND BUFFER AREA.
11. INSTALL UNDERGROUND UTILITIES.
12. PERFORM BUFFER MITIGATION WORK
13. AREAS OF EXPOSED SOILS SHALL BE STABILIZED WITH APPROVED TESC MEASURES SUCH AS SEEDING, MULCHING, PLASTIC COVERINGS, ETC., OR AS DIRECTED BY THE CESCL (CERTIFIED EROSION AND SEDIMENT CONTROL LEAD) AND/OR COUNTY INSPECTOR.
14. WHEN THE DEVELOPMENT IS COMPLETE AND ALL PAVING, BUILDINGS AND LANDSCAPING ARE IN PLACE, THE PERMANENT STORM DRAINAGE FACILITIES SHALL BE CLEANED OF ALL SEDIMENT AND CONSTRUCTION DEBRIS. THIS WATER MAY NOT BE FLUSHED DOWNSTREAM.
15. AFTER THE KING COUNTY INSPECTOR HAS APPROVED THE PERMANENT STORM DRAIN SYSTEM CONSTRUCTION, THE TEMPORARY EROSION CONTROL FACILITIES AND ALL PERIMETER FENCING SHALL BE REMOVED.
16. MINIMIZE THE TRACKING OF MUD/CONSTRUCTION DEBRIS ONTO HWY 169 BY KEEPING ON-SITE TRAFFIC AWAY FROM AREAS WITH EXPOSED SOILS.

GEOTECH NOTE: INFILTRATION TRANSFER

DURING CONSTRUCTION, THE INFILTRATION FACILITY MUST BE CONFIGURED TO PREVENT INFLOW OF TURBID, SILT-LADEN CONSTRUCTION RUNOFF. PRIOR TO BRINGING THE INFILTRATION FACILITY ON-LINE, THE FOLLOWING ELEMENTS MUST BE ACHIEVED:

1. ALL PLANNED EARTHWORK MUST BE COMPLETE.
2. SITE STABILIZATION MUST BE COMPLETE:
  - A. ALL PERMANENT GROUNDCOVER IN PLACE.
  - B. NO EXPOSED TOPSOIL.
  - C. HYDROSEDED AREAS MUST HAVE ESTABLISHED GROWTH SUFFICIENT TO FIX TOPSOIL IN PLACE.
  - D. NO VISIBLE SEDIMENT TRANSPORT BY STORMWATER DURING RAIN EVENTS.
  - E. CATCH-BASIN FILTER SOCKS SHOULD NO LONGER BE NEEDED AND SHALL BE REMOVED.
3. HARD SURFACES SUCH AS PAVING AND SIDEWALKS MUST BE CLEANED WITH NO VISIBLE SEDIMENT OR SUBSTANCES THAT COULD BE TRANSPORTED BY STORMWATER.
4. ALL STORMWATER COLLECTION SYSTEM COMPONENTS MUST BE CLEANED AND INSPECTED:
  - A. ALL CATCH BASINS, MANHOLES, AND SIMILAR STRUCTURES SHALL BE CLEANED BY RINSING AND VACUUMING TO REMOVE VISIBLE SEDIMENT. NO WATER USED IN THE CLEANING OF THE UPSTREAM SYSTEM SHALL BE DISCHARGED INTO THE INFILTRATION FACILITY.
  - B. ALL STORMWATER PIPES SHALL BE JETTED TO REMOVE VISIBLE SEDIMENT.
  - C. AFTER CLEANING, A VIDEO SURVEY SHALL BE COMPLETED OF ALL PIPES AND STRUCTURES IN THE STORMWATER COLLECTION SYSTEM. THE OWNER SHALL BE NOTIFIED PRIOR TO THE VIDEO SURVEY WORK SO THEY MAY OBSERVE THE WORK IN PROGRESS IF DESIRED. A RECORDING OF THE VIDEO SURVEY SHALL BE PROVIDED TO THE OWNER, CIVIL ENGINEER, AND AESI. THE SURVEY SHALL INCLUDE SUFFICIENT DETAIL TO CORRELATE VIDEO IMAGES WITH ON-SITE LOCATIONS.
5. AESI SHALL BE NOTIFIED THAT CONSTRUCTION IS COMPLETE, AND SHALL BE ALLOWED TO INSTALL LONG-TERM MONITORING COMPONENTS SUCH AS WATER LEVEL LOGGERS BEFORE WATER IS ROUTED TO THE INFILTRATION FACILITY.
6. THE OWNER, CIVIL ENGINEER, AND AESI MUST BE NOTIFIED THAT THE ABOVE ITEMS HAVE BEEN COMPLETED, AND MUST CONCUR THAT THE ABOVE ITEMS HAVE BEEN SATISFACTORILY COMPLETED.
7. WRITTEN AUTHORIZATION MUST BE PROVIDED FROM THE OWNER, CIVIL ENGINEER, AND AESI TO THE CONTRACTOR THAT WATER MAY BE ROUTED TO THE INFILTRATION FACILITY FOR DISPOSAL.
8. FOLLOWING THE FIRST SUBSTANTIAL RAIN EVENT AFTER THE INFILTRATION FACILITY IS BROUGHT ON-LINE, THE SYSTEM SHALL BE VISUALLY INSPECTED. THE CONTRACTOR SHALL CONTACT THE OWNER, CIVIL ENGINEER, AND AESI TO ATTEND THE INSPECTION, AND SHALL OPEN FACILITY ENCLOSURES, CATCH BASINS, MANHOLES, AND OTHER STRUCTURES AS NEEDED TO ALLOW VISUAL INSPECTION.

KING COUNTY DDES APPROVAL	
Review Engineer	Date
Senior Engineer	Date
Wally Archuketa, P.E., DEVELOPMENT ENGINEER	Date

triad

a division of David Evans and Associates, Inc.

20300 Woodinville Snohomish Rd NE  
Suite A • Woodinville, WA 98072  
p: 425.415.2000 f: 425.486.5059  
w: triadincarchuketa.net

GRADING AND TESC NOTES

LAKESIDE INDUSTRIES, INC.

MAPLE VALLEY ASPHALT FACILITY

18825 RENTON-MAPLE VALLEY SE (SR 169)

KING COUNTY.

WASHINGTON

DATE: BY: CK

REVIEWED BY: DATE: REVISION

XXXXXXXXXXXX

DESIGNED: TW

CDDP:00

PRELIMINARY

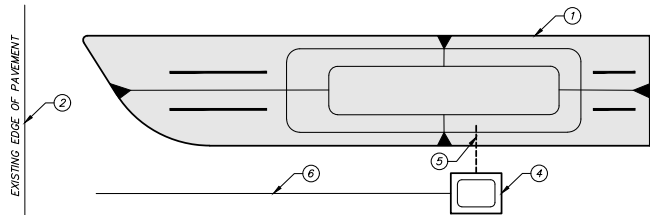
STAMP NOT VALID  
UNLESS SIGNED AND DATED

FIRST SUBMITTAL DATE: 10/2/18  
SCALE: HORIZ.: 1"=40' VERT.: N/A

PROJECT NO.  
LKSD00000002

SHEET NO.  
3

OF 18



LEGEND

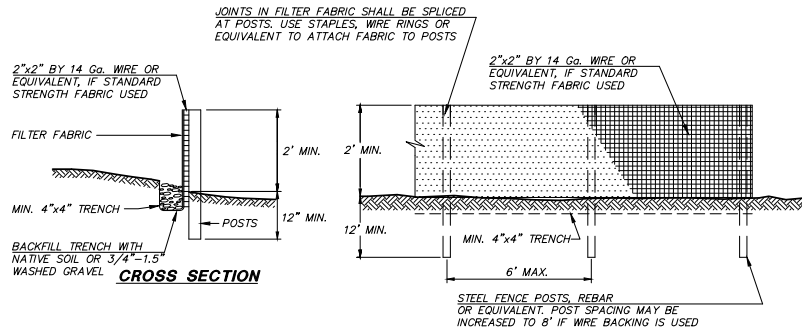
1. TEMPORARY TRUCK WASH 18' Wx50' L, 4" OF A.C. OVER 6" OF 2"-4" CRUSHED ROCK OVER 8" QUARRY SPALLS.
2. EXISTING EDGE OF PAVEMENT.
3. 8"x15' ORANGE PAINT STRIPE (TYP) TO DIRECT TRAFFIC THROUGH WASH AREA.
4. 10'x10'x3' DEEP SUMP, LINE SUMP WITH 12 MIL. SHEET PLASTIC.
5. 6" DIA. PVC DRAIN LINE, DRAIN WASH AREA INTO SUMP.
6. 6" DIA. PVC DRAIN LINE, CONNECT TO ADJACENT SWALE.

WHEEL WASH DETAIL

NOT TO SCALE

NOTES

1. FILL TRUCK WASH AND SUMP AREAS WITH CLEAN WATER USING WATER TRUCKS TO DESIGN OPERATING DEPTH, SUPPLEMENT AS NECESSARY.
2. WASH WATER TO BE DISCHARGED TO TEMP SEDIMENT SUMP.
3. CONTRACTOR MAY EMPLOY ALTERNATIVE, PROPRIETARY OR SELF CONTAINED WHEEL WASH SYSTEMS TO ENSURE MUD/DIRT IS NOT TRACKED ONTO SR 169.



FILTER FABRIC FENCE INSTALLATION

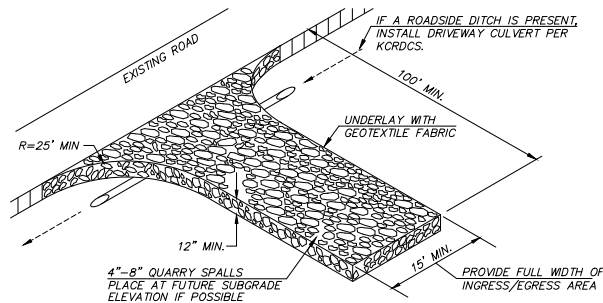
- MAXIMUM SLOPE STEEPNESS (NORMAL (PERPENDICULAR) TO FENCE LINE) 2:1.
- MAXIMUM SHEET OR OVERLAND FLOW PATH LENGTH TO THE FENCE 100 FEET.
- NO CONCENTRATED FLOWS GREATER THAN 0.5 GFS.
- FABRIC MIRAFI 100X OR EQUIVALENT
- THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6 INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST.
- POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 30 INCHES (WHERE PHYSICALLY POSSIBLE).
- A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER. THE TRENCH SHALL BE CONSTRUCTED TO FOLLOW THE CONTOUR.
- A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 4 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- THE FILTER FABRIC SHALL BE WIRED TO THE FENCE, AND 20 INCHES OF THE FABRIC SHALL EXTEND INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES. OTHER TYPES OF FABRIC MAY BE STAPLED TO THE FENCE.

MAINTENANCE STANDARDS

- ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY.
- IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT TRAP OR POND.
- IT IS IMPORTANT TO CHECK THE UPHILL SIDE OF THE FENCE FOR SIGNS OF THE FENCE CLOGGING AND ACTING AS A BARRIER TO FLOW AND THEN CAUSING CHANNELIZATION OF FLOWS PARALLEL TO THE FENCE. IF THIS OCCURS, REPLACE THE FENCE OR REMOVE THE TRAPPED SEDIMENT.
- SEDIMENT MUST BE REMOVED WHEN THE SEDIMENT IS 6 INCHES HIGH.
- IF THE FILTER FABRIC (GEOTEXTILE) HAS DETERIORATED DUE TO ULTRAVIOLET BREAKDOWN, IT SHALL BE REPLACED.
- FILTER FABRIC FENCE SHALL BE REMOVED WHEN THE AREA DRAINING TO IT IS STABILIZED WITH VEGETATION NEARING MATURITY. THE AREA DISTURBED IN THE FILTER FABRIC FENCE REMOVAL SHALL BE HAND BROADCAST SEEDED AND STABILIZED USING STRAW MULCH. EXCESS SEDIMENTS SHALL BE REMOVED WITH THE FENCE MATERIALS.

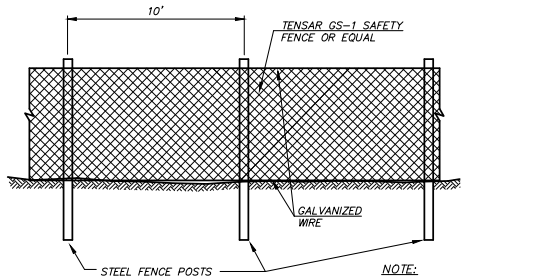
FILTER FENCE DETAIL

NOT TO SCALE



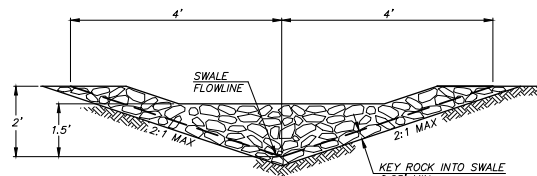
ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE



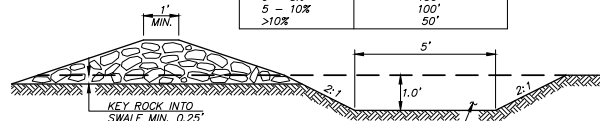
HIGH VISIBILITY CONSTRUCTION FENCE

DO NOT ATTACH TO TREES OR OTHER NATIVE VEGETATION  
NOT TO SCALE  
(TO BE USED ALONG N.G.P.A. BOUNDARY AS SHOWN ON PLANS)



SWALE CROSS SECTION @ ROCK CHECK DAM

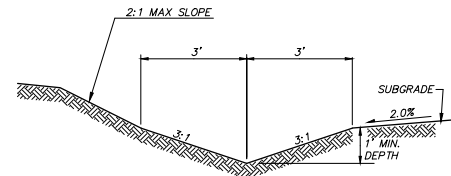
DITCH SLOPE	CHECK DAM SPACING
0 - 5%	150'
5 - 10%	100'
>10%	50'



ROCK CHECK DAM CROSS SECTION

ROCK CHECK DAM DETAILS

NOT TO SCALE



TOE OF CUT ALONG ROAD

TEMPORARY INTERCEPTOR SWALE DETAIL

NOT TO SCALE

PRELIMINARY

STAMP NOT VALID  
UNLESS SIGNED AND DATED

FIRST SUBMITTAL DATE: 10/2/18  
SCALE: HORIZ.: VERT.:

PROJECT NO.  
LKSD00000002

SHEET NO.

4  
OF 18

KING COUNTY DDES APPROVAL	
Review Engineer	Date
Senior Engineer	Date
Wally Archuketa, P.E., DEVELOPMENT ENGINEER	Date

## **APPENDIX B – BMP Detail List**

### **Construction Stormwater BMPs**

- Preserving Natural Vegetation (BMP C101)
- Buffer Zones (BMP C102)
- High Visibility Plastic or Metal Fence (BMP C103)
- Stabilized Construction Entrance (BMP C105)
- Wheel Wash (BMP C106)
- Construction Road / Parking Area Stabilization (BMP C107)
- Temporary and Permanent Seeding (BMP C120)
- Mulching (BMP C121)
- Nets and Blankets (BMP C122)
- Plastic Covering (BMP C123)
- Sodding (BMP C124)
- Topsoiling / Composting (BMP C125)
- Surface Roughening (BMP C130)
- Dust Control (BMP C140)
- Materials on Hand (BMP C150)
- Concrete Handling (BMP C151)
- Sawcutting and Surface Pollution Prevention (BMP C152)
- Certified Erosion and Control Lead (BMP C160)
- Scheduling (BMP C162)
- Grass-Lined Channels (BMP C201)
- Interceptor Dike and Swale (BMP C200)
- Channel Lining (BMP C202)
- Check Dams (BMP C207)
- Outlet Protection (BMP C209)
- Storm Drain Inlet Protection (BMP C220)
- Silt Fence (BMP C233)
- Construction Stormwater Filtration (BMP C251)
- High pH Neutralization Using CO<sub>2</sub> (BMP C252)
- pH Control for High pH Water (BMP C253)
- Sediment Sump
- Portable Water Storage Tanks (e.g. “Baker Tanks” or equivalent) for sedimentation

## **Alternate BMPs**

The following includes a list of possible alternative BMPs for the 13 elements not described in the main SWPPP text. This list can be referenced in the event a BMP for a specific element is not functioning as designed and an alternative BMP needs to be implemented.

### **Element #2 – Establish Construction Access**

- Water Bars (BMP C203)

### **Element #3 – Control Flow Rates**

- Outlet Protection (BMP C209)
- Sediment Trap (BMP C240)
- Temporary Sediment Pond (BMP C241)

### **Element #4 – Install Sediment Controls**

- Water Bars (BMP C203)
- Pipe Slope drains (BMP C204)
- Subsurface Drain (BMP C205)
- Level Spreader (BMP C206)
- Brush Barrier (BMP C231)
- Gravel Filter Berm (BMP C232)
- Vegetated Strip (BMP C234)
- Wattles (BMP C235)
- Sediment Trap (BMP C240)
- Temporary Sediment Pond (BMP C241)

### **Element #5 – Stabilize Soils**

- Polyacrylamide (PAM) for Soil Erosion Protection (BMP C126)
- Gradient Terraces (BMP C131)
- Early application of gravel base or ATB

### **Element #6 – Protect Slopes**

- Mulching (BMP C121)
- Nets and Blankets (BMP C122)
- Plastic Covering (BMP C123)
- Sodding (BMP C124)
- Gradient terrace (BMP C131)
- Grass-Lined Channels (BMP C201)

- Water Bars (BMP C203)
- Pipe Slope Drains (BMP C204)
- Subsurface Drains (BMP C205)
- Level Spreader (BMP C206)
- Triangular Silt Dike (BMP C208)
- Wattles (BMP C235)

**Element #8 – Stabilize Channels and Outlets**

- Water Bars (BMP C203)

**Element #9 – Control Pollutants**

- Construction Stormwater Chemical Treatment (BMP C250)

**Element #13 – Low Impact Development**

- Check Dams (BMP C207)
- Triangular Silt Dike (BMP C208)
- Brush Barrier (BMP C231)
- Vegetated Strip (BMP C234)
- Construction Stormwater Filtration (BMP C251)

## **APPENDIX C – Site Inspection Form**

# Construction Stormwater Site Inspection Form

Project Name \_\_\_\_\_ Permit # \_\_\_\_\_ Inspection Date \_\_\_\_\_ Time \_\_\_\_\_

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*

Print Name: \_\_\_\_\_

Approximate rainfall amount since the last inspection (in inches): \_\_\_\_\_

Approximate rainfall amount in the last 24 hours (in inches): \_\_\_\_\_

Current Weather Clear ☐ Cloudy ☐ Mist ☐ Rain ☐ Wind ☐ Fog ☐

A. Type of inspection: Weekly ☐ Post Storm Event ☐ Other ☐

## B. Phase of Active Construction (check all that apply):

Pre Construction/installation of erosion/sediment controls	<input type="checkbox"/>	Clearing/Demo/Grading	<input type="checkbox"/>	Infrastructure/storm/roads	<input type="checkbox"/>
Concrete pours	<input type="checkbox"/>	Vertical Construction/buildings	<input type="checkbox"/>	Utilities	<input type="checkbox"/>
Offsite improvements	<input type="checkbox"/>	Site temporary stabilized	<input type="checkbox"/>	Final stabilization	<input type="checkbox"/>

## C. Questions:

- |  |     |     |    |     |
|--|-----|-----|----|-----|
| 1. Were all areas of construction and discharge points inspected?  | Yes | ___ | No | ___ |
| 2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen            | Yes | ___ | No | ___ |
| 3. Was a water quality sample taken during inspection? ( <i>refer to permit conditions S4 &amp; S5</i> ) | Yes | ___ | No | ___ |
| 4. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?*                       | Yes | ___ | No | ___ |
| 5. If yes to #4 was it reported to Ecology?  | Yes | ___ | No | ___ |
| 6. Is pH sampling required? pH range required is 6.5 to 8.5.   | Yes | ___ | No | ___ |

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: \_\_\_\_\_ Date: \_\_\_\_\_

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory				
pH	Paper, kit, meter				



# Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required" details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)						
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?						
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.						
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?						
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?						
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).						
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.						
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.						
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?						

# Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?						
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?						
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?						
	Is off-site storm water managed separately from stormwater generated on the site?						
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?						
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?						
7 Drain Inlets	Storm drain inlets made operable during construction are protected.						
	Are existing storm drains within the influence of the project protected?						
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?						
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?						
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?						
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?						
	Has secondary containment been provided capable of containing 110% of the volume?						
	Were contaminated surfaces cleaned immediately after a spill incident?						
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?						

# Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.						
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.						
	Dewatering has been done to an approved source and in compliance with the SWPPP.						
	Were there any clean non turbid dewatering discharges?						
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?						
12 Manage the Project	Has the project been phased to the maximum degree practicable?						
	Has regular inspection, monitoring and maintenance been performed as required by the permit?						
	Has the SWPPP been updated, implemented and records maintained?						
13 Protect LID	Is all Bioretention and Rain Garden Facilities protected from sedimentation with appropriate BMPs?						
	Is the Bioretention and Rain Garden protected against over compaction of construction equipment and foot traffic to retain its infiltration capabilities?						
	Permeable pavements are clean and free of sediment and sediment laden-water runoff. Muddy construction equipment has not been on the base material or pavement.						
	Have soiled permeable pavements been cleaned of sediments and pass infiltration test as required by stormwater manual methodology?						
	Heavy equipment has been kept off existing soils under LID facilities to retain infiltration rate.						

**E. Check all areas that have been inspected. ✓**

All in place BMPs ☐ All disturbed soils ☐ All concrete wash out area ☐ All material storage areas ☐  
 All discharge locations ☐ All equipment storage areas ☐ All construction entrances/exits ☐

## Construction Stormwater Site Inspection Form

---

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials

*Attach additional page if needed*

**Sign the following certification:**

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) \_\_\_\_\_ (Signature) \_\_\_\_\_ Date: \_\_\_\_\_

Title/Qualification of Inspector: \_\_\_\_\_