

Construction Stormwater General Permit

Stormwater Pollution Prevention Plan (SWPPP)

for

Zackuse Creek Fish Passage and Stream Restoration Project

Prepared for:

**The Washington State Department of Ecology
Northwest Regional Office**

Permittee / Owner	Developer	Operator / Contractor
City of Sammamish	City of Sammamish	Pacific Civil & Infrastructure

City of Sammamish, Washington

Certified Erosion and Sediment Control Lead (CESCL)

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SWPPP Preparation Date

February 8, 2018

Project Construction Dates

Activity / Phase	Start Date	End Date
Culvert Replacement and Stream Restoration	June 15, 2018	October 15, 2018

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List of Acronyms and Abbreviations

Acronym / Abbreviation	Explanation
303(d)	Section of the Clean Water Act pertaining to Impaired Waterbodies
BMP(s)	Best Management Practice(s)
CESCL	Certified Erosion and Sediment Control Lead
CO₂	Carbon Dioxide
CRO	Central Regional Office of the Department of Ecology
CSWGP	Construction Stormwater General Permit
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved Oxygen
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
ERTS	Environmental Report Tracking System
ESC	Erosion and Sediment Control
GULD	General Use Level Designation
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Units
NWRO	Northwest Regional Office of the Department of Ecology
pH	Power of Hydrogen
RCW	Revised Code of Washington
SPCC	Spill Prevention, Control, and Countermeasure
su	Standard Units
SWMMEW	Stormwater Management Manual for Eastern Washington
SWMMWW	Stormwater Management Manual for Western Washington
SWPPP	Stormwater Pollution Prevention Plan
TESC	Temporary Erosion and Sediment Control
TMDL	Total Maximum Daily Load
WAC	Washington Administrative Code
WSDOT	Washington Department of Transportation
WWHM	Western Washington Hydrology Model

1 Project Information

This Stormwater Pollution Prevention Plan documents the sediment control and water quality measures that will be implemented on the Zackuse Creek Fish Passage and Stream Restoration Project to control sediment deposition in the creek, and the temporary stream bypass that will direct the stream around the project area during construction. Source control measures for controlling pollutants will be implemented when applicable during construction of the project. The 13 elements of a SWPPP (Department of Ecology) and the anticipated Best Management Practices that will be used for this project are documented in the following sections. A pre-construction meeting will be conducted to address these elements prior to initiating construction.

1.1 Existing Conditions

The existing Zackuse Creek flows into Lake Sammamish along the eastern shoreline of the lake, approximately 500 ft. south of Lewis Thompson Road in the City of Sammamish. Zackuse Creek flows down a west-facing slope in a steep-sided ravine east of the East Lake Sammamish (ELS) Parkway before reaching a forested wetland adjacent to the Parkway.

This downstream section of Zackuse Creek crosses through five culverts before reaching the outlet to Lake Sammamish. Zackuse Creek currently flows through a 30" concrete pipe culvert under East Lake Sammamish Parkway that presents a fish barrier at most flows. Zackuse then flows through a 36" concrete pipe culvert under East Lake Sammamish Trail as well as a small box culvert under East Lake Sammamish Shore Lane.

The project site is located at 205 E. Lake Sammamish Shore Lane NE, Sammamish WA 98074. Discharge from the site ultimately drains to Lake Sammamish however no 303(d) listed waterbodies are within the project site. Total acreage (including support activities such as off-site equipment staging yards, material storage areas, borrow areas) are detailed below:

Total acreage:	2.77 A.C.
Disturbed acreage:	2.1 A.C.
Existing structures:	Structures in staging area to be demolished
Landscape Topography:	1.9 A.C.
Drainage patterns:	Along the drainage flow path the topography falls at an average and generally consistent grade of 4% over approximately 460 lf.
Existing Vegetation:	1.9 A.C.
Critical Areas (wetlands, streams, high erosion risk, steep or difficult to stabilize slopes):	.39 A.C.

Table 1 includes a list of suspected and/or known contaminants associated with the construction activity.

Table 1 – Summary of Site Pollutant Constituents

Constituent (Pollutant)	Location	Depth	Concentration
Concrete saw-cut particulate	East Lake Sammamish Parkway	Surface	N.A.
Chlorinated water for water main disinfection	East Lake Sammamish Parkway	Water Main is approximately 4 feet deep and will be exposed during construction	Concentration as required for water main disinfection
Cast In Place Concrete Wing Wall Footings	East Lake Sammamish Parkway	Varies from 12 feet to 1 foot of depth	N.A.
Vehicle Fuels and Lubricants	East Lake Sammamish Parkway	Surface	N.

1.2 Proposed Construction Activities

Work on the Zackuse Creek Fish Passage and Stream Restoration Project includes clearing and grubbing, grading and excavation of approximately 400 linear feet of constructed stream channel with large woody debris stabilization and grade control structures, habitat enhancement planting preparation, demolition of existing building structures, installation of access road, preparation and implementation of storm water pollution prevention plan, installation of temporary staging area, and restoration.

Work also includes demolition and replacement of the existing 30-inch concrete pipe culvert under East Lake Sammamish Parkway (ELSP). This culvert will be replaced with a 12 foot span by 6 foot rise by 49.25 foot long concrete box structure under ELSP. Site work also includes a temporary stream bypass, preparation and implementation of storm water pollution prevention plan, temporary traffic control, installation of guardrail, paving with HMA, and landscape restoration.

Drainage enters the site from the upstream drainage off of the plateau as well as the eastern hillside. Flow then passes through approximately 400 lf of existing stream channel and wetland where it will enter a new concrete box culvert under East lake Sammamish Parkway (ELSP) before discharging to the stream channel.

Final stabilization will include paving all disturbed roadway of ELSP, placing streambed gravels and log structures to stabilize the channel excavation, landscaping and vegetation of disturbed areas and seeding and mulching disturbed slopes.

Contaminated Site Information:

No contaminated soils or groundwater are anticipated and no sewer or contaminated water will be discharged on the site. Demolition and abatement of the existing structures to be removed at the staging area will be evaluated for contaminants by the contractor.

2 Construction Stormwater Best Management Practices (BMPs)

BMP's to control on-site sediment:

- High Visibility Silt Fence
- Erosion Protection Sheeting
- Stabilized Construction Entrance
- Biodegradable Erosion Control Blanket for Ditches
- Straw Wattle
- Gravel Bag Berms
- Tree Wrap
- High Visibility Fence

These BMP's will be implemented and inspected at the beginning of the project, prior to any land disturbance, clearing or grubbing, pavement removal, excavation, staging equipment or stockpiling materials.

Inspection and documentation will be completed at minimum intervals and after significant storm events as required by the City of Sammamish and WA Department of Ecology rules and regulations. The contractor will provide a maintenance and inspection plan that includes identification and contact information for the ESC project lead and backup contacts.

This SWPPP is an active document that reflects current conditions and changes throughout the life of the project. Changes, formal or informal (i.e., hand-written notes and deletions) should be documented in Appendix C. The SWPPP should be updated when the CESCL has noted a deficiency in BMPs or deviation from original design.

2.1 The 13 Elements

2.2 Element 1: Preserve Vegetation / Mark Clearing Limits

To protect adjacent properties and to reduce the area of soil exposed due to construction, the limits of construction will be clearly marked before land-disturbing activities begin. The project limits should be well defined and all wetlands, natural vegetation and native topsoils protected and preserved from unnecessary disturbance. High Visibility Fence and Tree Wrap will be used to protect identified existing trees from disturbance or removal. The BMPs relevant to marking the clearing limits that will be applied for this project include:

- High Visibility Silt Fence
- Tree Wrap
- High Visibility Fence

Installation Schedules:

These BMP's will be implemented and inspected at the beginning of the project, prior to any land disturbance, clearing or grubbing, pavement removal, excavation, staging equipment or stockpiling materials.

2.2.1 Element 2: Establish Construction Access

Two staging areas off of ELSP are available for the project. Stabilized construction entrances shall be installed at the locations for both project staging areas, with temporary culverts provided to maintain drainage. For access to the stream work an access road (nominally 12' wide) shall be constructed to the stream restoration staging area. The access road shall be constructed in such a way that impacts to the wetlands shall be minimized. The BMPs relevant to establish construction access that will be applied for this project include:

- Stabilized Construction Entrance
- Street Sweeping
- Collect and contain any chlorinated water from water mains
- Collect and contain any residual water as a result of placing wet concrete
- Collect and contain saw-cutting particulate from cutting existing concrete panels in Eastlake Sammamish Parkway

Installation Schedules:

- Equipment may operate within the ordinary high water line of the stream only after all fish exclusion has been completed and water bypass systems are in place and functioning properly.
- Work shall occur in the dry watercourse (when no natural flow is occurring in the channel, or when flow is diverted around the job site).

Element 3: Control Flow Rates

In order to protect properties and waterways downstream of the project site, stormwater discharges from the site will be controlled. No detention, permanent infiltration ponds or other low impact development facilities will be constructed or used on the project site.

Prior to commencing work within the ordinary high water mark of Zackuse Creek a temporary stream bypass will be installed to isolate the work zone (details of which are included in the plan set). The temporary bypass is proposed in stages to facilitate work at multiple phases of the project and shall be fully functioning before work on culvert trenching begins. At the downstream outlet of the existing and replaced culvert, erosion control blankets and gravel bag berms will be used to prevent scour.

The BMPs relevant to controlling flow rates that will be applied for this project include:

- Silt Fence
- Gravel Bag Berms
- Wattle
- Biodegradable Erosion Control Blanket for Ditches
- Temporary Stream Bypass

Element 4: Install Sediment Controls

All stormwater runoff from disturbed areas shall pass through an appropriate sediment removal BMP before leaving the construction site. Installation shall occur at the beginning of the project prior to land disturbing activities.

The site soils consist of organic materials including peat overlaying impervious till soils, unfortunately infiltration is not a viable option on this site. Approximately 400 lf of channel construction will be done adjacent to and outside of the existing stream channel, while keeping the existing channel undisturbed and in service. Much of the excavation and earthwork will be performed in the delineated wetland with a high water table. Excavation of the new Zackuse Creek channel in this delineated wetland may require sediment control of water table contributing water into the excavated channeled before the contractor can complete permanent channel stabilization according to plan.

The culvert replacement work will utilize a stream bypass plan to divert stream flow around the disturbance required for construction of the new box culvert. The stream bypass plan will include fish screens to prevent Salmonids from entering off-channel areas or drainages.

The BMPs relevant to installing sediment controls that will be applied for this project include:

- High Visibility Silt Fence
- Stabilized Construction Entrance
- Biodegradable Erosion Control Blanket
- Straw Wattles
- Gravel Bag Berms
- Seeding Fertilizing and Mulching

To avoid potential sediment control issues, the Certified Erosion and Sediment Control Lead will promptly initiate the implementation of an appropriate alternative BMP at the first sign that any existing BMPs are ineffective or failing.

2.2.2 Element 5: Stabilize Soils

Exposed and unworked soils will be protected with temporary seeding and mulching as well as plastic sheeting over gravel or stockpiles over weekends or when rain is a possibility. An extensive stream restoration and planting plan is also a part of this project along the new channel corridor.

No soils shall remain exposed and unworked for more than seven days during the dry season and two days during the wet season (as seen in the below table). The anticipated project dates are June 15, 2018 - October 15, 2018 and construction is not anticipated during the wet season. The connecting area between the access road and channel grading area in particular should be prioritized where final grading and preparation work is completed before planting to be done by others.

Season Delineations 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

Steep slopes along the Eastlake Sammamish Parkway roadway embankment will be stabilized with a combination of plastic sheeting and straw wattles placed at intervals perpendicular to the slopes as well as seeding and mulching. Although unexpected, if contaminated soils are present, the soils will be contained using plastic sheeting both underneath and over stockpiles. Soils must be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast.

The BMPs relevant to stabilizing soils that will be applied for this project include:

- Plastic sheeting
- Temporary and Permanent seeding and mulching
- Planting and landscaping

2.2.3 Element 6: Protect Slopes

Roadway embankment slopes on Eastlake Sammamish Parkway are considered steep slopes and will be replaced at a maximum slope of two horizontal to one vertical (2:1 slope). BMPs will be initiated immediately after placing and compacting the roadway embankments along Eastlake Sammamish Parkway.

The BMPs relevant to protecting slopes that will be applied for this project include:

- Plastic sheeting and sand bags
- Straw wattles
- Seeding and Mulching

2.2.4 Element 7: Protect Drain Inlets

There are no existing drain inlets, catch basins or storm drainage piping on the project and the existing culvert at the project site will be replaced with a concrete box culvert including streambed sediment.

2.2.5 Element 8: Stabilize Channels and Outlets

Work at the Zackuse Creek project can be thought of in two phases, a stream channel construction and culvert replacement. The new Zackuse Creek, as it does not coincide with the existing Zackuse Creek alignment, can be built outside of the fish window, July 1 – September 30. Log structures placed as directed will assist in stabilization of the new channel. The existing stream channel will be isolated from flow during the construction period. Stream bypass phasing suggestions have been presented in the plans. Additionally, the stream bypass plan will utilize gravel bags installed to prevent erosion from any concentrated discharge.

Prior to returning flow to the constructed channel all newly constructed stream channels will be stabilized with a two foot depth of streambed gravels designed to prevent gravel migration and to stabilize the channel in place. Stream flow will not be introduced to the channel until the gravels are placed, secured and inspected. Stream flow shall be introduced slowly in accordance with special provisions in order to stabilize and seal the new streambed and prevent unnecessary sediment transport.

The outlet to both the existing and replaced culvert will be protected (as shown in plans) with a gravel bag berm and biodegradable erosion control to avoid scour at the outlet.

The BMPs relevant to protecting slopes that will be applied for this project include:

- Gravel Bag Berm
- Biodegradable Erosion Control Blanket
- Temporary Stream Bypass

2.2.6 Element 9: Control Pollutants

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.

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

Table 2 – Pollutants

Pollutant (List pollutants and source, if applicable)
Concrete saw-cut particulate
Chlorinated water for water main disinfection
Residual water from cast in place concrete wing wall footings

The contractor will provide a containment plan for both saw-cutting the concrete roadway panels in Eastlake Sammamish Parkway and for water main disinfection at the time of new water main construction and connection. Containment will be implemented at the time of water main disinfection and of concrete saw-cutting

Since maintenance, fueling, and/or repair of heavy equipment and vehicles is expected to occur onsite the contractor will be required to provide a final list of chemicals, fuels or oils the contractor will store on site. In addition, a security and containment plan will need to be approved and implemented prior to bringing any chemicals, fuels or oils onto the site.

An SPCC Plan for approval for any of these times and it will be required to include a security plan for the chemicals and impervious containment. City staff will inspect the SPCC facilities on a regular basis. The Contractor supervisor and City staff to be determined.

Access road, staging area and stabilized construction entrance will be placed prior to hauling materials or channel excavation. The gravel access road is approximately 260 feet long with a stabilized construction entrance at Eastlake Sammamish Parkway (ELSP). We do not expect equipment tires to carry dust or dirt onto the ELSP surface after travelling the access road, but a wheel wash system could be implemented by change order later if this proves to be a problem. Street cleaning will also be required if dirt is carried onto the pavement of ELSP.

Since pH-modifying sources are expected to be present on-site, a list of sources is presented in Table 3. Both headwalls and wingwalls for the culvert have been pre-ordered with the contract thus negating potential cast in place sources of concrete waste. Saw-cutting waste water will be fully contained at the time of saw-cutting. All pumping and mixer washouts would be temporarily placed into containment, hauled off site and properly disposed. 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.

Table 3 – pH-Modifying Sources

<input checked="" 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 checked="" type="checkbox"/>	Waste streams generated from concrete grinding and sawing
<input type="checkbox"/>	Exposed aggregate processes
<input type="checkbox"/>	Dewatering concrete vaults
<input checked="" type="checkbox"/>	Concrete pumping and mixer washout waters
<input type="checkbox"/>	Recycled concrete
<input type="checkbox"/>	Recycled concrete stockpiles
<input type="checkbox"/>	Other (i.e., calcium lignosulfate) [please describe:]

Will uncontaminated water from water-only based shaft drilling for construction of building, road, and bridge foundations be infiltrated provided the wastewater is managed in a way that prohibits discharge to surface waters?

Yes No

2.2.7 Element 10: Control Dewatering

Dewatering is expected to be necessary for the trench excavation of the culvert foundation in Eastlake Sammamish Parkway. Sheet piling will be used to define the trench limits and to hold the excavation to a minimum during culvert construction. The trench excavation will be approximately 20 ft. deep in a high groundwater area with peat soils.

The contractor will be required to provide a dewatering plan that will include turbidity sampling. Installation of dewatering system and containment will be completed prior to trench excavation. Sediment laden water also requires transport off-site for proper disposal or an alternate plan to prevent discharge to Waters of the State. Transport off-site in a vehicle (vacuum truck for legal disposal) will be implemented as necessary and the contractor will provide a dewatering and disposal plan.

Inspection and documentation will be completed at minimum intervals as required by the State or EPA rules and regulations and after significant storm events as defined by the State and EPA rules and regulations. The contractor will provide a maintenance and inspection plan that includes street sweeping as requested, identification and contact information for the ESC project lead and backup contacts. The contractor will identify a responsible person and City staff will provide oversight for these matters.

2.2.8 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*).

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.

2.2.9 Element 12: Manage the Project

The standard bid item ESC lead has been included in the contract documents. Erosion and sediment control BMPs for this project have been designed based on the following principles:

- Design the project to fit the existing topography, soils, and drainage patterns.
- Emphasize erosion control rather than sediment control.
- Minimize the extent and duration of the area exposed.
- Keep runoff velocities low.
- Thoroughly monitor site and maintain all ESC measures.
- Schedule all earthwork during the dry season to the extent possible.

In addition, projects will be phased to the maximum extent practicable and seasonal work limitations will be taken into account. Since the construction of a new channel does not require immediate re-watering, it is suggested that work that can be done outside of the fish window be prioritized. A BMP implementation scheduling template is included in Table 6 for use as needed.

The SWPPP will be updated, maintained, and implemented in accordance with 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.

Inspection and monitoring:

- Inspection, maintenance and repair of all BMPs will occur as needed to ensure performance of their intended function.
- Site inspections, monitoring and sampling locations will be located in accordance with applicable requirements of the CSWGP.
- A Certified Erosion and Sediment Control Lead shall be on-site or on-call at all times

3 Pollution Prevention Team

Table 5 is provided as a template for team member information and coordination as members are identified.

Table 5 – Team Information

Title	Name(s)	Phone Number
Certified Erosion and Sediment Control Lead (CESCL)	Provided by Contractor (TBH)	TBD
Resident Engineer	TBD	TBD
Emergency Ecology Contact	TBD	TBD
Emergency Permittee/ Owner Contact	TBD	TBD
Non-Emergency Owner Contact	TBD	TBD
Monitoring Personnel	TBD	TBD
Ecology Regional Office	Northwest Regional Office	(425) 649-7000

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

A blank form is provided as a template in Appendix D.

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.

4.2 Stormwater Quality Sampling

4.2.1 Turbidity Sampling

Turbidity requirements will be dictated by the terms of the 401 water quality permit.

The WA Department of Ecology Regional office contact is included below:

Northwest Region (King, Kitsap, Island, San Juan, Skagit, Snohomish, Whatcom): (425) 649-7000 or http://www.ecy.wa.gov/programs/spills/forms/nerts_online/NWRO_nerts_online.html

4.2.2 pH Sampling

pH requirements will be dictated by the terms of the 401 water quality permit.

The WA Department of Ecology Regional office contact is included below:

Northwest Region (King, Kitsap, Island, San Juan, Skagit, Snohomish, Whatcom): (425) 649-7000 or http://www.ecy.wa.gov/programs/spills/forms/nerts_online/NWRO_nerts_online.html

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

5.1 303(d) Listed Waterbodies

No known 303D listed waterbodies exist within the project site.

5.2 TMDL Waterbodies

Discharges to TMDL receiving waterbodies will meet in-stream water quality criteria at the point of discharge. The Construction Stormwater General Permit Proposed New Discharge to an Impaired Water Body form is included in Appendix F.

6 Reporting and Record Keeping

6.1 Record Keeping

6.1.1 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
- Sample logs

6.1.2 Records Retention

Records will be retained during the life of the project and for a minimum of three (3) years following the termination of permit coverage in accordance with Special Condition S5.C of the CSWGP.

Permit documentation to be retained on-site:

- CSWGP
- Permit Coverage Letter
- SWPPP
- Site Log Book

Permit documentation will be provided within 14 days of receipt of a written request from Ecology. A copy of the SWPPP or access to the SWPPP will be provided to the public when requested in writing in accordance with Special Condition S5.G.2.b of the CSWGP.

6.1.3 Updating the SWPPP

The SWPPP will be modified if:

- Found ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site.
- There is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the State.

The SWPPP will be modified within seven (7) days if inspection(s) or investigation(s) determine additional or modified BMPs are necessary for compliance. An updated timeline for BMP implementation will be prepared.

6.2 Reporting

6.2.1 Discharge Monitoring Reports

Cumulative soil disturbance is one (1) acre or larger; therefore, Discharge Monitoring Reports (DMRs) will be submitted to Ecology monthly. If there was no discharge during a given monitoring period the DMR will be submitted as required, reporting “No Discharge”. The DMR due date is fifteen (15) days following the end of each calendar month.

DMRs will be reported online through Ecology’s WQWebDMR System.

6.2.2 Notification of Noncompliance

If any of the terms and conditions of the permit is not met, and the resulting noncompliance may cause a threat to human health or the environment, the following actions will be taken:

1. Ecology will be notified within 24-hours of the failure to comply by calling the applicable Regional office ERTS phone number (Regional office numbers listed below).
2. Immediate action will be taken to prevent the discharge/pollution or otherwise stop or correct the noncompliance. If applicable, sampling and analysis of any noncompliance will be repeated immediately and the results submitted to Ecology within five (5) days of becoming aware of the violation.
3. A detailed written report describing the noncompliance will be submitted to Ecology within five (5) days, unless requested earlier by Ecology.

Anytime turbidity sampling exceeds requirements of the 401 water quality permit, the Ecology Regional office will be notified by phone within 24 hours of analysis as required by Special Condition S5.A of the CSWGP.

- **Northwest Region** at (425) 649-7000 for Island, King, Kitsap, San Juan, Skagit, Snohomish, or Whatcom County

Include the following information:

1. Your name and / Phone number
2. Permit number
3. City / County of project
4. Sample results
5. Date / Time of call
6. Date / Time of sample
7. Project name

In accordance with Special Condition S4.D.5.b of the CSWGP, the Ecology Regional office will be notified if chemical treatment other than CO₂ sparging is planned for adjustment of high pH water.

- A. Site Map**
- B. Proposed TESC and Stream Bypass Details**
- C. Correspondence – None at this time**
- D. Site Inspection Form**
- E. Construction Stormwater General Permit (CSWGP) - Pending**
- F. Contaminated Site Information – As Needed**
- G. Engineering Calculations – As Needed**

LAKE SAMMAMISH

SCHEDULE DESCRIPTION OF WORK

SCHEDULE A1 (CITY OF SAMMAMISH)
 • ZACKUSE CREEK RELOCATION

SCHEDULE A2 (CITY OF SAMMAMISH)
 • E LAKE SAMMAMISH PARKWAY CULVERT REPLACEMENT

SCHEDULE A3 (CITY OF SAMMAMISH)
 • E LAKE SAMMAMISH PARKWAY WATER AND SEWER UTILITY WORK

SCHEDULE B (KING COUNTY)
 • E LAKE SAMMAMISH REGIONAL TRAIL CULVERT REPLACEMENT

SCHEDULE C (KING COUNTY)
 • E LAKE SAMMAMISH SHORE LANE NE CULVERT REPLACEMENT

SURVEY NOTES

- HORIZONTAL DATUM: WASHINGTON STATE PLANE, NORTH ZONE, NAD83/91.
 BASED ON WASHINGTON STATE REFERENCE NETWORK AND CONSTRAINED TO PUBLISHED COORDINATES OF KING COUNTY CONTROL POINTS 1966, 1499, AND 1561, AS DESCRIBED IN CONTROL TABLE.
 PROJECT HORIZONTAL CONTROL WAS ESTABLISHED BY A COMBINATION OF FIELD TRAVERSE AND GPS RTK THAT MEETS OR EXCEEDS WAC 332-130-090.
 ALL UNITS IN US SURVEY FEET.
- VERTICAL DATUM: NAVD88
 BASED ON ELEVATION INFORMATION FOR KING COUNTY CONTROL POINT 1499, WITH A PUBLISHED ELEVATION 58.86'.
- FIELD SURVEY PERFORMED BY OTAK, INC. BETWEEN OCTOBER 2016 AND JANUARY 2017.
- ALL LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN ESTABLISHED BY FIELD SURVEY OF ABOVE GROUND FACILITIES AND LOCATED PAINT MARKS BY APS INC. OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD THEREFORE BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE.

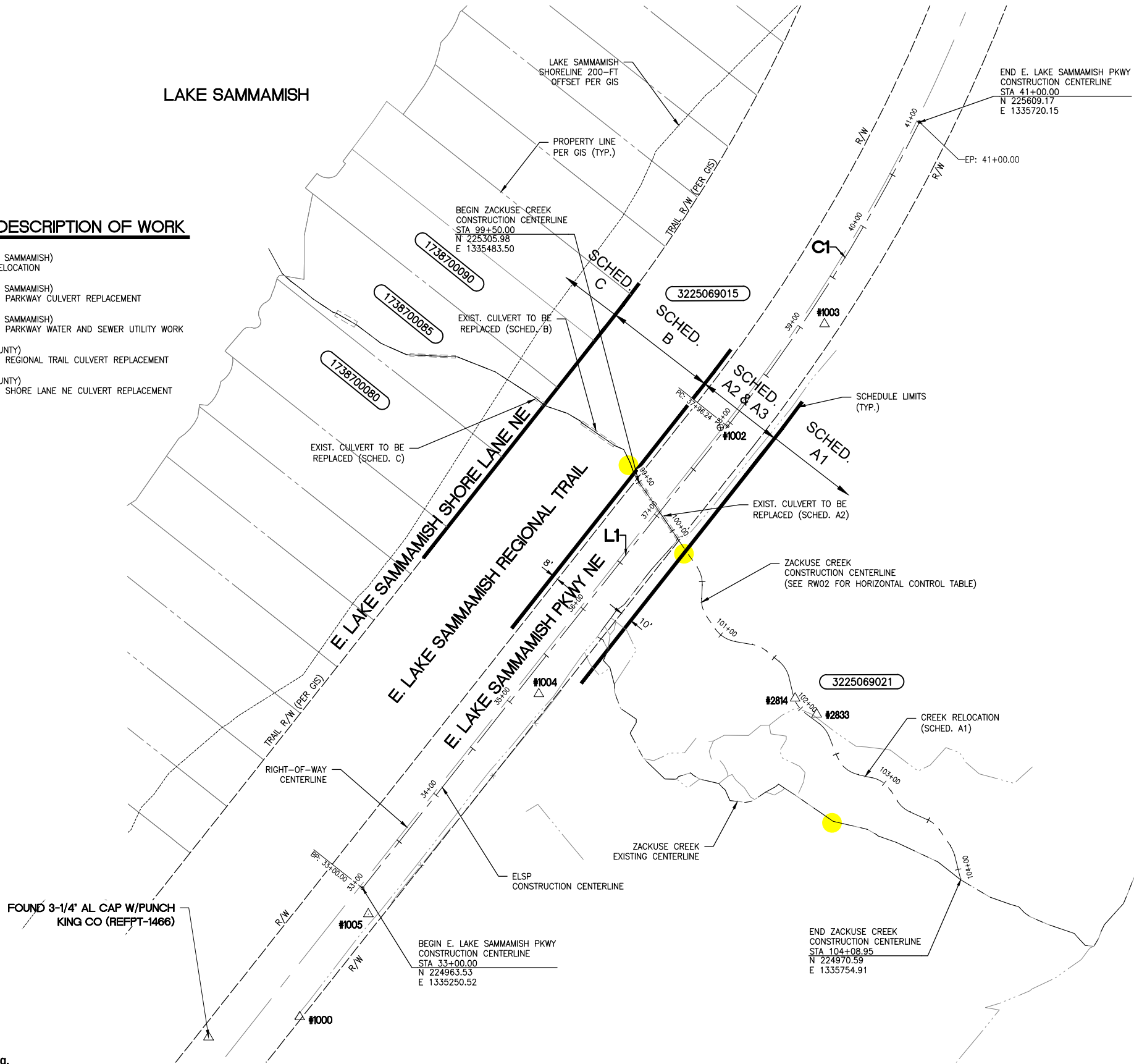
SAMMAMISH PKWY CONSTRUCTION CENTERLINE						
NUMBER	BEGIN STATION	LENGTH	END STATION	RADIUS	BEARING	DELTA
L1	33+00.00	496.24'	37+96.24		N38°19'49"E	
C1	37+96.24	303.76'	41+00.00	1435.19'	N32°16'01"E	12°07'36"

NOTE:
 CONSTRUCTION CENTERLINE DOES NOT EQUAL RIGHT-OF-WAY CENTERLINE

SURVEY CONTROL				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1000	224855.01	1335197.60	50.00	FOUND 1/2 REBAR/CAP
1001	224682.11	1335063.23	51.11	FOUND PK NAIL IN FENCE POST BASE
1002	225351.85	1335552.27	50.27	FOUND 3" MON W/PUNCH
1003	225439.14	1335640.06	52.80	SET PK NAIL
1004	225127.34	1335399.19	48.81	SET PK W/WASHER
1005	224941.79	1335255.43	49.20	SET MAG W/OTAK WASHER
1019	223160.85	1333822.12	51.27	FOUND 2-1/2" BRASS DISK W/PUNCH
1020	224664.14	1335916.86	94.67	FOUND 1-3/4" IRON PIPE
1466	224837.97	1335120.70	49.02	FOUND 3-1/4" AL CAP W/PUNCH KING CO
1489	223958.96	1334477.51	44.96	FOUND 2" AL MON IN CONC BASE (MON BOX)
1499	226078.91	1335855.74	58.86	FOUND 1-1/2" BRASS DISK W/"X" IN CASE
2814	225123.63	1335615.25	53.46	2" IRON PIPE
2833	225110.10	1335633.50	54.19	2" IRON PIPE, 1.6' ABOVE GROUND

LEGEND

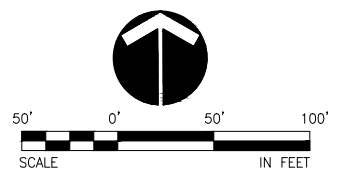
- XXXXXX PARCEL NUMBER
- △ SURVEY CONTROL POINT
- PROPOSED DISCHARGE POINT



FOUND 3-1/4" AL CAP W/PUNCH
 KING CO (REFPT-1466)



Know what's below.
 Call before you dig.



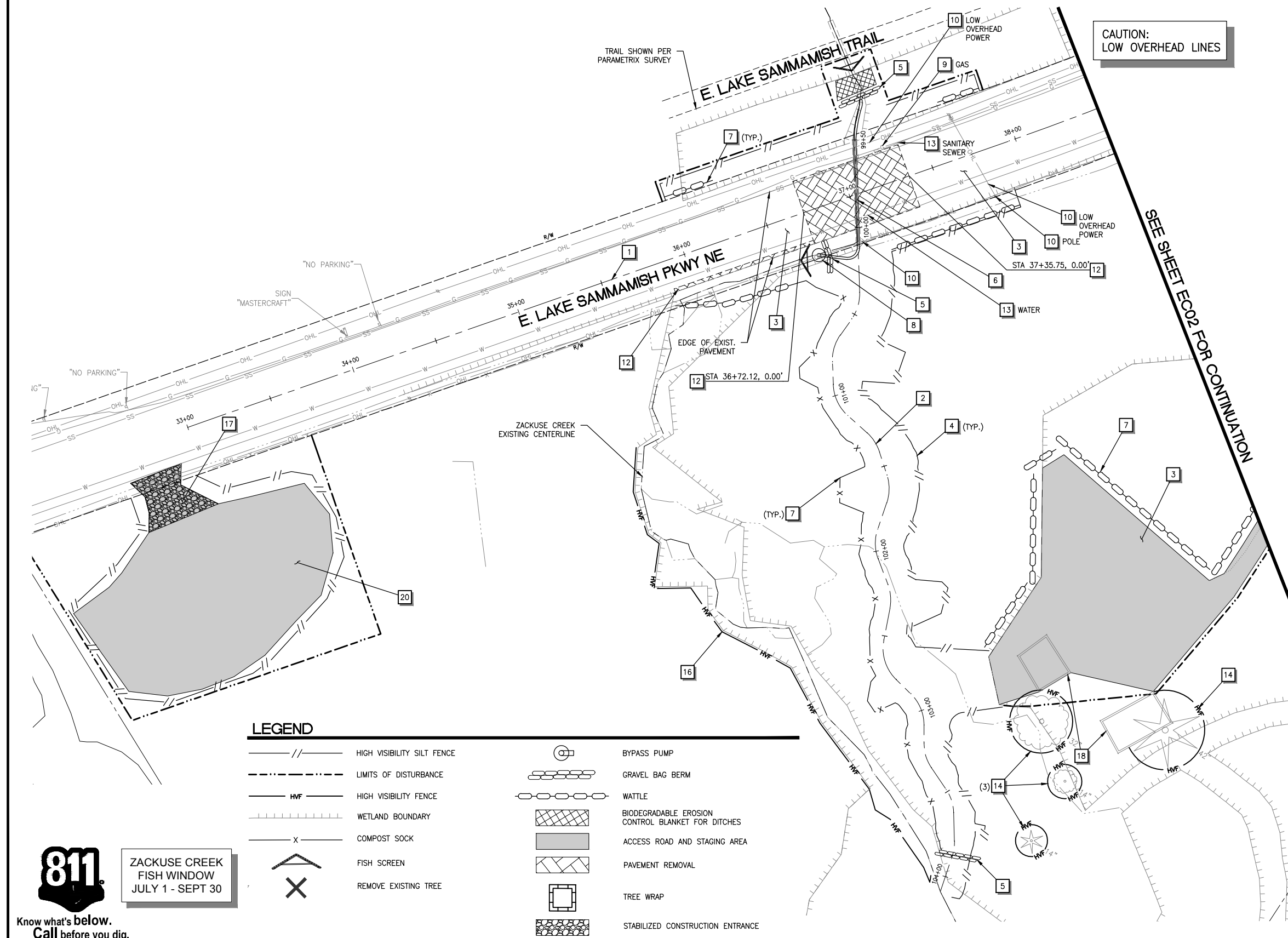
ZACKUSE CREEK FISH PASSAGE AND STREAM RESTORATION PROJECT SAMMAMISH, WASHINGTON	NO.	REVISIONS	DATE	DATE: 02/23/2018		REFER TO ORIGINAL DRAWINGS FOR SIGNATURES AND SEALS	ROADWAY CONSTRUCTION CENTERLINE, SURVEY CONTROL PLAN AND SCHEDULE LIMITS	RW01	
	1			DESIGNED BY: BS/DC/BD/MM/CEM/EH				SHEET	OF
	2								
	3								
	4							DRAWN BY: AK	
5				REVIEWED BY:	4	34			

TESC & DEMOLITION NOTES

- 1 ELSP CONSTRUCTION CENTERLINE, SEE SHEET RW01 FOR DETAILS.
- 2 ZACKUSE CREEK CONSTRUCTION CENTERLINE, SEE SHEET RW02 FOR DETAILS.
- 3 CONSTRUCT ACCESS ROAD (NOMINALLY 12' WIDE) AND STAGING AREA FOR STREAM RESTORATION AS NECESSARY. LOCATION SHALL BE FIELD LOCATED AND APPROVED BY ENGINEER. CONTRACTOR MAY PROPOSE ALTERNATIVES THAT REDUCE WETLAND IMPACTS (IF APPROVED BY CITY) AND USE CLOSURE ON ELSP NE FOR STAGING AREA, PROTECT EXISTING PAVEMENT. SEE SHEET EC03 FOR DETAILS.
- 4 INSTALL HIGH VISIBILITY SILT FENCE PER WSDOT STD. PLAN 1-30.16-00.
- 5 INSTALL TEMPORARY GRAVEL BAG BERM PER LOCATIONS AND DETAILS SHOWN ON SHEETS BP01-BP02.
- 6 REMOVE EXISTING CULVERT, 36" DIAMETER, 55' LENGTH.
- 7 INSTALL STRAW WATTLE PER WSDOT STD PLAN 1-30.30-01, OR COMPOST SOCK PER STD PLAN 1-30.40-01.
- 8 TEMPORARY STREAM BYPASS. SEE PLAN ON SHEET BP01 AND DETAILS ON SHEET BP02.
- 9 PROTECT EXISTING UTILITY DURING CONSTRUCTION.
- 10 CONTRACTOR SHALL COORDINATE WITH PSE FOR SUPPORTING AND PROTECTING EXISTING POLE, POWER LINES, AND GUY WIRE DURING CONSTRUCTION.
- 11 REMOVE EXISTING TREES. TREE TO BE USED AS NEEDED IN WOOD STRUCTURE CONSTRUCTION FOR STREAM RESTORATION. REPLACE IN KIND, ON EASTERN SIDE OF ROAD, WITH WESTERN RED CEDAR OR SITKA SPRUCE, SIZING PER SHEET LS06.
- 12 SAWCUT AND REMOVE EXISTING PAVEMENT, INCLUDING HMA PAVEMENT AND CONC. PANEL UNDERNEATH.
- 13 EXISTING UTILITY TO BE RELOCATED/ADJUSTED, SEE SHEETS UT01-UT02 FOR DETAILS.
- 14 PROTECT EXISTING TREE PER TREE/SHRUB PROTECTION DETAIL ON SHEET EC03.
- 15 PROTECT EXISTING TREE PER TREE WRAP PROTECTION, SEE SHEET EC03 FOR DETAILS.
- 16 INSTALL HIGH VISIBILITY FENCE PER WSDOT STD 1-10.10-01.
- 17 INSTALL STABILIZED CONSTRUCTION ENTRANCE PER WSDOT STD PLAN 1-80.10-02. PROVIDE TEMPORARY CULVERT UNDER CONSTRUCTION ENTRANCE TO MAINTAIN DRAINAGE.
- 18 EXISTING STRUCTURES TO BE DEMOLISHED. DEMOLITION WILL REQUIRE A CITY OF SAMMAMISH DEMOLITION PERMIT ACQUIRED BY CONTRACTOR. FILL VOID WITH COMMON BORROW.
- 19 REMOVE EXISTING GUARDRAIL, LIMITS PER PLAN.
- 20 EXISTING TREES 8" AND GREATER CALIPER (DBH) SHALL BE PROTECTED WITHIN STAGING AREA. TREES SMALLER THAN 8" MAY BE REMOVED. APPROX. STAGING AREA IS SHOWN.

GENERAL NOTES

1. SEE SHEET EC02 FOR TREES ALONG THE TEMPORARY ACCESS ROAD THAT HAVE BEEN IDENTIFIED TO BE PROTECTED (PER DETAILS ON SHEET EC03) OR TO BE FELLED AND USED AS PART OF THE STREAM RESTORATION CONSTRUCTION.
2. TESC MEASURES SHOWN ARE APPROXIMATE AND CONTRACTOR SHALL FIELD LOCATE TO ACCOMMODATE SITE CONDITIONS AND WORK SCHEDULE.
3. PROTECT ALL EXISTING FEATURES AND VEGETATION NOT CALLED TO BE REMOVED.
4. SEE SHEET EC03 FOR EROSION AND SEDIMENT CONTROL NOTES.



CAUTION:
LOW OVERHEAD LINES

SEE SHEET EC02 FOR CONTINUATION

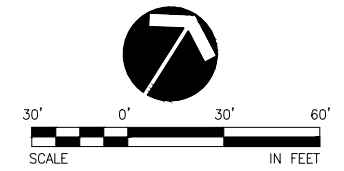
LEGEND

- | | | | |
|--|----------------------------|--|---|
| | HIGH VISIBILITY SILT FENCE | | BYPASS PUMP |
| | LIMITS OF DISTURBANCE | | GRAVEL BAG BERM |
| | HIGH VISIBILITY FENCE | | WATTLE |
| | WETLAND BOUNDARY | | BIODEGRADABLE EROSION CONTROL BLANKET FOR DITCHES |
| | COMPOST SOCK | | ACCESS ROAD AND STAGING AREA |
| | FISH SCREEN | | PAVEMENT REMOVAL |
| | REMOVE EXISTING TREE | | TREE WRAP |
| | | | STABILIZED CONSTRUCTION ENTRANCE |

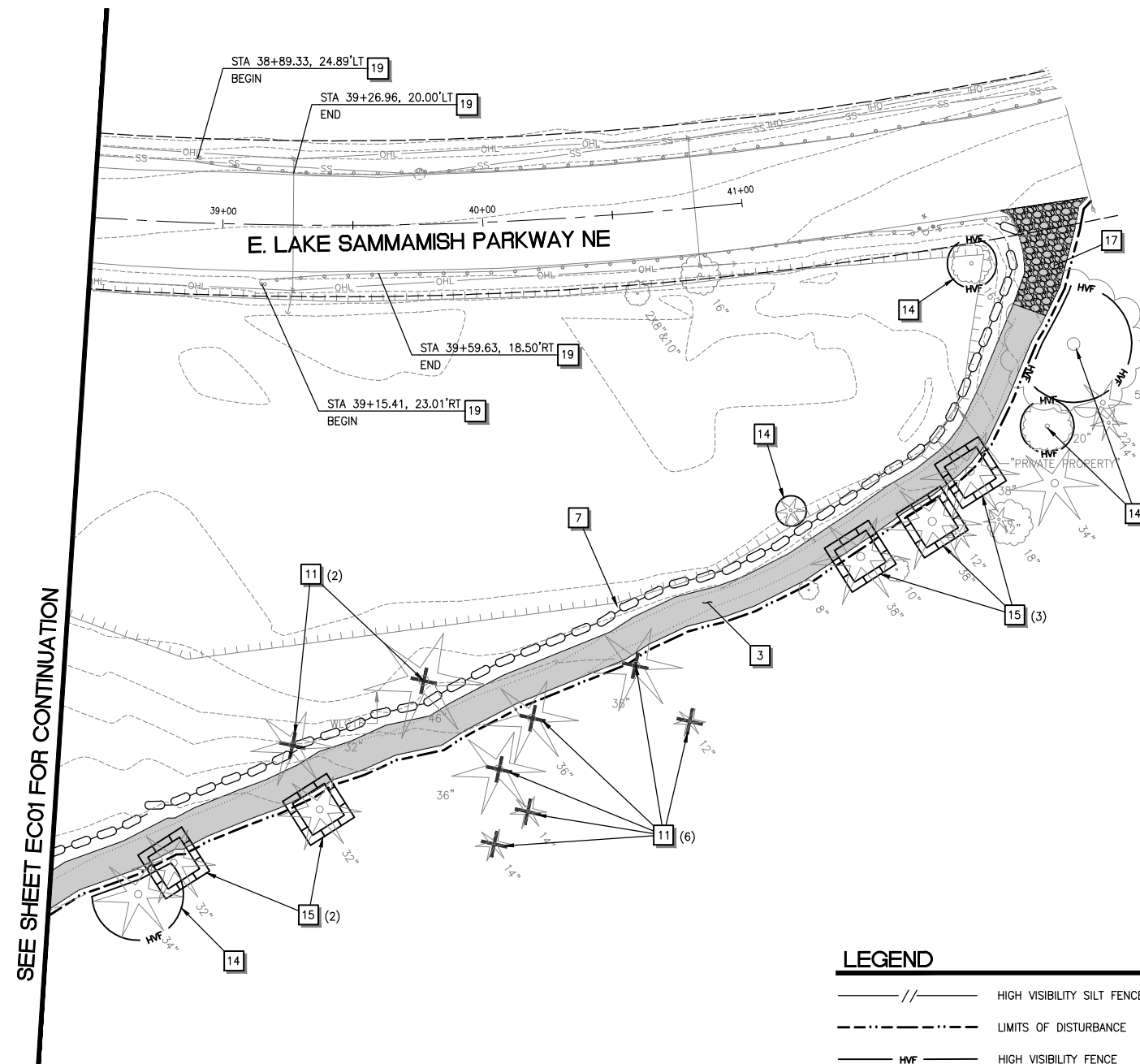


ZACKUSE CREEK
FISH WINDOW
JULY 1 - SEPT 30

Know what's below.
Call before you dig.



ZACKUSE CREEK FISH PASSAGE AND STREAM RESTORATION PROJECT SAMMAMISH, WASHINGTON	NO.	REVISIONS	DATE	DATE: 02/23/2018		REFER TO ORIGINAL DRAWINGS SIGNATURES AND SEALS	TESC AND DEMOLITION PLAN 1 OF 2	1		DESIGNED BY: BS/DC/BD/MM/CEM/EH	EC01 SHEET OF 9 34
	2			DRAWN BY: AK							
	3			REVIEWED BY:							
	4										
	5										



SEE SHEET EC01 FOR CONTINUATION

TESC & DEMOLITION NOTES

- 1 ELSP CONSTRUCTION CENTERLINE, SEE SHEET RW01 FOR DETAILS.
- 2 ZACKUSE CREEK CONSTRUCTION CENTERLINE, SEE SHEET RW02 FOR DETAILS
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GENERAL NOTES

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3. PROTECT ALL EXISTING FEATURES AND VEGETATION NOT CALLED TO BE REMOVED.

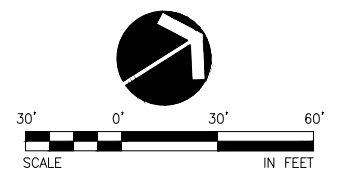
LEGEND

	HIGH VISIBILITY SILT FENCE		BYPASS PUMP
	LIMITS OF DISTURBANCE		GRAVEL BAG BERM
	HIGH VISIBILITY FENCE		WATTLE
	WETLAND BOUNDARY		BIODEGRADABLE EROSION CONTROL BLANKET FOR DITCHES
	COMPOST SOCK		ACCESS ROAD AND STAGING AREA
	FISH SCREEN		PAVEMENT REMOVAL
	REMOVE EXISTING TREE		TREE WRAP
			STABILIZED CONSTRUCTION ENTRANCE

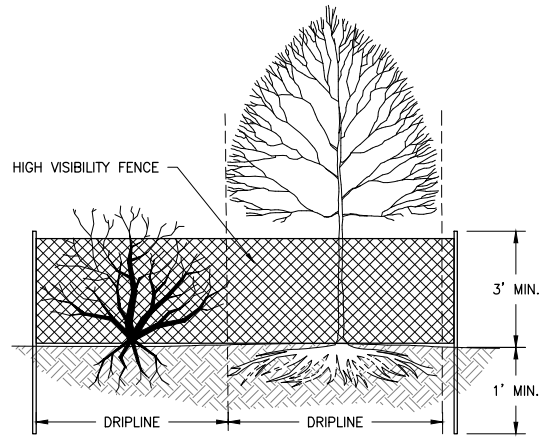


ZACKUSE CREEK FISH WINDOW
JULY 1 - SEPT 30

Know what's below.
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ZACKUSE CREEK FISH PASSAGE AND STREAM RESTORATION PROJECT SAMMAMISH, WASHINGTON	NO.	REVISIONS	DATE	DATE: 02/23/2018		REFER TO ORIGINAL DRAWINGS SIGNATURES AND SEALS	TESC AND DEMOLITION PLAN 2 OF 2	EC02	
	1			DESIGNED BY: BS/DC/BD/MM/CEM/EH				SHEET	OF
	2							10	34
	3			DRAWN BY: AK					
	4			REVIEWED BY:					
5									

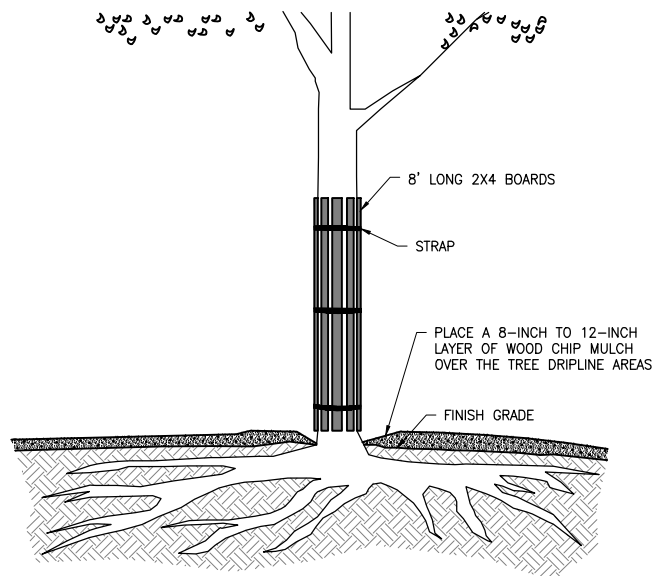


NOTES:

- 3' HIGH VISIBILITY FENCE SHALL BE PLACED AT DRIPLINE OF TREE TO BE SAVED UNLESS OTHERWISE SHOWN ON PLAN. FENCE SHALL COMPLETELY ENCIRCLE TREE(S). AVOID DRIVING POSTS OR STAKES INTO MAJOR ROOTS.
- TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION: FOR ROOTS OVER 1" IN DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN, STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING, AND COVERED WITH SOIL AS SOON AS POSSIBLE.
- WORK WITHIN PROTECTION FENCE SHALL BE DONE MANUALLY. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING.
- SEE SPECS FOR ADDITIONAL DETAILS.

TREE/SHRUB PROTECTION DETAIL

NOT TO SCALE



NOTES:

- PRUNE TO CROWN RAISE THE CANOPY TO PROVIDE SUFFICIENT CLEARANCE FOR CONSTRUCTION EQUIPMENT AND VEHICLES.
- REMOVE TRUNK PROTECTION STRUCTURE AT CONCLUSION OF PROJECT.
- THE ENGINEER MAY APPROVE THE USE OF ALTERNATIVE TREE PROTECTION TECHNIQUES IF A PROTECTED TREE WILL BE PROTECTED TO AN EQUAL OR GREATER DEGREE THAN THROUGH ALTERNATIVE TECHNIQUES.

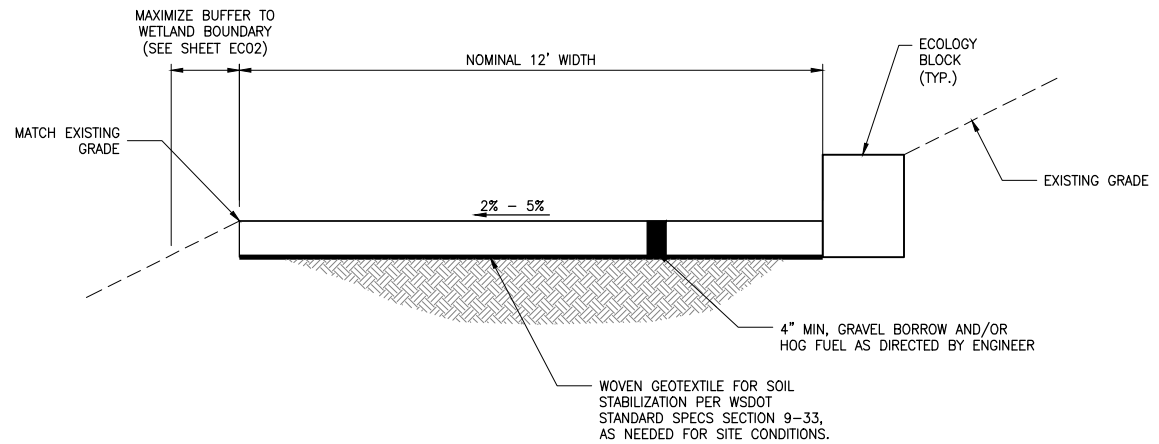
TREE WRAP PROTECTION DETAIL

NOT TO SCALE



ZACKUSE CREEK
FISH WINDOW
JULY 1 - SEPT 30

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ACCESS ROAD TYPICAL SECTION

NOT TO SCALE

1. ACCESS ROAD SHALL BE MAINTAINED DURING CONSTRUCTION AND REPAIR DAMAGES AS NECESSARY PRIOR TO COMPLETION OF SCHEDULE A1

EROSION & SEDIMENT CONTROL NOTES

- THE TEMPORARY EROSION AND SEDIMENT CONTROL FEATURES SHALL BE CONSTRUCTED PRIOR TO ANY GRADING OR EXTENSIVE LAND CLEARING IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER. THESE FACILITIES MUST BE SATISFACTORILY MAINTAINED UNTIL CONSTRUCTION AND LANDSCAPING ARE COMPLETED, AND SITE IS STABILIZED. SEDIMENT LADEN WATER SHALL NOT ENTER THE NATURAL DRAINAGE SYSTEMS.
- TEMPORARY SILT FENCE SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL, AND AT LEAST DAILY DURING PROLONGED RAINFALL. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED WATTLES, END RUNS, AND UNDER-CUTTING BENEATH WATTLES. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
- ALL CLEARING, GRUBBING, AND GRADING SHALL BE CONTAINED WITHIN THE LIMITS ESTABLISHED BY THE ENGINEER. ALL VEGETATION OUTSIDE DESIGNATED LIMITS SHALL REMAIN UNDISTURBED.
- ALL STOCKPILES ARE TO BE LOCATED IN SAFE AREAS AND PROTECTED FROM EROSION BY MECHANICAL OR VEGETATIVE MEANS.
- ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY SEEDING, MULCHING, MATTING OR PLASTIC COVERING. FROM OCT. 1 TO APRIL 30 NO SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN 2 DAYS. FROM MAY 1 TO SEPT. 30, NO SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN 7 DAYS.
- ALL PROPERTIES ADJACENT TO THE PROJECT SHALL BE PROTECTED FROM SEDIMENT DEPOSIT.
- DE-WATERING DEVICES SHALL DISCHARGE INTO A SEDIMENT TRAP, SEDIMENT POND, OR OTHER DEVICE APPROVED BY THE ENGINEER.
- ALL POLLUTANTS OTHER THAN SEDIMENTS THAT OCCUR ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORM WATER. SEE DEPARTMENT OF ECOLOGY STORM WATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON, 2012, VOLUME 2, CHAPTER 4.
- SEDIMENTS TRANSPORTED ONTO A ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. SEE SPECIAL PROVISION, DISPOSAL OF SURPLUS MATERIAL. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
- CITY OF SAMMAMISH WILL TRANSFER GENERAL STORMWATER CONSTRUCTION PERMIT TO CONTRACTOR.

ZACKUSE CREEK
FISH PASSAGE AND STREAM
RESTORATION PROJECT
SAMMAMISH, WASHINGTON

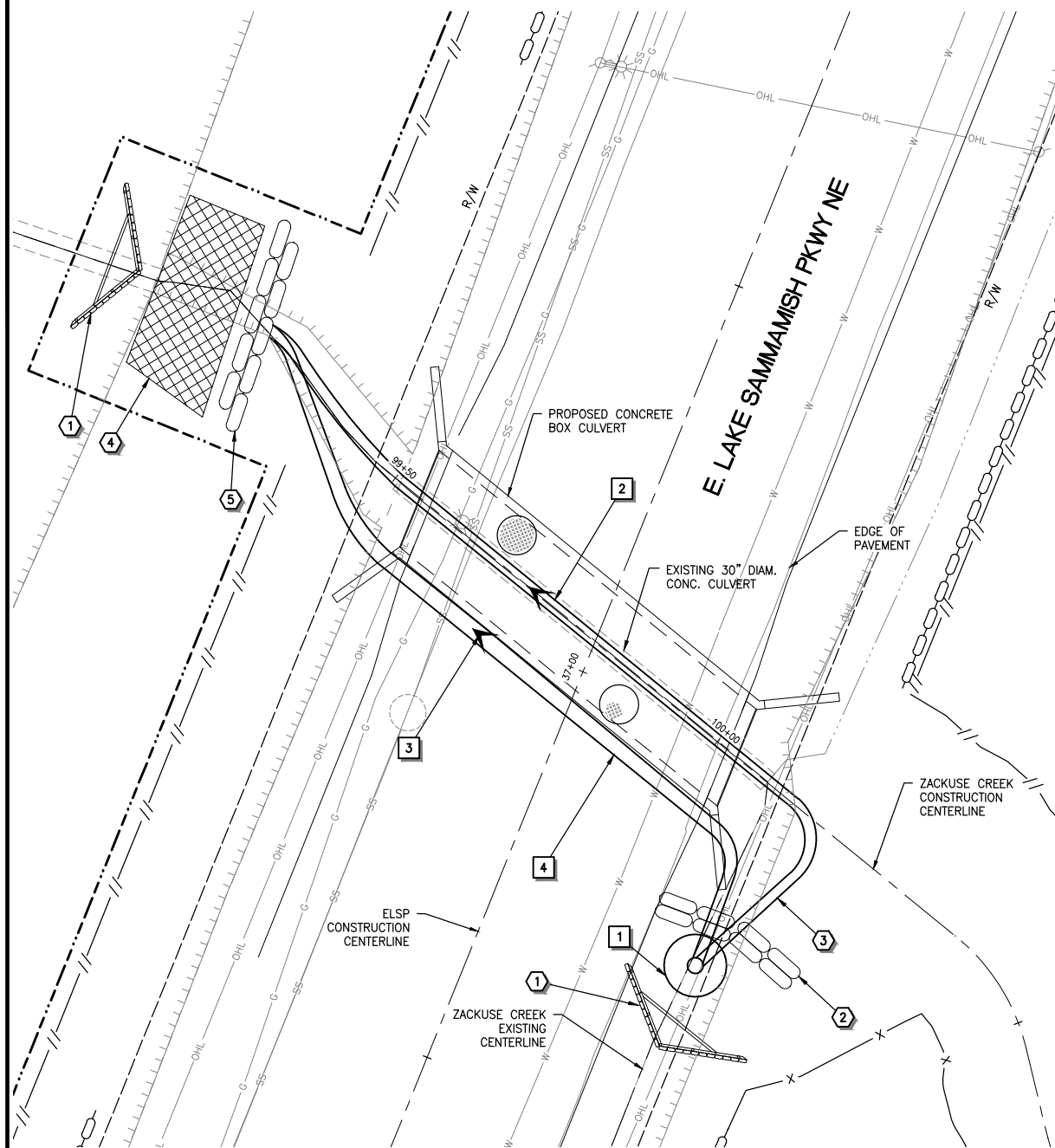
NO.	REVISIONS	DATE	DATE:
1	ACCESS ROAD CLARIFICATION	04/25/2018	02/23/2018
2			DESIGNED BY: BS/DC/BD/MM/CEM/EH
3			DRAWN BY: AK
4			REVIEWED BY:
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REFER TO
ORIGINAL DRAWINGS
SIGNATURES
AND SEALS

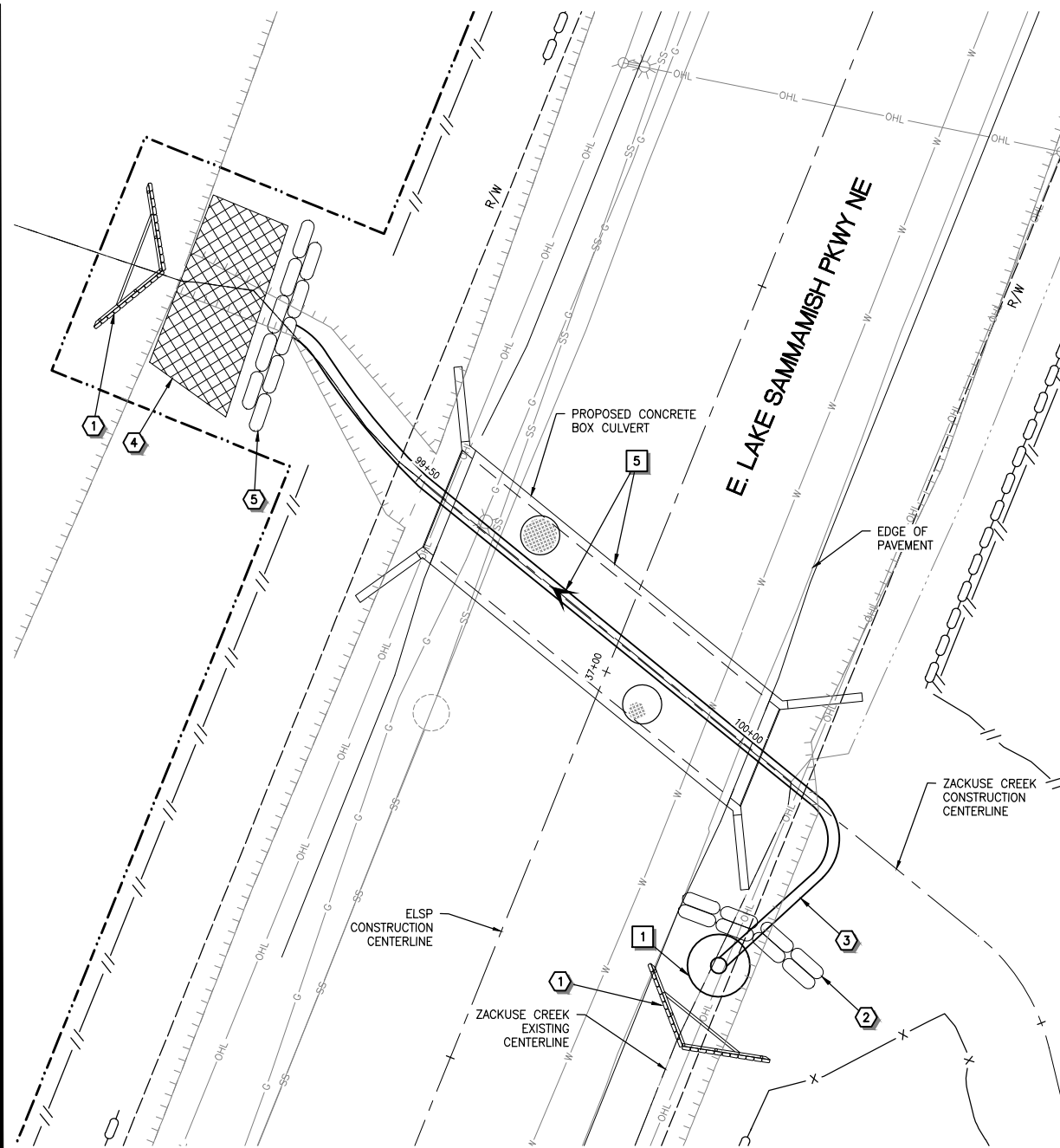
TESC DETAILS

EC03	
SHEET	OF
11	34



STAGE 1: SLIP-LINE TEMPORARY BYPASS THROUGH EXISTING CULVERT

STAGE 2: MOVE TEMPORARY BYPASS PIPE WITHIN LIMITS OF EXCAVATION TRENCH



STAGE 3: TEMPORARY BYPASS PIPE IN PLACE UNTIL END OF PROJECT

STREAM BYPASS NOTES

- 1 INSTALL FISH SCREEN PER DETAIL ON SHEET BP02.
- 2 INSTALL TEMP. GRAVEL BAG BERM PER DETAIL ON SHEET BP02.
- 3 INSTALL 24" DIAM. BYPASS PIPE. SEE PROFILES ON THIS SHEET. INSTALL GRAVEL BAGS ON/AROUND PIPE INLET TO STABILIZE.
- 4 INSTALL BIODEGRADABLE EROSION CONTROL BLANKET FOR DITCHES. PER DETAIL ON SHEET BP02.
- 5 INSTALL SUFFICIENT GRAVEL BAGS AT BYPASS OUTFALL TO PREVENT EROSION.

IN-WATER WORK TESC PLAN NOTES AND RECOMMENDED SEQUENCING

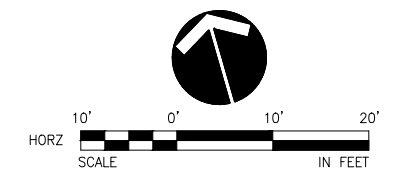
- 1 PROVIDE TEMPORARY PUMP SYSTEM FOR DEWATERING AS NEEDED. APPROXIMATE LOCATION SHOWN. DISCHARGE TO SEDIMENT FILTER MAT OR OTHER APPROVED TESC MEASURE. SEE SPECIFICATIONS FOR DEWATERING REQUIREMENTS.
- 2 INSTALL TEMPORARY STORM DRAIN PIPE THROUGH EXISTING 30" DIAM. CONC. CULVERT IN THE APPROXIMATE LOCATION SHOWN.
- 3 EXCAVATE NEW CHANNEL WITH EXISTING PIPE IN PLACE.
- 4 INSTALL TEMPORARY DIVERSION PIPE IN NEW CHANNEL FOR REMOVAL OF EXISTING 30" DIAM. CONC. CULVERT.
- 5 INSTALL CONCRETE BOX CULVERT BOTTOM AND STREAMBED GRAVELS. TRANSFER TEMPORARY DIVERSION PIPE TO WITHIN BOX CULVERT FOR REMAINDER OF BOX CULVERT CONSTRUCTION AND RESTORATION WORK.

IN-WATER WORK TESC PLAN GENERAL NOTES

1. THE CONTRACTOR SHALL SUBMIT THE TEMPORARY BYPASS AND ISOLATION SYSTEM PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL. THE TEMPORARY BYPASS SYSTEM AND ISOLATION BERM SHOWN ON PLAN IS SUGGESTED ONLY.
2. THE TEMPORARY BYPASS AND ISOLATION SYSTEM SHALL MEET ALL PERMIT REQUIREMENTS. CONTRACTOR SHALL REMOVE ALL TEMPORARY BYPASS MEASURES AFTER COMPLETION OF PROJECT.
3. THE TEMPORARY STREAM BYPASS SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTION.
4. PEAK FLOW RATES ANTICIPATED DURING THE PERIOD OF CONSTRUCTION COULD BE AS HIGH AS 15 CFS. FLOW MAY BE HIGHER DURING HIGH RAINFALL EVENTS. CONTRACTOR SHALL BE PREPARED TO PROTECT WORK SITE DURING HIGHER FLOWS.
5. FISH EXCLUSION AND FISH REMOVAL SHALL BE PERFORMED FOR IN-WATER WORK IN ACCORDANCE WITH THE WASHINGTON DEPARTMENT OF FISH AND WILDLIFE HPA.
6. PUMP SYSTEM WILL REQUIRE POWER FROM OVERHEAD UTILITY. GENERATORS WILL NOT BE ALLOWED. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY TO PROVIDE POWER DROP FROM OVERHEAD LINE.

LEGEND

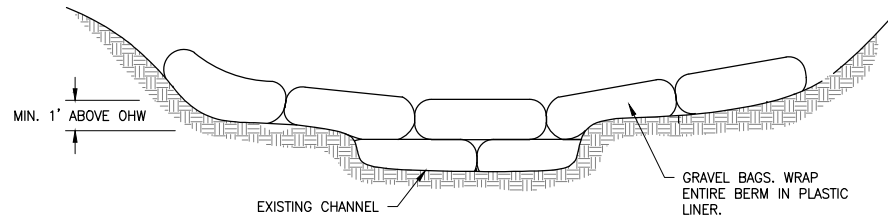
- HIGH VISIBILITY SILT FENCE
- LIMITS OF DISTURBANCE
- FISH SCREEN
- BYPASS PUMP
- GRAVEL BAG BERM
- WATTLE
- BIODEGRADABLE EROSION CONTROL BLANKET FOR DITCHES



ZACKUSE CREEK
FISH WINDOW
JULY 1 - SEPT 30

ZACKUSE CREEK
FISH WINDOW
JULY 1 - SEPT 30

ZACKUSE CREEK FISH PASSAGE AND STREAM RESTORATION PROJECT SAMMAMISH, WASHINGTON	NO.	REVISIONS	DATE	DATE: 02/23/2018		REFER TO ORIGINAL DRAWINGS SIGNATURES AND SEALS	STREAM BYPASS PLAN	BP01	
	1			DESIGNED BY: BS/DC/BD/MM/CEM/EH					SHEET OF
	2								
	3			DRAWN BY: AK					
	4			REVIEWED BY:					
5				12 34					

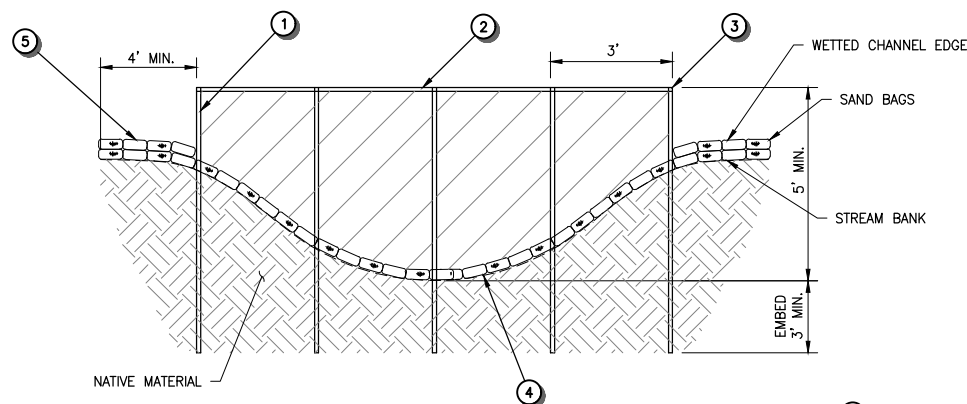


NOTES:

1. GRAVEL BAGS SHALL BE FILLED WITH STREAMBED SEDIMENT PER WSDOT SPEC. 9-03.11(1). STREAMBED SEDIMENT SHALL BE WASTED TO UPSTREAM END OF HABITAT CHANNEL UPON COMPLETION OF WORK.
2. INITIAL ROW OF GRAVEL BAGS SHALL BE KEYED INTO THE GROUND SUCH THAT THEY MAKE TIGHT CONTACT WITH THE GROUND FOR THE LENGTH OF THE BERM.

TEMPORARY GRAVEL BAG BERM DETAIL

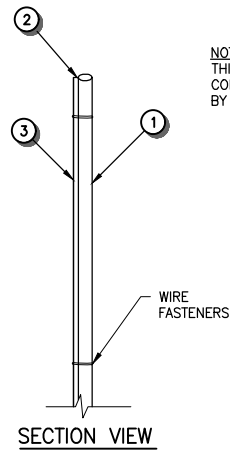
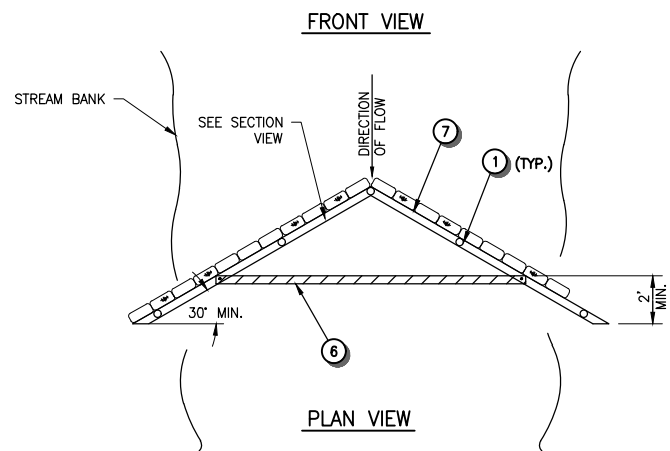
NOT TO SCALE



FISH SCREEN CONSTRUCTION SEQUENCE

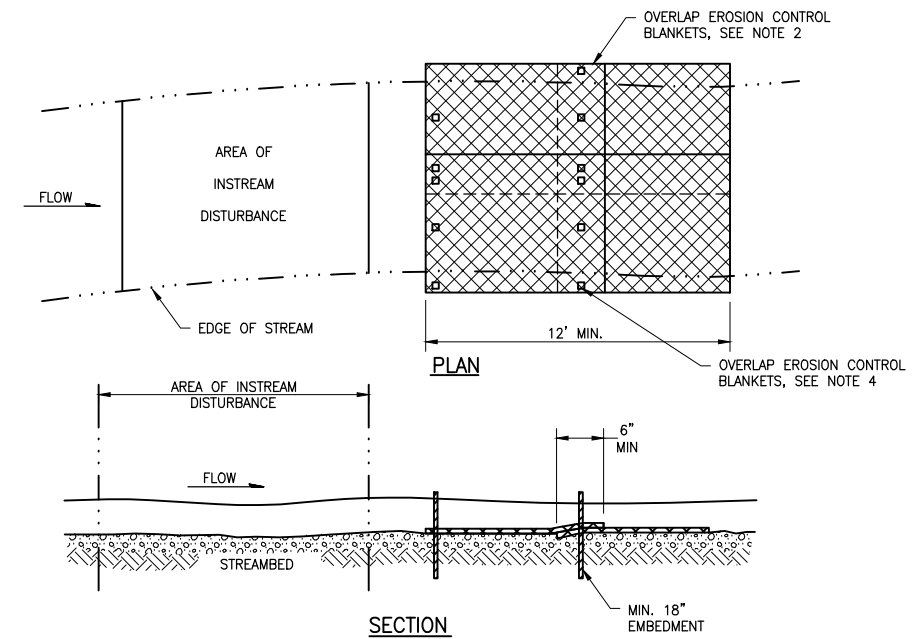
- 1 INSTALL 2" GALVANIZED TUBES ON 3' CENTERS.
- 2 SECURE WIRE MESH TO 2" GALVANIZED TUBES WITH WIRE FASTENER.
- 3 SECURE 1/4" MAX. FISH NYLON NET TO UPSTREAM SIDE OF WIRE MESH WITH WIRE FASTENER.
- 4 SECURE NYLON FISH NET TO STREAM BOTTOM WITH SAND BAGS.
- 5 EXTEND SAND BAGS 4' MIN. INTO STREAM BANKS.
- 6 ADD BRACING TIMBER AS NEEDED TO SUPPORT THE SCREEN.
- 7 REMOVAL OF DEBRIS FROM THE UPSTREAM SIDE OF THE FENCE IS NECESSARY OTHERWISE THE SCREEN WILL BECOME CLOGGED AND WATER MAY TOPPLE OR BREACH THE SCREEN.

NOTE:
THIS IS A RECOMMENDED METHOD FOR CONSTRUCTION SEQUENCE. CONTRACTOR MAY SUBMIT AN ALTERNATE FISH PLAN FOR APPROVAL BY THE ENGINEER.



FISH SCREEN DETAIL

NOT TO SCALE



NOTES:

1. INSTALL EROSION CONTROL BLANKETS FLAT ON THE STREAM BOTTOM AT DOWNSTREAM EDGE OF DISTURBED AREA IMMEDIATELY PRIOR TO INSTREAM DISTURBANCE AND REMOVE IMMEDIATELY AFTER INSTREAM ACTIVITIES ARE COMPLETED.
2. OVERLAP THE TRAILING EDGE OF UPSTREAM EROSION CONTROL BLANKETS OVER THE LEADING EDGE OF DOWNSTREAM EROSION CONTROL BLANKETS BY AT LEAST 6". OVERLAP SIDES A MINIMUM OF 6".
3. HOLD THE LEADING EDGE OF THE MATS TIGHTLY TO STREAMBED CONTOURS WITH ROCKS OR OTHER WEIGHTS SUFFICIENT TO PREVENT MAT FROM LIFTING. ROCKS SHALL BE LARGE ENOUGH THAT THE FORCE OF A 2-YR STORM EVENT WILL NOT CAUSE THE EROSION CONTROL BLANKETS FROM DISLODGING.
4. SECURE UPSTREAM CORNERS AND CENTERS OF EROSION CONTROL BLANKETS IN THE STREAMBED WITH 2"x2"x2' LONG WOOD STAKES.
5. IF STREAM VELOCITY IS HIGH, ENGINEER MAY REQUIRE ADDITIONAL LENGTH OF EROSION CONTROL BLANKET.

TESC EROSION CONTROL BLANKET DETAIL

NOT TO SCALE



ZACKUSE CREEK
FISH WINDOW
JULY 1 - SEPT 30

Know what's below.
Call before you dig.

ZACKUSE CREEK
FISH PASSAGE AND STREAM
RESTORATION PROJECT
SAMMAMISH, WASHINGTON

NO.	REVISIONS	DATE	DATE:
1			02/23/2018
2			DESIGNED BY: BS/DC/BD/MM/CEM/EH
3			DRAWN BY: AK
4			REVIEWED BY:
5			



REFER TO
ORIGINAL DRAWINGS
FOR
SIGNATURES
AND SEALS

STREAM BYPASS DETAILS

BP02

SHEET OF

13 34

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 & 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	
<i>Turbidity</i>	tube, meter, laboratory				
<i>pH</i>	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: _____