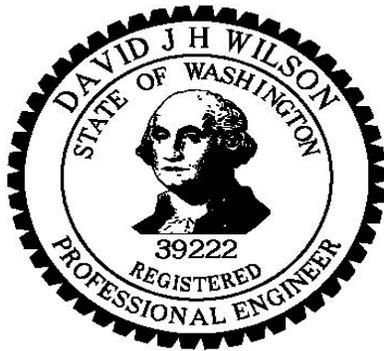


Storm-water Pollution Prevention plan for the Douglas Shaw Singlewide Demolition Project:

Prepared: March 18, 2020

Site Address: 17722 115th Street NE, Granite Falls, WA 98252

Parcel Number: 0040-6400-0029-00



Site Vicinity map:



Detailed Project Description:

The location of the Douglas Shaw home site is accessed off of the Engebretsen Road, 175th Ave SE in the Cedar Lane Plat, and 115th Street NE the parcel consists of a 0.25 acre parcel (13,080 square feet), with a 60' width and a 218' depth. The home was substantially damaged during the fall- winter floods of 2015, a substantial damage calculation was prepared by a flood hazard planner. In June of 2016 the home was submitted to FEMA Region X, and the State Military Department as a Snohomish County sponsored buyout/ demolition scoped project. After award in the fall of 2019, the county purchased the home for a sale price of \$ 106,800 and closed on the sale in March/ April of 2020. In March of 2020 the Public Works Department was issued a Demolition permit for removal of the home by WA State Labor and Industries and awarded the demolition contract to XXXX Inc. (Construction Material recycler/ Demolition Specialist). The home is planned to be completely torn down by September 2020, including the removal of out buildings and the cutting of all blackberry's onsite to a height of 18" off the ground surface. Due to fall/ winter flood season, the site work necessary to complete the invasive plant removal will continue, and final planting will be delayed until the end of the winter season with plants installed during February 2021. Native Plant establishment in the critical areas buffer is planned to occur in the fall/ winter of 2021-2022 if it becomes necessary to provide a longer term invasive plant treatment period prior to the installation of plant materials.

The site topography ranges between 240' and 250', and features a small fish bearing stream approximately 30 feet from the South portion of the property boundary. The slopes are gentle and flat as one would expect in the floodplain of the south fork Stillaguamish River. The former Douglas Shaw home site and single wide trailer are both inside the FIRM (Flood Insurance Rate Map) mapped floodplain as measured from the toe of the slope and the banks of the S. F. Stillaguamish River to Engebretsen road and the flood waters general drain from the east to the west during large flood events. The singlewide trailer removal does not pose much risk for the excavator operator and general contractor, who are to be awarded the site work and the structure removal and site stabilization for establishment of the riparian buffer with a soil amendment/ compost mixture with straw or arborists mulch.

Existing impervious conditions: When the square footage of the two sheds (150/ 220), the house (660), and covered deck are considered there is 1,030 square feet of structural building envelope to be removed from this site in the form of a three individual structures. The driveway impervious areas from the northern access point to the home is roughly 800 square feet, and the concrete slab east of the home is 200 square feet. Total impervious surfaces within the parcel boundaries is estimated to be 2,030 square feet.

Site impervious surfaces post demolition and ground disturbance: At completion of the project all of the improved structures will be removed including the buried septic tank. However there will still be 120 square feet of the access driveway that will remain in a compacted gravel surface. So total impervious surfaces in the post project conditions more or less be nearly all removed to a pervious condition to allow for establishment of native trees and shrubs.

Ground disturbing activities: The main disturbed area is the footprint of the home, adjacent septic tank, two sheds, and the east side deck. This amounts to another 3,500 square feet of ground disturbance. Total ground disturbing activities generated by the project amount to 0.08 acres.

Parcel Site Map:



Site Stabilization/ Restoration:

This project does not meet the definition of development as it involves the removal of impervious areas, property improvements, and installation of a native plant buffer and the creation of community open space. So many of the elements of the 2016 and 2017 updated Snohomish County Drainage Manual do not apply. Per section 1.6.3 of the Drainage Manual states: The Manual is not a “retrofit” manual but can be helpful identifying options for retrofitting areas or sites with existing development. In retrofit situations there are frequently site constraints that make the strict application of BMP’s difficult. Section 2.2 of the drainage manual covers “Exceptions and Exemptions” and refers readers to Snohomish County Code 30.63A part 200 (3) Remodeling or tenant improvements that do not meet the definitions of new development, redevelopment or land disturbing activity. Snohomish County Code 30.63A.300 Drainage review thresholds and requirements for new development. (2.b) For land disturbing activities a threshold of 7,000 square feet or greater is established. The Douglas Shaw singlewide home demolition as proposed generates a grading footprint of 2,000 square feet to 3,600 square feet as proposed in the site plan prepared for the demolition contractor.

All disturbed areas on the site proposed to be amended with a compost based/ or amended topsoil for establishment of a native shrub and tree filled riparian buffer. The composted amendment shall be per the requirements of best management practice described in the 2016 Snohomish County Storm-water Manual, volume V, chapter 5. During the removal of the concrete foundation pier blocks the onsite soils will be re-graded to remove the concrete structures

and grade the site to smooth surfaces without a large discontinuity such that the lot drains equality to the north and to the south side of the lot or area of excavation. Per the site work specifications the amended soil compost will be covered with a 6" layer of seed free straw or arborist mulch. There does not appear to be any wetlands on the site, the critical areas site plan or CASP documented that most of the lot is located within a riparian buffer of roughly 150' adjacent to the small fish bearing stream to the south.

Table 1.) Land cover conversion estimates, based upon demolition site plan and property restoration plans

Conversion activity	existing impervious to Forest	Pasture/ Meadow to Riparian Forest
Removed drive/ building footprints	2,030 square feet *	
150 foot setback from the small stream bank *		0.20 acre**

* Note no new impervious areas are proposed by this project

** Note a 10' setback from the edge of asphalt and the existing driveway (north of planting area) will be left in impervious (120 square feet) to provide reasonable maintenance access for mowing and clearing vegetation around the site of for maintenance of the erosion/ stabilization features of the site over time.

All disturbed areas on the site will be amended with a compost based/ or amended topsoil for establishment of a native shrub and tree filled riparian buffer or converted to pasture grasses. The composted amendment shall be per the requirements of best management practice described in the 2016 Snohomish County Storm-water Manual, volume V, chapter 5.

Per the site work specifications the amended soil compost will be covered with a 6" layer of seed free straw or arborist mulch. There were not any wetlands identified on the site by the project environmental planners in Public Works environmental services, the critical areas site plan or CASP documented that much of the lot is located within a riparian buffer of roughly 150 adjacent to the small stream to the south, a tributary to the South Fork Stillaguamish River.

SCC 30.63A (Drainage) Compliance: this project is found in compliance with the following Snohomish County drainage code and standards based upon:

- SCC 30.63A.300 (2) unless an exception under SCC 30.63A.210 applies, New development projects shall comply with minimum requirements 1-5 (SCC 30.63A.400 through 30.63A.525) for the new and replaced hard surfaces and the land disturbed if the activity will: (b) Cause land disturbance of 7,000 square feet or greater.
- SCC 30.65A.310: (1) Regardless of redevelopment thresholds established below in subsections (2) and (3) of this section all redevelopment shall comply with minimum requirement 2 (SCC 30.63A.445 and SCC 30.63A.450) unless minimum requirement 2 is not required for an exempted activity pursuant to SCC 30.63A.200. In addition re-development shall comply with any other applicable redevelopment requirement specified in part 700 of this chapter.
- SCC 30.63A.445: When minimum requirement 2 applies pursuant to part 300 of this chapter of SCC 30.63A.200, the applicant or any person required to comply with any other minimum requirement 2 shall prepare a SWPPP consistent with SCC 30.63A.445 and 30.63A.450. Onsite native trees and shrubs shall be protected during construction; any trees removed inadvertently by the contractor shall be replaced as described in the project technical specifications. The site grading shall be maintained, all disturbed areas where equipment has been utilized shall be covered with a six inch layer of seed free straw or wood mulch.

This project disturbs 0.08 acres of upland surfaces above the ordinary high water mark of the South Fork Stillaguamish River and outside of any known, mapped or identified wetlands. A SWPPP has been prepared and no new imperious or hard surfaces are proposed by this project.

SCC 30.63B (Land Disturbing Activity) Compliance this project is found in compliance with the following Snohomish County LDA code and standards based upon:

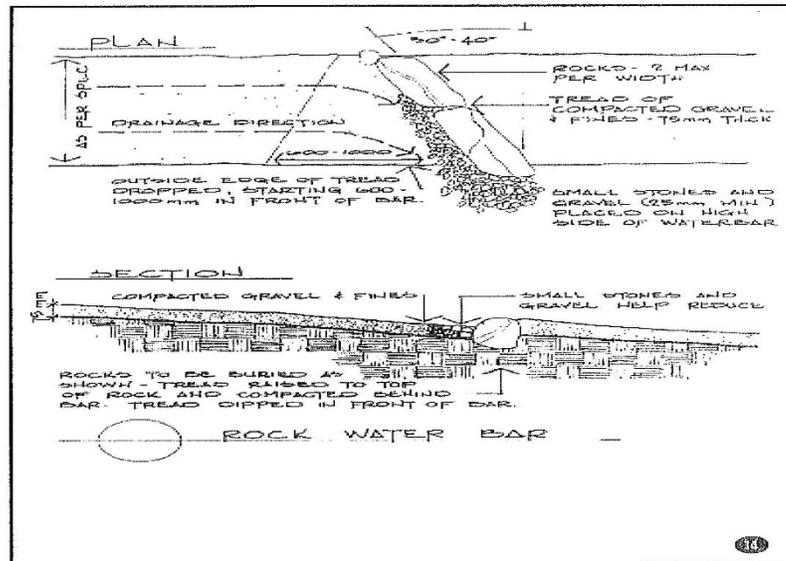
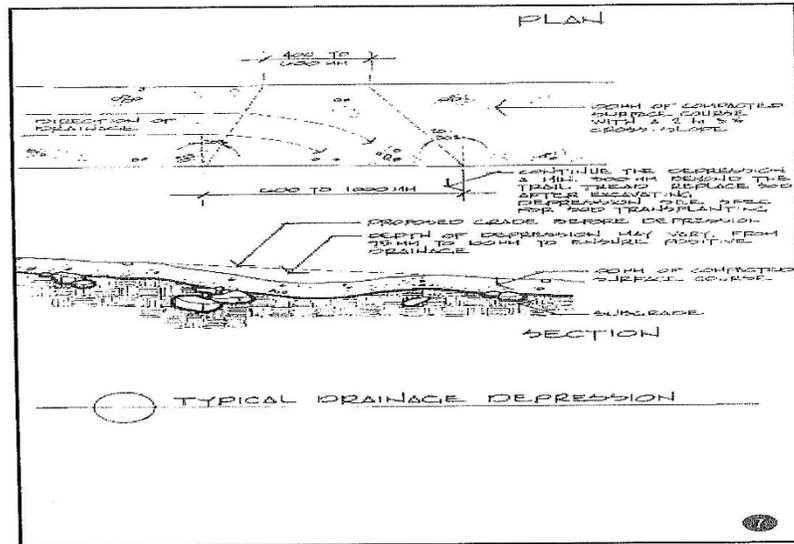
- SCC 30.63B.030: (1) A land disturbing activity permit is required for all land disturbing activity and must be obtained prior to the commencement of any land disturbing activity unless the activity is exempted in SCC 30.63B.070, or the activity is conducted as part of a project administered by the department of Public Works or the County Engineer under the requirements of SCC 30.63B.100(1)(b) and (2)

SWPPP Element # 1 Mark Clearing limits, the clearing limits are the limits of the upland parcel, some trees will be selectively limbed along the driveway due to access by large excavators and all conifers will be retained as noted on the "Demolition site plan", buildings on the south side of the lot will be removed and a 10 foot zone around these sites will be cleared to the limits of the building foot prints in those areas. The southern clearing limits are the limits of the building removal plus 10 feet at the most downstream portion of the site and will discharge through straw bales or a silt fence into a grassy meadow/ black berry covered type of area. Property boundaries will be staked by a private land surveyor from the County Public Works on-call list to support grading and demolition in the June and July time frame it is proposed to occur.

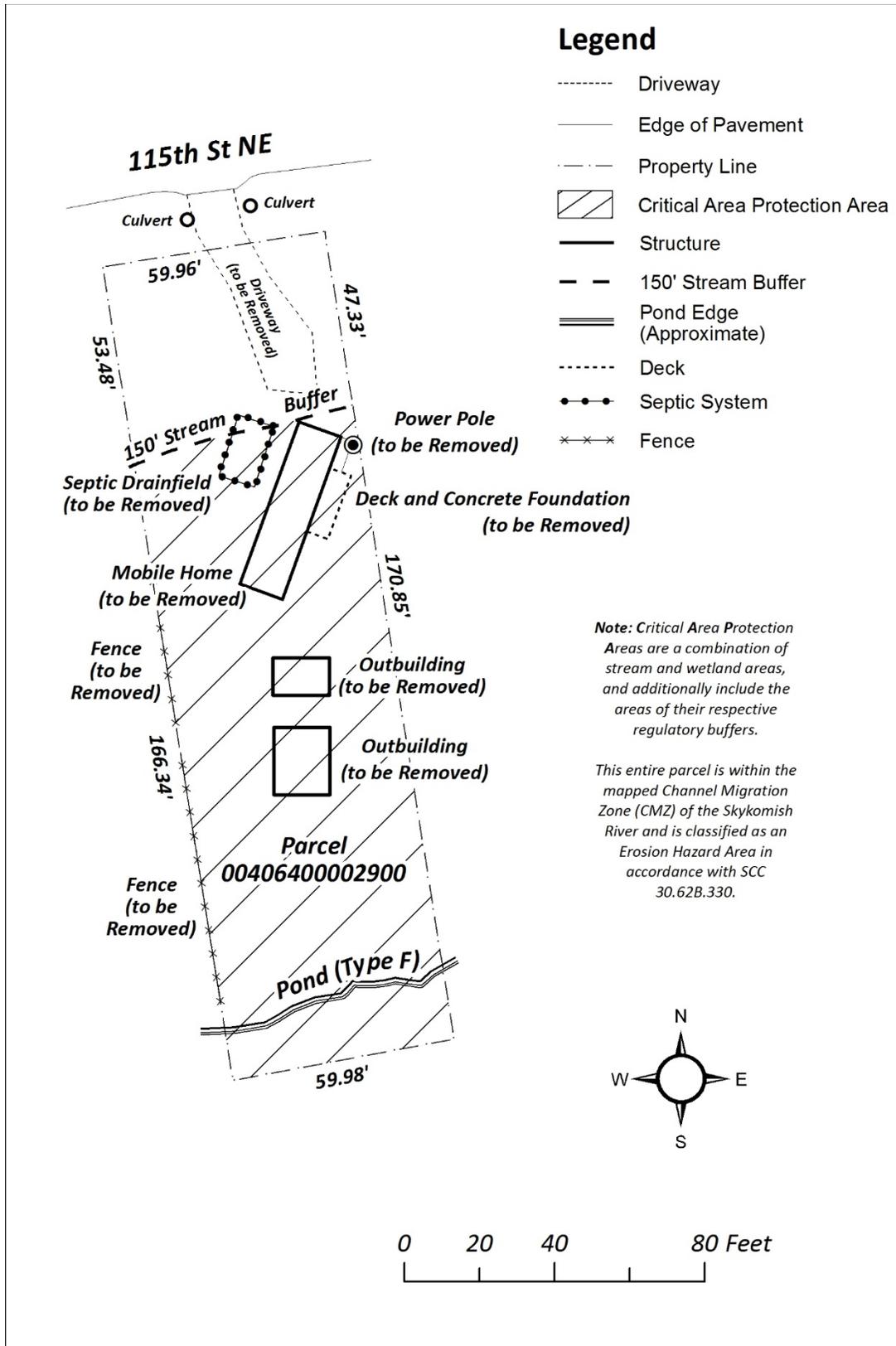
SWPP Element # 2 Construction Access, the main access is the existing driveway, it will be utilized during demolition and improved to accommodate higher clearance and the wider wheel base of heavy equipment and dump trucks, to widen the access the coniferous trees to the east of the drive will be limbed up in deference for protection of the onsite conifers located along the property line on the eastern portion of the lot.

The project proposes to use dispersion and removal of impervious areas for long term on-site storm-water management. Disturbed impervious areas of this site will be removed by the activities to remove the driveway and the concrete surfaces, foundations (blocks/ piers) on this site. So there is no intention to have any pollution generating surfaces in the post project condition, with the exception of the main driveway remnant. Which is necessary to remain to protect adjacent trees and install/ maintain proposed native plants in the river buffer areas. The biggest issue in terms of on-site storm-water is the site drainage during excavation site work and site stabilization phase of the project.

Existing fencing on the property shall be removed by the contractor, unless such removal of that alignment will interfere with existing native vegetation. If large boulders or other significant rocks are encountered during the demolition and associated excavation of the concrete foundation or the concrete driveway they may be placed between the lot and the Cedar Lane community roadway to prevent site occupation by motor vehicles in the future. Rocks or Portland cement concrete from the foundation (pier blocks) of the home may be left onsite oriented in a west to east direction parallel to the private road tract such that they create a barrier between the lot and community road to prevent motor vehicles entry to the newly created public open space. High density materials left onsite shall be mounded such that they have side slopes of 2:1, are keyed into site soils, and do not protrude to a height greater than 24" above adjacent terrace grades before mulch and topsoil is applied. High density materials shall be placed such that a minimum of 144 inch clear zone is provided to allow incidental parking and avoid blockage of the community roadway. Water Bar or Drainage Depression abandonment of the onsite gravel driveway, located on the north side of the lot there is a depression near the roadway in the form of a ditch located near the community roadway. The contractor shall excavate a depression in the footprint of the abandoned driveway roughly ten to twenty feet and drain adjacent surfaces to the west matching the natural drainage of the area. Damage to root systems greater than 7/8" in diameter shall be avoided if at all possible.



Driveway Abandonment Details:



Critical Areas Site Plan (CASP)

SWPPP Element 3.) Control Flow rates

Since the area of disturbance is below the 7,000 square foot threshold, flow control rates were not calculated, as there should be adequate distance to the small stream to the south that natural vegetation filtering such that disturbed soils will not discharge into the small stream directly, but will be filtered through the grasses and onsite vegetation such that existing flow rates will not change in the post project condition.

SWPPP Element 4.) Install sediment controls

Water Bar or Drainage Depression abandonment of the onsite gravel driveway, located on the north side of the site. The contractor shall create a depression at the northern limits of site work to direct onsite flows and drainage from disturbed areas and the private roadway for the purpose of sediment settling in the post project condition. The water bar shall drain to the ditch to the north and participate in the bio-filtration of the site run-off. The water bar will be created between the existing home site and the road to the north, such that one maintenance parking spot will be left on site. Additionally the driveway will be blocked, such that the site will not be accessible beyond the parking spot by motor vehicles. Planting and future maintenance activities will be completed with hand tools, wheel barrows, and other human powered or hand held motor systems/ means.



View from 115th Street/ from the northern portion of the lot.

SWPPP Element 5.) Stabilize Site Soils

All impervious surfaces such as asphalt, concrete pavement or compacted gravel will be removed by the contractor. Snohomish County does allow for the contractor to pile the broken Portland cement concrete in the existing excavation and “coffin” or bury the materials in place with a two foot lift of topsoil being placed above the broken concrete and a 6” layer of seed free straw or arborists mulch placed above to avoid riling or other site sediment transport by sheet flows. Replaced non-compacted soils will be established such that the top 12” of the soil profile can be easily replanted with native plants exclusively with hand tools.

Gravel driveway impervious surfaces shall be removed and hauled away by the contractor; with the exception of compacted gravel surfaces/ pavements within ten feet of the edge of the private roadway which may be left in place. An allowable alternative to this is to pile the 5/8" driveway gravels into a berm located just inside the north property boundary of the parcel, to minimize excavation in the "drip line" of the Douglas fir trees located adjacent and east of the driveway. The intent of this is to prevent occupation of the driveway by motor vehicles, recreational vehicles or camper vans.

Existing fencing on the property shall be maintained and repaired by the contractor, such that the alignment will not interfere with existing vegetation. If large boulders or other significant rocks are encountered during the demolition and associated excavation of the concrete foundation or the concrete driveway they may be placed between the lot and the adjacent private parcel to the east to prevent site occupation by motor vehicles in the future and act as a vegetation buffer for fence maintenance. Rocks or Portland cement concrete from the foundation of the home may be left onsite oriented in a west to east direction parallel to the north property line such that they create a barrier between the lot and private road to prevent motor vehicles entry to the newly created public open space. High density materials left onsite shall be mounded such that they have side slopes of 2:1, are keyed into site soils, and do not protrude to a height greater than 24" above adjacent terrace grades before mulch and topsoil is applied. High density materials shall be placed such that a minimum of 60 inch clear zone is provided at the eastern site boundary to allow for maintenance of fencing and assist with blockage of the private roadway with a minimum depth of 12' past the ditch system culvert in place for the lot's northern access point.

Storm-water site plan minimum requirement # 1 preparation of storm-water site plan

The development depicted below is generally the same presently, the Snohomish Health district as-built map of the septic. On the septic as-built map, the tank and drain field are depicted just north and slightly west of the home depicted below.

Some ornamental evergreen trees will be removed along the driveway, including the English Laurel along the driveway, additionally the ornamental "pampas grass" and "bamboo" adjacent to the septic system will be removed. Most of the site disturbance is within the footprint of the two outbuildings, house, and the septic system.

The site soils are alluvial in nature, un-consolidated graded materials from a fine loam and loose clay matrix to 12"-15" stone cobbles being highly erodible. In fact the entire parcel is located within the Flood Hazard zone of the South Fork Stillaguamish River and is classified as an hazard area. The property is a floodplain terrace and the site soils appear to be stable where they are flat and vegetated and quite suitable/ productive for native plants and tree growing purposes.

Offsite up-stream and downstream analysis, the upland areas adjacent to the parcel are part of the same floodplain terrace, gently draining from north to south at a 1-2% grade. The site is situated on a floodplain terrace, that is about 1,200 feet wide. The downstream drainage area is the South Fork of the Stillaguamish River, which is the source of the riverine flooding that has taken substantially damaged the home during the late fall of 2015.



View from the north from the east corner of the lot:



View to the south from the central portion of the lot:



View from the neighbors to the south east: