

Rosenstein Residence - 2035 81st Ave SE, Mercer Island

Seasonal Development Deviation Narrative

Project Overview

This Stormwater Site Plan is for a single-family residence located at the current address 2035 81st Ave SE in the City of Mercer Island, Washington. The project will be constructed in one phase.

Site work includes the demolition and reconstruction of one residential structure, partial reconstruction of an (E) private drive serving a total of two properties, a new driveway, a new residential structure with attached garage, lawn areas, patios, and landscaping improvements. The project includes minor amounts of site grading and drainage improvements that include the addition of a detention tank for collection of storm-water.

Existing (Pre-developed) conditions summary

The subject site is located on the north side of Mercer Island. The site area is approximately 2/5 of an acre and is developed with a residential structure that is two stories with a partial basement and crawl space and an attached carport. The property is located on a slope, has an existing rockery along the private drive off of 81st Ave SE. The site is bounded on the north, east and west, by residential properties and the south by a private drive. The existing residence is accessed by a private driveway off of 81st Ave SE. The property has a number of (E) terracing rockeries that will be maintained throughout construction

The site generally slopes from southeast to the northwest with an average slope of approximately 24%. Part of the property has been mapped by the City of Mercer Island as an Erosion Hazard, Seismic Zone and Potential Slide hazard zone.

Summary of existing drainage system:

- The site drains by a combination of surface flow and hard pipe, piped flow down slope to the NE to the city's sewer and storm water mains located in 80th Ave SE. The city sewer has an easement on the project property as well as 2024 80th Ave SE for the sewer line. It appears the stormwater line follows the sewer line but is separate.
- The current foundation drainage and roof downspouts currently tie into the line piped to flow directly to 80th Ave SE.
- The remainder of site sheet flows to the northwest

Developed Conditions Summary

The project includes:

- Demolition and reconstruction of one residential structure.
- Partial reconstruction of private drive off of 81st Ave serving this property and (1) other property
- Construction of soil stabilization pile wall to the project north to help with the poor soil quality and slope.
- Drainage improvements include a detention tank and pump to convey storm water up to the main in 81st Ave SE.
- Construction of patios, decks, and landscaping improvements.

Other

- The proposed house footprint (2,542 sf incl. garage) will be moving northwest in relationship to the (E) foundation as a result of setback requirements. There will be some reconfiguration of the shared driveway grade in order to try and lift the building up to minimize further excavation. The new driveway apron will tie into the (E) driveway reconfigured driveway and will drop down the site to the height of the (E) main level. The (E) basement level and proposed basement level are at the same level in order to minimize the amount of export. We will be installing a new permanent slope stabilization shoring wall in conjunction with proposed foundation to assist in the stabilization of the poor soil quality. We are working with the structural engineer and the geo-technical engineer to utilize the (E) basement retaining walls to serve as temporary shoring as we construct the new southern and south-eastern basement retaining walls.

The site topography and lot proportions dictate that the access to the existing residence is best served by utilizing the existing driveway location.

Summary of developed drainage system:

- During construction, a double silt fence along the downslope of the excavation, one at the base of the limits of excavation and one at the edge of the soil stabilization wall will be implemented.
- We will be utilizing the detention tank to deal with any silty water that accumulates.
 - If we are able to get an easement along the northern property to drain into the city main in 80th ave SE, and if necessary, we will bring in a temporary holding tank.
- The drainage improvements proposed for the development include:
 - Perforated subsurface foundation drains for structures and retaining walls to collect subsurface flows
 - Stormwater runoff of pollution generating impervious area associated with the driveways, as well as the downspouts due to location, will be conveyed to a detention tank prior to being pumped up to 81st Ave SE

Stormwater Pollution Prevention

The following 12 elements have been addressed on the TESC Plan (see Erosion Control Plan Sheet C-1.0):

- Mark Clearing Limits – Clearing limits will be defined by erosion control fencing, tree protection fencing and construction fencing. The actual limits of clearing will most likely be smaller than the limit of work area, but this identifies the maximum extent of the clearing limits. A tree preservation plan has been approved under permit 1908-009 to clearly show the existing trees to remain. Existing gravel areas and areas to be cleared will be maintained in an undisturbed condition until required to be impacted. Areas impacted and not anticipated to be covered with final measures shall be stabilized using approved TESC methods.
- Establish Construction Access – A temporary construction access will be installed if necessary. A quarry spall pad will be installed, if required, over the existing driveway. It is anticipated that much of the existing asphalt driveway will be used during construction to provide a protected hard surface for construction traffic and limit the erosion potential. The contractor will be directed to stay on the hard surface to the extent possible.
- Control Flow Rates- On-site runoff will be routed through sediment control facilities to holding tank to deal with any silty water that accumulates. Install Sediment Controls – Sediment will be controlled using a double silt fence at the downslope side of the limits of excavation and directly downslope of the installed soil stabilization wall, filter fabric fences, straw bales, triangular silt dikes, catch basin inserts, temporary runoff sumps with pumps as required, and sediment traps in the form of water tanks. It is the Contractor's responsibility to upgrade erosion control as necessary to meet applicable requirements
- Stabilize Soils – It is possible that some of the earthwork and grading may occur in wet weather conditions. The site must be stabilized and no soils will be allowed to remain unstabilized for more than two days between October 1st and April 30th. From May 1 through September 30, cover measures must be installed to protect disturbed areas that will remain unworked for seven days or more. By October 8, seed all areas that will remain unworked from October 1 through April 30. Mulch all seeded areas. Exposed slopes will be protected by DOE-approved coverage methods. BMPs including, but not limited to: C101, Preserving Natural Vegetation; C121, Mulching; C123, Plastic Covering; C130, Surface Roughening; C140, Dust Control; and T5.13 Post Construction Soil Amendment will be used to stabilize on-site soils during construction. (See Erosion and Sedimentation Control Notes sheet C-1.2).
- Protect Slopes – DOE-approved BMPs for slope protection will be utilized during construction. Concentrated discharges shall not be allowed to flow over the top of steep slopes. BMPs including, but not limited to C101, Preserving Natural Vegetation; C121, Mulching; C123, Plastic Covering; C130, Surface Roughening; C140, Dust Control; C200, Interceptor Dike and Swale; C207, Check Dams; and C233, Silt Fence are to be utilized to protect slopes during construction. Along the lines of C121, we are proposing the addition of 4" of mulch to protect the slope
- Protect Drain Inlets - To prevent discharge of turbid water downstream, all existing catch basins located within the disturbance area and outside of the disturbance area within approximately 500 ft downstream of the site will be protected with storm drain inlet protection (BMP C220). Proposed inlets will also be protected with catch basin inserts, and where feasible, their outlets will be temporarily plugged until the site is stabilized. The Contractor shall remove inlet protection at the end of the project without releasing captured sediment into the storm system.

- Stabilize Channels and Outlets - DOE-approved BMPs for channel stabilization will be utilized during construction, including, but not limited to: C200, Interceptor Dike and Swale; and C207, Check Dams.
- Control Pollutants – Temporary protection of the disturbed soils provides the first level of protection for pollution control, and perimeter measures downstream will mitigate the remaining pollutants. The temporary protection of disturbed soils may be mitigated with a temporary sump and pump facility to provide the second level of interception of pollutants. This collection system filters sediments prior to the pump system. The pump system will then route stormwater into the detention settling tank. All construction debris will be removed from the site. Contractor will be responsible for managing their construction equipment per DOE-approved BMPs. If a truck wheel wash is required, truck wheel wash water and concrete truck washout water shall be collected and discharged to the public sanitary sewer (SS) system or removed from the site and taken to an approved discharge location. To apply for SS release, the Contractor will contact the local sewer purveyor for authorization.
- Control De-watering –The majority of the earthwork on the project will be constructed during the dry season; therefore, it is not expected that groundwater will be encountered in the excavations for this project. In the event that perched groundwater is encountered during any wet season construction, the Contractor shall pump it out of the excavations and route it to the sump and then pump to a dispersion pipe.
- Maintain BMPs – DOE-approved standard BMP maintenance will be required in accordance with the Erosion and Sedimentation Control Plan and Notes.
- Manage the Project – All phases of construction will be managed by the Contractor. The site must be stabilized and no soils will be allowed to remain exposed and unworked for more than two days between October 1st and April 30th and for more than seven days between May 1st and September 30th. The Contractor will provide maintenance and monitoring of TESC BMPs. Work of all contractors will be coordinated to minimize the duration of disturbance on the site. The best management practices shown on the TESC plan are minimum requirements.

Best Management Practices (BMPs)

BMPs will be in accordance with the Stormwater Management Manual for Western Washington unless otherwise noted here.

Sediment Control – The majority of the earthwork is anticipated to be completed during wet weather condition and care will be given to protect disturbed soils. Stormwater from the building excavation will be collected and if necessary, filtered through sediment control tanks. Clean runoff will be collection into the new drainage system. It is anticipated that this will be sufficient to meet the discharge standard for the City. Sediment control sizing in accordance with the Stormwater Management Manual for Western Washington,

Included in Submittal:

- Development Application
- Wet Season Contact Information
- Wet Season Narrative
- Geo-Tech Wet Weather Memo
- Construction Timeline
- Wet Season Erosion Control Plan & Project Erosion Control, TESC & Drainage Plan (Associated with 1908-009)
- Storm Report associated with permit 1908-009