

CITY OF MERCER ISLAND

DEVELOPMENT SERVICES GROUP

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SECTION A: SMALL PROJECT STORMWATER SITE PLAN/REPORT

Narrative and Plan Submittal

Instructions: This is a template for a simplified Stormwater Report. This form or an equivalent must accompany your Building Permit Application if the answer is “Yes” to each statement below. If “No” is the answer to one or more of the statements below, a full Drainage Report is required and the project does not qualify for use of the Small Project Stormwater Site Plan/Report template.

Select “yes” or “no” for each statement below. Answer “yes” if the statement accurately describes your project.

Yes	No	Statement
✓		This project disturbs less than 1 acre and is not part of a larger common plan of development.
✓	<input type="checkbox"/>	This project converts less than 3/4 acre to lawn or landscape areas.
✓		This project will create, add, or replace (in any combination) 2,000 square feet or greater, but less than 5,000 square feet, of new plus replaced hard surface OR will have a land disturbing activity of 7,000 square feet or greater OR will result in a net increase of impervious surface of 500 square feet or greater.
✓	<input type="checkbox"/>	This project will not adversely impact a wetland, stream, water of the state, or change a natural drainage course.

Basic Project Information

Project Name: 2436 74th Ave SE

Site Address: 2436 74th Ave SE

Total Lot Size: 25,799

Total Proposed Area to be Disturbed (including stockpile area): 6,561 sq ft

Total Volume of Proposed Cut and Fill: 9 c.y. cut, 100 c.y. fill, net 91 c.y. fill sq ft

Total Proposed New Hard Surface Area: 3,409 sq ft

Total Proposed Replaced Hard Surface Area: 0 sq ft

Total Proposed Converted Pervious Surface Area 0
(Native vegetation to lawn or landscape): _____ sq ft

Net Increase in Impervious Surface: 3,409 sq ft



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SECTION A: SMALL PROJECT STORMWATER SITE PLAN/REPORT

Minimum Requirement #1 : Preparation of Stormwater Site Plan

Written Project Description:

The site is currently undeveloped. The project will construct a new single family residence along with typical utility connections. Storm water will be collected from all new impervious surfaces and connect to the existing on-site storm conveyance system within the stormwater easement. This storm line continues south connecting to an existing community stormwater system that flows through the site. This system continues east across the property line into the Aegis Living property and continues downstream to the east. The project proposes a fee in Lieu of detention. A downstream analysis report has been attached at the end of this form. The sewer line will connect to a sewer stub at the Northeast corner of the site. Water will connect to the main within 74th Ave E.

Calculate new or replaced areas by surface type:

Lawn or Landscape Areas: <u>2,676</u> sq ft	Roof Area: <u>2,619</u> sq ft
Other Hard Surface Areas:	
Driveway: <u>998</u> sq ft	Patio: <u>0</u> sq ft
Sidewalk: <u>270</u> sq ft	
Parking Lot: _____ sq ft	Other: _____ sq ft

Attach Drainage Plan

Drainage Plan shall include the following:

- Scaled drawing with slopes, lot lines, any public-right-of-way and any easements, location of each on-site stormwater management BMP selected above and the areas served by them, buildings, roads, parking lots, driveways, landscape features, and areas of disturbed soils to be amended.
- The scaled drawing must be suitable to serve as a recordable document that will be attached to the property deed for each lot that includes on-site BMPs. Document submittal must follow the “Standard Formatting Requirements for Recording Documents” per King County: www.kingcounty.gov/depts/records-licensing/recorders-office/recording-documents.aspx
- Identify design details and maintenance instructions for each on-site BMP, and attach them to this Small Project Stormwater Site Plan/Report.



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SECTION A: SMALL PROJECT STORMWATER SITE PLAN/REPORT

Minimum Requirement #2 : Construction Stormwater Pollution Prevention

- Complete Section B of this submittal package: Construction Stormwater Pollution Prevention Plan Narrative (SWPPP)
- Attach construction SWPPP

Minimum Requirement #3 : Source Control of Pollution

This section contains practices and procedures to reduce the release of pollutants. Provide a description of all known, available and reasonable source control BMPs that will be, or are anticipated to be, used at this location to prevent stormwater from coming into contact with pollutants. Additional BMPs are found in Volume IV of the 2014 Stormwater Management Manual for Western Washington (SWMMWW).

Check the BMPs you will use:

- BMP S411 for Landscaping and Lawn/ Vegetation Management
Operational practices for sites with landscaping
- BMP S421 for Parking and Storage of Vehicles.
Public and commercial parking lots can be sources of suspended solids, metals, or toxic hydrocarbons such oils and greases.
- BMP S433 for Pools, Spas, Hot Tubs, Fountains
Discharge from pools, hot tubs, and fountains can degrade ambient water quality. Routine maintenance activities generate a variety of wastes. Direct disposal of these waters to drainage system and waters of the state are not permitted without prior treatment and approval.
- Other BMPs found in Volume IV of SWMMWW applicable to project:

- No source control BMPs are applicable for this project.



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SECTION A: SMALL PROJECT STORMWATER SITE PLAN/REPORT

Minimum Requirement #4 : Preservation of Natural Drainage Systems

Natural drainage patterns shall be maintained and discharges from the project site shall occur at the natural location, to the maximum extent practicable. All outfalls require energy dissipation.

Choose the option below that best describes your project:

This site has existing drainage systems or outfalls. These items are shown on the Drainage Plan. Include the following items on the Drainage Plan:

- Pipe invert elevations, slopes, cover, and material
- Locations, grades, and direction of flow in ditches and swales, culverts, and pipes

Describe how these systems will be preserved:

This site does not have any existing drainage systems or outfalls.

Additional Comments:

Existing site runoff sheet flows towards the east property line and continues before being collected into an existing stormwater conveyance system located within tax parcel 5315100455. The system within the mentioned tax parcel conveys runoff until it oufalls to Lake Washington.



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SECTION A: SMALL PROJECT STORMWATER SITE PLAN/REPORT

Minimum Requirement #5 : On-site Stormwater Management

All projects meeting the thresholds for this Small Project Stormwater Report shall employ on-site stormwater management BMPs (See Small Project Stormwater Requirements Tip Sheet) to infiltrate, disperse, and retain stormwater runoff on-site to the extent feasible without causing flooding or erosion impacts.

List #1

For each category select the *first* feasible item on the list below. Document your justification for each infeasible BMP in Section C of this submittal package.

Check one option for each category below:



Lawn and Landscape Areas

- My project does not have *Lawn or Landscape* areas
- Post-construction soil quality and depth
- Post-construction soil quality and depth is infeasible (see Section C of this submittal package)



Roofs

- My project does not have *Roof* areas
- 1. Full dispersion or downspout full infiltration
- 2. Rain garden or bioretention
- 3. Downspout dispersion system
- 4. Perforated stub-out connections
- 5. On-site detention system or fee-in-lieu of on-site detention authorized by the City Engineer (applicable if options #1-4 are infeasible and drainage from the site will be discharged to a storm or surface water system that includes a watercourse or there is a capacity constraint in the system)
- 6. No Roof BMP (applicable if options #1-4 are infeasible and on-site detention is not required)

Measured Infiltration Rate: _____ in/ hr

If #5 or #6 is selected, briefly describe why no Roof BMP is feasible (include detailed information in Section C of this submittal package):

The Site is within a mapped area where infiltrating LID facilities are not permitted. The Site is located within an erosion hazard area, a seismic hazard area, and potential slide area. A fee in Lieu of detention is proposed for this project. All collected runoff will be piped to an existing community stormwater bypass system, and therefore no infiltration or flow control BMPs are required or proposed.



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SECTION A: SMALL PROJECT STORMWATER SITE PLAN/REPORT

Minimum Requirement #5 : On-site Stormwater Management (cont.)



Other Hard Surfaces (such as driveway, sidewalk, parking lot, patio, etc.)

- My project does not have *Other Hard Surface* areas
- 1. Full dispersion
- 2. Permeable pavement, rain gardens, or bioretention
- 3. Sheet flow dispersion or concentrated flow dispersion
- 4. On-site detention system or fee-in-lieu of on-site detention authorized by the City Engineer (applicable if options #1-3 are infeasible and drainage from the site will be discharged to a storm or surface water system that includes a watercourse or there is a capacity constraint in the system)
- 5. No Other Hard Surface BMP (applicable if options #1-3 are infeasible and on-site detention is not required)

Measured Infiltration Rate: _____ in/ hr

If #4 or #5 is selected, briefly describe why no Other Hard Surface BMP is feasible (include detailed information in Section C of this submittal package):

Due to site topography and lack of pervious or vegetated space downstream of site impervious areas, dispersion and bioretention are not feasible.

Flow Control Exempt List

Proceed with this list if your project discharges directly to Lake Washington or if findings from a downstream analysis confirm that the downstream system is free of capacity constraints for a minimum of ¼ mile and a maximum of 1 mile.

For flow control exempt discharges, the BMPs listed below for Roofs and Other Hard Surfaces do not need to be evaluated in priority order. You can select any BMP from the lists provided below and do not need to document infeasibility in Section C of this submittal package.

Check one option for each category below:



Lawn and Landscape Areas

- My project does not have *Lawn or Landscape* areas
- Post-construction soil quality and depth



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SECTION A: SMALL PROJECT STORMWATER SITE PLAN/REPORT

Minimum Requirement #5 : On-site Stormwater Management (cont.)



Roofs

- My project does not have *Roof* areas
- Downspout full infiltration
- Downspout dispersion system
- Perforated stub-out connections
- Each item above is infeasible

If “Each item above is infeasible” is selected, briefly describe why no Roof BMP is feasible:

The Site is within a mapped area where infiltrating LID facilities are not permitted. There is insufficient room for dispersion flow paths and the Site is located within an erosion hazard area and potential slide area. A fee in Lieu of detention is proposed for this project. All collected runoff will be collected and tightline connect to an existing community conveyance system within the adjacent parcel.



Other Hard Surfaces (such as driveway, sidewalk, parking lot, patio, etc.)

- My project does not have *Other Hard Surface* areas
- Sheet flow dispersion
- Concentrated flow dispersion
- Each item above is infeasible

If “Each item above is infeasible” is selected, briefly describe why no Other Hard Surface BMP is feasible:

The Site is within a mapped area where infiltrating LID facilities are not permitted. There is insufficient room for dispersion flow paths and the Site is located within an erosion hazard area and potential slide area. A fee in Lieu of detention is proposed for this project. All collected runoff will be collected and tightline connect to an existing community conveyance system within the adjacent parcel.



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SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

Instructions

This is a template for a simplified Construction Stormwater Pollution Prevention Plan (“Construction SWPPP”). If “No” is the answer to one or more of the statements on the first page of Section A of this submittal package, then a full Construction SWPPP is required and the project does not qualify for the use of the Small Project Construction SWPPP Narrative template. If the project is less than the thresholds on the first page of Section A of this submittal package, then Minimum Requirement #2 still applies, but this section (Section B) or a full construction SWPPP is not required. You should include your Construction SWPPP in your contract with your builder. A copy of the Construction SWPPP must be located at the construction site or within reasonable access to the site for construction and inspection personnel at all times.

General Information on the Existing Site and Project

Describe the following in the Project Narrative box below (attach additional pages if necessary):

- Nature and purpose of the construction project
- Existing topography, vegetation, and drainage, and building structures
- Adjacent areas, including streams, lakes, wetlands, residential areas, and roads that might be affected by the construction project
- How upstream drainage areas may affect the site
- Downstream drainage leading from the site to the receiving body of water
- Areas on or adjacent to the site that are classified as critical areas
- Critical areas that receive runoff from the site up to one-quarter mile away
- Special requirements and provisions for working near or within critical areas
- Areas on the site that have potential erosion problems

Project Narrative:

-The proposed development plans for the Site involve constructing a new residence along with new utility and drainage connections.

- The remainder of the Site contains steep slopes of vegetated areas with evergreen and deciduous trees with light underbrush. The Site mainly has slopes ranging from 13% - 60% down to the eastern property line. Steeper slope areas above 40% are located east of the proposed residence and garage,

-Adjacent areas that may be affected by this project include 74th Ave SE due to construction traffic and adjacent residential areas due to typical residential construction activities. The Site contains one Category IV Wetland. There are no other known streams or wetlands adjacent to the Site.

-The project will provide required mitigation sequencing per COMI provisions.

-The upstream area consists of 74th Ave SE west of the Site and a portion of the adjacent residential parcel north of the Site. Due to existing topography, minor sheet flow runoff may drain onto the site. No adverse impacts are anticipated; therefore, no mitigation is required from the upstream tributary area.

-Runoff currently sheet flows to the southeast onto adjacent properties.

-There are steep slopes along with potential slide and erosion hazard areas on the Site.

-There are no special requirements or provisions for working near or within critical areas for this project.

-Potential erosion problems on the site include temporary soil stockpiles, wall/ grading cuts and the house foundation cuts.



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SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

Construction SWPPP Drawings

Refer to the general Drawing Requirements in Stormwater Management Manual for Western Washington (SWMMWW) Volume I, Chapter 3.

Vicinity Map

Provide a map with enough detail to identify the location of the construction site, adjacent roads, and receiving waters.

Site Map

Include the following (where applicable):

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Legal description of the property boundaries or an illustration of property lines (including distances) on the drawings. | <input checked="" type="checkbox"/> Final and interim grade contours as appropriate, drainage basins, and the direction of stormwater flow during and upon completion of construction. |
| <input checked="" type="checkbox"/> North arrow. | <input checked="" type="checkbox"/> Areas of soil disturbance, including all areas affected by clearing, grading, and excavation. |
| <input checked="" type="checkbox"/> Existing structures and roads. | <input checked="" type="checkbox"/> Locations where stormwater will discharge to surface waters during and upon completion of construction. |
| <input checked="" type="checkbox"/> Boundaries and identification of different soil types. | <input checked="" type="checkbox"/> Existing unique or valuable vegetation and vegetation to be preserved. |
| <input checked="" type="checkbox"/> Areas of potential erosion problems. | <input checked="" type="checkbox"/> Cut-and-fill slopes indicating top and bottom of slope catch lines. |
| <input checked="" type="checkbox"/> Any on-site and adjacent surface waters, critical areas, buffers, flood plain boundaries, and Shoreline Management boundaries. | <input checked="" type="checkbox"/> Total cut-and-fill quantities and the method of disposal for excess material. |
| <input checked="" type="checkbox"/> Existing contours and drainage basins and the direction of flow for the different drainage areas. | <input checked="" type="checkbox"/> Stockpile; waste storage; and vehicle storage, maintenance, and washdown areas. |
| <input checked="" type="checkbox"/> Where feasible, contours extend a minimum of 25 feet beyond property lines and extend sufficiently to depict existing conditions. | |

Temporary and Permanent BMPs

Include the following on site map (where applicable):

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Locations for temporary and permanent swales, interceptor trenches, or ditches. | <input checked="" type="checkbox"/> Details for bypassing off-site runoff around disturbed areas. |
| <input checked="" type="checkbox"/> Drainage pipes, ditches, or cut-off trenches associated with erosion and sediment control and stormwater management. | <input checked="" type="checkbox"/> Locations of temporary and permanent stormwater treatment and/or flow control best management practices (BMPs). |
| <input checked="" type="checkbox"/> Temporary and permanent pipe inverts and minimum slopes and cover. | <input checked="" type="checkbox"/> Details for all structural and nonstructural erosion and sediment control (ESC) BMPs (including, but not limited to, silt fences, construction entrances, sedimentation facilities, etc.) |
| <input checked="" type="checkbox"/> Grades, dimensions, and direction of flow in all ditches and swales, culverts, and pipes. | <input checked="" type="checkbox"/> Details for any construction-phase BMPs or techniques used for Low Impact Development (LID) BMP protection. |
| <input checked="" type="checkbox"/> Locations and outlets of any dewatering systems. | |



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SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

Element 1: Preserve Vegetation / Mark Clearing Limits

The goal of this element is to preserve native vegetation and to clearly show the limits of disturbance.

This element **does not** apply to my project because:

The site was cleared as part of clearing activity that is subject to an enforcement action and is re-vegetated. Restoration may be necessary to comply with Critical Area Regulations or NPDES requirements. Buffer Zones-BMP C102 may apply if Critical Areas exist on-site and buffer zones shall be protected.

Other Reason / Additional Comments:

If it **does** apply, describe the steps you will take and select the best management practices (BMPs) you will use:

The perimeter of the area to be cleared shall be marked prior to clearing operation with visible flagging, orange plastic barrier fencing and/or orange silt fencing as shown on the SWPPP site map. The total disturbed area shall be less than 7,000 square feet. Vehicles will only be allowed in the areas to be graded, so no compaction of the undeveloped areas will occur.

Additional Comments:

Construction will take place in areas to minimize impact on vegetation. The project will have clearing limits marked and tree protection in place during construction.

Check the BMPs you will use:

- C101 Preserving Natural Vegetation C102 Buffer Zones C103 High Visibility Fence



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SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

Element 2: Construction Access

The goal of this element is to provide a stabilized construction entrance/exit to prevent or reduce or sediment track out.

This element **does not** apply to my project because:

The driveway to the construction area already exists and will be used for construction access. All equipment and vehicles will be restricted to staying on that existing impervious surface.

Other Reason / Additional Comments:

If it **does** apply, describe the steps you will take and select the BMPs you will use:

A stabilized construction entrance will be installed prior to any vehicles entering the site, at the location shown on the SWPPP site map.

Additional Comments:

Check the BMPs you will use:

C105 Stabilized Construction Entrance / Exit

C106 Wheel Wash

C107 Construction Road / Parking Area Stabilization



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SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

Element 3: Control Flow Rates

The goal of this element is to construct retention or detention facilities when necessary to protect properties and waterways downstream of development sites from erosion and turbid discharges.

This element **does not** apply to my project because:

Other Reason / Additional Comments:

If it **does** apply, describe the steps you will take and select the BMPs you will use:

Flow rates will be controlled by using SWPPP Element 4 sediment controls and BMP T5.13 Post-Construction Soil Quality and Depth if necessary.

Additional Comments:



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SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

Element 4: Sediment Control

The goal of this element is to construct sediment control BMPs that minimize sediment discharges from the site.

This element **does not** apply to my project because:

The site has already been stabilized and re-vegetated.

Other Reason / Additional Comments:

If it **does** apply, describe the steps you will take and select the BMPs you will use:

Sediment control BMPs shall be placed at the locations shown on the SWPPP site map

Additional Comments:

Check the BMPs you will use:

C231 Brush Barrier

C233 Silt Fence

C235 Wattles

C232 Gravel Filter Berm

C234 Vegetated Strip



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SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

Element 5: Stabilize Soils

The goal of this element is to stabilize exposed and unworked soils by implementing erosion control BMPs.

This element **does not** apply to my project because:

Other Reason / Additional Comments:

If it **does** apply, describe the steps you will take and select the BMPs you will use:

- Exposed soils shall be worked during the week until they have been stabilized. Soil stockpiles will be located within the disturbed area shown on the SWPPP site map. Soil excavated for the foundation will be backfilled against the foundation and graded to drain away from the building. No soils shall remain exposed and unworked for more than 7 days from May 1 to September 30 or more than 2 days from October 1 to April 30. Once the disturbed landscape areas are graded, the grass areas will be amended using BMP T5.13 Post-Construction Soil Quality and Depth. All stockpiles will be covered with plastic or burlap if left unworked.

Additional Comments:

Check the BMPs you will use:

- C120 Temporary & Permanent Seeding
- C122 Nets & Blankets
- C124 Sodding
- C131 Gradient Terraces
- C235 Wattles
- C121 Mulching
- C123 Plastic Covering
- C125 Topsoil / Composting
- C140 Dust Control



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SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

Element 6: Protect Slopes

The goal of this element is to design and construct cut-and-fill slopes in a manner to minimize erosion.

This element **does not** apply to my project because:

No cut slopes over 4 feet high or slopes steeper than 2 feet horizontal to 1 foot vertical, and no fill slopes over 4 feet high will exceed 3 feet horizontal to 1 foot vertical. Therefore, there is no requirement for additional engineered slope protection.

Other Reason / Additional Comments:

If it **does** apply, describe the steps you will take and select the BMPs you will use:

Additional Comments:

Check the BMPs you will use:

- | | | |
|------------------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> C120 Temporary & Permanent Seeding | <input checked="" type="checkbox"/> C205 Subsurface Drains | <input type="checkbox"/> C207 Check Dams |
| <input type="checkbox"/> C204 Pipe Slope Drains | <input type="checkbox"/> C206 Level Spreader | <input type="checkbox"/> C208 Triangular Silt Dike (Geotextile-Encased Check Dam) |



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SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

Element 7: Protect Permanent Drain Inlets

The goal of this element is to protect storm drain inlets during construction to prevent stormwater runoff from entering the conveyance system without being filtered or treated.

This element **does not** apply to my project because:

- The site has open ditches in the right-of-way or private road right-of-way.
- There are no catch basins on or near the site.
- Other Reason / Additional Comments:

If it **does** apply, describe the steps you will take and select the BMPs you will use:

- Catch basins on the site or immediately off site in the right-of-way are shown on the SWPPP site map. Storm drain inlet protection shall be installed.

Additional Comments:

Check the BMPs you will use:

- C220 Storm Drain Inlet Protection



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SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

Element 8: Stabilize Channels and Outlets

The goal of this element is to design, construct, and stabilize on-site conveyance channels to prevent erosion from entering existing stormwater outfalls and conveyance systems.

This element **does not** apply to my project because:

Construction will occur during the dry weather. No storm drainage channels or ditches shall be constructed either temporary or permanent. A small swale shall be graded to convey yard drainage around the structure using a shallow slope; it shall be seeded after grading and stabilized.

Other Reason / Additional Comments:

If it **does** apply, describe the steps you will take and select the BMPs you will use:

A wattle shall be placed at the end of the swale to prevent erosion at the outlet of the swale.

Additional Comments:

Check the BMPs you will use:

C202 Channel Lining C207 Check Dams C209 Outlet Protection C235 Wattles



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SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

Element 9: Control Pollutants

The goal of this element is to design, install, implement and maintain BMPs to minimize the discharge of pollutants from material storage areas, fuel handling, equipment cleaning, management of waste materials, etc.

This element **does not** apply to my project because:

Other Reason / Additional Comments:

If it **does** apply, describe the steps you will take and select the BMPs you will use:

- Any and all pollutants, chemicals, liquid products and other materials that have the potential to pose a threat to human health or the environment will be covered, contained, and protected from vandalism. All such products shall be kept under cover in a secure location on-site. Concrete handling shall follow BMP C151.

Additional Comments:

Check the BMPs you will use:

- | | |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> C151 Concrete Handling | <input checked="" type="checkbox"/> C152 Sawcutting and Surfacing Pollution Prevention |
| <input checked="" type="checkbox"/> C153 Material Delivery, Storage, and Containment | <input checked="" type="checkbox"/> C154 Concrete Washout Area |



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SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

Element 10: Control De-watering

The goal of this element is to handle turbid or contaminated dewatering water separately from stormwater.

This element **does not** apply to my project because:

No dewatering of the site is anticipated.

Other Reason / Additional Comments:

If it **does** apply, describe the steps you will take and select the BMPs you will use:

Additional Comments:

Check the BMPs you will use:

C203 Water Bars

C236 Vegetated Filtration

C206 Level Spreader



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SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

Element 11: Maintain Best Management Practices

The goal of this element is to maintain and repair all temporary and permanent erosion and sediment control BMPs to assure continued performance.

Describe the steps you will take:

- Best Management Practices or BMPs shall be inspected and maintained during construction and removed within 30 days after the City Inspector or Engineer determines that the site is stabilized, provided that they may be removed when they are no longer needed.

Element 12: Manage the Project

The goal of this element is to ensure that the construction SWPPP is properly coordinated and that all BMPs are deployed at the proper time to achieve full compliance with City regulations throughout the project.

If it **does** apply, describe the steps you will take and select the BMPs you will use:

The Construction SWPPP will be implemented at all times. The applicable erosion control BMPs will be implemented in the following sequence:

- 1. Mark clearing limits
- 2. Install stabilized construction entrance
- 3. Install protection for existing drainage systems and permanent drain inlets
- 4. Establish staging areas for storage and handling polluted material and BMPs
- 5. Install sediment control BMPs
- 6. Grade and install stabilization measures for disturbed areas
- 7. Maintain BMPs until site stabilization, at which time they may be removed

Additional Comments:



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SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

Element 13: Protect Low Impact Development BMPs

The goal of this element is to protect on-site stormwater management BMPs (also known as “Low Impact Development BMPs”) from siltation and compaction during construction. On-site stormwater management BMPs used for runoff from roofs and other hard surfaces include: full dispersion, roof downspout full infiltration or dispersion systems, perforated stubout connections, rain gardens, bioretention systems, permeable pavement, sheetflow dispersion, and concentrated flow dispersion. Methods for protecting on-site stormwater management BMPs include sequencing the construction to install these BMPs at the latter part of the construction grading operations, excluding equipment from the BMPs and the associated areas, and using the erosion and sedimentation control BMPs listed below.

Describe the construction sequencing you will use:

Additional Comments:

1. Arrange and attend a pre-construction meeting with the city inspector.
2. Flag or fence clearing limits.
3. Call one-call utility locate service prior to any excavation work.
4. Grade access road & construct/install rock construction entrance if necessary.
5. Install perimeter protection (silt fence, brush barrier, etc.).
6. Install shoring wall.
7. Construct residence and other site improvements.
8. Maintain erosion control measures in accordance with city or county standards and manufacturer's recommendations.
9. Maintain access to off-site roads and driveways at all times during the duration of the project.
10. Relocate erosion control measures or install new measures so that as site conditions change the erosion and sediment control is always in accordance with the city TESC minimum requirements.
11. Cover all areas that will be unworked for more than seven days during the dry season or two days during the wet season with straw, wood fiber mulch, compost, plastic sheeting or equivalent.
12. Stabilize all areas that reach final grade within seven days.
13. Seed or sod any areas to remain unworked for more than 30 days.
14. Upon completion of the project, all disturbed areas must be stabilized and BMPs removed if appropriate after acceptance by inspector.

Select the BMPs you will use:

- | | | |
|-----------------------------------------------------|----------------------------------------------------------------|---------------------------------------------|
| <input type="checkbox"/> C102 Buffer Zone | <input checked="" type="checkbox"/> C103 High Visibility Fence | <input type="checkbox"/> C231 Brush Barrier |
| <input checked="" type="checkbox"/> C233 Silt Fence | <input type="checkbox"/> C234 Vegetated Strip | |



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SECTION C: INFEASIBILITY CRITERIA

Minimum Requirement #5 (On-Site Stormwater Management)

The following tables summarize infeasibility criteria that can be used to justify not using various on-site stormwater management best management practices (BMPs) for consideration for Minimum Requirement #5. This information is also included under the detailed descriptions of each BMP in the 2014 Stormwater Management Manual for Western Washington (Stormwater Manual), but is provided here in this worksheet for additional clarity and efficiency. Where any inconsistencies or lack of clarity exists, the requirements in the main text of the Stormwater Manual shall be applied. If a project is limited by one or more of the infeasibility criteria specified below, but an applicant is interested in implementing a specific BMP, a functionally equivalent design may be submitted to the City for review and approval. Evaluate the feasibility of the BMPs in priority order based on List #1 or #2 (Small Project Stormwater Requirements Tip Sheet and Stormwater Manual). Select the first BMP that is considered feasible for each surface type. Document the infeasibility (narrative description and rationale) for each BMP that was not selected. Only one infeasibility criterion needs to be selected for a BMP before evaluating the next BMP on the list. Attach additional pages for supporting information if necessary.

Note: If your project discharges directly to Lake Washington (flow control exempt) or a downstream analysis confirms that the downstream system is free of capacity constraints for a minimum of ¼ mile and a maximum of 1 mile, then you do not need to complete this worksheet, but should still refer to the infeasibility criteria when selecting BMPs.

Lawn and Landscaped Areas		
BMP and Applicable Lists	Infeasibility Criteria	Infeasibility Description and Rationale for Each BMP Not Selected
Post-construction Soil Quality and Depth List #1 and #2	<input type="checkbox"/> Siting and design criteria provided in BMP T5.13 (Stormwater Manual Volume V, Section 5.3) cannot be achieved. <input type="checkbox"/> Lawn and landscape area is on till slopes greater than 33 percent.	
Roofs		
BMP and Applicable Lists	Infeasibility Criteria	Infeasibility Description and Rationale for Each BMP Not Selected
Full Dispersion List #1 and #2	<input checked="" type="checkbox"/> Site setbacks and design criteria provided in BMP T5.30 (Stormwater Manual Volume V, Section 5.3) cannot be achieved. <input checked="" type="checkbox"/> A 65 to 10 ratio of forested or native vegetation area to impervious area cannot be achieved. <input checked="" type="checkbox"/> A minimum forested or native vegetation flowpath length of 100 feet (25 feet for sheet flow from a non-native pervious surface) cannot be achieved.	Insufficient flowpath and steep slopes downhill from the project area
Downspout Full Infiltration List #1 and #2	<input checked="" type="checkbox"/> Evaluation of infiltration is not required per the Infiltration Infeasibility Map due to steep slopes, erosion hazards, or landslide hazards. <input type="checkbox"/> Site setbacks and design criteria provided in BMP T5.10A (Stormwater Manual Volume III, Section 3.1.1) cannot be achieved. <input type="checkbox"/> The lot(s) or site does not have out-wash or loam soils. <input type="checkbox"/> There is not at least 3 feet or more of permeable soil from the proposed final grade to the seasonal high groundwater table or other impermeable layer. <input type="checkbox"/> There is not at least 1 foot or more of permeable soil from the proposed bottom of the infiltration system to the seasonal high groundwater table or other impermeable layer.	



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SECTION C: INFEASIBILITY CRITERIA

Roofs (cont.)		
BMP and Applicable Lists	Infeasibility Criteria	Infeasibility Description and Rationale for Each BMP Not Selected
Bioretention or Rain Gardens List #1 (both) and List #2 (bioretention only)	<p><i>Note: Criteria with setback distances are as measured from the bottom edge of the bioretention soil mix.</i></p> <p>Citation of any of the following infeasibility criteria must be based on an evaluation of site-specific conditions and a written recommendation from an appropriate licensed professional (e.g., engineer, geologist, hydrogeologist):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Where professional geotechnical evaluation recommends infiltration not be used due to reasonable concerns about erosion, slope failure, or down-gradient flooding. <input type="checkbox"/> Within an area whose ground water drains into an erosion hazard, or landslide hazard area. <input type="checkbox"/> Where the only area available for siting would threaten the safety or reliability of pre-existing underground utilities, pre-existing underground storage tanks, pre-existing structures, or pre-existing road or parking lot surfaces. <input type="checkbox"/> Where the only area available for siting does not allow for a safe overflow pathway to stormwater drainage system or private storm sewer system. <input type="checkbox"/> Where there is a lack of usable space for bioretention areas at re-development sites, or where there is insufficient space within the existing public right-of-way on public road projects. <input type="checkbox"/> Where infiltrating water would threaten existing below grade basements. <input type="checkbox"/> Where infiltrating water would threaten shoreline structures such as bulkheads. <p>The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Evaluation of infiltration is not required per the Infiltration Infeasibility Map due to steep slopes, erosion hazards, or landslide hazards <input type="checkbox"/> Within setback provided for BMP T7.30 (Stormwater Manual Volume V, Section 7.4) <input type="checkbox"/> Where they are not compatible with surrounding drainage system as determined by the city (e.g., project drains to an existing stormwater collection system whose elevation or location precludes connection to a properly functioning bioretention area). 	



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SECTION C: INFEASIBILITY CRITERIA

Roofs (cont.)		
BMP and Applicable Lists	Infeasibility Criteria	Infeasibility Description and Rationale for Each BMP Not Selected
Bioretention or Rain Gardens (cont.)	<p>The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Where land for bioretention is within an erosion hazard, or landslide hazard area (as defined by MICC 19.07.060). <input type="checkbox"/> Where the site cannot be reasonably designed to locate bioretention areas on slopes less than 8 percent. <input type="checkbox"/> Within 50 feet from the top of slopes that are greater than 20 percent and over 10 feet of vertical relief. <input type="checkbox"/> For properties with known soil or groundwater contamination (typically federal Superfund sites or state cleanup sites under the Model Toxics Control Act [MTCA]): <ul style="list-style-type: none"> • Within 100 feet of an area known to have deep soil contamination. • Where groundwater modeling indicates infiltration will likely increase or change the direction of the migration of pollutants in the groundwater. • Wherever surface soils have been found to be contaminated unless those soils are removed within 10 horizontal feet from the infiltration area. • Any area where these facilities are prohibited by an approved cleanup plan under the state MTCA or Federal Superfund Law, or an environmental covenant under Chapter 64.70 RCW. <input type="checkbox"/> Within 100 feet of a closed or active landfill. <input type="checkbox"/> Within 10 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is 1,100 gallons or less. As used in these criteria, an underground storage tank means any tank used to store petroleum products, chemicals, or liquid hazardous wastes of which 10 percent or more of the storage volume (including volume in the connecting piping system) is beneath the ground surface. <input type="checkbox"/> Within 100 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is greater than 1,100 gallons. 	



CITY OF MERCER ISLAND

SECTION C: INFEASIBILITY CRITERIA

Roofs (cont.)		
BMP and Applicable Lists	Infeasibility Criteria	Infeasibility Description and Rationale for Each BMP Not Selected
Bioretention or Rain Gardens (cont.)	<p>The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Where field testing indicates potential bioretention/rain garden sites have a measured (a.k.a., initial) native soil saturated hydraulic conductivity less than 0.30 inches per hour. A small-scale or large-scale PIT in accordance with Stormwater Manual Volume III, Section 3.3.6 (or an alternative small scale test specified by the City) shall be used to demonstrate infeasibility of bioretention areas. If the measured native soil infiltration rate is less than 0.30 in/hour, bioretention/rain garden BMPs are not required to be evaluated as an option in List #1 or List #2. In these slow draining soils, a bioretention area with an underdrain may be used to treat pollution-generating surfaces to help meet Minimum Requirement #6, Runoff Treatment. If the underdrain is elevated within a base course of gravel, it will also provide some modest flow reduction benefit that will help achieve Minimum Requirement #7. <input type="checkbox"/> Where the minimum vertical separation of 3 feet to the seasonal high groundwater elevation or other impermeable layer would not be achieved below bioretention that would serve a drainage area that exceeds the following thresholds (and cannot reasonably be broken down into amounts smaller than indicated): <ul style="list-style-type: none"> o 5,000 square feet of pollution-generating impervious surface (PGIS) o 10,000 square feet of impervious area o 0.75 acres of lawn and landscape. <input type="checkbox"/> Where the minimum vertical separation of 1 foot to the seasonal high groundwater or other impermeable layer would not be achieved below bioretention that would serve a drainage area less than the above thresholds. <input type="checkbox"/> Within 100 feet of a drinking water well, or a spring used for drinking water supply. <input type="checkbox"/> Within 10 feet of small on-site sewage disposal drainfield, including reserve areas, and grey water reuse systems. For setbacks from a "large on-site sewage disposal system," see Chapter 246-272B WAC. 	



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SECTION C: INFEASIBILITY CRITERIA

Roofs (cont.)		
BMP and Applicable Lists	Infeasibility Criteria	Infeasibility Description and Rationale for Each BMP Not Selected
Downspout Dispersion Systems List #1 and #2	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Site setbacks and design criteria provided in BMP T5.10B (Stormwater Manual Volume III, Section 3.1.2) cannot be achieved. <input type="checkbox"/> For splash blocks, a vegetated flowpath at least 50 feet in length from the downspout to the downstream property line, structure, stream, wetland, slope over 15 percent, or other impervious surface is not feasible. <input type="checkbox"/> For trenches, a vegetated flowpath of at least 25 feet in between the outlet of the trench and any property line, structure, stream, wetland, or impervious surface is not feasible. A vegetated flowpath of at least 50 feet between the outlet of the trench and any slope steeper than 15 percent is not feasible. 	Insufficient flowpath and steep slopes downhill from the project area
Perforated Stub-Out Connections List #1 and #2	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Evaluation of infiltration is not required per the Infiltration Infeasibility Map due to steep slopes, erosion hazards, or landslide hazards <input type="checkbox"/> For sites with septic systems, the only location available for the perforated portion of the pipe is located up-gradient of the drainfield primary and reserve areas. This requirement can be waived if site topography will clearly prohibit flows from intersecting the drainfield or where site conditions (soil permeability, distance between systems, etc.) indicate that this is unnecessary. <input type="checkbox"/> Site setbacks and design criteria provided in BMP T5.10C (Stormwater Manual Volume III, Section 3.1.3) cannot be achieved. <input type="checkbox"/> There is not at least 1 foot of permeable soil from the proposed bottom (final grade) of the perforated stub-out connection trench to the highest estimated groundwater table or other impermeable layer. <input type="checkbox"/> The only location available for the perforated stub-out connection is under impervious or heavily compacted soils. 	
On-site Detention List #1 and #2	<ul style="list-style-type: none"> <input type="checkbox"/> Project discharges directly to Lake Washington. <input checked="" type="checkbox"/> Findings from a 1/4 mile downstream analysis confirm that the downstream system is free of capacity constraints. <input type="checkbox"/> Site setbacks and design criteria provided in the Stormwater Manual (Volume III, Section 3.2.2) cannot be achieved. 	A fee in Lieu of detention is proposed for this project. All collected runoff will be collected and tightline connect to an existing community conveyance system within the adjacent parcel.



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SECTION C: INFEASIBILITY CRITERIA

Other Hard Surfaces		
BMP and Applicable Lists	Infeasibility Criteria	Infeasibility Description and Rationale for Each BMP Not Selected
Full Dispersion List #1 and #2	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Site setbacks and design criteria provided in BMP T5.30 (Stormwater Manual Volume V, Section 5.3) cannot be achieved. <input checked="" type="checkbox"/> A 65 to 10 ratio of forested or native vegetation area to impervious area cannot be achieved. <input checked="" type="checkbox"/> A minimum forested or native vegetation flowpath length of 100 feet (25 feet for sheet flow from a non-native pervious surface) cannot be achieved. 	Insufficient flowpath and steep slopes downhill from the project area
Permeable Pavement List #1 and #2	<p>Citation of any of the following infeasibility criteria must be based on an evaluation of site-specific conditions and a written recommendation from an appropriate licensed professional (e.g., engineer, geologist, hydrogeologist):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Where professional geotechnical evaluation recommends infiltration not be used due to reasonable concerns about erosion, slope failure, or downgradient flooding. <input type="checkbox"/> Within an area whose ground water drains into an erosion hazard, or landslide hazard area. <input type="checkbox"/> Where infiltrating and ponded water below the new permeable pavement area would compromise adjacent impervious pavements. <input type="checkbox"/> Where infiltrating water below a new permeable pavement area would threaten existing below grade basements. <input type="checkbox"/> Where infiltrating water would threaten shoreline structures such as bulkheads. <input type="checkbox"/> Down slope of steep, erosion prone areas that are likely to deliver sediment. <input type="checkbox"/> Where fill soils are used that can become unstable when saturated. <input type="checkbox"/> Excessively steep slopes where water within the aggregate base layer or at the subgrade surface cannot be controlled by detention structures and may cause erosion and structural failure, or where surface runoff velocities may preclude adequate infiltration at the pavement surface. <input type="checkbox"/> Where permeable pavements cannot provide sufficient strength to support heavy loads at industrial facilities such as ports. <input type="checkbox"/> Where installation of permeable pavement would threaten the safety or reliability of pre-existing underground utilities, pre-existing underground storage tanks, or pre-existing road subgrades. 	



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SECTION C: INFEASIBILITY CRITERIA

Other Hard Surfaces (cont.)		
BMP and Applicable Lists	Infeasibility Criteria	Infeasibility Description and Rationale for Each BMP Not Selected
Permeable Pavement (cont.)	<p>The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Evaluation of infiltration is not required per the Infiltration Infeasibility Map due to steep slopes, erosion hazards, or landslide hazards <input type="checkbox"/> Within an area designated as an erosion hazard, or landslide hazard. <input type="checkbox"/> Within 50 feet from the top of slopes that are greater than 20 percent. <input type="checkbox"/> For properties with known soil or groundwater contamination (typically federal Superfund sites or state cleanup sites under MTCA): <ul style="list-style-type: none"> • Within 100 feet of an area known to have deep soil contamination. • Where groundwater modeling indicates infiltration will likely increase or change the direction of the migration of pollutants in the groundwater. • Wherever surface soils have been found to be contaminated unless those soils are removed within 10 horizontal feet from the infiltration area. • Any area where these facilities are prohibited by an approved cleanup plan under the state MTCA or Federal Superfund Law, or an environmental covenant under Chapter 64.70 RCW. <input type="checkbox"/> Within 100 feet of a closed or active landfill. <input type="checkbox"/> Within 100 feet of a drinking water well, or a spring used for drinking water supply, if the pavement is a pollution-generating surface. <input type="checkbox"/> Within 10 feet of a small on-site sewage disposal drainfield, including reserve areas, and grey water reuse systems. For setbacks from a "large on-site sewage disposal system," see Chapter 246-272B WAC. <input type="checkbox"/> Within 10 feet of any underground storage tank and connecting underground pipes, regardless of tank size. As used in these criteria, an underground storage tank means any tank used to store petroleum products, chemicals, or liquid hazardous wastes of which 10 percent or more of the storage volume (including volume in the connecting piping system) is beneath the ground surface. <input type="checkbox"/> At multi-level parking garages, and over culverts and bridges. <input type="checkbox"/> Where the site design cannot avoid putting pavement in areas likely to have long-term excessive sediment deposition after construction (e.g., construction and landscaping material yards). 	



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SECTION C: INFEASIBILITY CRITERIA

Other Hard Surfaces (cont.)		
BMP and Applicable Lists	Infeasibility Criteria	Infeasibility Description and Rationale for Each BMP Not Selected
Permeable Pavement (cont.)	<p>The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Where the site cannot reasonably be designed to have: <ul style="list-style-type: none"> • Porous asphalt surface < 5% slope • Pervious concrete surface < 10% slope • Permeable interlocking concrete pavement surface < 12% slope • Grid systems < 6-12% slope (check with manufacturer and local supplier to confirm maximum slope) <input type="checkbox"/> Where the subgrade soils below a pollution-generating permeable pavement (e.g., road or parking lot) do not meet the soil suitability criteria for providing treatment. See soil suitability criteria for treatment in the Stormwater Manual Volume III, Section 3.3.7. Note: In these instances, the city may approve installation of a 6 inch sand filter layer meeting city specifications for treatment as a condition of construction. <input type="checkbox"/> Where underlying soils are unsuitable for supporting traffic loads when saturated. Soils meeting a California Bearing Ratio of 5 percent are considered suitable for residential access roads. <input type="checkbox"/> Where replacing existing impervious surfaces unless the existing surface is a non-pollution generating surface over an outwash soil with a saturated hydraulic conductivity of 4 inches per hour or greater. <input type="checkbox"/> Where appropriate field testing indicates soils have a measured (a.k.a., initial) subgrade soil saturated hydraulic conductivity less than 0.3 inches per hour. Only small-scale PIT or large-scale PIT methods in accordance with Stormwater Manual Volume III, Section 3.3.6 (or an alternative small scale test specified by the City) shall be used to evaluate infeasibility of permeable pavement areas. (Note: In these instances, unless other infeasibility restrictions apply, roads and parking lots may be built with an underdrain, preferably elevated within the base course, if flow control benefits are desired.) <input type="checkbox"/> Roads that receive more than very low traffic volumes, and areas having more than very low truck traffic. Roads with a projected average daily traffic volume of 400 vehicles or less are very low volume roads (AASHTO 2001) (U.S. Department of Transportation, 2013). Areas with very low truck traffic volumes are roads and other areas not subject to through truck traffic but may receive up to weekly use by utility trucks (e.g., garbage, recycling), daily school bus use, and multiple daily use by pick-up trucks, mail/parcel delivery trucks, and maintenance vehicles. (Note: This infeasibility criterion does not extend to sidewalks and other non-traffic bearing surfaces associated with the collector or arterial). 	



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SECTION C: INFEASIBILITY CRITERIA

Other Hard Surfaces (cont.)		
BMP and Applicable Lists	Infeasibility Criteria	Infeasibility Description and Rationale for Each BMP Not Selected
Permeable Pavement (cont.)	<p>The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):</p> <ul style="list-style-type: none"> <input type="checkbox"/> At sites defined as “high-use sites” (refer to the Glossary in the Stormwater Manual Volume I). <input type="checkbox"/> In areas with “industrial activity” as identified in 40 CFR 122.26(b)(14). <input type="checkbox"/> Where the risk of concentrated pollutant spills is more likely such as gas stations, truck stops, and industrial chemical storage sites. <input type="checkbox"/> Where routine, heavy applications of sand occur in frequent snow zones to maintain traction during weeks of snow and ice accumulation. <input type="checkbox"/> Where the seasonal high groundwater or an underlying impermeable/low permeable layer would create saturated conditions within 1 foot of the bottom of the lowest gravel base course. 	
Bioretention or Rain Gardens List #1 (both) and List #2 (bioretention only)	<p><i>Note: Criteria with setback distances are as measured from the bottom edge of the bioretention soil mix.</i></p> <p>Citation of any of the following infeasibility criteria must be based on an evaluation of site-specific conditions and a written recommendation from an appropriate licensed professional (e.g., engineer, geologist, hydrogeologist):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Where professional geotechnical evaluation recommends infiltration not be used due to reasonable concerns about erosion, slope failure, or down-gradient flooding. <input type="checkbox"/> Within an area whose ground water drains into an erosion hazard, or landslide hazard area. <input type="checkbox"/> Where the only area available for siting would threaten the safety or reliability of pre-existing underground utilities, pre-existing underground storage tanks, pre-existing structures, or pre-existing road or parking lot surfaces. <input type="checkbox"/> Where the only area available for siting does not allow for a safe overflow pathway to stormwater drainage system or private storm sewer system. <input type="checkbox"/> Where there is a lack of usable space for bioretention areas at re-development sites, or where there is insufficient space within the existing public right-of-way on public road projects. <input type="checkbox"/> Where infiltrating water would threaten existing below grade basements. <input type="checkbox"/> Where infiltrating water would threaten shoreline structures such as bulkheads. 	



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SECTION C: INFEASIBILITY CRITERIA

Other Hard Surfaces (cont.)		
BMP and Applicable Lists	Infeasibility Criteria	Infeasibility Description and Rationale for Each BMP Not Selected
Bioretention or Rain Gardens (cont.)	<p>The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Where evaluation of infiltration is not required per the Infiltration Infeasibility Map due to steep slopes, erosion hazards, or landslide hazards. <input type="checkbox"/> Within setback provided for BMP T7.30 (Stormwater Manual Volume V, Section 7.4) <input type="checkbox"/> Where they are not compatible with surrounding drainage system as determined by the city (e.g., project drains to an existing stormwater collection system whose elevation or location precludes connection to a properly functioning bioretention area). <input type="checkbox"/> Where land for bioretention is within an erosion hazard, or landslide hazard area (as defined by MICC 19.07.060). <input type="checkbox"/> Where the site cannot be reasonably designed to locate bioretention areas on slopes less than 8 percent. <input type="checkbox"/> Within 50 feet from the top of slopes that are greater than 20 percent and over 10 feet of vertical relief. <input type="checkbox"/> For properties with known soil or groundwater contamination (typically federal Superfund sites or state cleanup sites under the Model Toxics Control Act [MTCA]): <ul style="list-style-type: none"> • Within 100 feet of an area known to have deep soil contamination. • Where groundwater modeling indicates infiltration will likely increase or change the direction of the migration of pollutants in the groundwater. • Wherever surface soils have been found to be contaminated unless those soils are removed within 10 horizontal feet from the infiltration area. • Any area where these facilities are prohibited by an approved cleanup plan under the state MTCA or Federal Superfund Law, or an environmental covenant under Chapter 64.70 RCW. <input type="checkbox"/> Within 100 feet of a closed or active landfill. <input type="checkbox"/> Within 10 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is 1,100 gallons or less. As used in these criteria, an underground storage tank means any tank used to store petroleum products, chemicals, or liquid hazardous wastes of which 10 percent or more of the storage volume (including volume in the connecting piping system) is beneath the ground surface. 	



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SECTION C: INFEASIBILITY CRITERIA

Other Hard Surfaces (cont.)		
BMP and Applicable Lists	Infeasibility Criteria	Infeasibility Description and Rationale for Each BMP Not Selected
Bioretention or Rain Gardens (cont.)	<p>The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Within 100 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is greater than 1,100 gallons. <input type="checkbox"/> Where field testing indicates potential bioretention/rain garden sites have a measured (a.k.a., initial) native soil saturated hydraulic conductivity less than 0.30 inches per hour. A small-scale or large-scale PIT in accordance with Stormwater Manual Volume III, Section 3.3.6 (or an alternative small scale test specified by the City) shall be used to demonstrate infeasibility of bioretention areas. If the measured native soil infiltration rate is less than 0.30 in/hour, bioretention/rain garden BMPs are not required to be evaluated as an option in List #1 or List #2. In these slow draining soils, a bioretention area with an underdrain may be used to treat pollution-generating surfaces to help meet Minimum Requirement #6, Runoff Treatment. If the underdrain is elevated within a base course of gravel, it will also provide some modest flow reduction benefit that will help achieve Minimum Requirement #7. <input type="checkbox"/> Where the minimum vertical separation of 3 feet to the seasonal high groundwater elevation or other impermeable layer would not be achieved below bioretention that would serve a drainage area that exceeds the following thresholds (and cannot reasonably be broken down into amounts smaller than indicated): <ul style="list-style-type: none"> o 5,000 square feet of pollution-generating impervious surface (PGIS) o 10,000 square feet of impervious area o 0.75 acres of lawn and landscape. <input type="checkbox"/> Where the minimum vertical separation of 1 foot to the seasonal high groundwater or other impermeable layer would not be achieved below bioretention that would serve a drainage area less than the above thresholds <input type="checkbox"/> Within 100 feet of a drinking water well, or a spring used for drinking water supply. <input type="checkbox"/> Within 10 feet of small on-site sewage disposal drainfield, including reserve areas, and grey water reuse systems. For setbacks from a "large on-site sewage disposal system," see Chapter 246-272B WAC. 	



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SECTION C: INFEASIBILITY CRITERIA

Other Hard Surfaces (cont.)		
BMP and Applicable Lists	Infeasibility Criteria	Infeasibility Description and Rationale for Each BMP Not Selected
Sheet Flow Dispersion List #1 and #2	<input checked="" type="checkbox"/> Site setbacks and design criteria provided in BMP T5.12 (Stormwater Manual Volume V, Section 5.3) cannot be achieved. <input type="checkbox"/> Positive drainage for sheet flow runoff cannot be achieved. <input type="checkbox"/> Area to be dispersed (e.g., driveway, patio) cannot be graded to have less than a 15 percent slope. <input type="checkbox"/> For flat to moderately sloped areas, at least a 10 foot-wide vegetation buffer for dispersion of the adjacent 20 feet of contributing surface cannot be achieved. For variably sloped areas, at least a 25 foot vegetated flowpath between berms cannot be achieved.	Presence of erosion hazard and potential slide areas, proposed finish grades exceed 20%
Concentrated Flow Dispersion List #1 and #2	<input checked="" type="checkbox"/> Site setbacks and design criteria provided in BMP T5.11 (Stormwater Manual Volume V, Section 5.3) cannot be achieved. <input type="checkbox"/> A minimum 3 foot length of rock pad and 50 foot flowpath OR a dispersion trench and 25 foot flowpath for every 700 square feet of drainage area followed with applicable setbacks cannot be achieved. <input type="checkbox"/> More than 700 square feet drainage area drains to any dispersion device.	Presence of erosion hazard and potential slide areas, proposed finish grades exceed 20%
On-site Detention List #1 and #2	<input type="checkbox"/> Project discharges directly to Lake Washington. <input type="checkbox"/> Findings from a 1/4 mile downstream analysis confirm that the downstream system is free of capacity constraints. <input type="checkbox"/> Site setbacks and design criteria provided in the Stormwater Manual (Volume III, Section 3.2.2) cannot be achieved.	



CITY OF MERCER ISLAND

SECTION D: POST-CONSTRUCTION SOIL MANAGEMENT

Attachments Required *(Check off required items that are attached)*

- Site Plan showing, to scale:
 - Areas of undisturbed native vegetation (no amendment required)
 - New planting beds (amendment required)
 - New turf areas (amendment required)
 - Type of soil improvement proposed for each area

Soil test results (required if proposing custom amendment rates)

Product test results for proposed amendments

Total Amendment / Topsoil / Mulch for All Areas

Calculate the quantities needed for the entire site based on all of the areas identified on the Site Plan and the calculations on the following page(s):

Product	Total Quantity (CY)	Test Results
TBD Product #1: _____	_____ CY	_____ % organic matter _____ C:N ratio "Stable"? yes <input type="checkbox"/> no <input type="checkbox"/>
Product #2: _____	_____ CY	_____ % organic matter _____ C:N ratio "Stable"? yes <input type="checkbox"/> no <input type="checkbox"/>
Product #3: _____	_____ CY	_____ % organic matter _____ C:N ratio "Stable"? yes <input type="checkbox"/> no <input type="checkbox"/>

CY = cubic yards, C:N = Carbon:Nitrogen



CITY OF MERCER ISLAND

SECTION D: POST-CONSTRUCTION SOIL MANAGEMENT

Amendment / Topsoil / Mulch by Area

For each identified area on your Site Plan, provide the following information: (Use additional sheets if necessary)

Area # A (should match identified Area # on Site Plan)

Planting type: Turf Undisturbed native vegetation
 Planting Beds Other: _____

Pre-Approved Amendment Method

<input type="checkbox"/>	Amend with compost	Turf: _____ SF x 5.4 CY ÷ 1,000 SF = _____ CY Planting beds: _____ SF x 9.3 CY ÷ 1,000 SF = _____ CY Total Quantity = _____ CY Scarification depth: 8 inches	Product: _____
<input checked="" type="checkbox"/>	Stockpile and amend	Turf: <u>2,665</u> SF x 5.4 CY ÷ 1,000 SF = <u>14.4</u> CY Planting beds: <u>0</u> SF x 9.3 CY ÷ 1,000 SF = _____ CY Total Quantity = <u>X</u> _____ CY Scarification depth: 8 inches	TBD Product: _____
<input type="checkbox"/>	Topsoil import	Turf: _____ SF x 18.6 CY ÷ 1,000 SF = _____ CY Planting beds: _____ SF x 18.6 CY ÷ 1,000 SF = _____ CY Total Quantity = _____ CY Scarification depth: 6 inches	Product: _____

Custom Amendment

<input type="checkbox"/>	Amend with compost	Attach information on bulk density, percent organic matter, moisture content, C:N ratio, and heavy metals analysis to support custom amendment rate and scarification depth. Total Quantity = _____ CY Scarification depth: _____ inches	Product: _____
<input type="checkbox"/>	Stockpile and amend	Attach information on bulk density, percent organic matter, moisture content, C:N ratio, and heavy metals analysis to support custom amendment rate and scarification depth. Total Quantity = _____ CY Scarification depth: _____ inches	Product: _____

Mulch

<input type="checkbox"/>	Amend with compost	Planting beds: _____ SF x 12.4 CY ÷ 1,000 SF = _____ CY Total Quantity = _____ CY	Product: _____
<input type="checkbox"/>	Stockpile and amend	Planting beds: _____ SF x 12.4 CY ÷ 1,000 SF = _____ CY Total Quantity = _____ CY	Product: _____
<input type="checkbox"/>	Topsoil import	Planting beds: _____ SF x 12.4 CY ÷ 1,000 SF = _____ CY Total Quantity = _____ CY	Product: _____

CY = cubic yards, C:N = Carbon:Nitrogen



CITY OF MERCER ISLAND

SECTION E: SIGNATURE PAGE

Project Engineer's Certification for Section B

For Stormwater Site Plans with engineered elements, the Construction SWPPP is stamped by a professional engineer licensed in the State of Washington in civil engineering.

If required, attach a page with the project engineer's seal with the following statement:

*"I hereby state that this Construction Stormwater Pollution Prevention Plan for 2436 74th Ave SE
(name of project)
has been prepared by me or under my supervision and meets the standard of care and expertise which is usual and customary in this community for professional engineers. I understand that the City of Mercer Island does not and will not assume liability for the sufficiency, suitability, or performance of Construction SWPPP BMPs prepared by me."*

Applicant Signature for Full Stormwater Package (Sections A through D)

I have read and completed the Stormwater Submittal Package and know the information provided to be true and correct.

Print Applicant Name: Vann Lanz

Applicant Signature: _____ Date _____

CERTIFICATION FOR SECTION B

I hereby state that this Construction Stormwater Pollution Prevention Plan for 2424, 2430 and 2436 74th Ave SE has been prepared by me or under my supervision and meets the standard of care and expertise which is usual and customary in this community for professional engineers. I understand that the City of Mercer Island does not and will not assume liability for the sufficiency, suitability, or performance of Construction SWPPP BMPs prepared by me.



05/06/2024

SURVEYOR'S NOTES

- ALL TITLE INFORMATION SHOWN ON THIS MAP HAS BEEN EXTRACTED FROM CHICAGO TITLE COMPANY OF WASHINGTON COMMITMENT NO. 0187036-16, UPDATED AND COMMITMENT DATED NOVEMBER 2, 2020. IN PREPARING THIS MAP, D.R. STRONG CONSULTING ENGINEERS, LLC HAS CONDUCTED NO INDEPENDENT TITLE SEARCH NOR IS D.R. STRONG CONSULTING ENGINEERS, LLC AWARE OF ANY TITLE ISSUES AFFECTING THE SURVEYED PROPERTY OTHER THAN THOSE SHOWN ON THE MAP AND DISCLOSED BY REFERENCED CHICAGO TITLE COMPANY OF WASHINGTON COMMITMENT. D.R. STRONG CONSULTING ENGINEERS, LLC HAS RELIED WHOLLY ON SAID CHICAGO TITLE COMPANY OF WASHINGTON REPRESENTATIONS OF THE TITLE'S CONDITION TO PREPARE THIS SURVEY AND THEREFORE D.R. STRONG CONSULTING ENGINEERS, LLC QUALIFIES THE MAP'S ACCURACY AND COMPLETENESS TO THAT EXTENT.
- THIS SURVEY REPRESENTS VISIBLE PHYSICAL IMPROVEMENT CONDITIONS EXISTING ON APRIL 13, 2023. ALL SURVEY CONTROL INDICATED AS "FOUND" WAS RECOVERED FOR THIS PROJECT ON APRIL 6, 2023 UNLESS NOTED OTHERWISE.
- PROPERTY AREA:
PARCEL A = 7,994± SQUARE FEET (0.1836± ACRES)
PARCEL B = 25,800± SQUARE FEET (0.5923± ACRES)
- ALL DISTANCES ARE IN U.S. SURVEY FEET.
- THIS IS A COMBINED FIELD TRAVERSE AND GLOBAL NAVIGATION SATELLITE SYSTEMS SURVEY. A TRIMBLE S7 ONE SECOND COMBINED ELECTRONIC TOTAL STATION AND A TRIMBLE R121 GLOBAL NAVIGATION SATELLITE SYSTEMS (GNSS) RECEIVER WERE USED TO MEASURE THE ANGULAR AND DISTANCE RELATIONSHIPS BETWEEN THE CONTROLLING MONUMENTATION AS SHOWN. CLOSURE RATIOS OF THE TRAVERSE MET OR EXCEEDED THOSE SPECIFIED IN WAC 332-130-090. ALL MEASURING INSTRUMENTS AND EQUIPMENT ARE MAINTAINED IN ADJUSTMENT ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
- RTK GNSS OBSERVATIONS WERE MADE ON 04/06/2023 UTILIZING THE WASHINGTON STATE REFERENCE NETWORK (WSRN). THE COMBINED GRID TO GROUND SCALE FACTOR USED IS 0.999986520.
- UTILITIES OTHER THAN THOSE SHOWN MAY EXIST ON THIS SITE. ONLY THOSE UTILITIES WITH EVIDENCE OF THEIR INSTALLATION VISIBLE AT GROUND SURFACE ARE SHOWN HEREON. UNDERGROUND UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY. UNDERGROUND UTILITY CONNECTIONS ARE SHOWN AS STRAIGHT LINES BETWEEN SURFACE UTILITY LOCATIONS BUT MAY CONTAIN BENDS OR CURVES NOT SHOWN. SOME UNDERGROUND LOCATIONS SHOWN HEREON MAY HAVE BEEN TAKEN FROM PUBLIC RECORDS. D.R. STRONG CONSULTING ENGINEERS INC. ASSUMES NO LIABILITY FOR THE ACCURACY OF PUBLIC RECORDS.
- THE BOUNDARY SHOWN HEREON IS BASED ON A FIELD SURVEY.
- CONTOURS ARE DERIVED FROM DIRECT FIELD OBSERVATION. CONTOUR ACCURACY IS WITHIN ONE-HALF CONTOUR INTERVAL PER NATIONAL MAPPING STANDARDS.
- THIS SURVEY WAS PERFORMED IN SUPPORT OF ENGINEERING DESIGN.

CONSTRUCTION SEQUENCE

- ARRANGE AND ATTEND A PRECONSTRUCTION MEETING WITH THE CITY INSPECTOR.
- FLAG OR FENCE CLEARING LIMITS.
- CALL ONE-CALL UTILITY LOCATE SERVICE PRIOR TO ANY EXCAVATION WORK.
- GRADE INSTALL ROCK CONSTRUCTION ENTRANCE IF NECESSARY.
- INSTALL PERIMETER PROTECTION (SILT FENCE, BRUSH BARRIER, ETC.).
- CONSTRUCT RESIDENCE AND OTHER SITE IMPROVEMENTS.
- MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH CITY OR COUNTY STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
- MAINTAIN ACCESS TO OFF-SITE ROADS AND DRIVEWAYS AT ALL TIMES DURING THE DURATION OF THE PROJECT.
- RELOCATE EROSION CONTROL MEASURES OR INSTALL NEW MEASURES SO THAT AS SITE CONDITIONS CHANGE THE EROSION AND SEDIMENT CONTROL IS ALWAYS IN ACCORDANCE WITH THE CITY TESC MINIMUM REQUIREMENTS.
- COVER ALL AREAS THAT WILL BE UNWORKED FOR MORE THAN SEVEN DAYS DURING THE DRY SEASON OR TWO DAYS DURING THE WET SEASON WITH STRAW, WOOD FIBER MULCH, COMPOST, PLASTIC SHEETING OR EQUIVALENT.
- STABILIZE ALL AREAS THAT REACH FINAL GRADE WITHIN SEVEN DAYS.
- SEED OR SOD ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS.
- UPON COMPLETION OF THE PROJECT, ALL DISTURBED AREAS MUST BE STABILIZED AND BMPs REMOVED IF APPROPRIATE AFTER ACCEPTANCE BY INSPECTOR.

NW 1/4 SECTION 12, TOWNSHIP 24 N, RANGE 4E, W.M.

2436 74TH AVE SE

LEGAL DESCRIPTION:

PARCEL B:
PARCEL B OF CITY OF MERCER ISLAND LOT LINE REVISION NO. SUB14-011, RECORDED UNDER RECORDING NUMBER 2015052890006, IN KING COUNTY WASHINGTON; SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

REFERENCES:

- PLAT - MCGILVRA'S ISLAND ADDITION, VOLUME 16, PAGE 58 OF PLATS.
- LOT LINE REVISION SUB14-011, RECORDING NO. 2015052890006.
- SURVEY - RECORDING NO. 8501049012.

HORIZONTAL DATUM:

WASHINGTON PLANE COORDINATE SYSTEM, NORTH ZONE. NAD83-2011 EPOCH 2010.00 (SEE SURVEY NOTE 6)

VERTICAL DATUM:

NAVD 88 PER GNSS OBSERVATION (SEE SURVEY NOTE 6)

BENCHMARK:

3.5" DIA. CONCRETE MONUMENT WITH 1/2" BRASS PLUG AND PUNCH IN MONUMENT CASE AT THE INTERSECTION OF SE 24TH ST. AND 74TH AVE. SE. BENCHMARK IS TOP OF CONCRETE MONUMENT. ELEVATION = 155.20'

P.E. CERTIFICATION FOR SECTION B:

I HEREBY STATE THAT THIS CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN FOR 2430 74TH AVE SE HAS BEEN PREPARED BY ME OR UNDER MY SUPERVISION AND MEETS THE STANDARD OF CARE AND EXPERTISE WHICH IS USUAL AND CUSTOMARY IN THIS COMMUNITY FOR PROFESSIONAL ENGINEERS. I UNDERSTAND THAT THE CITY OF MERCER ISLAND DOES NOT AND WILL NOT ASSUME LIABILITY FOR THE SUFFICIENCY, SUITABILITY, OR PERFORMANCE OF CONSTRUCTION SWPPP BMPs PREPARED BY ME.

SURVEY CONTOUR NOTE:

SEE NOTE ON BOUNDARY AND TOPOGRAPHIC SURVEY. ADDITIONAL SURVEY POINTS WERE TAKEN TO ENSURE THE AVERAGE CONTOUR ELEVATION WITHIN THE VICINITY OF THE BUILDING FOOTPRINT IS ACCURATE WITHIN 6 INCHES VERTICALLY AND HORIZONTALLY FROM ACTUAL ELEVATIONS.

TITLE RESTRICTIONS: (NOTE: NOT ALL DOCUMENTS PROVIDED.)

- EASEMENT GRANTED TO MERCER ISLAND SEWER DISTRICT FOR A SEWER PIPELINE, RECORDING NO. 4655731. AFFECTS PORTIONS OF PARCEL A AND OTHER PROPERTY. [NOT PROVIDED]
- 4-FOOT WIDE EASEMENT FOR SIDE SEWER - AS CONSTRUCTED, RECORDING NO. 4995706. NOT PLOTTABLE. AFFECTS PORTION OF PARCEL B AND OTHER PROPERTY. [NOT PROVIDED]
- 7-FOOT WIDE EASEMENT FOR UTILITIES INCLUDING POWER, LIGHT, GAS, WATER SEWER AND TELEPHONE, RECORDING NO. 5601958. AFFECTS NORTHERLY PORTION OF PARCEL A. [NOT PROVIDED]
- TEMPORARY CRANE BOOM EASEMENT, RECORDING NO. 20101007000106. EASEMENT DOES NOT APPEAR TO IMPACT CURRENT LEGAL DESCRIPTION OF PARCEL A AND MAY HAVE SELF TERMINATED.
- MAINTENANCE AND CONSTRUCTION EASEMENT, RECORDING NO. 20101007000107. DOES NOT APPEAR TO IMPACT CURRENT DESCRIPTION OF PARCEL A.
- COVENANTS, CONDITIONS AND RESTRICTIONS, IF ANY, AS PERMITTED BY APPLICABLE LAW, AS SET FORTH IN DOCUMENT RECORDING NO. 6158024. [NOT PROVIDED]
- HOLD HARMLESS AGREEMENT, RECORDING NO. 2016012000200 [INCOMPLETE RECORDING NO., COPY NOT PROVIDED]
- COVENANTS, CONDITIONS AND RESTRICTIONS, IF ANY, AS PERMITTED BY APPLICABLE LAW, AS SET FORTH ON LOT LINE REVISION NO. SUB14-011, RECORDING NO. 20150528900006.
- TIEBACK AND SHORING EASEMENT, RECORDING NO. 20170530001254. AFFECTS EASTERLY PORTION OF PARCELS A AND B. NO DEFINITE LOCATION DESCRIBED. MAY HAVE SELF TERMINATED.
- EASEMENT FOR SEWER LINE, RECORDING NO. 20170530001263. SHOWN HEREON.
- HOLD HARMLESS AGREEMENT, RECORDING NO. 20170710000863. NOT SURVEY RELATED.
- RESTAURANT AGREEMENT, RECORDING NO. 20171113001170. NOT SURVEY RELATED.
- 13-16. RELATED TO TAXES AND ASSESSMENTS. NOT SURVEY RELATED.
- NOTING ENCROACHMENT OF A "TRASH CORRAL".

TESC LEGEND:

- FOR ADDITIONAL TESC DETAILS REFER TO DOE 2012/ 2014 SWMMWW
- CL CONSTRUCTION LIMITS, TO BE FLAGGED OR FENCED WHEN NO SILT FENCE IS PROPOSED (BMP C103)
 - SF SILT FENCE IS PROPOSED (BMP C233)
 - CE STABILIZED CONSTRUCTION ENTRANCE (BMP C105)
 - SSV STREET SWEEPING & VACUUMING
 - IP INLET PROTECTION (BMP C220)
 - DC DUST CONTROL (BMP C140)
 - MU MULCHING, MATTING, & COMPOST BLANKETS (BMP C121, BMP C125)
 - PS PERMANENT SEEDING AND PLANTING (BMP C120)
 - SA POST-CONSTRUCTION SOIL QUALITY & DEPTH (BMP TS.13) SEE DETAIL ON SHEET C2
 - CH CONCRETE HANDLING (BMP C151)
 - PC PLASTIC COVERING (BMP C123)

EARTHWORK VOLUME CALCULATIONS

	CUT VOLUME (CU. YDS.)	FILL VOLUME (CU. YDS.)	NET VOLUME (CU. YDS.)
SITE	302	231	89 FILL

ALL VOLUMES ARE APPROXIMATE AND ARE PROVIDED FOR PERMITTING PURPOSES AND REPRESENT FINISH GRADE TO EXISTING GRADE AS SHOWN. CONTRACTOR SHALL RELY ON HIS/HER OWN ESTIMATES FOR DETERMINING ACTUAL EARTHWORK QUANTITIES. THE VOLUMES DO NOT INCLUDE STRIPPING, UTILITY EXCAVATION, EXPANSION/COMPACTION FACTOR OR ANY SOIL TYPE RESTRICTIONS.



VICINITY MAP

SCALE 1" = ±500'

PROJECT CONTACTS:

- PROPERTY OWNER/APPLICANT: VANN LANZ
 LNL BUILDS, LLC
 317 4TH STREET
 KIRKLAND, WA 98033
 (206) 499-1277
 VANN@LNLBUILDS.COM
- CIVIL ENGINEER/SURVEYOR: D.R. STRONG CONSULTING ENGINEERS, INC.
 620 7TH AVENUE
 KIRKLAND, WASHINGTON 98033
 (425) 827-3063
 CONTACT: MAHER A. JOUDI, P.E.
 MAHER.JOUDI@DRSTRONG.COM
- GEOTECHNICAL ENGINEER: EARTH SOLUTIONS NW
 15365 NE 90TH ST #100
 REDMOND, WASHINGTON 98052
 (425) 449-4704
 CONTACT: SCOTT RIEGEL
 SCOTTR@ESNW.COM
- ENVIRONMENTAL ENGINEER: ALTMANN OLIVER ASSOCIATES, LLC.
 PO BOX 578
 CARNATION, WA 98014
 (425) 333-4535
 CONTACT: JOHN ALTMANN
 JOHN@ALTOLIVER.COM
- ARBORIST: DAVEY RESOURCE GROUP, INC.
 18809 10TH AVE NE
 SHORELINE, WA
 (253) 656-1650

PROJECT DESCRIPTION:

- SITE ADDRESS: 2436 74TH AVE SE
 TAX PARCEL NUMBER: 5315100455
 NUMBER OF LOTS: 1
 ZONING: R-9.6
 SITE AREA: 25,799 S.F. (0.592 ACRES)
 GROSS PROJECT AREA: 6,561 S.F. (0.194 ACRES)
 PROPOSED IMPERVIOUS AREA: 3,409 S.F. (13.2%)
 OFFSITE IMPERVIOUS AREA: 478 S.F.
 REPLACED IMPERVIOUS AREA: 0 S.F. (0.0%)
 PROPOSED PERVIOUS AREA: 22,390 S.F. (86.8%)
 EXISTING LOT COVERAGE: 0 S.F. (0.0%)
 PROPOSED LOT COVERAGE: 2,616 S.F. (10.14%)
 NUMBER OF PARKING SPACES: 2 MIN.

GRADING NOTE:

TOTAL AREA TO BE DISTURBED ON-SITE: 5,521 S.F.
 TOTAL AREA TO BE DISTURBED OFF-SITE: 1,040 S.F.
 FILL SHALL CONSIST OF SUITABLE MATERIAL ORIGINATING FROM THE SITE OR FROM AN APPROVED SUPPLIER.

CONSTRUCTION NOTES:

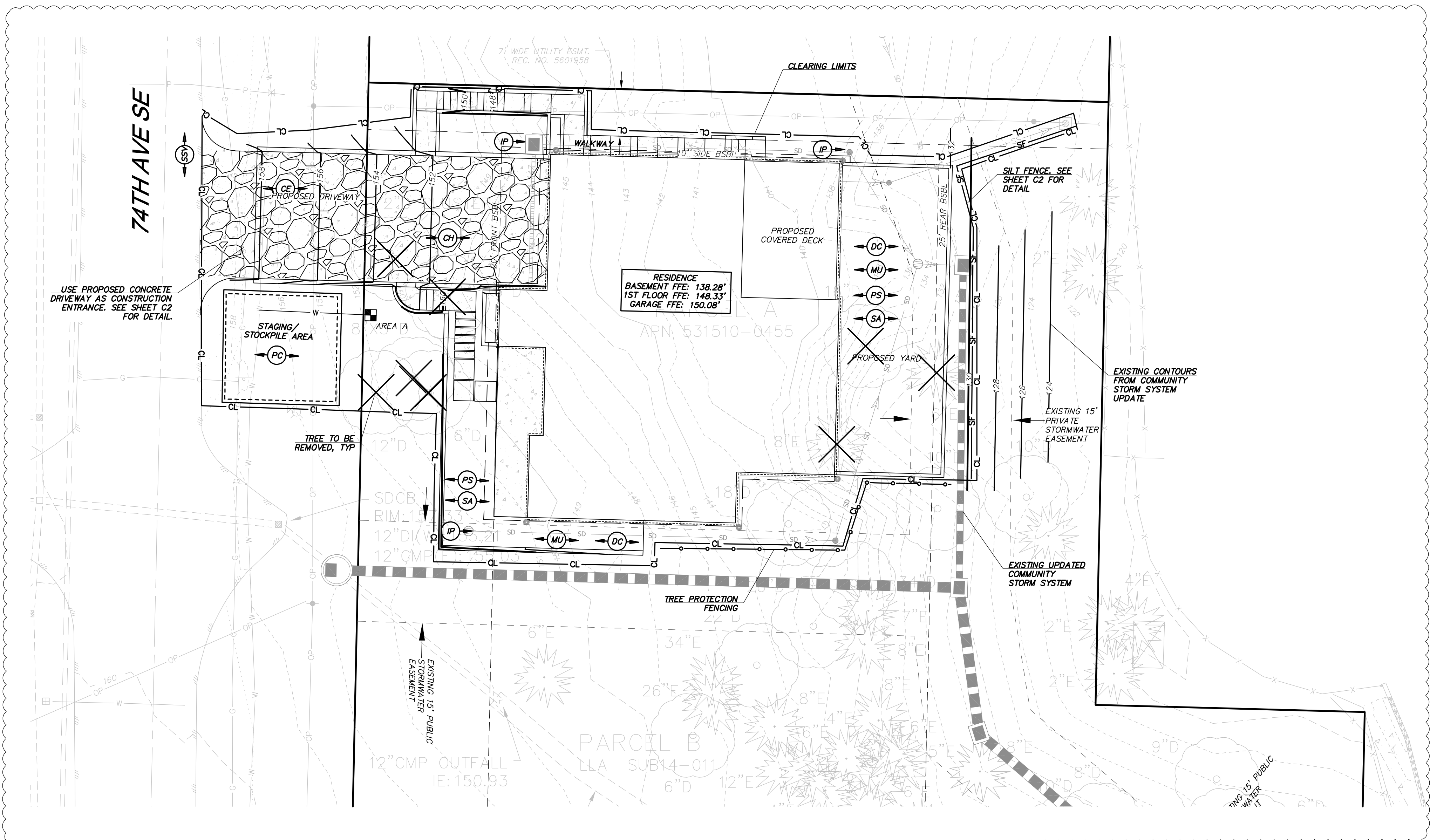
- ALL UTILITIES TO BE DISCONNECTED OR REMOVED PRIOR TO THE START OF THE PROJECT. COORDINATE WITH UTILITY COMPANIES PRIOR TO DISCONNECTION OR REMOVAL.

SOIL AMENDMENT NOTE:

AREA (A) ENCOMPASSES THE ENTIRE SITE OUTSIDE OF HARD SURFACES. SEE LANDSCAPE PLANS FOR TURF AND PLANTING BED AREAS. STOCKPILE SITE DUFF AND TOPSOIL FOR ALL DISTURBED PERVIOUS AREAS AND REPLY WITH SOIL AMENDMENT AFTER GRADING AND CONSTRUCTION. MINIMUM SCARIFICATION DEPTH 6-INCHES. PROVIDE A TOTAL OF 14.4 G.Y. OF AMENDMENT FOR AN AREA OF 2,665 S.F. (AREAS FOR TURF AND PLANTING BEDS TO BE DETERMINED)

GENERAL EROSION CONTROL NOTES:

ALL DISTURBED AREAS SHALL BE STABILIZED USING TYPICAL TESC BMPs. THE LIMITS OF DISTURBANCE WILL BE DELINEATED WITH HIGH VISIBILITY CONSTRUCTION FENCING. DURING CONSTRUCTION SILT FENCES WILL BE PLACED DOWN SLOPE OF DISTURBED AREAS ALONG WITH STRAW MATTING, NETS, OR PLASTIC COVERING OVER EXPOSED SOIL OR STORMWATER. TREES TO BE RETAINED WILL BE PROTECTED WITH HIGH VISIBILITY CONSTRUCTION FENCING.
 AT THE COMPLETION OF THE PROJECT ALL DISTURBED AREAS WILL BE STABILIZED WITH COMPOST AMENDED SOILS AND HYDROSEEDING OR SOD.
 EXPOSED SOILS SHALL BE WORKED DURING THE WEEK UNTIL THEY HAVE BEEN STABILIZED. SOIL STOCKPILES WILL BE LOCATED WITHIN THE DISTURBED AREA SHOWN ON THE SWPPP SITE MAP. SOIL EXCAVATED FOR THE FOUNDATION WILL BE BACKFILLED AGAINST THE FOUNDATION AND GRADED TO DRAIN AWAY FROM THE BUILDING. NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN 7 DAYS FROM MAY 1 TO SEPTEMBER 30 OR MORE THAN 2 DAYS FROM OCTOBER 1 TO APRIL 30. ONCE THE DISTURBED LANDSCAPE AREAS ARE GRADED, THE GRASS AREAS WILL BE AMENDED USING BMP TS.13 POST-CONSTRUCTION SOIL QUALITY AND DEPTH. ALL STOCKPILES WILL BE COVERED WITH PLASTIC OR BURLAP IF LEFT UNWORKED.

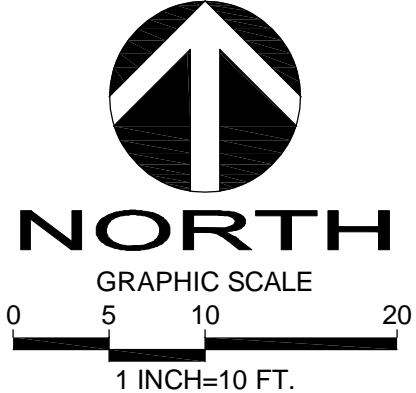


SHEET INDEX:

- C1 OF 5 COVER SHEET & T.E.S.C. PLAN
- C2 OF 5 T.E.S.C. NOTES & DETAILS
- C3 OF 5 TREE RETENTION PLAN
- C4 OF 5 TREE RETENTION PLAN
- C5 OF 5 STORM DRAINAGE PLAN

BASIS OF BEARINGS:

N 88°29'52" W BETWEEN THE MONUMENTS FOUND IN PLACE ALONG SE 24TH ST.



Call 2 Working Days Before You Dig
811
 Utilities Underground Location Center
 (D,M,T,N,D,OR,WA)

DRS
D.R. STRONG
CONSULTING ENGINEERS
 ENGINEERS PLANNERS SURVEYORS
 620 - 7th AVENUE KIRKLAND, WA 98033
 ☎ 425.827.3065 F 425.827.2423

2430 74TH AVE SE
COVER SHEET & T.E.S.C. PLAN
2436 74TH AVE SE
MERCER ISLAND
WASHINGTON 98040
PARCEL NO. 5315100455

VANN LANZ
LNL BUILDS, LLC
 317 4TH STREET
 KIRKLAND, WASHINGTON 98033
 206.499.1277



DATE	REVISION	INITIALS	COMMENTS
10.18.23			
5.3.24			

DRAFTED BY: RMF
 DESIGNED BY: RMF
 PROJECT ENGINEER: MAJ
 DATE: 9.26.23
 PROJECT NO.: 23001

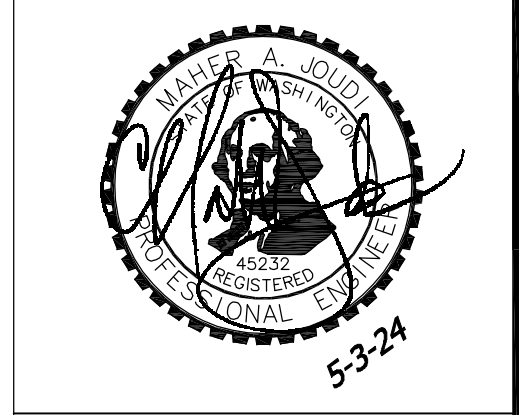
DRAWING: C1
 SHEET: 1 OF 5

NW 1/4 SECTION 12, TOWNSHIP 24 N, RANGE 4E, W.M.
2436 74TH AVE SE



2430 74TH AVE SE
 GRADING & UTILITIES PLAN
 2436 74TH AVE SE
 MERCER ISLAND
 WASHINGTON 98040
 PARCEL NO. 5315100455

**VANN LANZ
 LNL BUILDS, LLC**
 317 4TH STREET
 KIRKLAND, WASHINGTON 98033
 206-489-1277



APR	MAJ	MAJ
REVISION	DATE	BY
INITIALS	10.18.23	MAJ
COMMENTS	5.3.24	MAJ

DRAFTED BY: RMF
 DESIGNED BY: RMF
 PROJECT ENGINEER: MAJ
 DATE: 9.26.23
 PROJECT NO.: 23001

DRAWING: **C5**
 SHEET: **5** OF **5**

FIRE SPRINKLER NOTE:

NFPA 13R FIRE SPRINKLER SYSTEM IN COMPLIANCE WITH NFPA 13R AND COMI STANDARDS SHALL BE INSTALLED THROUGHOUT THE RESIDENCE. A SEPARATE FIRE PERMIT IS REQUIRED.

FIRE ALARM NOTE:

A NFPA 72 - CHAPTER 29 MONITORED FIRE ALARM SYSTEM IN COMPLIANCE WITH NFPA 72 AND COMI STANDARDS SHALL BE INSTALLED THROUGHOUT THE RESIDENCE. A SEPARATE FIRE PERMIT IS REQUIRED.

LAWN AND LANDSCAPE AREA NOTE:

THE LAWN AND LANDSCAPE AREAS ARE REQUIRED TO PROVIDE POST-CONSTRUCTION SOIL QUALITY AND DEPTH IN ACCORDANCE WITH BMP 15.13. THE PROJECT CIVIL ENGINEER MUST PROVIDE A LETTER OF CERTIFICATION TO ENSURE THAT THE LAWN AND LANDSCAPE AREAS ARE MEETING THE POST-CONSTRUCTION SOIL QUALITY AND DEPTH REQUIREMENTS SPECIFIED ON THE APPROVED PLAN SET PRIOR TO FINAL INSPECTION OF THE PROJECT.

AREA BREAKDOWN:

ADDRESS: 2436 74TH AVE SE
 LOT SIZE: 25,799 S.F. (0.592 AC.)

EX. HARD SURFACES ON LOT: 0 S.F.
 NEW HARD SURFACES ON LOT:
 MAIN HOUSE ROOF: 2,619 S.F.
 DRIVEWAY: 520 S.F.
 WALKS & PATIOS: 270 S.F.
 TOTAL NEW ON LOT: 3,409 S.F. (13.2%)

NEW HARD SURFACES:
 LOT PERVIOUS: 3,409 S.F.
 TOTAL PROJECT HARD SURFACES: 3,885 S.F.
 OFFSITE DRIVEWAY: 478 S.F.
 TOTAL PROJECT HARD SURFACES: 3,885 S.F.
 TOTAL P.G.I.S.: 998 S.F.

DOWNSPOUT ELEVATIONS

DOWNSPOUT #	INVERT ELEV.
1	145.00
2	140.84
3	135.53
4	135.04
5	142.55

UTILITY LEGEND:

SD	PROPOSED STORM LINE
C	PROPOSED COMMUNICATION LINE
W	PROPOSED WATER LINE
P	PROPOSED POWER LINE
SS	PROPOSED SEWER LINE

GENERAL NOTES:

- SITE PLAN PROVIDED BY CLIENT ON APRIL 10, 2023.
- WALL / FOOTING / LAWN UNDERDRAIN DRAINAGE SYSTEM AND ROOF DOWNSPOUT SYSTEM SHALL NOT BE INTERCONNECTED UNLESS SUCH CONNECTION IS MADE AT LEAST ONE FOOT BELOW THE WALL / FOOTING / UNDERDRAIN DRAINAGE SYSTEM AND DOWN SLOPE OF THE WALL / BUILDING FOUNDATION AND DOWNSTREAM OF THE DETENTION TANK.
- EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES SHOWN, OR NOT SHOWN IN THEIR PROPER LOCATION.
- CONTRACTOR SHALL POT-HOLE LOCATION OF EXISTING UTILITIES TO BE RECONNECTED PRIOR TO BEGINNING CONSTRUCTION. NOTIFY ENGINEER OF ANY CONFLICTS.
- CONTRACTOR TO VERIFY CONDITION AND GOOD WORKING ORDER OF ALL EXISTING UTILITIES TO BE RECONNECTED OR RE-USED PRIOR TO START OF CONSTRUCTION.
- SOILS ON THE SITE CONSISTS OF KITSAP SILT LOAM (KpB) PER THE NRCS WEB SOIL SURVEY.
- ROOF DRAINS SHALL BE 4" OR 6" PVC AS SHOWN AND HAVE A MINIMUM SLOPE OF 2.00%.
- ALWAYS CALL 811 TWO WORKING DAYS BEFORE YOU DIG.

STORM DRAINAGE NOTES:

- 6" & 8" PVC PIPE SHALL MEET ASTM D3034 SDR-35
- FOOTING / WALL DRAINAGE SYSTEM AND ROOF DOWNSPOUT SYSTEM SHALL NOT BE INTERCONNECTED UNLESS SUCH CONNECTION IS MADE AT LEAST ONE FOOT BELOW THE FOOTING / WALL DRAINAGE SYSTEM AND DOWN SLOPE OF THE BUILDING FOUNDATION. PROVIDE BACKWATER VALVES WHERE NOTED.
- APPLICANTS ARE REQUIRED TO CALL FOR INSPECTIONS. IF THE WORK DOES NOT CONFORM TO THE APPROVED PLANS, OR THE INSPECTION REVEALS OTHER CONDITIONS THAT REQUIRE MODIFICATIONS OR ADDITIONAL INFORMATION, THAT PORTION OF THE WORK WILL BE STOPPED. NO FINAL OCCUPANCY SHALL BE PERMITTED UNTIL ALL ON-SITE STORMWATER MANAGEMENT BMPs AND OTHER DRAINAGE CONTROL FACILITIES ARE COMPLETED, INSPECTED AND APPROVED.
- APPLICANTS MAY BE REQUIRED TO OBTAIN A STREET OPENING PERMIT IF DRAINAGE WORK IS TO BE DONE IN THE CITY'S RIGHT-OF-WAY. IF THE IMPROVEMENTS INCLUDE A CONCRETE DRIVEWAY THAT IS TO EXTEND INTO THE PUBLIC RIGHT-OF-WAY, A PUBLIC PLACE USE PERMIT IS REQUIRED FOR THAT PORTION OF THE DRIVEWAY LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY.
- FIELD ADJUST AREA DRAIN LOCATIONS. GRADE TO DRAIN.
- SLEEVE ALL PIPES UNDER / THROUGH WALLS.

SURVEY CONTOUR NOTE:

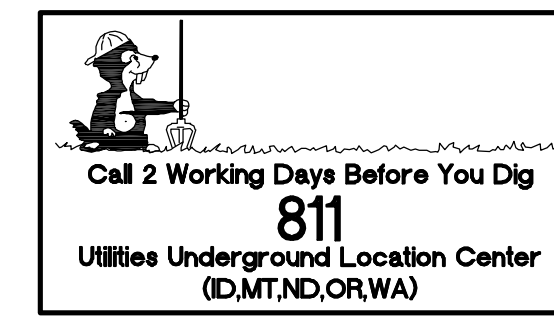
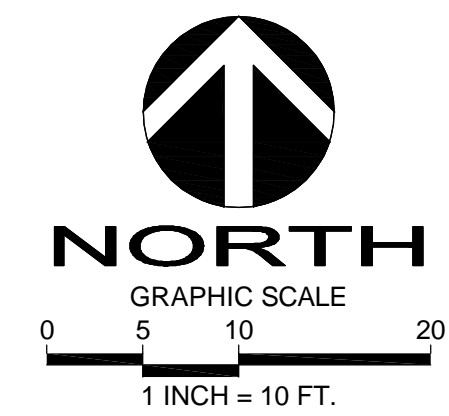
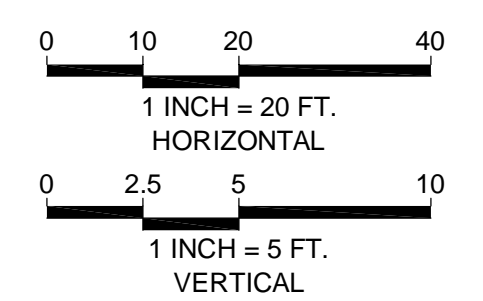
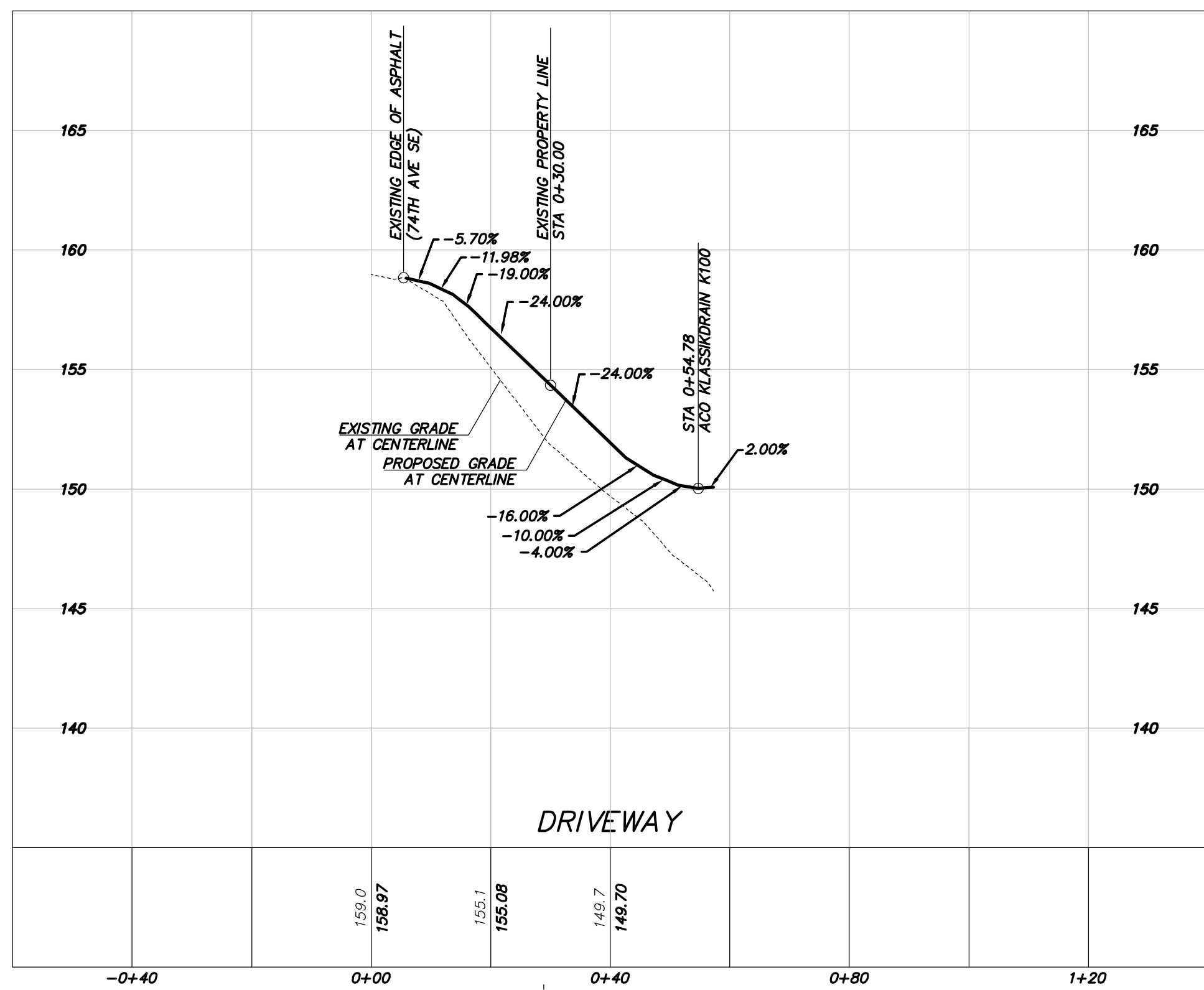
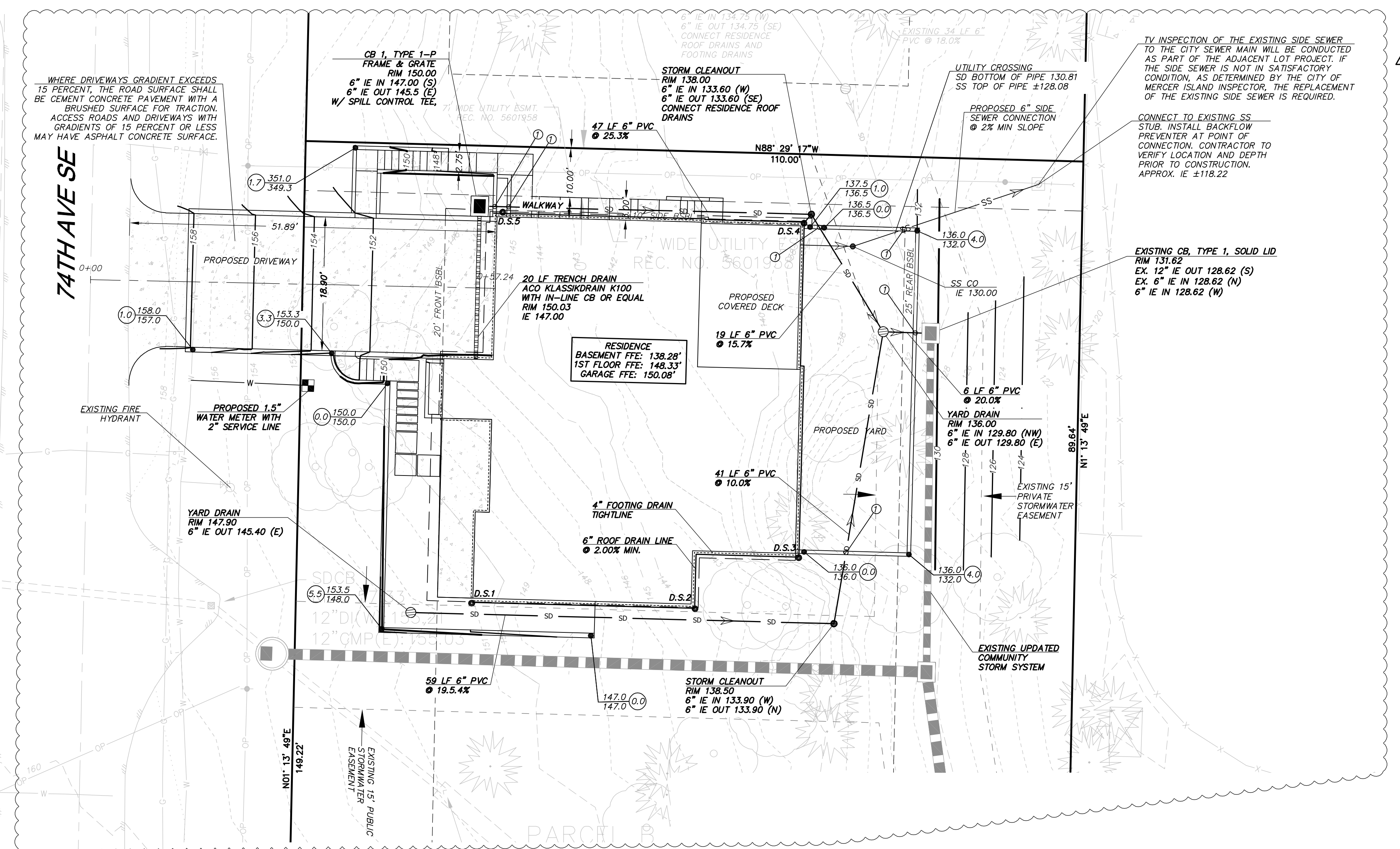
SEE NOTE ON BOUNDARY AND TOPOGRAPHIC SURVEY. ADDITIONAL SURVEY POINTS WERE TAKEN TO ENSURE THE AVERAGE CONTOUR ELEVATION WITHIN THE VICINITY OF THE BUILDING FOOTPRINT IS ACCURATE WITHIN 6 INCHES VERTICALLY AND HORIZONTALLY FROM ACTUAL ELEVATIONS.

DETENTION NOTE:

THIS PROJECT PROPOSES A FEE IN LIEU OF DETENTION. SEE DRAINAGE REPORT FOR DETAILED ANALYSIS.

PIPE SLEEVE NOTE:

- ① SLEEVE ALL PIPES UNDER / THROUGH WALLS.



Off-Site Analysis:

Upstream Area:

A portion of 74th Ave SE right-of-way to the west of the Site flows as sheet flow onto the Site. The runoff is considered negligible due to the limited area. The remainder of the adjacent properties flow east, away from the Site.

A portion of 74th Ave SE and six residences along the roadway connect to the community flow through system that runs through 2436 74th Ave SE. This system within 2436 74th Ave SE will be updated under a different permit by the time of construction for this project and the stormwater from 2436 74th Ave SE will connect to the updated flow through system.

On-Site Existing and Proposed Conditions

The existing property of 2436 74th Ave SE is undeveloped other than the existing community flow through stormwater system. Runoff sheet flows east toward the adjacent Aegis Living property and is collected by an interceptor trench along the property line. This system connects to the same location as the community flow through system, within the Aegis Living property.

The proposed project for 2436 74th Ave SE consists of a single-family residence, a proposed driveway, and walkways. Stormwater from the proposed residence and associated improvements will be collected and sent to the updated community flow through conveyance system which connects to the existing Aegis Living storm system east of the Site.

Downstream System

Stormwater from the proposed residence and associated improvements will be collected and sent to the updated community flow through conveyance system which connects to the existing Aegis Living storm system east of the Site.

Runoff is conveyed through the adjacent property through a series of 18" pipes, and leaves the Aegis Living property to the north entering the existing SE 24th St conveyance system. Within SE 24th St it is conveyed east through a series of catch basins as the storm line increases to 24" diameter. Once the system reaches 76th Ave SE, runoff turns north in a 24" storm drain toward I-90. The system expands to a 30" diameter pipe beneath I-90 and further to a 36" pipe as it exits I-90 to the north. Runoff crosses N Mercer Way and proceeds to Lake Washington on the west side of 76th Ave SE. This portion of the drainage system consists of a roadside stream and culverts of 24" and 30" diameters under existing driveways. Runoff continues as open channel flow until its outfall into Lake Washington.

Overall, the downstream system appears to be operating well with no apparent capacity or erosion issues. All structures and pipes appear in good condition and the culverts are free of any debris. The outfall stream appears to be recently maintained/updated with large rocks and tree stumps to reduce the erosion impacts of the water as the system outfalls to Lake Washington.



Runoff sheet flows east toward the adjacent Aegis Living property and is collected by an interceptor trench along the property line.



This system connects to the community flow through system, within the Aegis Living property.



Runoff leaves the Aegis Living property to the north entering the existing SE 24th St conveyance system. Within SE 24th St it is conveyed east through a series of catch basins as the storm line increases to 24" diameter. Once the system reaches 76th Ave SE, runoff turns north in a 24" storm drain toward I-90.



Runoff outfalls to an open channel stream within private property on the north side of I-90, continuing north.



Runoff continues north along 76th Ave SE through a 24" and 36" culvert.





The open channel continues north through Lincoln Landing and outfalls to Lake Washington Approximately 2,400 ft from the site.