

From: [Emmi Brant-Zawadzki](#)
To: [Sarah Kress](#)
Subject: RE: Harbor Grove subdivision preliminary Plat- affects on 9107 Hargreaves Place (Rugosa Ridge subdivision)
Date: Wednesday, September 13, 2023 11:00:05 PM
Attachments: [Landau HG and Stormwater Assessment 2023 09 11.pdf](#)

[WARNING: THIS MESSAGE HAS COME FROM A SENDER OUTSIDE THE CITY OF MUKILTEO NETWORK,]

Hi, Sarah.

My husband, Peter and I own and live in the lowest lot of west side Rugosa Ridge. We are very concerned and afraid of affects of new development and how it would effect our property, especially flooding.

Ever since we moved to our property, we keep experiencing flooding in our property. We had Bodine construction came and assess our source of flooding. It was determined that water is coming from top of hill in our backyard pouring down to our crawlspace/garage. It took extensive work and total cost for fixing flood was \$17,000. (It flooded three times.)

Taking current vegetations out would really increase water coming to our yard, hence the house. Even after construction, we have significant water currently comes to our yard and washes most of soil. We keep losing all gravel under the patio stones and needed to get re-pounded frequently. Having high stone wall built suggested by builder, make me concern that whether or not the wall would hold over length of 5 years. It seems like setting our property for higher risk for mud slide.

While we do not have anything against builder wanting to built the houses, we need to have following things addressed.

1) Stormwater pump system.

How the project will handle the additional stormwater runoff if the pump system fails (for example, if there is a power outage during a heavy rainstorm, tress falling, etc)

2) Need builders to be responsible party for property damage if the stormwater pump system fail.

Many warranty only extends only a year. To keep up with curren significant water drainage to our yard, just maintenance cost to keep up with washing soils and gravel cost close to \$8,000. (\$3,000 plus gravel to level cost \$5,000.) Fixing just crawl space/basement flood cost us about \$17,000. having additional water from this new development water running to our house would create serious property damage cost us more.

3) Concern about the large retaining walls so close to the property line and creation of shadows and tall buildings.

4) Concern that future maintenance of the drainage system and landscaping will be extremely difficult because the area at the base of the large walls has no access. No maintenance means it is more likely the pump system will fail.

We also hired Landau Associates to run independent water drainage study to our

yard. Attached is the technical report from Landau Associates addressing drainage and stormwater from the Harbor Grove project. The highlights of this report struck us and scared us are following:

- 1) The project has not fully addressed the impacts that would be created on the neighboring properties in Rugosa Ridge.
- 2) There would be additional stormwater in the pump system that is not accounted for in the Applicant's drainage studies.
- 3) The additional stormwater increases the risk to adjacent properties in the event of a pump system failure.
- 4) The project design does not include emergency overflow measures to protect adjacent properties in the event of failure of the pump system. (Note: the Mukilteo city code has a requirement to include such measures.)

We would like builders to revise the drainage system other than pump for safety and address future inevitable property damages it would bring. Attached report from Landau associates, addressing that builder's water pump system would not be sufficient to hold water and create additional water for current flooding wet area. Thank you.

Sincerely,
Peter and Amy (Emmi) Brant-Zawadzki

Sent from my iPad

From: [Jan Delorey-Lytle](#)
To: [Sarah Kress](#)
Subject: Harbor Grove Subdivision on 53rd Avenue
Date: Wednesday, September 13, 2023 2:17:25 PM

[WARNING: THIS MESSAGE HAS COME FROM A SENDER OUTSIDE THE CITY OF MUKILTEO NETWORK,]

Hello Sarah Kress, Associate Planner,

We live at 9035 Hargreaves Place, the street that is directly below the proposed building site.

We are very concerned about the housing project that is planned above us because it relies on a mechanical pump to move excess water closer to 53rd Avenue. When the pump fails due to a power outage, lack of maintenance, or the advancing age of the system, our neighborhood will be affected.

There are numerous letters on file with the city concerning the maintenance of the permeable road surface on Hargreaves Place. Sediment and debris is continually washed down 92nd Street and it flows onto Hargreaves Place. With the new proposed housing project, more debris will end up on our road.

The loss of many old growth trees will add to the drainage problem and certainly will not enhance the esthetics of Mukilteo.

Thank you for your time.

Jan Delorey-Lytle

Jan Delorey-Lytle, DDS

September 13, 2023

To:
Sarah Kress, Associate Planner
Community Development Department
City of Mukilteo

(sent via email to: skress@mukilteowa.gov)

Re: Harbor Grove Proposal, 9110 53rd Avenue W, Mukilteo

I have reviewed the documents you have posted on the City's web site for the Harbor Grove project. Listed below are my comments.

**1. Geotechnical Engineering Study by Earth Solutions NW (ESNW)
(Report re-submitted 7-28-22) is inadequate.**

See below a copy of page 2 of ESNW's Geotechnical Engineering Study (7-28-22). Note the areas I've highlighted in yellow and blue.

Sea Pac Homes
July 30, 2021
Updated July 28, 2022

ES-7975
Page 2

Project Description

The subject site is located at 9110 – 53rd Avenue West in Mukilteo, Washington, as illustrated on Plate 1 (Vicinity Map). The site consists of one tax parcel (Snohomish County Parcel No. 00611600015901) totaling approximately 2.43 acres of land area.

We understand site development plans include construction of seven new residential lots, an access road, a stormwater vault, and associated improvements; the existing structure and site improvements will be demolished. **We anticipate grade cuts and fills on the order of five to ten feet will be necessary to establish level building pads in some areas of the site.**

At the time of report submission, specific building load values were not available for review; however, we anticipate the proposed residential structures will consist of relatively lightly loaded wood framing supported on conventional foundations. Based on our experience with similar developments, we estimate wall loads of about 1 to 2 kips per linear foot and slab-on-grade loading of 150 pounds per square foot (psf) will be incorporated into the final design.

If the above design assumptions are incorrect or change, ESNW should be contacted to review the recommendations provided in this report. ESNW should review the final design to confirm that our geotechnical recommendations have been incorporated into the final plans.

SITE CONDITIONS

Surface

The site is currently developed with an existing single-family residence, detached garage, and associated site improvements. The existing topography consists of a localized high area within the central portion of the site, which gently descends to the west, south, and east, with approximately 30 feet of vertical relief across the parcel. Vegetation consists primarily of forested areas with mature trees, underbrush, landscaping, and yard areas.

Subsurface

A representative of ESNW observed, logged, and sampled eight test pits at accessible locations

The yellow highlighted area says ESNF did their Geotechnical Engineering Study based on the assumption that the Harbor Grove project would have **fills between 5 and 10 feet**. However, based on the applicant's most recent civil plans, in the southwest corner of the proposed development (lot 7) the fill is up to 20 feet. ESNF says (highlighted in blue) that if the design assumptions are incorrect or change (i.e., the fills are different than 5 and 10 feet in depth), ESNW should review the recommendations based on the design assumption. **ESNW**

has not evaluated the proposed project as presented in the latest set of building plans (i.e., fills greater than 10 feet). Because this **geotechnical engineering review did not evaluate the project as proposed**, the City cannot approve the applicant's land use application until the evaluation includes a review of the fill areas with a depth greater than 10 feet. as presented in the latest civil plans.

And since the 7-28-22 geotechnical engineering study is not based on the proposed plans, it is not consistent with SEPA and MMC 15.16 and the proposed project application should be denied.

2. Kindred Hydro's Hydrologic Impact Assessment (dated 4-19-23) is based on ESNW's 7-28-22 report which is inadequate

As discussed above, ESNW's 7-28-22 report is inadequate, because it did not evaluate the impact of fills greater than 10 feet. In the SW corner of the project site, fills are greater than 10 feet deep. While there may be underlying dense glacial fill, any precipitation falling on this fill area will be collected by the drains at the retaining walls.

The analysis for groundwater movement in areas with fill up to 20' deep has not been analyzed in either the Kindred Hydro or ESNW studies/reports. Consequently, the Kindred Hydro findings cannot be used as a basis for its conclusion that the development of the site should reduce the water flow into and beneath the Hargrove properties west of the site.

3. Comments on the Storm Drainage Report (dated 4-11-23)

Page 3.2. Existing Downstream Drainage Path

East Subbasin (Frontage Basin)

Text says: "In the existing condition, portions of runoff from the subject site frontage along 53rd Ave W are collected via drainage swales and routed **north** (NOTE this is incorrect, water is routed **south**. See comments on Photo E.1., page 3.7) along the west side of 53rd Ave W (Photo E.1)."

Text says: "Flows enter a driveway culvert near the northeast corner of the subject parcel and daylight to a drainage swale that continues **north** (NOTE this is incorrect; water is routed **south**. See comments on Photo E.2., page 3.7) before entering a culvert that directs water to a storm drain manhole (Photo E.2)."

Page 3.5, Photo 1.

The text says: "Photo 1 – Facing west from the south side of 92nd St SW. Runoff travels west via the **proposed** tightlined storm system." This is incorrect. This is an existing (not proposed) tightlined storm system.

Page 3.7 Photo E.2

The text says: "Facing north from the **east** (NOTE: this is incorrect, it is the **west side**) side of 53rd Ave W. Runoff travelling south enters a catch basin and is conveyed west through the existing tightlined storm system."

Sincerely,

Sylvia Kawabata
6031 88th ST SW
Mukilteo, WA 98275

Sylvia6031@comcast.net.

From: [Sarah Kress](#)
To: [Kristin Kirk](#)
Cc: [Kristina Cerise](#); [Andrew Galuska](#)
Subject: RE: Notice of Environmental Decision for Harbor Grove Subdivision Preliminary Plat - 9110 53rd Avenue W. - SD-2021-001/ENG-2021-019/SEPA-2021-010
Date: Thursday, September 14, 2023 2:13:06 PM
Attachments: [image001.png](#)

Kristin,

I will add your comments to the record. You will be notified when the public hearing for the project will happen.

If you have more comments before then, you are welcome to add them to the record up until / or at the hearing.

Sincerely,

Sarah Kress C.P.T. | Associate Planner

Community Development Department
(425) 263-8044 skress@mukilteowa.gov

My normal hours are Monday – Thursday 6:30am-5pm

All email, including attachments, sent to or from the City of Mukilteo are public records and may be subject to disclosure pursuant to the Public Records Act (RCW 42.56).

Mukilteo 2044: Help determine the future of our community.

We are planning for the next 20 years – right now. Please visit our [project website](#) for more information.

From: Kristin Kirk <ktree3@msn.com>
Sent: Wednesday, September 13, 2023 6:12 PM
To: Sarah Kress <skress@mukilteowa.gov>
Subject: Re: Notice of Environmental Decision for Harbor Grove Subdivision Preliminary Plat - 9110 53rd Avenue W. - SD-2021-001/ENG-2021-019/SEPA-2021-010

[WARNING: THIS MESSAGE HAS COME FROM A SENDER OUTSIDE THE CITY OF MUKILTEO NETWORK,]

Sarah - It is very disappointing to not have received timely notice. This application should be denied unless revised to protect on site wetlands and associated buffers in protected tracts. The plan should also be revised to cluster density to preserve significant trees and habitat areas.

From: Sarah Kress <skress@mukilteowa.gov>
Sent: Wednesday, September 13, 2023 2:42 PM
To: Kristin Kirk <ktree3@msn.com>
Cc: Kristina Cerise <kerise@mukilteowa.gov>; Andrew Galuska <agaluska@mukilteowa.gov>

Subject: FW: Notice of Environmental Decision for Harbor Grove Subdivision Preliminary Plat - 9110 53rd Avenue W. - SD-2021-001/ENG-2021-019/SEPA-2021-010

Hi Kristin,

The below was sent out earlier and I realized you were left off the list. Please let me know if you have any questions; I've updated our distribution list and you will receive correspondence about further items associated with this project.

Sincerely,

Sarah Kress C.P.T. | Associate Planner

Community Development Department

(425) 263-8044 skress@mukilteowa.gov

My normal hours are Monday – Thursday 6:30am-5pm

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We are planning for the next 20 years – right now. Please visit our [project website](#) for more information.

From: Joseph Reyes <jreyes@mukilteowa.gov>

Sent: Wednesday, August 30, 2023 9:18 AM

To: Sarah Kress <skress@mukilteowa.gov>

Cc: permitcenter <permitcenter@mukilteowa.gov>

Subject: Notice of Environmental Decision for Harbor Grove Subdivision Preliminary Plat - 9110 53rd Avenue W. - SD-2021-001/ENG-2021-019/SEPA-2021-010

Notice of Environmental Decision

Notice of Environmental Decision and Request for Comments – Harbor Grove Subdivision Preliminary Plat – City of Mukilteo

You are receiving this email as an agency or interested party for this project or this type of project with the City of Mukilteo. If you would like to be removed from this list or need to update your email address, please let us know.

The City of Mukilteo is reviewing a proposal and requests other affected agencies, interested parties, and members of the public to review the available materials and comment. Your comments will assist the City's evaluation of this application.

File No(s): SD-2021-001/ENG-2021-019/SEPA-2021-010
Project Name: Harbor Grove Subdivision Preliminary Plat
Applicant: Jake Drake of the Blueline Group LLC
Location: 9110 53rd Avenue W
Parcel No(s): 00611600015901
Description: Development of a seven-lot (7) subdivision on 2.43 acres of land with associated grading, drainage, landscaping, and street frontage improvements.
Notice Issue Date: August 30, 2023
Comment Period: September 13, 2023 (4:30 PM)
Appeal Period: September 27, 2023 (4:30 PM)

Application materials and related documents are available online at:
<https://mukilteowa.gov/departments/planning-development/development-regulations/land-use-action-notices/>

Please send questions or comments to the Project Manager listed below.
You may email or mail your comments.

Name: Sarah Kress, Associate Planner
Phone: 425-263-8044
Email: skress@mukilteowa.gov
Mail: 11930 Cyrus Way, Mukilteo, WA 98275

Kind Regards,
Joseph Reyes
Permit Services Lead
City of Mukilteo
11930 Cyrus Way, Mukilteo, WA. 98275
Office Phone: 425-263-8000 / 8068
Email: permitcenter@mukilteowa.gov / jreyes@mukilteowa.gov

Disclosure: All email, including attachments, sent to or from the City of Mukilteo are public records and may be subject to disclosure pursuant to the Public Records Act (RCW 42.56).

CITY HALL HOURS: Mukilteo City Hall is open to the public Monday-Thursday, from 8:00 AM–5:00 PM, and closed daily from 12-1:00 PM for lunch. We are closed on Fridays; however, City staff is available to assist you remotely from 8:00 AM–5:00 PM.

Mukilteo 2044: Tell us about the future of our community

We need your help to understand what our community wants to see in the future for Mukilteo

ahead of our 2024 Comprehensive Plan Update. Please take a moment to visit our [project website](#) to learn more and fill out [our survey](#).



From: [Andrew Galuska](#)
To: [Richard Emery](#); [Christine Awad Schmalz](#)
Cc: [Sarah Kress](#)
Subject: RE: Harbor Grove Development
Date: Thursday, September 14, 2023 7:56:21 AM
Attachments: [image001.png](#)

Good morning,

The notice that was sent out was for an environmental determination that there is no likely significant impact for the project. There was sufficient understanding to issue this determination, although the applicant has made a resubmittal to correct some labels and clarify some issues on their final plans. The city will still hold a public hearing before issuing a decision on the project which will likely be next month.

The comment period is a period where the city cannot make a decision while comments are submitted, it is not a limit to when comments are received. The city will continue to accept and consider comments on the proposal up until the end of the public comment period at the open record hearing concerning the application.

The copy of the plans on the website appears to be a full quality version, but we also have paper copies at City Hall that are available for review.

Andy Galuska

Community Development Director



11930 Cyrus Way

Mukilteo, WA 98275

Ph: (425) 263-8084

Cell: (425) 866-9129

From: Richard Emery <remery@mukilteowa.gov>
Sent: Wednesday, September 13, 2023 4:02 PM
To: Christine Awad Schmalz <theartworkshop7@aol.com>; Andrew Galuska <agaluska@mukilteowa.gov>
Cc: Elected <elected@mukilteowa.gov>
Subject: Re: Harbor Grove Development

I hope the comment period can be extended, if indeed the response time has been only two days. Another resident has also mentioned this, as well.

CM Emery

Get [Outlook for iOS](#)

From: Christine Awad Schmalz <theartworkshop7@aol.com>

Sent: Tuesday, September 12, 2023 6:20:35 PM

To: Andrew Galuska <agaluska@mukilteowa.gov>

Cc: Elected <elected@mukilteowa.gov>

Subject: Harbor Grove Development

[WARNING: THIS MESSAGE HAS COME FROM A SENDER OUTSIDE THE CITY OF MUKILTEO NETWORK,]

Mr. Galuska,

Due to the short notice of new information that was released to the public on the HARBOR GROVE LAND USE project could there be an extension for comment period? Certain documents were put up only 2 days ago and I need more time to read the 38 page document . Also the civil drawings are weak in quality to view. Could you please upload a better quality copy of the stormwater study for this project?

Thank you,
Christine Awad Schmalz
9115 53rd Ave West

From: [Andrew Galuska](#)
To: [Christine Awad Schmalz](#)
Cc: [Sarah Kress](#); [Matthew Geiger](#); [Brian Wirt](#)
Subject: RE: Harbor Grove
Date: Thursday, September 14, 2023 12:44:02 PM
Attachments: [image001.png](#)

Mr. Schmalz,

The comment period is a time where the city cannot make a decision while it accepts comments but does not limit the amount of time where we accept or consider public comments. That is to say, we will continue to accept comments on the proposal up until the close of public comments at the public hearing on the permit application. As such there is no need to extend the comment period as we will continue to accept comments in the coming weeks.

The drainage design has been reviewed by our staff and appears to comply with our adopted stormwater regulations. All of the stormwater generated from new impervious surfaces (roads ways, driveways, roof tops etc.) will be collected into the stormwater system and released to the public stormwater system. The design will not increase the rate of stormwater discharged to ensure downstream properties and infrastructure is protected.

Andy Galuska

Community Development Director



11930 Cyrus Way

Mukilteo, WA 98275

Ph: (425) 263-8084

Cell: (425) 866-9129

From: Christine Awad Schmalz <theartworkshop7@aol.com>

Sent: Tuesday, September 12, 2023 10:01 PM

To: Andrew Galuska <agaluska@mukilteowa.gov>

Subject: Harbor Grove

[WARNING: THIS MESSAGE HAS COME FROM A SENDER OUTSIDE THE CITY OF MUKILTEO NETWORK,]

Mr. Galuska,

I wish these comments to be part of the record for the Harbor Grove subdivision project. It is my understanding that important documents were just added for public view just days before the comment period is set to expire on Wednesday, September 13th. I ask that a minimum that the comment period be extended at last another 2 weeks so the public can review and comment on them. Since this project's inception, there have been numerous extensions given to the applicant (at the discretion on the Director of Planning) yet the MMC is silent who has that authority.

The other issue I would like to comment on is the proposed storm water back up system (or lack of one). With this proposed development there will be a large storm water run off due the new impermeable surface that this new development will create. This location is part of the Smuggler's Gulch LID and the area in question is important to keep storm water from flowing at high rates down hill to the west. The erosion and flooding waters over the years has been significant to the residents to west of this proposed area of development. The City of Mukilteo has spent millions of dollars fixing roads and culverts from excessive storm water flooding down the hill from where this area of development is being proposed. I do not see anything in the plans that will lessen the impact that even more potential storm water will be created. the water has no where has no where to go but straight downhill. Bringing in fill will only make things worse. This potential development could end costing Mukilteo taxpayers millions of dollars in unnecessary ongoing infrastructure repairs by the impact this new development. There needs to be an in depth study and analysis of the storm water impact this project will have on the residences, streets and other city infrastructure before moving forward with this project.

Sincerely,

Steve Schmalz
9115 53rd Avenue West
Mukilteo, WA 98275

Harbor Grove Subdivision -comments

Attn: Sarah Kress - Associate Planner 425 263-8044

From: Marilyn Strand | 9011 53rd Avenue West| Mukilteo, WA|98275

Email: Helgahalvorson3@gmail.com | **Phone:** 425 610-5731

Thank you for the chance to comment on Harbor Grove proposed development. Below are my comments.

There are several deficient areas of my concern. The development plan dramatically changes the existing land contour and requires significant engineering to meet simple code standards. SeaTac home design is out of compliance with expert opinion in the Low Impact Development study. I challenge the designers to develop a natural design with a modern scientific model that fits into the slope.

Primary concerns are focused on public safety and environmental impact mitigation.

Summary of my comments/issues:

1. Stormwater/lack of redundant surface water management systems
2. Pedestrian Safety and Construction Mitigation
3. Liability for any failures
4. Tree Canopy Removal - omission of impact studies/mitigation
5. Coho Habitat -Wetland Report/Raptor nesting
6. Landslides steep slopes flooding & major land sculpting
7. Untimely filing of official documents - extend review period 2 weeks
8. Mukilteo is low on taxpayer funds to fix this project if it needs remediation.

1. Stormwater/ insufficient Surface Water Mitagation

The Engineering document recognizes the mechanical pumps for uphill transport of surface water can fail. The Civil Plan deficiently omits mitigation for this eventuality.

1.1. The plan is deficient as it does not include a redundant area to capture overflow/ spill over water in the case of failure of the detention pit/mechanical pump system.

1.2 Plan does not indicate the City has published independent analysis on the appropriate system design and conformity to code.

Use Cases to consider:

UC 1.0: Where does stormwater go if Pump design fails and gravitates downhill, undermining the retaining wall and homes.

UC 1.1: Of the 7 houses - which house coordinates paying for future inspection and maintenance of pumps, pipes and cleaning of the detention pit?

UC 1.2: Homeowners move and knowledge is lost - plan does not describe how maintenance compliance is assured.

UC 1.3 City employees move on and the necessity of compliance inspection is lost.

UC 1.4 Lots 5 & 6 have pipes on the property line. Risks potential damage to pipes.

2. Pedestrian Safety and Construction Mitigation

Plan omits a mitigation/need for staging on site construction parking, and/or other mitigation for pedestrian safety measures in coexistence with large scale dirt moving actors .

- 2.1. How to manage the lack of on-street parking is not addressed.
- 2.2 Mitigation of damage to roads by heavy dirt moving equipment and Liability for road damage is not addressed.

Use Case to consider

UC 2.1 Missing Mitigation plan for repair of road damage to half mile of pavement on 92nd street and 53rd street. 7 houses responsible for breaking pavement for the rest of the community. Mukilteo is not so flush with money it can pay unconcernedly for damage caused by private developers.

Weight of a loaded dump truck - up to 50,000 pounds per load
1000 dump truck loads

UC 2.2: Street configuration abutting the site has limited or no street parking - no shoulders. Restricted parking due to 'Fire lanes', rain garden ditches. Plan has no mitigation for staging on site construction parking.

UC: 2.3: Ordinance subdivision does require safe access to and from school bus stops

UC 2.4: Mitigation of mud and rocks on neighboring roads and sidewalks not addressed.

UC 2.5.: This is an excellent opportunity to enable green transportation and require sidewalks.

3. Liability for design 'mistakes'

Developers do not publish that they will own the risk if surface water modeling fails.

Propose SeaPac Homes provide a performance bond. Put money in escrow to cover cases where the property needs design re-engineering. After a predetermined period, SeaPac Homes gets back the money that has not been spent + interest.

4. Tree Canopy removal

Plan is deficient in mitigating impact of potential property damage to adjacent properties due to the SeaTac Homes/BlueLine Group design. The liability of falling trees on neighboring lots due to windshear changes directly related to the sudden removal of a significant number of tall trees needs a compensation plan or mitigation plan..

5. Coho Salmon habitat - Wetland Report

Wetland report (page 2) identifies an 'unnamed waterway 0.4 miles to the west' (downhill from site) as a close fish bearing Coho Habitat'. No mitigation in the report describes how construction will protect Coho Habitat.

Mitigation should be done to the property for a known raptor/hawk nesting site in tree located in lot #1. (3 fledglings occupy forest canopy sharp-shinned hawk).

6. Untimely filing of official documents requires extended review time

Civil plans updates were posted as late as September 10, 2023. Due to the need to identify and analyze the changes, and respond as appropriate - request is made to extend the comment review deadline by 2 weeks.

7. Landslides steep slopes LID study & major land sculpting

The (expensive but declared as absolutely necessary for future development) Low Impact Development (LID) study, specifically to remediate landslide disruption, calls out this property for its location above and below significant landslide prone areas.

This SeaTac home design is out of compliance with expert opinion in the LID study. I challenge the designers to develop a natural design with a modern scientific model that fits into the slope. This is a landslide area and recreating the shopping mall parking look is causing engineering headaches.

The developers have no published written bond and guarantee their mid slope retaining wall and mechanical water system is fool-proof.

Major regrading and flattening of natural 'bowl' on the east(wetland report) and filling land contours of a steep sloping landscape to a consistent parking lot smooth surface removes all natural swales that slow stormwater/surface water that will gravitate downhill.

Retaining Wall design/engineering

From the drawings it is difficult to gauge the height and breath of the western retaining wall. It appears to balance on a slope?

- 1) Is it true the wall is in the setback and therefore application must be redone?
- 2) Is it true the French Drain is 4 feet above hardpan? Water will flow downward to the hardpan missing the french drain? Can water flowing under the wall possibly destabilize the retaining wall?
- 3) SeaPac Homes GeoTech report did not detail engineering minimums needed to protect Hargreaves Place Houses.

Appendix L1st**[City of Mukilteo Critical Areas \(arcgis.com\)](#)**

LID Low Impact Development - stormwater management [City of Mukilteo | Surface Water Programs - City of Mukilteo \(mukilteowa.gov\)](#)

Washington State Department of Ecology requires LID for new development and redevelopment unless site conditions are prohibitive.

Low Intensity Development (LID) map of Smugglers Gulch-[PAU_Sheets.indd \(mukilteowa.gov\)](#)

LID Planning Stormwater Surface Water [doc-stormstratPlanrev.pdf \(mukilteowa.gov\)](#) recommendations of the LID Study.(See 4.3.3 page 31 - protection of forest vegetation)

The Harbor Grove/SeaPac Home developer's limit the studies to the boundaries of their parcel. The Low Intensity Development Stormwater (LID) project designates this parcel as a 'Targeted Management Area' and the need to implement regional watershed based stormwater strategies. (see links in appendix below).

Landslide map

https://www.snohomishcountywa.gov/DocumentCenter/View/31772/Quad_11?bidId=

LID STUDY (see link in appendix below)

City of Mukilteo>Home>City Departments>Public Works>Surface Water Utility>Surface Water Programs> Watershed Based Storm Water Strategies Plan

Smuggler's Gulch PAU contains a steep ravine; use of strategies that infiltrate runoff will be **limited/prohibited in these areas due to risks of landslides**. Approximately 90% of the PAU is residential development; therefore on-site strategies may be most effective.

There are two known problems in this PAU (Project Analysis Unit):

1. The homes located along the north side of 92nd are impacted by flooding due to excessive flows and flat topography.
 2. There is excessive erosion and landslides in the stream west of 53rd and frequent problems with a culvert that is plugged during storm events
- The Harbor Grove parcel is a 'known opportunity' (Smuggler's Gulch Pre-Design Report -Appendix A.)

- Smuggler's Gulch has 'low intactness' to impact degraded habitat (no opportunities to control water), except for land cover on this parcel and the adjoining parcel also under consideration.
 - (a) Not already developed
 - (b) Vegetation preservation
 - (c) Ravine with steep discharge

Parcel is located alongside a seasonal stream corridor/ravine on the north side where watershed responds rapidly to storm events where erosion and water quality are impacted. Parcel is moderate high (2nd highest category) for importance for recharge process -holding back water.

LANDSLIDE MANAGEMENT

Burlington Northern input is suggested due to the bluff area downslope from the parcel is a large known landslide area. Additionally, the map shows the area upslope from the property is a landslide hazard zone.

https://www.snohomishcountywa.gov/DocumentCenter/View/31772/Quad_11?bidId=

I found State Regulations to support additional analysis:

- (30.62B.390 - boundaries of a geologically hazardous area **can be expanded** to mitigate any significant adverse impact from a proposed development activity.)
- (30.62B.320 - actual gradient of the site must be considered as part of the **entire surface water/landslide hazard** rulings)

Historic examples of City of Mukilteo water management 'challenges' - what mitigation can Harbor Grove put in place to escape a similar fate?

- Church construction causing water to send a new stream flooding into Japanese Gulch
- Hotel with sudden rain overflows causing water discharge to erode Big Gulch ravine
- Housing Development on 93rd place SW w/water discharging a new wetland into 92nd St homeowner's yard. City Planner quit shortly thereafter.
- Hargreaves Place with endemic water runoff issues.

September 13, 2023

City of Mukilteo Community Development Dept.
Attn: Sarah Kress, Associate Planner
11930 Cyrus Way
Mukilteo, WA 98275

**RE: File: SD-2021-001/ENG-2021-019/SEPA-2021-010
Harbor Grove Subdivision**

Dear Ms. Kress,

Please accept the following comments regarding the Determination of Non-Significance issued on August 30, 2023 for the Harbor Grove preliminary seven-lot subdivision.

I. The DNS is deficient and has been issued in error for the following reasons:

- A. The Harbor Grove application is incomplete and contains insufficient information for the City of Mukilteo and the public to complete the analysis of impacts under SEPA and city code. The application is incomplete based on the following:
1. Variances are required under MMC Chapter 17.20.080.A.2.a. for retaining wall height within the 25-foot rear setback and MMC 17.20.020 for future building height potentially exceeding the allowable maximum of 30 feet. The proposed project design conflicts with these requirements for the reasons stated herein. See analysis in [Section III here](#).
 2. The application does not include slope and vegetation removal data required under MMC 15.12.050.C. – Table 1 – Clearing Matrix. The information provided by the Applicant in the civil plans and geotechnical study does not allow the City to complete an evaluation of impacts on topography, vegetation, or hydrology under this section or SEPA. See analysis in [Section III here](#).
 3. The DNS and project application do not provide a complete description of the project proposal. The following major elements of the proposal are not included in either the DNS or the description on page 3 of the environmental checklist:
 - Over 500 linear feet of retaining walls proposed along the property's west and south property lines. The combined height of the retaining walls would be up to 20 feet and the walls would be located within the 25' rear setback;
 - The elevation of the site would be raised by 20' above the existing ground level along the property's west and south boundaries, immediately adjacent to existing single-family development. This would be accomplished by placement of up to 10,000 cubic yards of fill material; and
 - Placement of a stormwater pump system with 160 lineal feet of force main piping and a drainage swale immediately adjacent to developed residential properties along the project's western boundary.

The omission of these key elements from the project description prevents the public and decision makers from completing an evaluation of the project under SEPA and city code. These are the most controversial components of the project and are the cause of many of the impacts on the adjacent properties. As a result, the public has not been adequately informed as to the true scope of the project and is required to “piece together” these details by interpreting the grading/drainage plans and technical studies. Most members of the public do not have the background or expertise to interpret this information. As a result, they cannot perform their own independent evaluation of how the project impacts their properties or the broader neighborhood.

In addition, the SEPA checklist and other application documents do not describe the applicant’s design goals and objectives for the project. Consequently, the application fails to demonstrate that the proposed mass grading and drainage alterations are necessary for reasonable development of the property. These aspects of the design are directly and indirectly responsible for many of the project’s impacts and sufficient justification for these design elements has not been provided. This information is also necessary to inform the decision maker and the public as to what alternative designs must be considered.

- B. The DNS does not identify or analyze impacts on the abutting property owners on the west side of the project site. This includes impacts identified in public comments submitted previously on the project. These impacts will result in material damage to the abutting properties, including short- and long-term impacts on surface water, earth and topography, groundwater, visual impacts and aesthetics (land and shoreline use) and light/shadow impacts created by excessive grade changes, building height and retaining wall height. The impacts described herein are site-specific impacts based on the detailed plans and specifications in the application; they have not been identified or mitigated through any previous SEPA review or by the City’s Comprehensive Plan.

It is worth noting that many of the impacts of the project are directly related to the part of the project proposal (i.e., grading in excess of 1,000 cubic yards) that triggered the requirement for a SEPA review in the first place under MMC 17.84.070.

- C. The DNS does not identify mitigation measures or conditions necessary to address the environmental impacts of the proposal. It concludes no mitigation measures are required because the application complies with existing development regulations. It also states the proposal has been clarified and changed by the applicant:

“...as necessary include necessary mitigation measures to avoid, minimize or compensate for probable significant adverse impacts.”

However, the DNS does not describe the impacts in question, nor does it identify mitigation measures. The DNS also fails to consider alternative designs that could have been implemented with fewer impacts.

- D. The Harbor Grove application conflicts with the development regulations contained in the Mukilteo Municipal Code (MMC) and other adopted standards including:
- Title 15 (Buildings and Construction);
 - Title 17 (Zoning);
 - Chapter 17.84 (Implementing the State Environmental Policy Act); and
 - City of Mukilteo 2017 Development Standards (amended 2019).

By failing to comply with these code provisions, the proposed project generates impacts on the environment and abutting properties that have not been mitigated—either by SEPA or by existing codes and ordinances. See analysis in [Section III here](#).

Additionally, the DNS provides no information as to how the City’s existing development regulations apply to the project, or what must be done to comply with them (i.e., list of conditions/requirements). The lack of such information makes it impossible for the public to know whether or how any of the project’s impacts will be addressed.

II. Discussion of Impacts Under SEPA Elements of the Environment.

The following analysis describes likely impacts of the proposed project under the elements of the Environment in [WAC 197-11-444](#), which is adopted by reference in MMC [17.84.110](#). *Note: the absence of mitigation measures in the DNS presumes that the project has no impacts under SEPA, and that all other impacts will be addressed by existing codes and ordinances. This conclusion is incorrect in both cases.*

A. SEPA Elements: *Earth, Water*

Impacts from mass grading, fill and retaining walls. Placement of a minimum of 10,000 cubic yards of fill material at a depth of up to 20 feet or more will change the character of the site and lead to both short- and long-term impacts.

1. **Short-Term impacts/impacts during construction.** Short term impacts will include the potential for erosion and sedimentation during construction of the preliminary subdivision. This site has a high potential for transport of sediment to the abutting properties due to slopes of greater than 35 percent, removal of native vegetation, excessive grading and fill, and artificial grade changes along the property boundary abutting Rugosa Ridge. The temporary erosion and sedimentation control (TESC) measures will be inadequate to prevent stormwater runoff and sediment from entering adjacent properties to the west and south.
 - a. Silt fence. The proposed silt fence along the west property line will be inadequate to protect adjacent properties from potential mass soil movement and silt-laden runoff during a heavy rainfall event. Additional measures must be taken to block movement of soil and water across the west and south property lines.
 - b. Phase II Interceptor swale. The TESC plans show a Phase I and Phase II interceptor swale, with the Phase II swale installed at an elevation of about 405’. The existing land elevation at the location of the swale ranges from 392’ – 400’ which means the swale can *only* be installed after site grading is complete. Because there will be a delay between the time the site is cleared/graded and when this system becomes operational, the adjacent properties will be vulnerable to mass soil movement and erosion impacts prior to the time the swale becomes operational.
 - c. Permanent Interceptor swale. This swale is shown on the TESC plan along the west property line and includes a pump system to pump water and sediment away from the western portion of the site, up to the eastern portion of the site. The location of this swale immediately adjacent to the property line abutting Rugosa Ridge leaves little to no space for access in the event of a problem during construction. The swale will be sandwiched between a fence on one side and a large retaining wall on the other. The swale and pump system could be easily overwhelmed with sediment if there is a large storm event during construction, rendering it inoperable and damaging the adjacent properties.

Similarly, a power outage during construction would cause the system to fail and flood the adjacent properties and structures with sediment-laden runoff.

- d. Retaining Wall Construction. The TESC plan “Construction Sequence” does not indicate when the large retaining walls along the west property line will be constructed. This is very important since the size and location of the walls will effectively block access to the permanent interceptor swale. How will this swale be accessed for maintenance and repairs during construction?
- e. Large storm event during construction. This development will require a substantial amount of sitework that will leave the site exposed to rainfall for many months. Due to the scope and duration of the project, this work likely cannot be completed during one dry season and will likely extend into the wet season, increasing the risk of runoff and damage to the adjacent properties. Contingency provisions must be provided to address a large storm occurring while the site is under construction. This site has a high potential for transport of sediment to the abutting properties due to slopes of greater than 35 percent and the amount of grading and fill. The potential scenario of a 50 or 100-year storm event occurring during construction while earth-moving work is ongoing must be evaluated as part of the SEPA review. A wet weather erosion control plan and/or wet weather suspension plan must be provided under Section 3.5.4.2 or 3.5.4.3 of the City of Mukilteo Development Standards.
- f. Property damage during construction. Property owners in Rugosa Ridge have installed fencing and landscaping up to the property boundary adjacent to the project. With the proposed grading, drainage and retaining walls constructed up to the property line, there is a high potential for contractor work to cause damage to our properties. It is noted the developer and contractors do not have permission to remove, damage, or undermine fences, landscaping, or other improvements on our property.

2. Topography and Soils

Risk of Differential Settlement; risk of retaining wall failure; risk of drainage system failure.

With the proposed extensive site alterations, including grading, fill, retaining walls, and drainage revisions, the project creates substantial risk that one or more of the improvements will fail, or that the substantial amount of fill material will experience settlement. The level of risk will increase over time due to lack of maintenance. Because the project site would be elevated, the adjacent properties in Rugosa Ridge would be most at risk, not the subject property.

Potential sedimentation impact on Hargreaves Place. In addition to providing access, Hargreaves Place is also a drainage facility consisting of permeable pavement. Any erosion event occurring during construction of the Harbor Grove property would likely cause sediment to flow downhill to the west and be deposited in the street, reducing its drainage function and damaging both the property owners in Rugosa Ridge and the City of Mukilteo, since both parties own portions of the street. Downstream properties may also be impacted. This scenario must be evaluated in the SEPA analysis and contingencies provided.

3. Long-Term Impacts

- a. Surface Water.
 - i. Stormwater Facility Design. The proposed project design, with its intensive regrading of the site, will alter the natural drainage pattern, resulting in surface water being redirected to a different drainage sub-basin than it currently flows. Currently, a small amount of surface water exits the eastern portion of the site via a drainage swale along 53rd Ave W that flows north to Smugglers Gulch Creek. The remainder either infiltrates to the groundwater table or is absorbed by the

existing vegetation on the site. According to the studies in the application, subsurface water flows mostly in a westerly direction toward properties in Rugosa Ridge.

The stormwater system includes a drainage collection swale on the western edge of the property, combined with a pump system to send collected surface water upward and east to a stormwater vault. This is a highly unusual design that relies on a mechanical pump system to prevent collected surface and subsurface water from running off to properties in Rugosa Ridge, which sit at a lower elevation. This type of pressurized system is not normally used as a permanent stormwater control. It would more typically be used in a temporary system such as dewatering a construction site, or in a basement or crawl space. This system creates risk. A mechanical failure, pipe obstruction, or even a simple power failure would cause the system to stop functioning. As a result of the topography, failure of the pump system would not impact the properties that actually own it. Instead, a system failure would result in collected water flowing back to the west, into properties in Rugosa Ridge, causing flooding and property damage. The system must be designed, installed and must function perfectly *forever* to avoid impacts on the adjacent properties. It is an imperfect design that will eventually fail.

The *Hydrogeologic and Stormwater System Design Assessment* (Landau Associates 9/23 – Exhibit 1) concluded the applicant’s drainage and hydrologic studies have likely underestimated the amount of stormwater flows/infiltration flows entering the stormwater pump system. The underestimation is the result of the applicant’s studies not accounting for sufficient infiltration of stormwater within the western portion of the site in the grading and filling of the project. The results of this underestimation are that properties in Rugosa Ridge are at greater risk in the event of stormwater overflows caused by a pump system failure or power outage.

In addition, *Landau* concludes the project design does not appear to include emergency overflow measures to protect adjacent properties in the event of pump system failure or power outage. This type of system would normally include such measures as part of the system design. See additional analysis in [Section III here](#).

The runoff pattern of surface and subsurface water affecting properties to the west of the project will be altered by the proposed grading and drainage measures. Per the applicant’s drainage studies, existing runoff “sheetflows” in a westerly direction, which disperses the water at low concentrations across a broad area. However, the modifications to site drainage will result in water moving west, then being collected and conveyed to a single point at the pump location. This means that any failure of the pump system will release higher concentrations of stormwater as compared with existing conditions.

The location and design of the pump system guarantees that future access to the pump and associated piping in the event of a system failure will be either impractical or impossible, and it will be difficult to inspect, repair or replace it. The future lot owners in Harbor Grove will have neither the awareness nor the technical capability to complete repairs of this system in a timely manner. If the system fails and floods properties in Rugosa Ridge, there would be significant time lag between when the problem first occurs and when it is fixed, if it can be fixed at all. This would extend the duration of flooding indefinitely.

The risk of flooding and property damage to the adjacent properties in Rugosa Ridge has not been adequately evaluated or mitigated. This actual risk is greater than what may be inferred from the plans and studies on file. This is due to:

- Proximity of the stormwater pump and collection system to the west property line;
- Elevation differences between properties;
- Stormwater calculations that use incorrect assumptions regarding soil types and infiltration rates;
- Insufficient protection measures in the event of stormwater overflows from the pump system; and
- Inadequate maintenance provisions to meet City of Mukilteo Development Standards (see B.1, below).

B. SEPA Element: *Land and Shoreline Use*

1. Inadequate Maintenance Provisions for Retaining Wall Area on West Side of Property. The project design ensures that many of the site improvements will not be maintained because they will not be accessible or visible to the future lot owners in Harbor Grove. This includes drainage facilities, landscaping and retaining walls along the project's western property line. The lack of maintenance will result in nuisance impacts as viewed from properties in Rugosa Ridge, and property damage caused by flooding when the stormwater pump system fails.

a. Drainage swale and pump system. The project includes a drainage swale and pressurized pump system (i.e., force main) to collect stormwater runoff along the project's western boundary. The applicant proposes this system as part of a private stormwater system to be owned and maintained by the future Homeowners Association (HOA). It will not be owned or maintained by the City of Mukilteo. This is a complex and specialized system that will require skilled personnel to inspect, maintain and repair it. And it will be expensive. This work is beyond the capabilities of a small, 7-lot HOA and will require a specialized consultant to be contracted with the HOA, per the Applicant response letter dated 4-21-23. Further, it is not clear the City will have legal authority or the resources to compel the HOA to take the following actions, which will be necessary steps to ensure the system functions properly over time:

- Ensure the HOA convenes regular meetings;
- Ensure the HOA adopts a budget and collects assessments for pump system maintenance and repair;
- Ensure the HOA enters into a contract with a pump system/drainage specialist;
- Ensure the HOA drainage specialist completes all inspections, maintenance and repairs such that flooding impacts on Rugosa Ridge are avoided; and
- Ensure the HOA continues to do all of the above for the life of the project (i.e., 100+ years).

In summary, the City will have no control over how the future HOA conducts its business, which means it will be unable to prevent a pump system failure. There is a possibility the future Harbor Grove HOA will become inactive, meaning that it stops conducting meetings and collecting assessments from its members. Can the City really prevent this scenario and what would be the outcome if this were to occur?

The potential impact of a drainage system failure must be evaluated and avoided or mitigated.

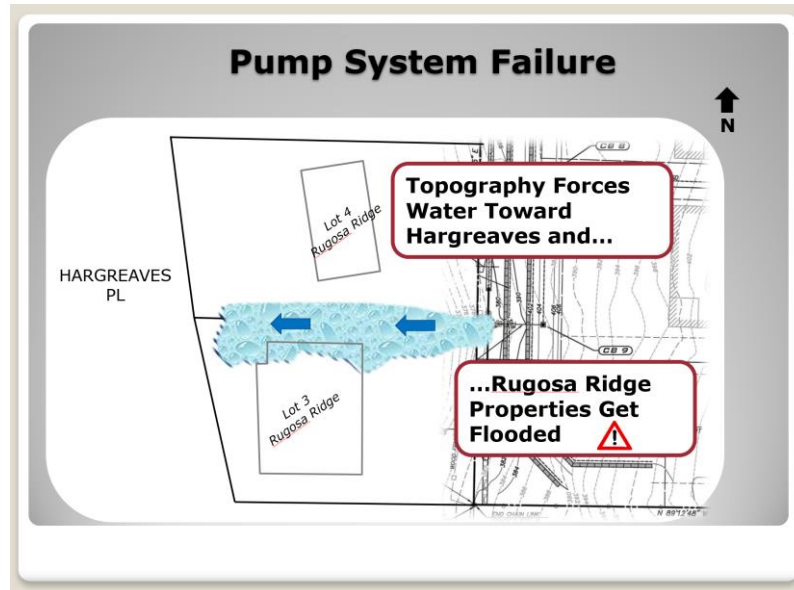


Figure 1 – Impact of Stormwater Pump System Failure on Rugosa Ridge Properties

The use of covenants and easements will not provide sufficient legal authority for the city to enforce on the HOA. This type of detailed policing and enforcement can only be enabled through a binding legal agreement that is signed by all parties, including future lot owners in Harbor Grove. Since all future property owners would be responsible for protecting property in another subdivision (Rugosa Ridge), they should be required to sign such an agreement as a condition of lot purchase. Rugosa Ridge HOA should be a party to the agreement and should be granted right of access to the pump system for inspections. This is reasonable given that: a) the pump would be much easier to access from Rugosa properties than from Harbor Grove properties; and b) Rugosa properties would be the first to experience the effects of a pump system failure.

The design of the project's drainage system places the responsibility of protecting property located within one HOA (Rugosa Ridge) in the hands of another HOA (Harbor Grove). In approving this design, the City would effectively be delegating protection of the public health, safety and welfare to a small group of private property owners over which it has only limited control. And such a role or responsibility is never included in the charter language or bylaws of a typical HOA. This scenario places lot owners in Rugosa Ridge in a vulnerable position (to flooding impacts) and is in nobody's best long-term interest. In the event of a pump system failure that impacts the adjacent properties, the burden of proof would fall on the affected property owners in Rugosa Ridge, putting them in an extremely difficult position.

- b. Landscaping along western retaining walls. Regular landscape maintenance includes irrigation, debris removal, weeding, pruning and mulching. The proposed landscaping improvements located at the base of and in between the retaining walls cannot be maintained due to the height, length and location of the walls. No irrigation of the landscape areas is proposed (*see Landscape plans on file*). The continuous wall design will prevent the transport of materials and equipment to and from the landscape areas. The inaccessibility of this area will lead to accumulation of leaves, weeds and debris. Importantly, the landscaping will provide no tangible benefit to the future property owners of Harbor Grove since it will not be visible. It will only exist for the presumed 'benefit' of the residents of Rugosa

Ridge. This will greatly reduce the incentive for future residents of Harbor Grove to perform maintenance work. When the landscaping dies due to lack of maintenance and irrigation, it will become a visual nuisance that gets worse over time as dead plants, weeds and debris accumulate.

The use of covenants and restrictions to require maintenance of the landscaping in this area will be ineffective when the future homeowners cannot see it or gain access to it. The City would be approving a project design that creates a non-maintainable condition and becomes a source of conflict between existing owners in Rugosa Ridge and future owners in Harbor Grove. It is setting the stage for future enforcement action by the City and ultimate failure.

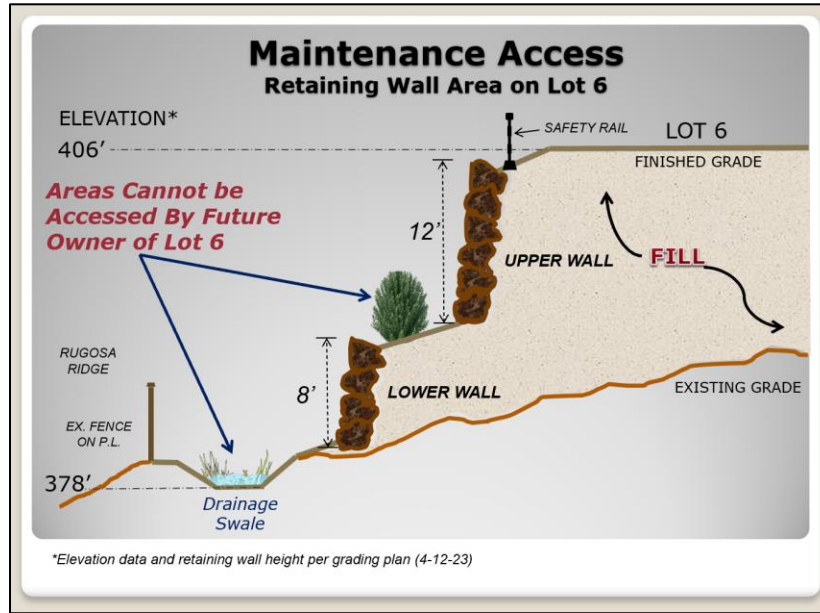


Figure 2 – Illustration Showing Difficulty of Access to Improvements on Lot 6

- c. Retaining Walls. The retaining walls along the western boundary of the project will be isolated. Future houses and other improvements will be constructed between the access road and the walls, meaning that any wall failures or damaged areas cannot be accessed for repairs. For example, if a section of the 12' wall on Lot 6 were to fail, it is likely that large equipment would be needed to bring in materials. However, there would be no place for equipment staging. The expectation, therefore, is that the walls will be designed, installed and maintained such that they will last forever. This is a false premise that will lead to erosion and drainage impacts on the adjacent Rugosa properties in the event of a wall failure. Such impacts cannot be addressed because the wall cannot be accessed for repairs. This is a potential unavoidable adverse impact under SEPA.
- d. Maintenance Easement/Maintenance Plan. The proposed maintenance provisions in the preliminary plat include an easement between Lots 5 and 6 and along the western boundary of the property, combined with language on the plans authorizing the City to inspect the drainage (storm detention) facility (see *Grading* and *Composite Utility* plans). The layout of the maintenance easement would require workers to hand-carry all tools, materials and equipment because there would be no vehicular access. As an example, access from 53rd Ave to the drainage swale and landscape areas in

the southwest corner of Lot 7 would require walking a distance of at least 650 feet over uneven terrain and around many obstacles. There are no logistical plans stating how often these facilities need to be inspected, how equipment or bulk materials will be brought in or out of the site. The simple conclusion is that maintenance of any improvements along the far western portion of the property will be impractical or impossible.

There needs to be a full maintenance plan, schedule, and budget. This information is needed before the project is approved to understand whether the drainage and landscaping improvements can or will be maintained by the future HOA. Providing a legal mechanism alone (i.e., easement and covenants) is insufficient when there will be real-world difficulties in actually performing the maintenance due to a flawed project design.

2. **Visual/Aesthetic impacts.** The project includes large retaining walls up to 20 feet in height facing developed residential properties to the west. The walls will be located within the rear setback area, in violation of the zoning code, which limits freestanding walls to six feet within the rear setback. The future dwellings will be perched on top of the walls and will tower over the neighboring properties to the west, causing them a loss of use and enjoyment of their property. The walls will be an eyesore when they are first installed and will become a nuisance due to lack of maintenance (*see Item B.1 above*).
3. **Light/Shadow impacts.** The proposed fill and grade changes on the western portion of the property would result in a finished grade at least 20 feet higher than the existing grade. Since buildings are allowed to be constructed up to 30 feet in height under the zoning code, the effective building height would be up to 50 feet above existing grade if buildings are constructed near the rear setback line on Lots 5, 6 and 7. As a result, future dwellings placed on the artificially elevated ground level would loom over the adjacent properties, peering into back yards, reducing solar exposure and casting longer shadows during morning hours. This would reduce privacy, use and enjoyment of properties in Rugosa Ridge.

Visual impacts, nuisance impacts, reduced solar access, and other incompatibilities, could have been reduced if the City had required the project to be redesigned earlier in the permit process. With the current design, these impacts have not been addressed under SEPA or zoning.

III. Project Compliance with Mukilteo Municipal Code.

This section describes how the proposed project fails to comply with applicable provisions of the Mukilteo Municipal Code (MMC).

A. Title 17 – Zoning

1. Setbacks for retaining walls; building height.

17.08.020 Definitions.

“Building height” means the vertical distance from the mean ground level (prior to any elevation change in native existing grade except as approved through a plat or short plat) to the highest point of the coping of a flat roof or to the deck line of a mansard roof or to the height of the highest gable or roofline of a gable or pitched roof.”

“Setback” or “yard requirements” means the required open space distance that buildings, uses or structures must be removed from their lot lines.

“Setback line” means a line parallel to the property line and located at the minimum distance required by the code or ordinance between a building wall and a property line or other reference.

“Structure” means a combination of materials constructed or erected on the ground or water, or attached to something having a location on the ground or water.

“Freestanding sign” means a pole, pylon, ground or monument sign supported by the structures or supports that are placed on, or anchored in, the ground and that are independent from any building or structure.

17.20.080 Fences and freestanding walls.

A. *Fences and Freestanding Walls. Fences and freestanding walls are allowed under the following conditions.*

2. *Height.*

a. *In residential zones, fences and freestanding walls located in side and rear yards may not exceed six feet in height and must be stepped down to not more than four feet or forty-eight inches at the front setback line.*

C. *Variances. Increases in the height of fences or freestanding walls by more than two feet in height shall be subject to the review procedures and requirements of Section 17.64.040, Variances.*

Analysis – Retaining Wall Setbacks and Height:

The proposed retaining walls along the western boundary of the project are located within the 25-foot rear setback required by the zoning code (*Figure 3*). The lower wall would be within 12 feet of the property line, while the upper wall would be within about 20 feet. The total length of the lower wall would be 170 feet, while the upper wall would be 250 feet. The combined height of the walls would be up to 20 feet on Lots 6 and 7, in the southwest corner of the project site. Both walls would exceed six feet in height in places. The purpose of the walls is to enable the grade of the site to be raised and leveled such that it is significantly higher than the surrounding properties.

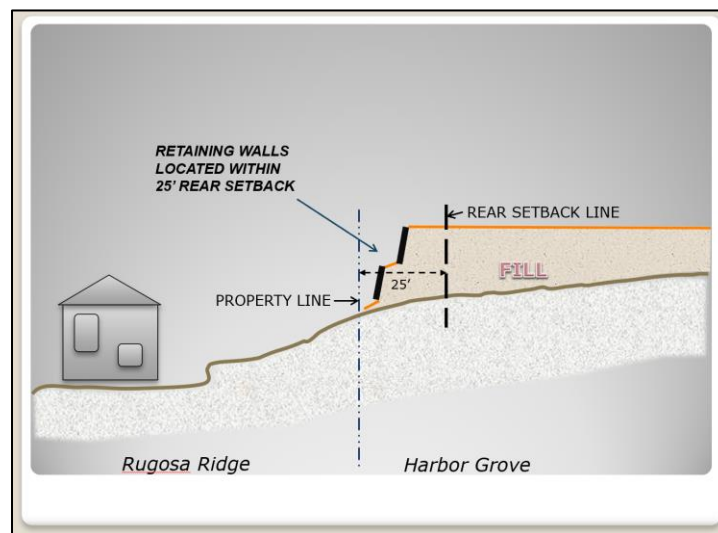


Figure 3 – Diagram showing location of retaining walls within rear setback

The City maintains that retaining walls are not freestanding walls and therefore are not required to meet setback regulations for walls, fences or other structures (*Galuska email 2/3/23*). Under this reasoning, there is no limit to the height of retaining walls within setback areas. In other words, the Planning Department maintains the walls

are *exempt* from regulation under the zoning code. This interpretation of the zoning code is contrary to the requirement that buildings and structures be located outside of the setback area (see “setback” definition above). It allows damaging impacts on adjacent properties including light, shadow impacts, and increased building height caused by abrupt and artificial grade increases. It also causes changes in drainage patterns.

Retaining walls are “structures” as defined in the zoning code (see definition above).

City code does not define freestanding walls or retaining walls specifically. The term “freestanding” is, however, used in identification of *sign* types and provides guidance on how the term should be applied here (see definition above). A “freestanding sign” is part of a self-supporting structure that is not attached to a building or other structure. Using this same approach, the retaining walls in the Harbor Grove project are also considered freestanding since they are not connected to any other structures. They are independent structures whose only function is to support fill dirt and allow the site elevation to be raised.

The proposed walls, because of their height, length and continuous nature, are more like large buildings than the type of retaining walls that are commonly used on residential lots. In fact, the proposed walls create a greater impact than if a variance were issued for a residential house within the rear setback. This is due to the continuous length of hundreds of feet, with no gaps to allow light to pass through.

The proposed walls along the western and southern property lines are both retaining walls *and* freestanding walls under city code and must meet the height and setback provisions under 17.20.080.A.2.a. They are also required to meet the setback standard because they are structures. A variance application is required for wall height exceeding eight feet within the 25-foot rear setback. The variance application must be processed as part of the Harbor Grove subdivision application and provided to the Hearing Examiner for review and approval. Without a variance request, the application is incomplete and the SEPA threshold determination has been issued in error.

Analysis – Building Height:

Under [MMC Section 17.20.020 - Structure bulk matrix](#) – maximum building height in the RD 12.5 zone is 30 feet from *existing grade*, as stated in the City’s requirements for building height calculation. The finished grade on Lots 4 through 7 is proposed to be elevated by up to 20 feet above existing grade. Calculation of building height based on the finished grade would result in future residences being allowed to have 30 feet of building height on top of 20 feet of fill for an overall height of up to 50 feet above the existing ground level (*Figure 4*). Applying the building height standard in this manner would be absurd and would create significant impacts on adjacent properties. It would amount to a building height bonus. Buildings located at or near the 25’ rear setback line would tower over neighboring houses and yards, resulting in light and shadow impacts and loss of privacy, use and enjoyment. These impacts have not been addressed or mitigated.

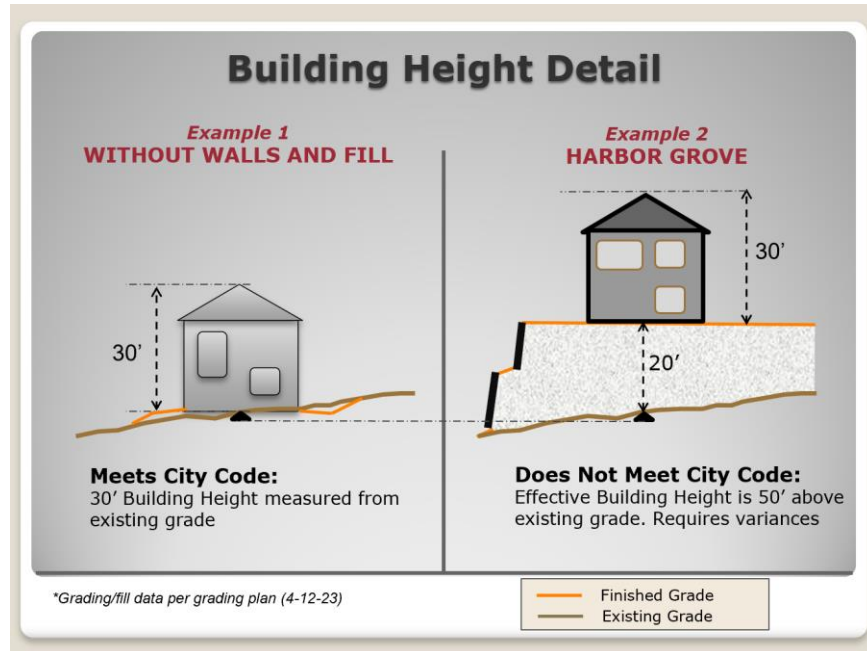


Figure 4 – Building Height examples – with and without project

The definition of building height provides an exception for plats and short plats based on an approved grading plan; however, this is a discretionary review process that must consider the impacts that would result from the large-scale regrading of a site. The purpose and intent of this exception is to allow for minor changes within the interior of the site necessary for reasonable grading for utilities, roads and building sites, while protecting adjacent properties and the natural setting from harmful impacts of artificial increases in site elevation and building height. It recognizes the need to create smooth, rather than abrupt transitions around the exterior margins of a subdivision. It is intended to consider the balancing of cut and fill, rather than a net import of fill material (10,000 cubic yards) as proposed in the project. The building height exception connected to approval of a grading plan must be considered jointly with MMC 15.16 addressing grading and excavation. The City has applied the two sets of code provisions (zoning and grading) in isolation from each other in a manner that fails to consider impacts under SEPA and zoning.

A variance is required to allow future building height on the site to exceed 30 feet from the existing ground elevation. The City has not provided justification for allowing future building height to be calculated from finished grade, nor has it documented the impacts of this interpretation.

2. **MMC 17.13.010 LAND USE AND DEVELOPMENT REVIEW PROCEDURES - Purpose**

C. *The purpose of this chapter is to establish a land use development permit review process, as required by state law, for considering consistency of a proposed project with the applicable development regulations. Consistency shall be established by considering the following four factors:*

4. *The character of the development, such as development standards.*

Compatibility of Project Design. The **design** of the project is inconsistent with the character of the surrounding development. The properties within the vicinity of the project have been developed without the use of large fills

and retaining walls. The project includes over 500 lineal feet of retaining walls, mostly within the rear setback along the west property line abutting existing developed property—and mostly supporting fill. For comparison, grading and retaining work on the Rugosa Ridge subdivision was completed lot-by-lot. There are no continuous walls spanning multiple lots. Most walls that have been built support an excavation, rather than a fill and are located within the interior portion of the site. Excavations typically have much less impact on abutting property since they do not result in light/shadow impacts and increased building height. Because of their height and length, the walls and mass grading scheme for Harbor Grove are more typical of larger commercial or industrial projects. These developments normally require a large, flat graded area for larger building footprints. Single-family development does not require large, flat expanses as proposed in the Harbor Grove application.

- a. Impacts caused by City’s Inconsistent Application of Standards. The City’s review of the project has resulted in the development standards being applied unequally when compared to the surrounding properties and the larger neighborhood. The City’s unbalanced application of grading and excavation, drainage and zoning standards categorically ignores concerns of the abutting property owners raised throughout the public comment process. The scale of grading activity, the large walls and increased building height are design elements that have not been used in the surrounding residential developments. The project design results in not just land use impacts but impacts on earth and water as demonstrated herein. It is as though the City has two completely different interpretations of its development standards: one for Harbor Grove and another for the surrounding community.
- b. Daffron Short Plat (SP 2017-003). To understand how the City’s application of development standards varies from one project to the next, there is an excellent example involving the adjacent property at 9018 – 53rd Ave W. The property was the subject of a four-lot short subdivision that was completed recently, although the houses have yet to be constructed. This project also abuts the Rugosa Ridge subdivision on its west side and has similar topography to the Harbor Grove site. And yet it was developed very differently, with minimal grading and drainage impacts and no retaining walls. It was also developed with minimal vegetation removal. See the comparison chart below:

	Daffron Short Plat 9018 – 53rd Ave W	Harbor Grove Subdivision 9110 – 53rd Ave W
No. of Lots/ Acreage	4 lots/1.4 acres	7 lots/2.4 acres
Grading	Minimal for road/utilities. Balanced cut & fill	Mass grading. 10,000 cubic yards fill. 20’ fill depth near site boundary
Drainage	Gravity flow	Pump/force main system. Major grade changes to enable re-routing of stormwater runoff.
Vegetation Removal	Minimal for road/utilities	All vegetation removed, except small portion of site.
Retaining Walls	None	2-tiered wall system. Over 500 linear feet of walls. 20’ height.

Table 1 – Comparison of Daffron Short Plat and Harbor Grove Subdivision

B. SEPA

WAC 197-11-060 Content of environmental review.

(4) *Impacts.*

(c) *Agencies shall carefully consider the range of probable impacts, including short-term and long-term effects. Impacts shall include those that are likely to arise or exist over the lifetime of a proposal or, depending on the particular proposal, longer.*

Analysis: The DNS does not identify or evaluate any environmental impacts of the proposal, including long-term impacts of the project on SEPA elements *Earth, Water* and *Land Use*. Long-term impacts on adjacent properties would include surface water flooding from drainage system failure including potential structure damage, changes to groundwater, nuisance impacts, light and shadow impacts, and loss of use of enjoyment of the adjacent properties. These impacts will be made worse by a project design that prevents proper maintenance of landscaping and infrastructure improvements. Impacts will occur over the long-term duration of the project (100+ years). Sufficient safeguards and contingency measures have not been provided to prevent or mitigate these impacts. It is noted these impacts have been raised previously during the public comment period and remain unaddressed.

C. Title 15 – Buildings and Construction

MMC 15.16.010 – Grading and Excavation - Purpose

15.16.010.C.3 *Minimize the impact of increased runoff erosion and sedimentation on nonconsenting persons caused by improper land development and maintenance practices;*

Analysis: The proposal places the deepest fill and tallest walls along the west and south property lines, which are the lowest portions of the property and directly abut developed residential properties. The walls will be within the rear setback area and will be hundreds of feet in length, leaving the far western and southern property lines inaccessible. If there is a problem either during or post-construction, such as a large rain event, it will be impossible to take corrective measures since equipment cannot be brought into this area. Similarly, equipment cannot be brought into the area from Rugosa properties due to the slope and location of existing improvements. All remedial work will need to be performed by hand, which will limit the effectiveness of any remedial action.

Both the City's clearing/grading requirements and the 2019 DOE Stormwater Manual recognize the importance of retaining native vegetation in limiting the impacts of increased site runoff, erosion and sedimentation.

This proposal would concentrate the most intensive development activity (grading and fill) where it will have the highest potential to cause erosion and sedimentation impacts on the surrounding properties. The remoteness and inaccessibility of the area below the retaining walls will prevent maintenance from being completed by the future homeowners. The project design creates a high likelihood of damaging impacts on the adjacent properties and should not be approved for this reason alone.

15.16.010.C.4 *Maintain and protect ground water resources; to minimize adverse effects of alteration in ground and surface water quantities, locations, and flow patterns;*

Analysis: As described in Section II, the project proposal would alter the natural drainage pattern by collecting and routing surface and subsurface water to the east side of the site. It would cause potential impacts on the adjacent properties by creating risk through installation of a mechanical pump system. This system will degrade over time and will be prone to failure. Failure of the pump system would lead to a large amount of stormwater flowing directly onto adjacent properties.

15.16.010.C.5 *Promote safety upon city roads and right-of-way; to decrease potential landslide, flood, and erosion damage to public and private property;*

Analysis: The project proposal would increase the risk of potential flood and erosion damage to adjacent private property as documented in this report.

15.16.140 Setbacks

C. Toe of Fill Slope. The toe of fill slope shall be made not nearer to the site boundary line than one-half the height of the slope with a minimum of two feet and a maximum of twenty feet. Where a fill slope is to be located near the site boundary and the adjacent off-site property is developed, special precautions shall be incorporated in the work as the permit authority deems necessary to protect the adjoining property from damage as a result of such grading. These precautions may include but are not limited to:

- 1. Additional setbacks;*

Analysis: The greatest amount of fill (up to 20 feet deep) will be placed immediately adjacent to developed residential properties in Rugosa Ridge (*see Grading plan*). The western boundary of fill (toe) and associated retaining walls will be within approximately 10 feet of the property line. Grading for the proposed drainage swale will require additional work at the property line. In terms of grading activity, this will be the most intensive area of development on this site. The construction work alone will be disruptive to the adjacent properties and will likely result in property damage to fences and landscaping. It will also cause an extended period of nuisance impacts (noise, dust, smoke, etc.) and increase the potential for erosion and sedimentation.

The City must use its authority under 15.16.140.C and SEPA to require additional retaining wall setbacks and reduced grading/fill in order to protect adjacent developed properties in Rugosa Ridge from grading and construction impacts.

15.16.050. Requirements. (for clearing and grading permit)

It is the intent of this section to promote practices consistent with the city's natural topographic, vegetational, and hydrologic features, and to control substantial land alterations of a speculative nature.

Analysis: The proposed grading and drainage scheme substantially modifies the existing natural site features, including the regrading from a sloping topography to a single flat pad; removal of all the existing site vegetation; and alteration of the natural drainage pattern (i.e., discharging stormwater from a different location than existing conditions). For the reasons stated in this letter, the grading permit for the Harbor Grove subdivision should not be approved.

Conclusion: The proposed development scheme is not consistent with the city's natural topographic, vegetational and hydrologic features and does not meet the intent of Section 15.16.050.

15.16.050.C Clearing.

1. All clearing of vegetation shall conform to the specifications of this table, except as noted elsewhere in this subsection:

Table 1: Clearing Matrix		
Grade of Site or Slope (%)	Maximum Native Vegetation/Groundcover Removal (%)	Minimum Required Significant Tree Retention (%)
> 35% 2b		See notes.
> 25%—≤ 35%	45%	55%
> 15%—≤ 25%	60%	40%
≤ 15%	75%	25%

Analysis: The application includes grading and filling of most of the property, including the steepest areas consisting of slopes greater than 35% within the south and western portions of the site. No vegetation would be retained in these portions of the property. Table 1 contains restrictions on how much of the native vegetation must be retained on a development site, based on the steepness of slopes on the property.

To meet the standards in Table 1 – Clearing Matrix, the application on file should have included a map showing a breakdown of on-site slopes according to steepness. Such a map can be prepared easily using Autocad or other common engineering software. See Figure 5 below, which shows the site to be anything but flat...

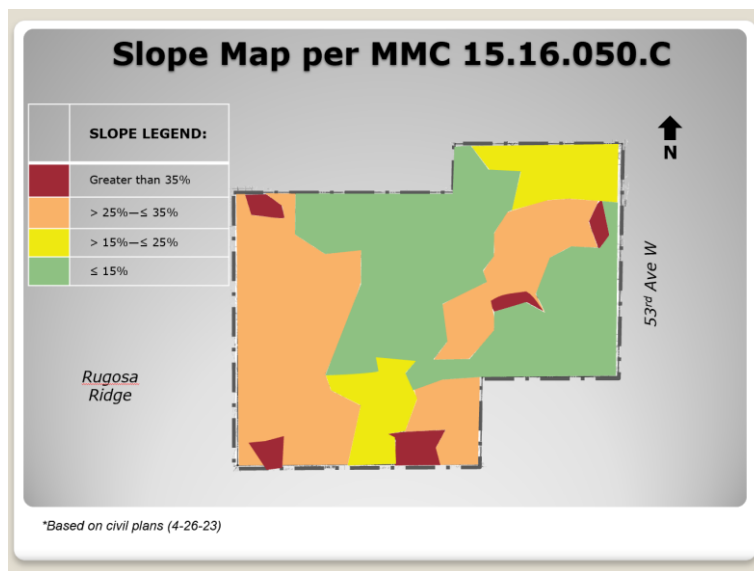


Figure 5 – Slope Map Showing Approximate Breakdown of Slopes by Percentage

The application fails to comply with the requirements of MMC 15.16.050.C – Table 1 because it does not provide slope category and vegetation removal data. It uses the “average slope” of the property, which is incorrect because it does not acknowledge that a significant portion of the site is greater than 15% slope. The

result is that the DNS allows extensive clearing, grading and alteration of the property, causing potential erosion and sedimentation impacts on adjacent properties and leading to long-term flooding and land use impacts. The purpose and intent of this section is to protect steeper sloped areas and abutting properties from exactly the type of intensive development proposed in this application. This intent is stated in 15.16.010.C.6. ***“...to promote practices consistent with the city’s natural topographic, vegetational, and hydrologic features...”*** The clearing and tree retention requirements implement this standard and must be applied correctly by the City. Otherwise, approval of the application as submitted will result in significant alteration of the site’s topography, vegetation and hydrology.

D. City of Mukilteo Development Standards (2019 Amendment)

Chapter 3 - Surface Water

3.4 General Requirements (applies to storm drainage facilities)

3. Emergency overflow provisions shall be installed in such a manner as to direct waters away from all structures without causing failure of those structures. The impact of a system failure should be analyzed both in terms of on-site and off-site effects. The impacts may be to adjacent properties or to elements of the public drainage system or other private systems. Retention/detention and infiltration facility design must take into account overflows which may result from:

- a. Higher-intensity or longer-duration storms than the design storm;*
- b. Plugged orifices;*
- c. Inadequate storage due to sediment buildup;*
- d. Debris blockage; and*
- e. Other reasons causing system failure.*

Analysis: Possible causes of failure of the Harbor Grove stormwater pump system on the west side of the property include pump failure; debris blockage of the water intake; sediment buildup; power outage; or failure of the force main outlet piping. The conveyance swale, pump and piping would be located at a higher elevation than the adjacent property. A system failure would result in stormwater overflowing off-site in a westerly direction due to the sloping topography. One of the adjacent residences sits directly in the flow path of any surface water exiting the lowest point of the Harbor Grove property (see *Figure 1*). A drainage system failure on the Harbor Grove property would potentially result in direct surface flows onto the neighboring property, causing damage to the structure, yard and landscaping. The DNS does not acknowledge or describe this impact.

The Landau study (*Exhibit 1*) conducted a review of the proposed stormwater management system and determined the following:

...the concept of a pump system without an emergency overflow or bypass system is inherently risky. In-perpetuity pumping is not standard practice for retaining wall drainage design. It is not clear in the project design documentation what the emergency overflow/bypass plan is in the event of prolonged power outage or other pump system malfunction. If emergency bypass flows will drain westward by gravity, some type of overflow and conveyance system would typically be appropriate to protect the neighboring parcel(s) from impacts.

*The project design does not comply with 3.4.3 because it does not include emergency overflow provisions to protect structures on the adjacent properties. In fact, the proposed location and design of the stormwater pump system would achieve the exact opposite of what is required by Section 3.4.3--it would ensure that stormwater emergency overflows are directed **toward** the adjacent structures, not away from them. The DNS from the City, and the application and analysis provided by the applicant do not evaluate the impact of a drainage system failure as required by the standards. Due to the design and location of the stormwater system, there are no contingency or emergency measures that can be put in place to prevent overflow stormwater from damaging the adjacent residence. Once a failure occurs, stormwater overflows will continue until the failure is corrected. Due to the difficulty in gaining access to this system and the fact it will be privately owned and maintained, there is no guarantee the needed repairs/corrections will be completed in a timely manner.*

6. The frequency and difficulty of future maintenance should be minimized by thorough consideration of possible failures in the system during design and what would be required to correct the problem. Design adjustments to ease maintenance should be a major consideration.

Analysis: The City has acknowledged that stormwater pump systems are the “option of last resort” for handling stormwater runoff in new development. However, it has provided no data or analysis to indicate that other options have even been considered during the project review process. Without a listing and evaluation of such options or alternative designs, the City’s SEPA analysis is incomplete.

The stormwater collection and pump system on the west side of the property will need to be inspected and maintained on a regular basis. However, due to its remoteness and lack of visibility, maintenance will be extremely difficult (*see analysis under Section II.B above*). The City cannot guarantee this system will be maintained because it will not own it. And the developer cannot ensure it will be maintained because it will pass the maintenance obligation to future homeowners. This creates uncertainty and risk for homeowners of the adjacent properties in Rugosa Ridge, who will have perpetual concerns about flooding impacts resulting from system failure.

The project design does not facilitate long-term maintenance of the drainage system. Because of the potential property damage impacts resulting from drainage system failure, the City must use its authority under Section 3.4, General Requirements, to either require a redesign of the project, or to deny the project outright.

7. Offsite improvements may be required if on-site controls are insufficient to mitigate impacts due to flooding, erosion, sedimentation, pollution, or habitat degradation.

Analysis: Per criteria #3 above, the project is required to provide emergency overflow measures to address impacts resulting from pump system failure. Due to the topography and location of the proposed stormwater collection and pump system, the project design may not allow on-site controls to mitigate these impacts. The only remaining option is for the applicant to install emergency overflow provisions on the adjacent properties. No such provisions have been made in the application.

Neither on-site nor off-site controls have been provided to mitigate the impacts of flooding and sedimentation as a result of a failure of the stormwater pump system.

9. The visual impact and other potential problems (mosquito breeding, smell, etc.) should be considered. Concerns will vary with the site environment, but aesthetics should always be of concern to the designer.

Analysis: Placement of the drainage swale and pump system at the base of the large, continuous walls along the western boundary will discourage future maintenance of the drainage system, leading to overgrown conditions, debris accumulation and general neglect of this area. This will cause visual nuisance impacts which will affect the adjacent properties in Rugosa Ridge. This impact has not been addressed under Section 3.4, General Requirements, or SEPA.

Overall Conclusion: The project application does not comply with the City's Development Standards – Section 3.4, General Requirements – criteria #s 3, 6, 7 and 9.

3.4.17 Stormwater Facility Access and Maintenance

1. All stormwater facilities shall be accessible to maintenance vehicles. If the facility is not located in or adjacent to an existing access, an improved roadway surface shall be provided.

Analysis: The stormwater drainage swale, pump and pipe system will be located at the base of a large retaining wall and would be inaccessible from any road or driveway. The nearest road would be approximately 150' as the crow flies, and the actual travel distance on foot would be much further (see Figure 5 below). At this location, it would be physically impossible to provide vehicular access to this portion of the drainage system. As a result, all maintenance will need to be performed by hand and all materials and equipment will need to be hand-carried. This will greatly limit the type of work that can be performed and the frequency of maintenance.

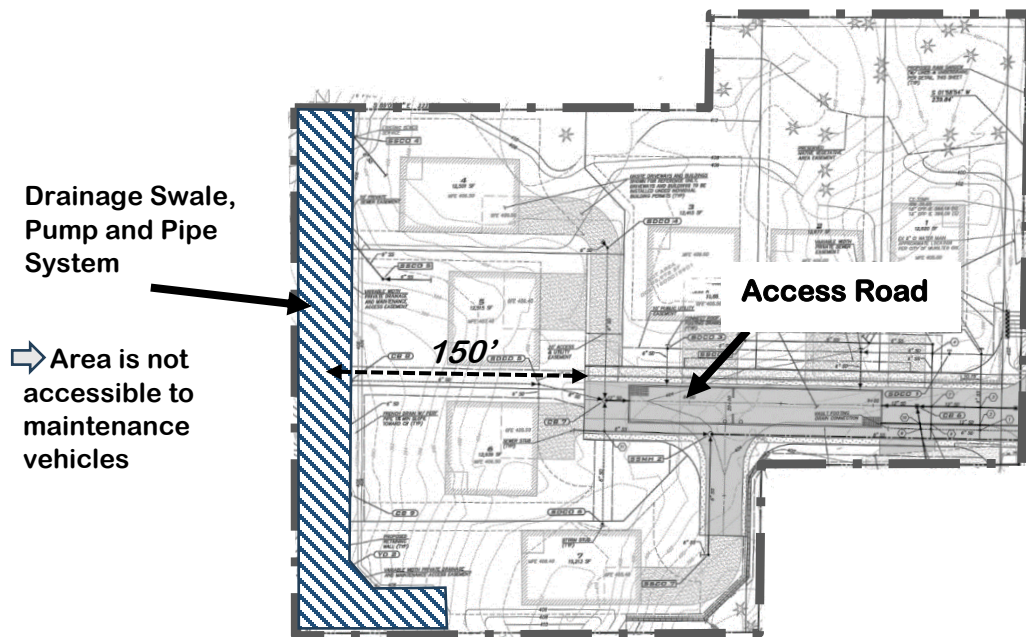


Figure 5 – Map of Project Showing Location of Drainage System and Access Road

The project design does not comply with stormwater facility access and maintenance standards because the stormwater pump system will be inaccessible to maintenance vehicles.

V. Summary, Conclusion and Alternative Design Options.

The Harbor Grove subdivision, if approved and constructed as currently proposed, will cause physical damage to my property, as well as other properties in the Rugosa Ridge subdivision. The design of the project creates risk of flooding impacts, erosion and sedimentation, nuisance impacts and loss of basic property rights including reduced privacy, use and enjoyment. Impacts will be both short- and long-term and will negatively affect property values.

The City of Mukilteo will be negatively impacted by the project. It will be drawn into conflict between Rugosa Ridge and future Harbor Grove property owners as a result of flooding and stormwater concerns, nuisances and failure to maintain Harbor Grove improvements properly. These are long-term concerns that will drain city resources due to the need for monitoring, enforcement and mediation. If approved and constructed, the impacts of the development could result in legal action that would cost additional city resources.

The DNS has been issued in error and must be withdrawn for the following reasons:

- A. The application is incomplete based on the requirements of Mukilteo City Code, Titles 15 and 17.
- B. The application fails to comply with multiple requirements of the Mukilteo City Code and will cause impacts on the adjacent properties as a result.
- C. The Harbor Grove subdivision proposal will cause unavoidable adverse impacts under SEPA that have not been mitigated. This includes damaging impacts on the adjacent properties and the natural environment.
- D. The DNS fails to consider alternative project design(s) with fewer impacts on the neighboring properties.
- E. The applicant has failed to provide justification for a project design that results in impacts on adjacent properties and the natural environment.

The City must take one of the following actions based on the application failing to meet city code or to address its environmental impacts:

1. Withdraw the DNS, reject and return the application to the applicant; or
2. Withdraw the DNS and issue a written request for a major redesign of the project to address impacts under SEPA and the project's inconsistencies with the Mukilteo Municipal Code. Alternative designs that could be considered include the following:
 - **Alternative A** – Cluster the housing and lots in the eastern portion of the site. This design can be accomplished with significantly less grading and drainage impacts on the abutting property owners in Rugosa Ridge.
 - **Alternative B** – Revised grading and drainage concept that preserves the natural topography, vegetation and hydrology consistent with MMC 15.16.010 and 15.16.050.

Respectfully submitted,

David Tyler
9055 Hargreaves Pl
Mukilteo, WA 98275

Cc: Andy Galuska

Enclosure: Exhibit 1 - *Hydrogeologic and Stormwater System Design Assessment (Landau Associates, 9/11/23)*



September 11, 2023

Transmitted via email to: david.d.tyler@comcast.net

9055 Hargreaves Place
Mukilteo, Washington 98275

Attn: David Tyler

**Re: Hydrogeologic and Stormwater System Design Assessment
Harbor Grove Subdivision Preliminary Plat
Mukilteo, Washington
Project No. 2201001.010**

Dear Mr. Tyler:

At your request, Landau Associates, Inc. (Landau) has completed a review of technical information and design documents related to the proposed Harbor Grove Subdivision Preliminary Plat project (project) located at 9110 53rd Avenue West in Mukilteo, Washington (site). Landau's review focused on which potential impacts on the hydrogeologic system and stormwater flows at—and in the vicinity of—the site have been adequately accounted for in the project design plans and documentation. Landau's review, described herein, is based on a site visit,¹ project design plans and other documentation provided on the City of Mukilteo's (City's) Land Use Action Notices website,² as well as project documentation provided on the City's separate website for this specific project.³ The City issued a Determination of Non-Significance (DNS) related to the State Environmental Protection Act (SEPA) requirements for the project on August 30, 2023. The City's DNS indicated that the City has determined the project "will not have a probable significant adverse impact on the environment that won't be adequately mitigated through application of existing city procedures and regulations (e.g., clearing and grading, critical areas, established impact fees)" and that the project "has been clarified and changed by the applicant, and conditioned to include necessary mitigation measures to avoid, minimize or compensate for probable significant impacts."

Based on our review, it is Landau's opinion the project design plans and other documentation—as updated in April 2023—do not provide sufficient assurance that adverse environmental impacts due to project development can be avoided or mitigated as presently proposed. Landau's primary findings of project deficiencies can be categorized into two subjects—anticipated stormwater flows and

¹ Landau's site visit included visual observations of the site from the public right-of-way and two private residences immediately west of the site.

² <https://mukilteowa.gov/departments/planning-development/development-regulations/land-use-action-notices/?cn-reloaded=1>

³ <https://mukilteowa.gov/harbor-grove/>

proposed stormwater management—and are described in more detail below, following a basic description of Landau’s understanding of the project.

Project Understanding

Existing Conditions

The site comprises a 2.43-acre parcel (Snohomish County #00611600015901) that is currently forested with understory vegetation and has one single-family home with garage and driveway. As described in the project Geotechnical Engineering Study (Geotechnical report; Earth Solutions NW 2021), the site surficial (or shallow) soils are mapped as Vashon-age glacial till (typically dense to very dense and relatively impermeable to downward water percolation), which was consistent with site-specific geologic explorations. The existing topography is described in the project Storm Drainage Report (drainage report; Blueline 2022) as having a “significant amount of elevation change across the parcel, with slopes greater than 33 percent in multiple areas.” The Geotechnical and drainage reports describe a topographic ridge (or drainage divide) running north-south in the central portion of the site and a vertical relief of approximately 30 feet (ft) across the site, resulting in stormwater runoff primarily sheet-flowing toward the west, east, and possibly south away from the site. The lowest point of the site is in the southwest corner, where the site parcel abuts a neighboring private parcel at 9107 Hargreaves Place (neighboring parcel). According to the owners of the neighboring parcel, stormwater flows from the site have contributed to past flooding of their yard and home.

Proposed Developed Conditions

Site Development Plans

The proposed project includes the demolition of the existing home and garage and construction of seven new single-family homes with associated access drive, utilities, and landscaping. All but 0.19 acres of the site, which will remain undisturbed/preserved within a Native Vegetative Area Easement, will be regraded to accommodate construction of the proposed homes. The proposed regrading of the site includes a multi-tiered retaining wall system that would result in a vertical relief of up to approximately 26 ft within the westernmost approximately 30 ft of the site (an area referred to herein as the ‘retaining wall area’). The grading plan⁴ notes an anticipated cut volume of approximately 4,446 cubic yards and an anticipated fill volume of approximately 9,873 cubic yards (i.e., over 2 times as much fill as cut), which will require imported material. In addition, the Geotechnical report indicates that the native soils (i.e., till) may not be appropriate for use as structural fill, which is specified to be “granular soil” with low (5 percent or less) fines content. Figure 1, an adaptation of the project Road and Stormwater Civil plan sheet, shows the boundaries of the site, the low-lying neighboring parcel, the preserved native vegetative area, the proposed retaining wall area, the drainage divide in the native till surface, and existing/proposed site ground surface elevations.

⁴ Sheet 9 of 22 of Blueline’s April 19, 2023 Civil Plan sheets.

Stormwater Management Plan

According to the drainage report, the proposed grading will result in the majority of site stormwater runoff being collected and routed to a detention vault in the central/eastern portion of the site and, from there, into piped stormwater infrastructure eastward toward 53rd Avenue West, then southward toward 92nd Street Southwest, then westward toward Hargreaves Place, then northward along Hargreaves Place before discharging to the Smuggler's Gulch Creek drainage. As such, the project stormwater design anticipates the majority of the site stormwater runoff to be collected and ultimately discharged west of Hargreaves Place, essentially bypassing the neighboring parcel(s) immediately west of the site. Part of the stormwater management plan, as documented in the drainage report and the Civil Plan sheets, is to collect the stormwater drainage from the retaining wall area (via perforated drain pipe installed behind the footings of the walls) and pump it back up to a catch basin at the top of the retaining wall area, where it will gravity flow toward the east to the proposed detention vault and discharge from the site as described above. The location of the proposed pump, in relation to the proposed retaining wall area, is shown on Figure 1. An emergency overflow or bypass for the pump system is not provided—or apparent—in the project design plans or documentation.

The drainage report documents hydraulic modeling performed with the Western Washington Hydrology Model (WWHM) in support of project design. The WWHM model is a standard hydraulic analysis tool that is used throughout western Washington to assist in estimating stormwater runoff rates and volumes and for appropriately sizing stormwater management facilities (e.g., detention vaults, infiltration facilities, etc.). Within a WWHM simulation of a specific site location, the user can specify the overall acreage of the following parameters for a given contributing area with the following variable parameters:

- surficial soil type, including “A/B” or outwash-type soils (i.e., relatively permeable) and “C” or till-type soils (i.e., relatively impermeable)
- land coverage, including pervious coverage (e.g., lawn, pasture, or forest) and impervious coverage (e.g., roads, parking, roofs, etc.)
- land slope, including flat, moderate, or steep.

All these parameters affect the amount of estimated stormwater flows and groundwater recharge (or more generally ‘stormwater infiltration’) in a simulated contributing area. For example, till-type (“C”) soils result in more surface runoff (and less groundwater recharge) compared to outwash-type (“A/B”) soils; impervious land cover results in more surface runoff (and less groundwater recharge) compared to pervious land cover; within pervious land cover, lawn results in more surface runoff than forest; and steeper slopes result in more surface runoff (and less groundwater recharge) than flat slopes.

The WWHM simulation of the proposed developed conditions described in the drainage report (referred to herein as the “drainage report simulation”) comprised a contributing area for stormwater flows to the proposed detention vault including: 1.10 acres impervious (i.e., the homes, access drive, etc.); 1.24 acres of pervious pasture land coverage on till-type (“C”) soils; and 0.13 acres of pervious lawn coverage on till-type (“C”) soils, for a total contributing area of 2.47 acres. Presumably, because

the stormwater surface runoff from the retaining wall area is planned to be captured and pumped back up to the top of the site for eventual gravity flow to the detention vault, the drainage report simulation did not specifically assess—for pump and/or retaining wall drainage pipe design purposes or otherwise—the estimated quantities of stormwater flows generated from the retaining wall area on its own.

The stormwater flows from the retaining wall area—and possibly other portions of the site that contribute stormwater flows toward the west—pose a particular risk to the neighboring parcel(s) immediately west of the site; therefore, a lack of detailed analysis of anticipated stormwater flows on the westward-draining portion of the site was an important missing piece in the project design plans and documentation.

Additional Stormwater Analysis

To better compare the anticipated stormwater flows from the westward-draining portion of the site (including the westward-sloping areas under existing conditions and the retaining wall area under proposed developed conditions), Kindred Hydro performed additional WWHM simulations (referred to herein as the “Kindred simulations”), as documented in an April 19, 2023 letter (Kindred Hydro 2023). Part of the purpose of the Kindred simulations was to assess the magnitude of stormwater flows that may impact the neighboring parcel(s) immediately west of the site in the event of stormwater pump failure or other malfunction compared to flows estimated to be impacting those parcels under current conditions.

The Kindred simulation of existing conditions included a 1.24-acre contributing area (representing the portion of the site that, due to site topography, currently drains toward the west) of pervious pasture and forest, as appropriate, on till-type (“C”) soil. The Kindred simulation of proposed developed conditions included a 0.24-acre contributing area (representing the retaining wall area) of pervious lawn on till-type (“C”) soil. According to the Kindred simulations, stormwater surface runoff flows toward the west (i.e., toward the neighboring parcel) would be expected to be lower under proposed developed conditions than flows under current conditions for the 2-year to 100-year stormwater events.

The Kindred simulations only included estimated surface runoff flows. However, because the retaining wall drainage and pumping system of the project will also likely collect stormwater infiltration water as well as shallow groundwater (as “horizontal interflow”, as described by Kindred, or perched groundwater flow originating as downward precipitation percolation from the site resulting in accumulation and flow of groundwater atop the relatively impermeable till), exclusion of stormwater flows that infiltrate to ground over portions of the site represent a limitation of the project design plans and documentation. The choice of till-type (“C”) soils for the contributing areas in the Kindred simulation of proposed developed conditions may be an additional limitation in the project design plans and documentation, as discussed below.

Project Planning and Documentation Deficiencies

This section provides additional details regarding what Landau considers to be deficiencies in the project design plans and documentation, organized in subsections relating to anticipated stormwater flows and general stormwater management.

Anticipated Stormwater Flows

The project design plans and documentation do not account for all stormwater flows that may impact the neighboring parcel(s) immediately west of the site. In other words, the project design plans likely underestimate the stormwater flows that may require management by the retaining wall area pump system.

As discussed above, the Kindred simulation of proposed developed conditions assumed till-like (“C”) soils and also only accounted for surface water runoff flows from the 0.24-acre retaining wall area. Assuming till-like soils for the retaining wall area is likely inappropriate relative to project designs. For instance, the project retaining wall design (Attachment 2) specifies reinforced soil backfill (“Materials Note F: suitable granular material approved by the Geotechnical Engineer”) behind the retaining walls. The Geotechnical report specifies that backfill material consist of “free-draining material”. The purpose of the backfill behind the retaining walls is to drain any water that may accumulate behind them downward and into an underlying drainage pipe to avoid developing hydrostatic pressures behind the walls. This is a typical design feature of retaining walls. Therefore, the 0.24-acre retaining wall area would be more appropriately simulated as outwash-type (“A/B”) soils, since outwash-type soils are generally more permeable than till.

An important component of the site water balance⁵ that is not included in the Kindred simulation of proposed developed conditions is the portion of stormwater that infiltrates to ground and may travel laterally as shallow interflow (or perched groundwater flowing along the top of the till) that is likely to be collected by the retaining wall drainage and pump system. Kindred (2023) erroneously indicates that WWHM “does not provide estimates of groundwater recharge.” In fact, by toggling on the “compute recharge” option in WWHM, the stormwater infiltration component of the site water balance can be included in the WWHM output. Attachment 3 provides an illustration of several sequenced actions that can be done within the WWHM model setup to allow for infiltration output to be provided from a WWHM simulation. The stormwater infiltration flows from the retaining wall area would be appropriate to include in the design plans for the stormwater collection, conveyance, and pump system.

Along the same lines, the component of stormwater infiltrating to ground in the remaining 1.0-acre portion of the westward-draining area of the site under existing conditions (i.e., 1.24 acres of the Kindred existing conditions simulation minus the 0.24 acres of the Kindred simulation of proposed developed conditions of the retaining wall area; see Figure 1) would likely percolate downward from

⁵ The site water balance includes: Flow in (precipitation) and flow out (surface runoff, groundwater recharge, and evapotranspiration). For a given time period, flow out should be approximately equal to flow in.

the surface through the grading fill material, perch on top of the underlying native till, and flow west as “horizontal interflow” following the topography of the original till surface. It would then presumably be intercepted by the retaining wall drainage and pump system. In the current design, all stormwater from this 1.0-acre area is assumed to be directed to the east, a limitation that ignores infiltrated stormwater.

The designation of A/B (outwash-like) soil in the WWHM simulation is supported by site grading recommendations in the Geotechnical report. This report specifies that the imported soil used for fill throughout the site⁶ should be granular material composed of 5 percent or less fines. While this fill will be compacted, the specified compaction is unlikely to result in till-like soil (which was compressed—made dense to very dense—below immense glacial ice during the Vashon glaciation). Infiltrating stormwater throughout the site would then likely discharge in the direction of the slope of the original till surface that underlies the fill instead of the slope of final grades.

Incorporating these modifications to the project design plans would provide a more realistic estimate of stormwater flows that may be anticipated to require management in the retaining wall area drainage, conveyance, and pump system.

Proposed Stormwater Management

The project design includes a pump system to manage stormwater flows from the retaining wall area. Aside from the likely underestimate of flows requiring management by that pump system, as described above, the concept of a pump system without an emergency overflow or bypass system is inherently risky. In-perpetuity pumping is not standard practice for retaining wall drainage design. It is not clear in the project design documentation what the emergency overflow/bypass plan is in the event of prolonged power outage or other pump system malfunction. If emergency bypass flows will drain westward by gravity, some type of overflow and conveyance system would typically be appropriate to protect the neighboring parcel(s) from impacts. If the bypass flows will be retained on the site, the retaining wall design should explicitly include considerations for ponding of water (and therefore increased hydrostatic pressure) behind the retaining wall system to ensure structural stability of the retaining walls.

Recommendations

Landau provides the following recommendations to better quantify the anticipated stormwater flows that may impact the neighboring parcel(s) immediately west of the site and to provide a more conservative stormwater management design concept:

- Account for all stormwater flows—including surface flows and infiltration flows—that may be anticipated to flow toward and require management by the retaining wall area drainage, conveyance, and pump system. Estimates of those flows should be based on realistic assumptions for land coverage, soil type, and contributing area. Landau recommends the

⁶ The native till to be cut during grading may not be suitable as on-site fill, according to the Geotechnical report.

following components be included in the retaining wall area stormwater drainage, conveyance, and pump system design:

- Combined surface and infiltration flows from the 0.24-acre retaining wall area, assuming outwash-type (“A/B”) soils, lawn coverage, and flat slopes.
- Infiltration flows from the 1.0-acre portion of the site—where downward percolating stormwater would likely perch on top of the underlying native till, flow west following the topography of the underlying till, and be intercepted by the retaining wall area drainage and pump system—assuming outwash-type (“A/B”) soils, land coverage in accordance with proposed site conditions within this area, and flat slopes.
- Incorporate an emergency backup drainage and conveyance system to bypass the designed pump system and convey drainage past, and to reduce the risk of impacts to, the low-lying neighboring parcel(s) immediately west of the site, in the event of prolonged power failure or other pump system malfunction.

LANDAU ASSOCIATES, INC.



Ben Lee, PE, CWRE
Senior Associate

BDL/EFW/kjg
[Y:\2201\R\HG AND STORMWATER ASSESSMENT\LANDAU HG AND STORMWATER ASSESSMENT_2023_09_11]

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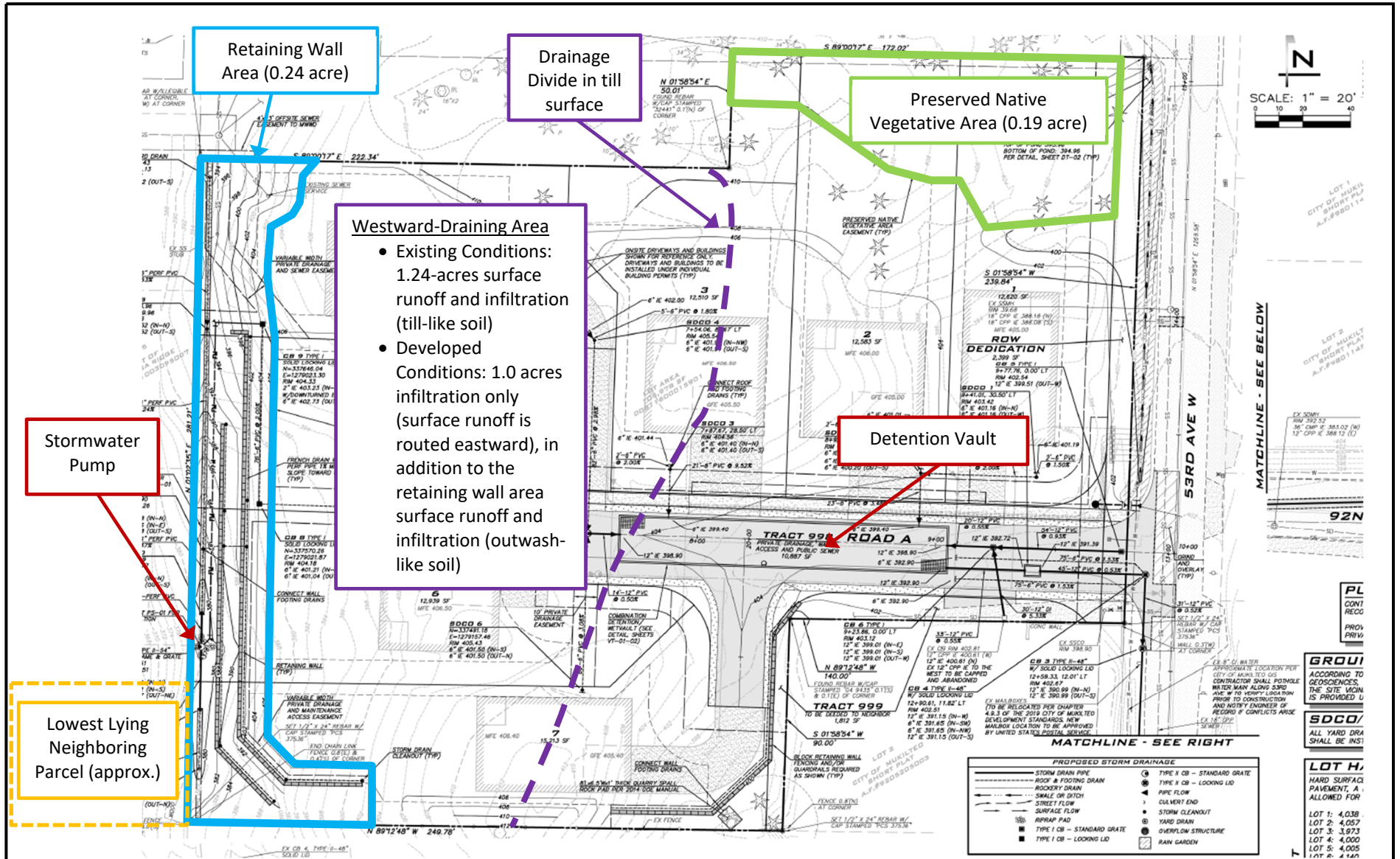
Blueline. 2022. Final: Storm Drainage Report: Harbor Grove Parcel No. 00611600015901; 9110 53rd Ave W, Mukilteo, WA 98275. May 3. Revised April 20, 2023.

Earth Solutions NW. 2021. Report: Geotechnical Engineering Study, Daffron Property; 9110 53rd Avenue West, Mukilteo, Washington. Earth Solutions NW, LLC. July 30. Updated July 28, 2022.

Kindred Hydro. 2023. Letter: Harbor Grove Development Hydrologic Impacts Assessment, 9110 53rd Ave West, Mukilteo, Washington. From J. Scott Kindred, to Glen Belew, Sea Pac Homes. April 19.

Attachments

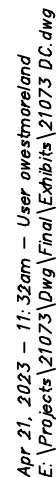
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|--------------|--|
| Figure 1 | Site Map |
| Attachment 1 | Proposed Developed Conditions from Drainage Report, April 21, 2023 |
| Attachment 2 | Retaining Wall Design Drawings, Earth Sciences NW, April 24, 2023 |
| Attachment 3 | WWHM Groundwater Recharge Output Toggling Illustrations |



Note: Adapted from Road & Storm Plan, Harbor Grove Civil Plans; Blueline Group, revised 4/12/2023

Proposed Developed Conditions from Drainage Report, April 20, 2023

FIGURE:
DC



**Retaining Wall Design Drawings, Earth Solutions NW
April 24, 2023**

DESIGN NOTES:

Reference: Blueline, Grading Plan, April 19, 2023

The following design assumptions were used:

- Internal angle of friction for reinforced soil = 32 degrees (design only - see Material Note "F")
- Unit weight of reinforced soil = 125 pcf
- Maximum wall height = 12.00 feet (single tier), 22.67 feet (total height for two tiers)
- Batter of wall = 1H : 10V
- Surcharge = Footing Load and Backslope

TECHNICAL SPECIFICATIONS FOR MECHANICALLY STABILIZED LOCK + LOAD RETAINING WALLS

GENERAL:

- A. The work involves the supply and installation of soil reinforced retaining walls. The Concrete Panels and Counterforts will consist of Lock + Load Stone. Counterfort and Geogrid are the types of soil reinforcement. The work will include, but is not limited to:
- excavation to the grades shown on the civil drawings
 - supply and installation of geogrid reinforcement
 - supply and installation of drainage fill and piping
 - supply and installation of segmental Lock + Load Stones
 - supply and installation of retained and reinforced soil fill
- B. The walls shall be installed on undisturbed Native Soils or Structural Fill, as appropriate.

MATERIALS

- A. Concrete Panels and Counterforts are locked together to form a "Stone". The retaining walls have been designed on the basis of Lock + Load Retaining Wall "Stones". Stones are to be purchased from a licensed Lock + Load manufacturer. The Lock + Load trademark on each pallet identifies Lock + Load products.
- B. Information on the purchase of Lock + Load products can be obtained through:
- Pacific LOCK + LOAD, Inc.
Telephone: (503) 682-2868
Website: www.pacificlockload.com
- C. Geogrid - See Geogrid Schedule.
- D. Drainage Fill - Drainage Fill placed around and above the perforated drainage pipe shall consist of clean aggregate between 3/4 inch and 1 1/2 inch.
- E. Face Gravel - 3/4 inch to 1 inch Clean Crushed Rock, no fines. Face Gravel shall be compacted thoroughly to ensure no settlement of panels.
- F. Reinforced Backfill - Suitable granular material approved by the Geotechnical Engineer.
- G. Leveling Pad - The Leveling Pad shall consist of angular, crushed aggregate of maximum size of 3/4 inch. The Leveling Pad Fill may be single size or may be well graded containing a maximum of 5% passing the #200 sieve.

EXECUTION

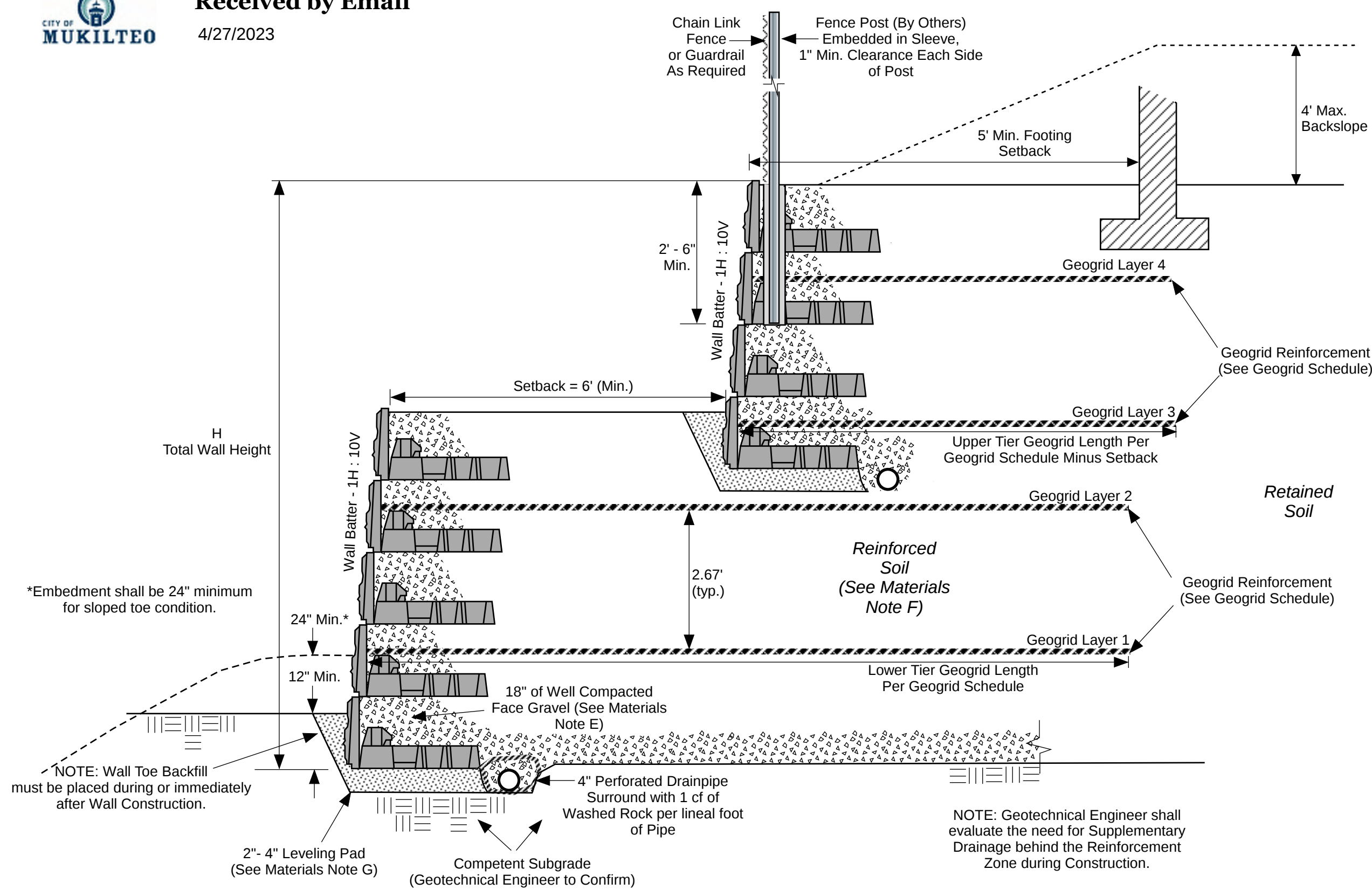
- A. Contractor shall excavate to the lines and grades shown on the construction drawings. The Geotechnical Engineer should observe the excavation prior to the placement of the leveling material or fill soils.
- B. Over-excavation of deleterious soils or rock shall be replaced with material meeting the specifications described in the section "Material G" above, and compacted to 95% of ASTM D-1557-91 (Modified Proctor) within 2% of the optimum moisture content of the soil.
- C. The first course of concrete Lock + Load Stones shall be placed on the Leveling Pad and the alignment and level checked.
- D. Stones shall be placed with the top of the panel level and parallel to the wall face. The Counterfort Base installs horizontal and perpendicular to the face of the retaining wall.
- E. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.
- F. Geogrid reinforcement shall be placed at the levels and to the lengths shown on the drawings beginning at the back of the Lock + Load Panels.
- G. The geogrid shall be laid horizontally in the direction perpendicular to the face of the retaining wall. The geogrid shall be pulled taut, free of wrinkles and anchored prior to backfill placement on the geogrid.
- H. The geogrid reinforcement shall be continuous throughout their embedment lengths. Spliced connection between shorter pieces of geogrid is not permitted.
- I. The drainage pipe discharge points shall be connected to approved discharge.
- J. Reinforced and Retained Backfill shall be placed, spread and compacted in such a manner that minimizes the development of slack in the geogrid.
- K. Reinforced and Retained Backfill shall be placed and compacted in lifts not to exceed 8 inches where hand compaction equipment is used and not more than 12 inches where heavy compaction equipment is used. FIRST - compact over tail of Counterfort then away from the retaining wall structure. Hand operated compaction equipment (700 lb. to 1,000 lb.) Vibratory Plate shall be used to compact face gravel at wall face.
- L. Reinforced and Retained Backfill shall be compacted to 95% of the maximum density as determined by ASTM D-1557-91 (Modified Proctor) or equivalent. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be within 2 percentage points of the optimum moisture content.
- M. Hand-operated equipment (700 lb. to 1,000 lb. Vibratory Plate) shall be used within 26 inches of the front face of the concrete facing.
- N. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid.
- O. Rubber tired equipment may pass over the geogrid reinforcement at slow speeds less than 5 mph. Sudden braking and sharp turning shall be avoided.
- P. At the end of each day of operation, the contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from the wall face. The contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

NOTE: Wall Alignment and Heights To Be Established By Contractor / Surveyor.



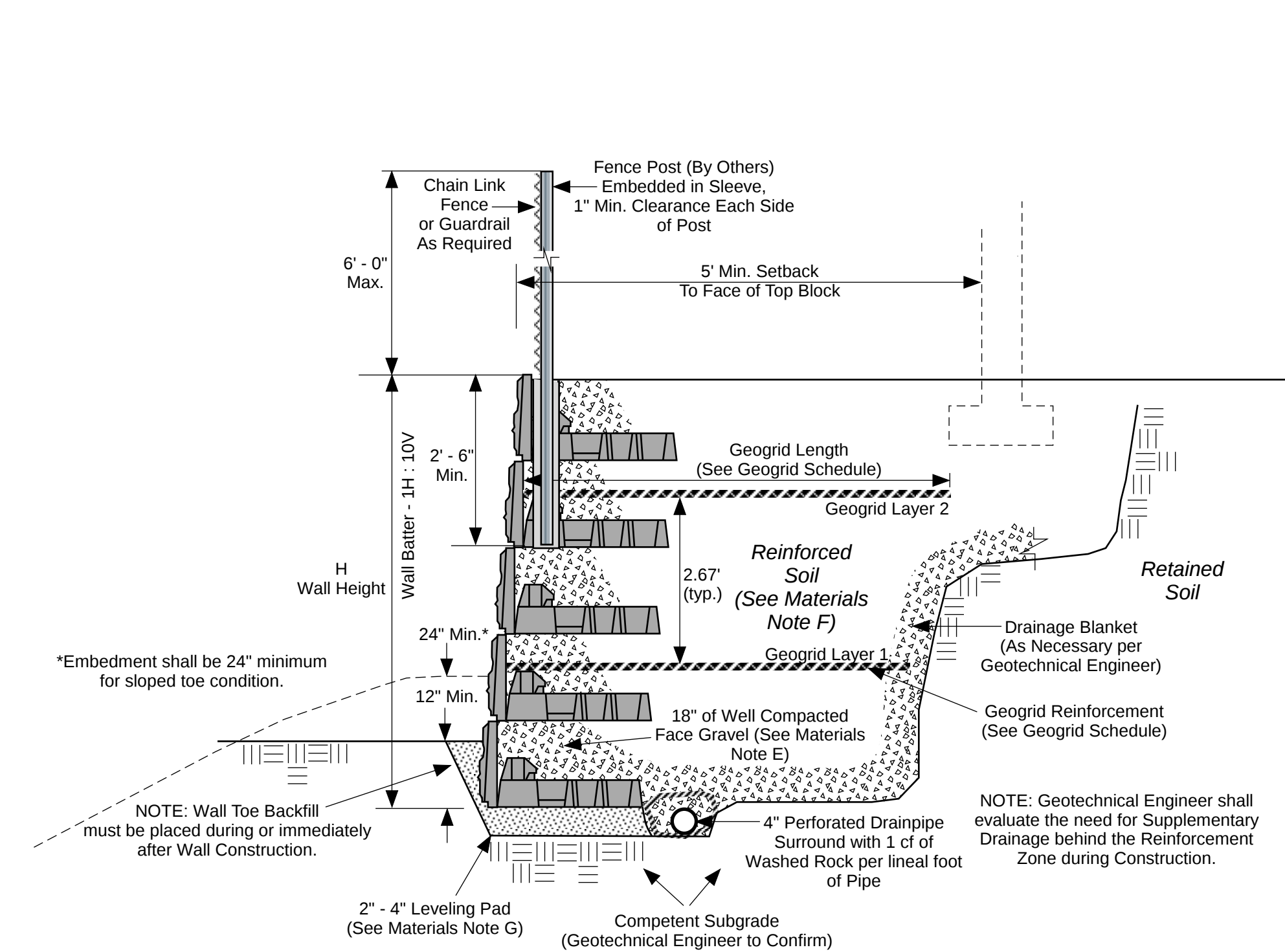
Received by Email

4/27/2023



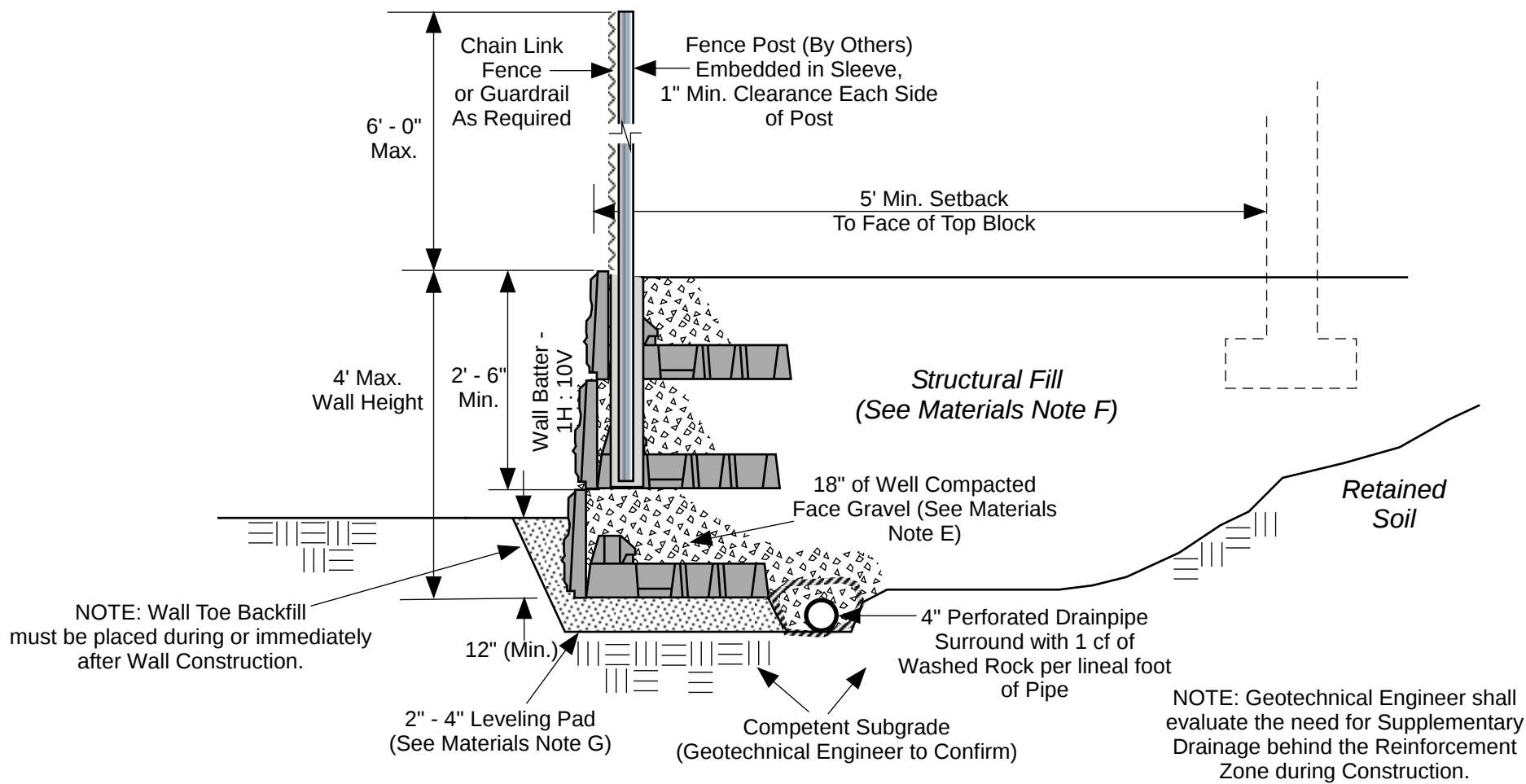
TIERED WALL SECTION
(If upper tier is within 1H:1V of lower tier)

NOT - TO - SCALE



TYPICAL WALL SECTION

NOT - TO - SCALE

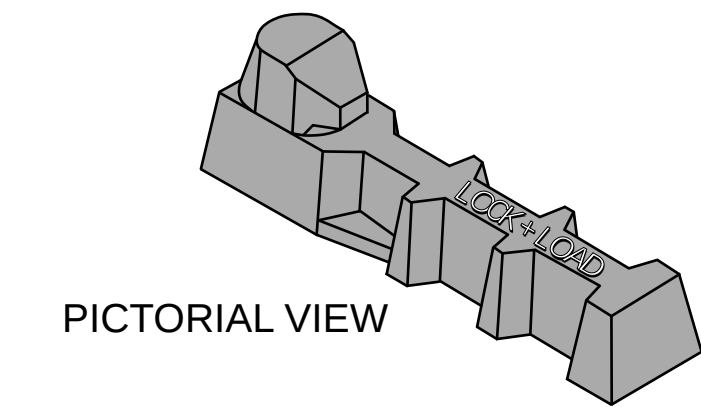
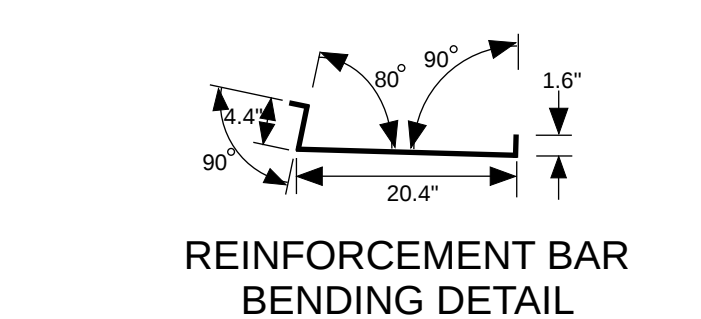
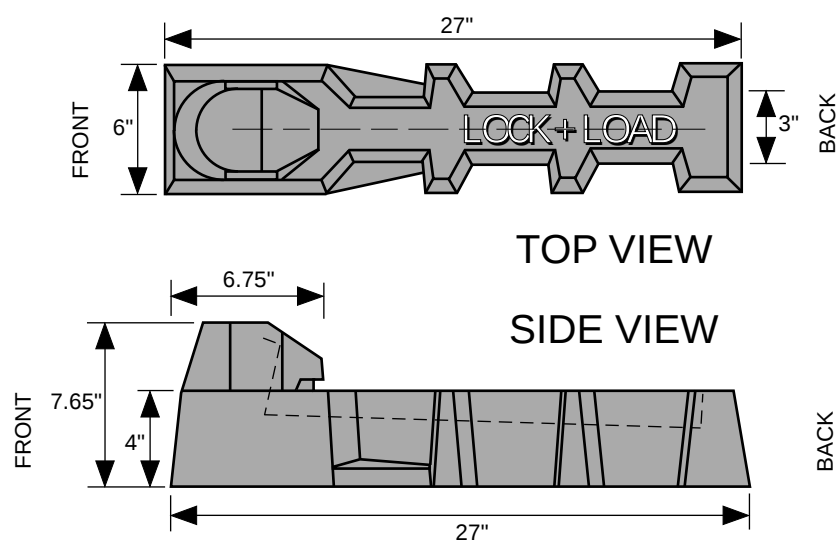


GRAVITY WALL CONDITION
(4 Foot Max. Height)

NOT - TO - SCALE

GEOGRID SCHEDULE										
# of Panels	H. Wall Height (feet)	Geogrid Length (feet)	Layers							
			1	2	3	4	5	6	7	8
4	5.33	7.00	A	A	-	-	-	-	-	-
5	6.67	8.00	A	A	-	-	-	-	-	-
6	8.00	9.00	A	A	A	-	-	-	-	-
7	9.33	10.00	A	A	A	-	-	-	-	-
8	10.67	12.00	B	A	A	A	-	-	-	-
9	12.00	14.00	B	A	A	A	-	-	-	-
10	13.33	15.00	B	A	A	A	A	-	-	-
11	14.67	17.00	B	B	A	A	A	-	-	-
12	16.00	18.00	B	B	A	A	A	A	-	-
13	17.33	20.00	C	B	A	A	A	A	-	-
14	18.67	22.00	C	B	B	A	A	A	A	-
15	20.00	23.00	C	B	B	A	A	A	A	-
16	21.33	25.00	C	C	B	B	A	A	A	A
17	22.67	27.00	C	C	B	B	A	A	A	A

GEOGRID: A = Miragrid 5XT
B = Miragrid 8XT
C = Miragrid 10XT

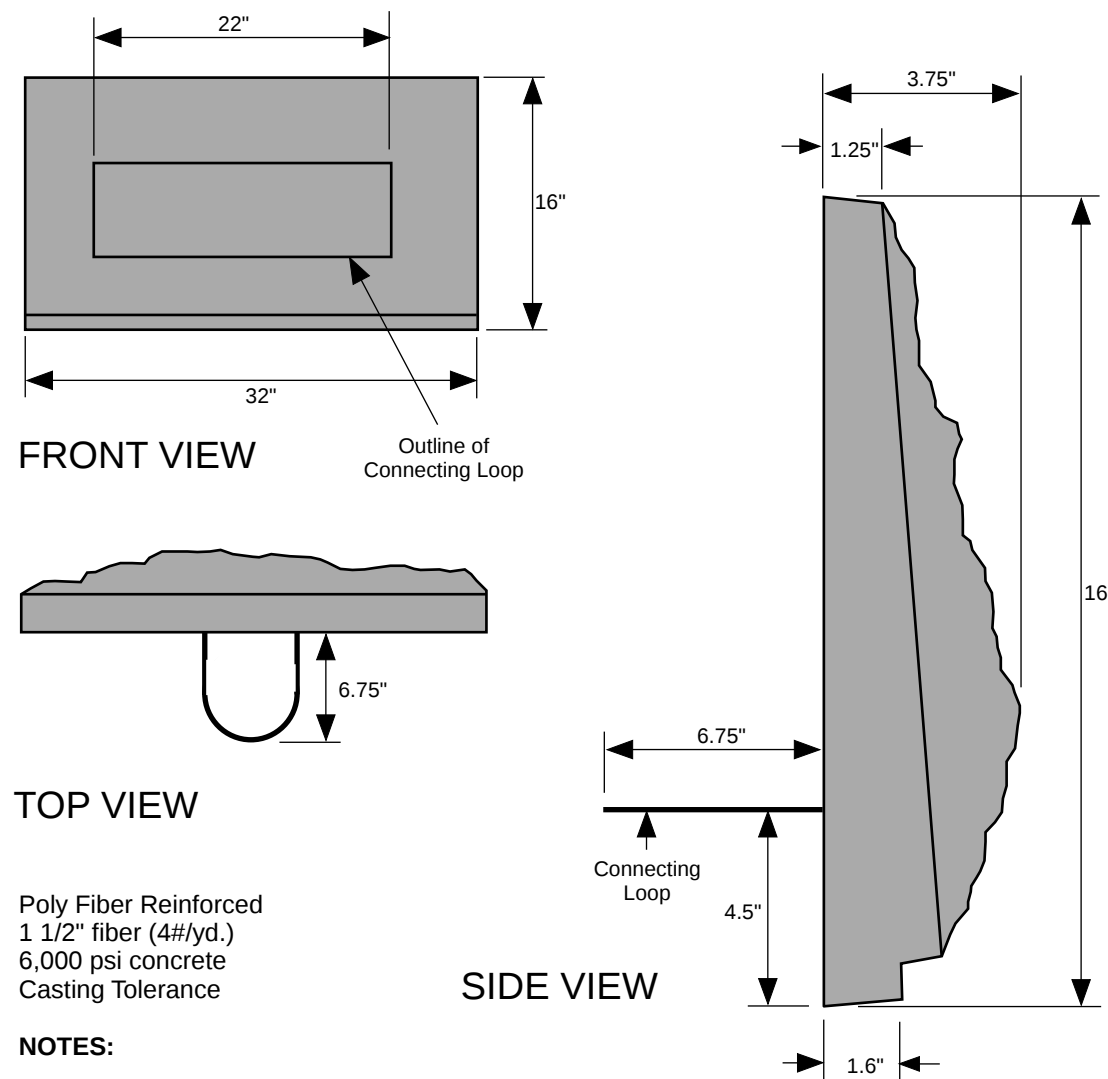


NOTES:

- Installation to be completed in accordance with manufacturer's specifications.
- Do not scale from drawings.

LOCK + LOAD COUNTERFORT

NOT - TO - SCALE



NOTES:

- Installation to be completed in accordance with manufacturers specifications.
- Do not scale from drawings.

LOCK + LOAD PANEL

NOT - TO - SCALE



Lock + Load Wall Designs and Notes
HARBOR GROVE
Mukilteo, Washington

Earth Solutions NWLLC
Geotechnical Engineering, Construction
Observation/Testing and Environmental Services

Date	Revisions

Proj. No.	7975.01
Date	04/24/2023
Drawn	MFS
Checked	HTW

Sheet No.

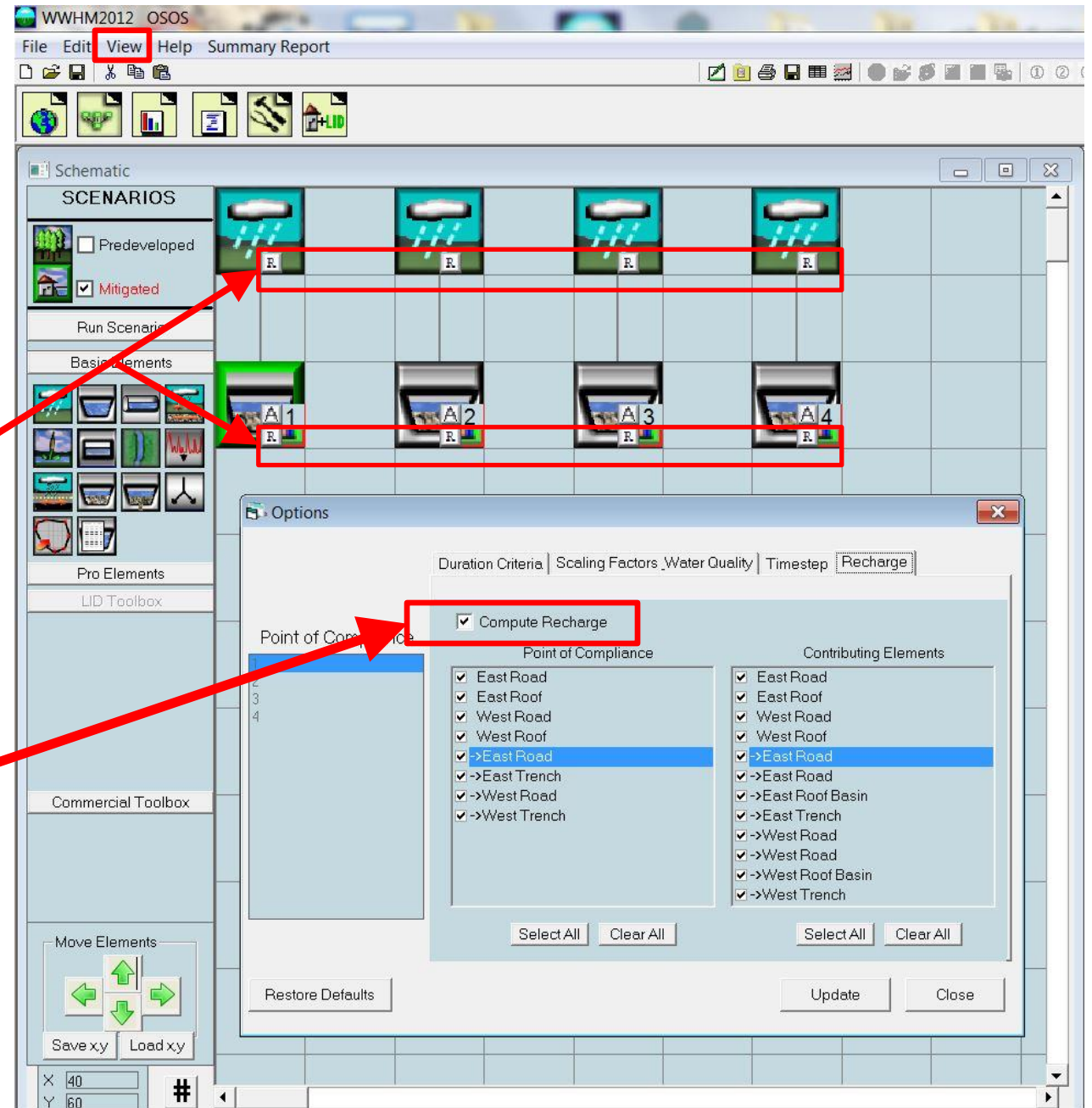
W1

WWHM Groundwater Recharge Output Toggling Illustrations

// Mounding Analysis Modeling

WWHM – COMPUTE RECHARGE TOGGLE

- ▲ You can right click and select 'Compute Recharge' for each basin and facility...
- ▲ But you also need to toggle the main 'Compute Recharge' option on
- ▲ Run Mitigated Scenario



// Mounding Analysis Modeling

WWHM VOLUME OUTPUTS

The screenshot shows the WWHM2012 OSOS software interface. The 'Create Graph' dialog box is open, displaying a list of data series on the left and graphing options on the right. Red arrows and labels highlight key features:

- Precipitation:** Points to the 'Hydrograph' tab in the bottom left.
- Inflows to Facilities:** Points to the '701 Inflow to POC 1 Mitigated' series in the list.
- Overflows from Facilities:** Points to the '801 POC 1 Mitigated flow' series in the list.
- Recharge:** Points to the '1021 POC 1 Recharge Mitigated' series in the list.
- Press 'Graph':** Points to the 'Graph' button in the 'Create Graph' dialog.

The 'Create Graph' dialog box includes the following options:

- Add Data File:** Button to add new data files.
- Previous Plots:** Button to view previous plots.
- Start Date:** 1955/10/01 00:00
- End Date:** 2008/09/30 24:00
- Plot Hydrograph:** 636
- Annual:** Radio button
- Monthly:** Radio button
- Daily:** Radio button
- Hourly:** Radio button
- 30-Minute:** Radio button
- 15-Minute:** Radio button
- 5-Minute:** Radio button
- Peaks:** Radio button
- Average:** Radio button
- Volume:** Radio button
- Calendar Year:** Radio button
- Graph:** Button to create the graph.
- Starting DSN#:** Input field.
- Color Table:** A table with 20 color-coded entries.

Color	1	6	11	16
1	2	7	12	17
3	8	13	18	
4	9	14	19	
5	10	15	20	

// Mounding Analysis Modeling

WWHM VOLUME OUTPUTS

Copy monthly
(or daily) flow
volume (in 'acre-
ft per time') and
precipitation (in
'inches per
time') timeseries
to Excel for post-
processing

