Island County Planning and Community Development
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Director

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Notice of Application - Optional DNS Process

Date of issuance: November 20, 2024

Island County has received a permit application for the following project.

Date of notice of application: November 27, 2024 **Comment due date: December 11, 2024**

Staff Contact: Yumi Shridhar **email:**y.shridhar@islandcountywa.gov **phone:** (360) 678-7817

File Number: 383/24 SHE-II **Applicant:** Caroline & Joseph Lu

Location: R23222-291-4150, Blackberry Ln, Camano Island

Proposal – Build a new SFR on the vacant lot and repair bulkhead sidewalk as needed. Site is in or near: mapped steep slopes, flood hazard area, feeder bluff, shoreline designation, and critical drainage area.

Island County has reviewed the proposed project for probable adverse environmental impacts and expects to issue a determination of non-significance (DNS). The optional DNS process established by WAC 197-11-355 is being used. The determination is based on the following findings and conclusions:

- The Geotechnical Engineering Report conducted by Geotechnical Consultants, on September 16, 2020, determined that site is compatible, from a geotechnical engineering standpoint, with the proposed development. If the recommendations of this report are implemented, the project should not be adversely affected by the stability of the slopes on the site nor should the project affect the stability of the slope.

Island County regulations under ICC 17.02B (Critical Areas), Title XI (Land Development Standards) & other applicable regulations are used to review and condition development to protect critical areas affected by this proposal. The proposal may include mitigation & the project review process may incorporate or require mitigation measures regardless of whether an EIS is required.

Public, Agency, and Tribal Comments: Agencies, tribes, and the public are encouraged to review and comment on the proposed project and its probable environmental impacts. Public comments must be received by 4:30 pm on **December 11, 2024**; mail to Island County Planning Department 1 NE 7th St., Coupeville, WA 98239; deliver to 1 NE 6th St, Coupeville, WA 98239; or 121 N. East Camano Drive, Camano Island; or Fax (360) 679-7306. This may be the only opportunity to comment on the environmental impacts of the proposal.

To request notice of hearings, to receive a copy of the decision, or for information on appeals, contact us at the above address.

The following conditions have been identified that may be used to mitigate the adverse environmental impacts of the proposal: **(From the Geotechnical Report)**

1. **General.**
    a. Because of the scarp at the top of the bluff overlooking the bulkhead any structure should be set back a minimum of 16 feet from the top of the bluff (irrespective of any shoreline restrictions).
2. **Development Considerations.**

a. Any disturbed areas should be restabilized as soon as possible through vegetation planting or other approved means.
b. All excavation spoils should be covered with plastic in the event of rain to minimize the potential for erosion and siltation.
c. Footing drains should be installed at least 1 foot below the planned finished floor slab or crawl space elevation. The drains should consist of 4-inch diameter, rigid, perforated PVC pipe that is surrounded by free-draining material, such as pea gravel wrapped in a non-woven filter fabric.
d. Footing drains should discharge into tightlines leading to an appropriate collection and discharge point (we suggest that you use the broken rock at the south end of the bulkhead on the southwestern corner of your parcel). Crawl spaces should be sloped to drain, and a positive connection should be made into the foundation drainage system. Roof drains should be tightlined separately of footing drains.

3. **Site Preparation and Grading.**
    a. The new building area should be stripped of vegetation, topsoil, loose soils, and fill, if any. Any excavation should have its slopes laid back temporarily to not more than 1H:1V (horizontal: vertical). The subgrade below any planned slab-on-grade and/or foundations should be compacted to a dense, non-yielding condition. Areas observed to pump or weave, should be repaired by over-excavating, and replacing with thoroughly compacted granular fill (structural fill).
4. **Temporary and Permanent Slopes.**
    a. It should be the responsibility of the contractor to maintain safe slope configurations since the contractor is continuously at the job site, able to observe the nature and condition of the cut slopes, and able to monitor the subsurface materials and ground water conditions encountered. For planning purposes, we recommend that the temporary cuts in the slope be no steeper than 1 Horizontal to 1 Vertical (1H:1V).
    b. We recommend that cut slopes be protected from erosion. Measures taken may include covering cut slopes with plastic sheeting and diverting surface runoff away from the top of cut slopes. We do not recommend vertical slopes for cuts deeper than 4ft if worker access is necessary. We recommend that cut slope heights and inclinations conform to WISHA/OSHA standards. Final slope inclinations for structural fill and unprotected cuts in the native soils should be no steeper than 2H:1V. Lightly compacted fills or common fills should be no steeper than 3H:1V. Common fills are defined as fill materials, potentially with some organics, that are "track rolled" into place. They would not meet the compaction specification of structural fill. Final slopes should be planted and covered with straw or jute netting. The vegetation should be maintained until it is established.
5. **Structural Fill.**
    a. **General:** All fill placed beneath buildings, pavements or other settlement-sensitive features should be placed as structural fill. For the purpose of this report, structural fill is defined as material that is placed in accordance with prescribed methods and standards and is monitored by an experienced geotechnical professional or soils technician. Field monitoring procedures would include the performance of a representative number of in-place density tests to document the attainment of the desired degree of relative compaction. The areas to receive fill should be prepared as outlined in the Site Grading subsection of this report.
    b. **Materials:** Imported structural fill should consist of a good quality, free-draining granular soil, free of organics, and other deleterious material, and be well graded to a maximum size of about 3 inches. Imported, all-weather fill should meet these requirements, and also should contain no more than about 5 percent fines (soils passing through a U.S. No. 200 Sieve), based on that fraction passing the U.S. ¾-inch sieve. The on-site native soils predominantly comprise a sandy silt or silty sand. It may be feasible to use this material as structural fill if it is relatively free of organics and can be moisture-conditioned to near-optimum moisture content for compaction. The necessary moisture-conditioning may consist of drying the material, which would require an adequate area to spread the material out. Drying the material may not be possible outside of the summer season.
    c. **Fill Placement.** Following subgrade preparation, placement of the structural fill may proceed. All fill should be placed in 6- to 8-inch thick uniform lifts, and each lift should be spread evenly and be thoroughly compacted prior to placement of subsequent lifts. All structural fill underlying building areas should be

compacted to at least 95 percent of its maximum dry density. Maximum dry density, in this report, refers to that density as determined by the ASTM D 1557 compaction test procedure. The moisture content of the soils to be compacted should be within about 2 percent of optimum, so that a readily compactable condition exists. It may be necessary to over-excavate and remove wet soils in cases where drying to a compactable condition is not feasible. All compaction should be accomplished by equipment of a type and size sufficient to attain the desired degree of compaction.

6. **Foundations.**
    a. Conventional shallow spread foundations should be placed on undisturbed medium dense or better native soils. Where less than medium dense soils are encountered at footing bearing elevation, the subgrade should be over-excavated to expose suitable bearing soil. The over-excavation could be filled with structural fill, or the footing may be extended down to the bearing native soils. If footings are supported on structural fill, the fill zone should extend outside the edges of the footing a distance equal to the depth of over-excavation below the footing. Footings, including interior footings, should extend at least 18 inches below the lowest adjacent finished ground surface for frost protection and/or bearing capacity and lateral resistance considerations. Minimum foundation widths of 18 and 24 inches are recommended for continuous and isolated spread footings, respectively. Standing water should not be allowed to accumulate in footing trenches. All loose or disturbed soil should be removed from the foundation excavation prior to pouring of the concrete.
    b. For foundations constructed as outlined above, we recommend an allowable design bearing pressure of not more than 2000 pounds per square foot (psf) be used for the footing design. Current International Residential Building Code (IRBC) guidelines should be used when considering increased allowable bearing pressure for short-term transitory wind or seismic loads. Potential foundation settlement using the recommended allowable bearing pressure is estimated to be less than 1 inch total and ½ inch differential between adjacent footings or across a distance of about 25 feet.
    c. Lateral loads may be resisted by friction on the base of the footing and passive resistance against the subsurface portions of the foundation. A coefficient of friction of 0.35 may be used to calculate the base friction and should be applied to the vertical dead load only. Passive resistance may be calculated as a triangular equivalent fluid pressure distribution. An equivalent fluid density of 200 pounds per cubic foot (pcf) should be used for passive resistance design. These recommended values incorporate safety factors of 1.5 and 2.0 applied to the estimated ultimate values for frictional and passive resistance, respectively. To achieve this value of passive resistance, the foundations should be placed “neat” (without forms) against the native medium dense or better soils or compacted soil should be placed against the faces of the footing. We recommend that the upper foot of soil be neglected when calculating the passive resistance. The soil surface should be horizontal in front of the footing for a distance equal to at least three times the depth of embedment of the footing.

7. **Slabs-on-Grade.**
    a. Slab-on-grade areas should be prepared as recommended in the Site Preparation and Grading subsection of this report. After removal of loose soil, the subgrade should be compacted to a dense, non-yielding condition. Prior to structural fill placement, the subgrade should be proof rolled with a heavy, rubber-tired piece of equipment, to identify soft or yielding areas that require repair. Areas observed to pump or weave should be reworked to structural fill specifications or be excavated and replaced with properly compacted structural fill.
    b. We recommend that all floor slabs be underlain by at least 6 inches of free-draining sand or gravel for use as a capillary break. A suitable vapor barrier, such as heavy plastic sheeting (10mil minimum is recommended) should be placed over the sand or gravel. A 4-inch-thick crushed rock blanket may be used to cover the vapor barrier to protect it. The capillary break should be designed to drain into the foundation drain system.

8. **Subsurface Walls and Retaining Walls.**
    a. The lateral pressure acting on subsurface and retaining walls is dependent on the nature and density of the soil behind the wall, the amount of lateral wall movement which can occur as backfill is placed, wall drainage conditions, and the inclinations of the backfill. For walls that are free to yield at the top at least

one thousandth of the height to the wall (active condition), soil pressures will be less than if movement is limited by such factors as wall stiffness or bracing (at-rest condition). We recommend that walls supporting horizontal backfill and not subjected to hydrostatic forces be designed using a triangular earth pressure distribution equivalent to that exerted by a fluid with a density of 40 pcf for yielding (active condition) walls, and 84 pcf for non-yielding (at-rest condition) walls.

b. These recommended lateral earth pressures are based on the assumption of a horizontal ground surface adjacent to the wall for a distance of at least the subsurface height of the wall, and do not account for surcharges. Additional lateral earth pressures should be considered for surcharge loads acting adjacent to the subsurface walls and within a distance equal to the subsurface height of the wall. This would include the effects of surcharges such as traffic loads, floor slab loads, slopes, or other surface loads. The lateral pressures on walls may be resisted by friction between the foundation and subgrade soil, and by passive resistance in acting on the below-grade portion of the foundation. Recommendations for frictional and passive resistance to lateral loads are presented in the Foundations subsection of this report.

c. Permanent drainage systems should be installed for retaining walls (and subsurface walls). We recommend that these drainage systems consist of an 18-inch-wide zone of clean (less than 3 percent fines), free-draining granular material placed along the back of the wall. Pea gravel is an acceptable drain material, or drainage composite may be used instead. We recommend that we be retained to evaluate the proposed wall drain backfill material for its suitability.

d. The granular material should be placed up the back of the wall to within 1 foot of the ground surface. The top 1-foot should be a layer of compacted, low-permeability soil to limit surface water infiltration and should be separated from the underlying free-draining material by a layer of plastic sheeting or building paper. A rigid perforated or slotted PVC drainpipe, having a minimum diameter of 4 inches, should be embedded in pea gravel or some other free-draining material and wrapped in a non-woven filter fabric such as Mirafi 140NSL, at the base of the wall along its entire length. Surface water drains and roof drains should not be connected to wall or footing drains until there is at least 1 foot elevation difference below the footing drains.

e. All wall backfill should be well-compacted as outlined in the Structural Fill subsection of the report. Care should be taken to prevent the buildup of excess lateral soil pressures, due to over compaction of the wall backfill. This can be accomplished by placing wall backfill in 8-inch-thick loose lifts and compacting it will small hand-operated compactors within a distance behind the wall equal to at least one-half the height of the wall.

9. **Closure.**

a. If the recommendations of this report are implemented, the project should not be adversely affected by the stability of the slopes on the site nor should the project affect the stability of the slope. This report is issued with the understanding that it is the responsibility of the owner or his/her representative to ensure that this information and recommendations contained in this report are called to the attention of all concerned parties and incorporated into the plans and the necessary steps are taken to see that the contractors or subcontractors carry out such recommendations in the field.

b. All people who own or occupy homes on or below hillsides should recognize that landslide movements are always a possibility, although the likelihood is low that such an event will actually occur. The landowner should periodically inspect the slope, especially after a winter storm. If distress is evident, a geotechnical engineer should be contacted for advice on remedial/preventative measures. The probability that landsliding will occur is substantially reduced by the proper maintenance of drainage measures at the site. Therefore, the homeowner should recognize the responsibility for performing such maintenance.

c. Consequently, we recommend that a copy of our report be provided to any future homeowners of the property if the home is sold (as well as to the homeowners of the property sited above the slope).

d. We suggest that we provide observation of the earthwork phases of the development. This should include grading, cutoff trench, and foundation construction, drainage installation, and erosion control measures. Although we expect the site geology, soil types, conditions, and distributions to be as discussed herein, some variations in subsurface conditions could occur. Should conditions other than those discussed above

be encountered, the geotechnical consultant should be notified for review and comment. Additional or alternative recommendations may be required.

Required Permits: *Shoreline Exemption*

Required Studies*: Geotechnical Report, Stormwater Management Report, SEPA Checklist*