

POLLUTION CONTROL HEARINGS BOARD  
STATE OF WASHINGTON

LAKE CAVANAUGH TRUST,

Appellant,

v.

WASHINGTON STATE DEPARTMENT  
OF NATURAL RESOURCES, FOREST  
REGULATION DIVISION

Respondent.

No.

DECLARATION OF WYATT  
GOLDING

I, Wyatt Golding, declare as follows:

1. I am an attorney representing the Lake Cavanaugh Trust non-profit organization. I make this declaration on personal knowledge.
2. I affirm that to the best of my knowledge the facts and images set forth in the accompanying Notice of Appeal and Request for Emergency Stay are true and correct.
3. I affirm that to the best of my knowledge the following exhibits are true and accurate copies.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed this 1<sup>st</sup> day of October, at Seattle, Washington.



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Wyatt Golding

**Wyatt Golding Declaration**  
**EXHIBIT A**



Forest Practices Application/Notification  
Office Checklist Page 1  
Northwest Region

FPA/N #: \_\_\_\_\_

Received Date: \_\_\_\_\_

Completed Date: \_\_\_\_\_

WDFW Concurrence Due Date: **N/A**

WDFW Concurrence Received: \_\_\_\_\_

Comments Due Date: \_\_\_\_\_

Decision Due Date: \_\_\_\_\_

FP Forester: \_\_\_\_\_

WDFW Biologist: \_\_\_\_\_

Shutdown Zone: \_\_\_\_\_

|                                                                                                                                          |                   |                                                                                                                                                                               |                       |
|------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| FPA/N CLASSIFICATION: <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> IVG <input type="checkbox"/> IVS |                   | <input type="checkbox"/> Biomass <input type="checkbox"/> 20-Acre Exempt <input checked="" type="checkbox"/> EARR TC <input type="checkbox"/> Yes <input type="checkbox"/> No |                       |
| Landowner Name:                                                                                                                          |                   | Project Name:                                                                                                                                                                 |                       |
| WRIA: _____                                                                                                                              |                   | WAU: _____                                                                                                                                                                    |                       |
| WRIA: _____                                                                                                                              |                   | WAU: _____                                                                                                                                                                    |                       |
| WRIA: _____                                                                                                                              |                   | WAU: _____                                                                                                                                                                    |                       |
| Legal: _____                                                                                                                             |                   | County: _____                                                                                                                                                                 |                       |
| Activity Type(s):                                                                                                                        | Harvest: _____ ac | Crossing: _____ #                                                                                                                                                             | Rock Pit: _____ ac    |
|                                                                                                                                          | Spoils: _____ cy  | Construction: _____ ft                                                                                                                                                        | Abandonment: _____ ft |

ALTERNATIVE PRESCRIPTIONS

- ☐ Alternate Plan ☐ Fixed-Width ☐ Overstocked  
☐ 10-Year Management Plan ☐ Statement of Intent  
☐ WAU Prescriptions: \_\_\_\_\_  
☐ Other: \_\_\_\_\_

- ☐ Habitat Conservation Plan ☐ HCP Crosswalk(s)  
☐ Landowner Option Plan for Northern Spotted Owl  
☐ Cooperative Habitat Enhancement Agreement  
☐ Other: \_\_\_\_\_

RESOURCE REVIEW

- ☐ Potentially Unstable Slopes ☐ In ☐ Around  
☐ Soils Map ☐ Highly Erodible ☐ Highly Unstable  
☐ SLPSTAB | ☐ 40+% ☐ 70+%  
☐ Landslide Inventory Polygon  
☐ Avalanche ☐ WSDOT ☐ FP  
☐ Rain-on-Snow ☐ Outside Approved WA  
☐ Hydric Soils  
☐ Wetland ☐ Forested ☐ A ☐ B ☐ HCP  
☐ In WMZ of ☐ A ☐ B Wetland  
☐ In RMZ/ELZ of Type ☐ S ☐ F ☐ Np  
☐ HCP Buffers ☐ LGE Buffers ☐ Np 29'

- ☐ FPHCP Bull Trout Populations of Concern  
☐ WNHP Rare Species  
☐ Group A or B Water Supply  
☐ Hatchery | Name: \_\_\_\_\_  
☐ Even-Aged Harvest greater than 120 Acres  
☐ Ground-based Equipment on Slopes at or greater than 40%  
☐ Road Construction on Slopes at or greater than 60%  
☐ Saltwater Islands ☐ Long Term Commitment Area  
☐ In or Over Typed Water ☐ S ☐ F ☐ Np ☐ Ns  
☐ FPF Verification Needed ☐ Wetland ☐ Water  
☐ GRT/WRT ☐ FREP

ASSOCIATED NON-SCANNED DOCUMENTS – On file with the FPA/N at the Region office.

- ☐ SEPA Checklist/Documents ☐ Other: \_\_\_\_\_

ASSOCIATED SCANNED DOCUMENTS

- ☐ Appendix A: Water Type Classification Worksheet  
☐ New ☐ Old | WTMF # \_\_\_\_\_  
☐ Appendix D: Slope Stability Informational Form  
☐ Qualified Expert ☐ Report ☐ Letter/Memo  
☐ Appendix E: CMZ Assessment Form  
☐ Appendix F: Stream Shade Assessment ☐ 16° ☐ 18°  
☐ Appendix G: Np RMZ Worksheet  
☐ Appendix H: Natural Regeneration Plan

- ☐ Appendix I: Watershed Analysis Worksheet  
☐ Appendix J: Marbled Murrelet Form  
☐ FPHP Plans & Specifications  
☐ SFLO RMAP Checklist ☐ FFFPP  
☐ COHP ☐ DFC Printout  
☐ SEPA DNS/MDNS ☐ LGE Permit(s)/Info  
☐ Other: \_\_\_\_\_  
☐ Other: \_\_\_\_\_  
☐ State Lands Water Typing Key

ADDITIONAL COMMENTS

☐ ENF # \_\_\_\_\_ ☐ Previous FPA # \_\_\_\_\_ ☐ Adjacent FPA # \_\_\_\_\_ Form completed by: \_\_\_\_\_





## Forest Practices Application/Notification Western Washington

| For DNR Region Office Use Only |           |
|--------------------------------|-----------|
| FPA/N No.:                     | 2819518   |
| Region:                        | NW        |
| Date of Receipt:               | 8/19/2024 |

Project Name: Cavanaugh Road A Extension

PLEASE READ FPA/N INSTRUCTIONS PRIOR TO COMPLETING THIS APPLICATION.

### 1. Landowner, Timber Owner and Operator

|                                                    |                                                                                     |                                                                                 |
|----------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Legal Name of Landowner<br>Timberline Logging Inc. | Legal Name of Timber Owner<br><input checked="" type="checkbox"/> Same as Landowner | Legal Name of Operator<br><input checked="" type="checkbox"/> Same as Landowner |
| Mailing Address<br>900 Dupont Street               | Mailing Address                                                                     | Mailing Address                                                                 |
| City, State, Zip<br>Bellingham, WA 98225           | City, State, Zip                                                                    | City, State, Zip                                                                |
| Phone: 360-630-0725                                | Phone:                                                                              | Phone:                                                                          |
| Email: SamP@nielsenbrothers.net                    | Email:                                                                              | Email:                                                                          |

|                                  |                                                        |
|----------------------------------|--------------------------------------------------------|
| Contact Person:<br>Samuel Petska | Phone: 360-630-0725<br>Email: SamP@nielsenbrothers.net |
|----------------------------------|--------------------------------------------------------|

### 2. Are you converting any portion of the land to non-forestry use within three (3) years of harvest?

☒ No ☐ Yes If yes, include a SEPA checklist and SEPA determination (if applicable) and copies of county clearing and grading permits (if applicable).

### 3. If you are harvesting timber, enter the Forest Tax Number of the Timber Owner.

800033234

Contact the Department of Revenue at 360-534-1324 to obtain a forest tax number or further information.

### 4. Are you eligible for the Enhanced Aquatic Resources Requirements (EARR) Tax Credit? See FPA/N instructions for further information.

☐ No ☒ Yes

5. Are you a small forest landowner per RCW 76.09.450? See FPA/N instructions for details.

☐ No ☒ Yes If yes, check all that apply. If no, skip to Question 6.

- ☒ My entire proposed harvest area is on a single contiguous ownership consisting of one or more parcels.
- ☐ My proposed forest practices activities are within an area covered by an approved Forest Stewardship Plan or Forest Management Plan developed in cooperation with DNR.
- ☐ I received technical assistance from a DNR small forest landowner Stewardship and Technical Assistance Forester in preparing this FPA/N.

6. Are you substituting prescriptions from an approved state or federal conservation agreement or Watershed Analysis?

☒ No ☐ Yes Write "HCP" or "Using Prescriptions" in tables that apply. Attach or reference prescriptions and/or crosswalk(s) for approved state and federal conservation agreements or Watershed Analysis on file at the region office.

7. What is the legal description of your forest practices?

| Section | Township | Range | E/W | Tax Parcel Number | County |
|---------|----------|-------|-----|-------------------|--------|
| 27      | 33       | 06    | E   | P67021            | Skagit |
|         |          |       |     |                   |        |
|         |          |       |     |                   |        |
|         |          |       |     |                   |        |
|         |          |       |     |                   |        |
|         |          |       |     |                   |        |
|         |          |       |     |                   |        |

8. Have you reviewed this forest practices activity area to determine whether it may involve historic sites and/or Native American cultural resources? Please read FPA/N instructions prior to answering this question.

☒ No ☐ Yes If you made any contacts, please provide information in Question 28.

9. Do you have a DNR approved Road Maintenance and Abandonment Plan (RMAP)?

- a. ☒ No ☐ Yes If no, skip to c.,  
If yes, enter your RMAP number and then continue to b.: \_\_\_\_\_
- b. ☐ No ☐ Yes Is this Forest Practices Application/Notification for work that is included in this approved RMAP?  
Continue to Question 10.
- c. ☐ No ☒ Yes Is a Small Forest Landowner Checklist RMAP required? (see instructions)

10. Are there potential unstable slopes or landforms in or around the area of your forest practices activity?

☐ No ☒ Yes If yes, attach Appendix D. Slope Stability Informational Form and map of areas reviewed for and locations of unstable slopes and landforms found. If applicable, attach a geotechnical letter, memo, or report, Watershed Analysis prescriptions, and/or SEPA Environmental Checklist.

**11. Is this Forest Practices Application/Notification** (answer all of the following questions)

- a. ☒ No ☐ Yes A request for a multiyear permit? If yes, length requested: ☐ 4 years or ☐ 5 years.  
*See FPA/N instructions to verify you qualify for a multiyear permit.*
- b. ☒ No ☐ Yes An Alternate Plan? If yes, include a template Alternate Plan Form or detailed plan. *See FPA/N instructions for details.*
- c. ☒ No ☐ Yes For a funded Forest Family Fish Passage Program (FFFP) project?
- d. ☒ No ☐ Yes Within an urban growth area? If yes, review FPA/N instruction for additional required documents.
- e. ☒ No ☐ Yes Within a public park? If yes, include a SEPA Environmental Checklist or SEPA Determination, except for harvest/salvage of less than 5,000 board feet within a developed public park.  
Park Name: \_\_\_\_\_
- f. ☒ No ☐ Yes Within 500 feet of a public park? Park Name: \_\_\_\_\_
- g. ☒ No ☐ Yes Part of an approved Conversion Option Harvest Plan (COHP) prepared by a local government entity? If yes, include a copy.
- h. ☒ No ☐ Yes Within 200 feet of the Ordinary High Water Mark (OHWM) or floodway of Type S Water? If yes, check with the county or city to determine whether a Substantial Development Permit is required under the local shoreline master plan.
- i. ☒ No ☐ Yes Within 50 miles of saltwater AND you own more than 500 acres of forestland in Washington state? If yes, include Appendix J. Marbled Murrelet Form or attach/reference applicable HCP prescriptions.
- j. ☒ No ☐ Yes In or directly adjacent to a potential Channel Migration Zone (CMZ)? If yes, include Appendix E. CMZ Assessment Form or attach/reference applicable HCP and/or Watershed Analysis prescriptions.

**You are required to verify all waters within 200 feet of your proposed forest practices activities prior to submitting a Forest Practices Application/Notification.** Use Appendix A. Water Type Classification Worksheet and/or a Water Type Modification form to explain how you verified water types. *See Water Typing Requirements in the FPA/N instructions for details.*

**\*\*\* IF NOT WORKING IN OR OVER TYPED WATER, SKIP TO QUESTION 16 \*\*\***

**Prior to answering Questions 12-15 in this section, please refer to the Forest Practices Application/Notification Instructions and Forest Practices Board Manual Section 5.**

**12. Are you proposing any of the following projects NOT permitted by current HPAs from WDFW?**

- a. ☒ No ☐ Yes Installing, replacing, or repairing a culvert at or below the bankfull width of Type S or F water that exceeds a five percent gradient?
- b. ☒ No ☐ Yes Constructing, replacing, or repairing a bridge at or below the bankfull width of unconfined streams in Type S or F water?
- c. ☒ No ☐ Yes Placing fill material within the 100-year flood level of unconfined streams in Type S or F water?

**13. Have you consulted with DNR and/or WDFW about the proposed hydraulic project(s) in or over Type S or F water?**

☒ No ☐ Yes

14. If installing, replacing, removing, or maintaining structures in or over any typed water, complete the table below. Provide crossing locations and identifiers on your Activity Map. Provide plan details in Question 28 or attach plan to the FPA/N. Type S, F and complex Type N waters require detailed plan information per WAC 222-24-042(2). See FPA/N instructions for detailed plan requirements.

| Crossing Identifier<br>(letter, number) | Water Type<br>(S, F, Np, Ns) | Planned Activity<br>(install, replace, remove, temporary, maintenance) | Structure<br>(bridge, ford/equipment crossing*, puncheon/fill, arch, round culvert, other) | Proposed Size<br>(width x length) | Culvert Design Method<br>(F and S only)<br>(no-slope, stream-sim, hydraulic, other) | Channel Bed Width<br>(F and S only)<br>(ft) | Stream Gradient<br>(F and S only)<br>(%) | Is this an RMAP Project |
|-----------------------------------------|------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------|-------------------------|
| 1                                       | Np                           | install                                                                | ford                                                                                       | 14' x 35'                         | N/A                                                                                 | N/A                                         | N/A                                      | N                       |
| 2                                       | Np                           | install                                                                | bridge                                                                                     | 17' x 88'                         | N/A                                                                                 | N/A                                         | N/A                                      | N                       |
| 3                                       | Ns                           | install                                                                | ford                                                                                       | 14' x 30'                         | N/A                                                                                 | N/A                                         | N/A                                      | N                       |
| 4                                       | Ns                           | install                                                                | culvert                                                                                    | 36" x 30'                         | N/A                                                                                 | N/A                                         | N/A                                      | N                       |
| 5                                       | Ns                           | install                                                                | culvert                                                                                    | 48" x 30'                         | N/A                                                                                 | N/A                                         | N/A                                      | N                       |
| 6                                       | Ns                           | install                                                                | culvert                                                                                    | 36"x30'                           | N/A                                                                                 | N/A                                         | N/A                                      | N                       |

\*Fords and/or equipment crossings on Type S and F Waters may result in an unauthorized incidental take of certain threatened or endangered fish species. For more information, see 'Background for the State's Incidental Take Permits for certain threatened and endangered fish species' following Question 22 of the FPA/N Instructions.

15. If conducting any of the following activities in or over typed water, complete the table below. Some activities will require identifiers on the Activity Map and/or more information in Question 28. See FPA/N instructions for details.

| Activity                        | Type S Water                   | Type F Water | Type Np Water | Type Ns Water |
|---------------------------------|--------------------------------|--------------|---------------|---------------|
| Equipment Crossing*             | PROVIDE DETAILS IN QUESTION 14 |              | ×             | ×             |
| Suspending Cables               |                                |              |               |               |
| Cable Yarding                   |                                |              |               |               |
| LWD Placement/Removal           |                                |              |               |               |
| Beaver Dam Removal              |                                |              |               |               |
| Felling and Bucking             |                                |              | ×             | ×             |
| Other (describe in Question 28) |                                |              |               |               |

\*Fords and/or equipment crossings on Type S and F Waters must be identified in Question 14.

16. If constructing or abandoning forest roads, complete the table below. Show the road locations and identifiers on the Activity Map. Include abandonment plans for all temporary roads and abandonment projects. See FPA/N instructions for abandonment plan requirements.

| Road Identifier<br>(name, number) | Road Construction |                         | Road Abandonment |                               |
|-----------------------------------|-------------------|-------------------------|------------------|-------------------------------|
|                                   | Length<br>(feet)  | Steepest Side-slope (%) | Length<br>(feet) | Abandonment Date<br>(MM/YYYY) |
| Road A Extension                  | 1325              | 50                      |                  |                               |
| Road B                            |                   |                         | 380              | 06/2025                       |
|                                   |                   |                         |                  |                               |
|                                   |                   |                         |                  |                               |
|                                   |                   |                         |                  |                               |
|                                   |                   |                         |                  |                               |



17. If depositing spoils and/or expanding or developing a rock pit for forestry use, complete the table below. Show locations and identifiers on the Activity Map.

| Spoil Area Identifier<br>(letter, number) | Amount of Spoils Deposited<br>(cubic yards) | Rock Pit Identifier<br>(name, number or letter) | Acres of New Rock Pit Developed | Acres of Existing Rock Pit Expanded |
|-------------------------------------------|---------------------------------------------|-------------------------------------------------|---------------------------------|-------------------------------------|
| W1                                        | 100                                         |                                                 |                                 |                                     |
|                                           |                                             |                                                 |                                 |                                     |
|                                           |                                             |                                                 |                                 |                                     |

18. If operating within 200 feet of a wetland that is not associated with Type S or F Water, complete the table below. Wetlands associated with Type S or F Water should be listed in Question 25 or Question 23 if using 20-acre exempt rules. Show the boundaries of each wetland, along with its identifier, and Wetland Management Zone (WMZ) on the Activity Map. See FPA/N instructions for details.

| Wetland Identifier<br>(letter, number) | Wetland Type<br>(A, B, Forested) | Planned Activities in Wetland | Planned Activities in Maximum Width WMZ | Total Wetland Acres | How many acres will be drained? | How many acres will be filled? |
|----------------------------------------|----------------------------------|-------------------------------|-----------------------------------------|---------------------|---------------------------------|--------------------------------|
|                                        |                                  |                               |                                         |                     |                                 |                                |
|                                        |                                  |                               |                                         |                     |                                 |                                |
|                                        |                                  |                               |                                         |                     |                                 |                                |
|                                        |                                  |                               |                                         |                     |                                 |                                |
|                                        |                                  |                               |                                         |                     |                                 |                                |
|                                        |                                  |                               |                                         |                     |                                 |                                |

\*\*\* IF NOT HARVESTING OR SALVAGING TIMBER, SKIP TO QUESTION 27 \*\*\*

19. If harvesting or salvaging timber, complete the table below. Show all harvest areas and unit numbers on the Activity Map. For even-aged harvest units, show surrounding stand information on the Activity Map. See FPA/N instructions for details.

| Unit Number | Harvest Method<br>(Even-aged, Uneven-aged, Salvage, Right of Way) | Biomass Harvest<br>(Y or N) | Logging System<br>(rubber tired skidder, tracked skidder, dozer, shovel, full suspension cable, leading end suspension cable, helicopter, cable assis/tethered, animal, chipper, forwarder, slash bundler) | Acres to be Harvested | Volume to be Harvested (mbf) | Biomass Volume to be Harvested (tonnage) | Volume to be Harvested (%) | Steepest Slope in Harvest Unit (%) |
|-------------|-------------------------------------------------------------------|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------|------------------------------------------|----------------------------|------------------------------------|
| 1           | Even-Aged                                                         | N                           | RTS, Dozer, Shovel                                                                                                                                                                                         | 1.4                   | 30                           | N/A                                      | 90                         | 60                                 |
| 2           | ROW                                                               | N                           | RTS, Dozer, Shovel                                                                                                                                                                                         | 0.6                   | 15                           | N/A                                      | 100                        | 70                                 |
|             |                                                                   |                             |                                                                                                                                                                                                            |                       |                              |                                          |                            |                                    |
|             |                                                                   |                             |                                                                                                                                                                                                            |                       |                              |                                          |                            |                                    |
|             |                                                                   |                             |                                                                                                                                                                                                            |                       |                              |                                          |                            |                                    |
|             |                                                                   |                             |                                                                                                                                                                                                            |                       |                              |                                          |                            |                                    |
|             |                                                                   |                             |                                                                                                                                                                                                            |                       |                              |                                          |                            |                                    |

**20. Reforestation.** Check all that apply:

- ☒ Planting. Tree Species: Conifer
- ☐ Natural. Include a Natural Regeneration Plan
- ☐ Not required because of one of the following:
- ☐ I am converting some or all of this land to non-forestland in the next three (3) years or lands are exempted under WAC 222-34-050.
  - ☐ Individual dead, dying, down, or wind-thrown trees will be salvaged.
  - ☐ Trees are removed under a thinning program reasonably expected to maximize the long-term productivity of commercial timber.
  - ☐ I am leaving at least 100 vigorous, undamaged, and well distributed saplings or merchantable trees per acre.
  - ☐ An average of 190 tree seedlings per acre are established on the harvest area and my harvest will not damage them.
  - ☐ Road right-of-way or rock pit development harvest only.

**\*\* IF YOU OWN MORE THAN 80 ACRES OF FORESTLAND IN WASHINGTON, SKIP TO QUESTION 25 \*\***

**21. Are you using the exempt 20-acre parcel riparian management zone (RMZ) rule on Type S, F, or Np Waters?**

*See FPA/N instructions for details.*

- ☐ No Skip to Question 25.
- ☐ Yes Continue to Question 22. *See FPA/N instructions for qualifications and information.*

**22. Choose the answer below that best fits your situation. Show all RMZs on the Activity Map.**

- ☐ a. **ALL of the following apply to me and my land: if no, answer b.**
- Between June 5, 2006 and today's date I have always owned less than 80 acres of forestland in Washington.
  - Between June 5, 2006 and today's date this parcel has always been 20 acres or less of contiguous ownership. *See RCW 76.09.020 for definition of "contiguous".*
  - Between June 5, 2006 and today's date this parcel has always been owned by me or someone else that has owned less than 80 acres of forestland in Washington.
- ☐ b. **ONE OR MORE of the following apply to me and/or my land (check all that apply):**  
If any of the statements below apply AND you use the exempt 20-acre parcel RMZ rule, you are NOT authorized under the State's Incidental Take Permits. *See FPA/N instructions for details.*
- ☐ Between June 5, 2006 and today's date I have owned more than 80 acres of forestland in Washington.
  - ☐ Between June 5, 2006 and today's date this parcel has been a part of more than 20 acres of contiguous ownership. *See RCW 76.09.020 for definition of "contiguous".*
  - ☐ Between June 5, 2006 and today's date this parcel has been owned by someone that has owned more than 80 forested acres in Washington.

23. If harvesting on an exempt 20-acre parcel and are within 115 feet of a Type S or F Water or periodically inundated areas of their associated wetlands, complete the table below. If you are harvesting within 75 feet or within the maximum RMZ (whichever is less), stream shade must be assessed and met following harvest. In order to show that you have assessed shade and determined it to be met per the method described in Forest Practices Board Manual (FPBM) Section 1, fill out the minimum required shade cover percentage below or use 'Appendix F. Stream Shade Assessment Worksheet' if necessary. Show RMZs and stream segment identifiers on the Activity Map.

| Stream Segment Identifier<br>(letter) | Water Type<br>(S, F,) | Segment Length<br>(feet) | Bankfull Width<br>(feet) | RMZ Maximum Width<br>(feet) | Are you harvesting within the maximum RMZ?<br>(Y or N) | Only complete if harvesting within 75 feet or within the maximum RMZ, whichever is less |                                          |
|---------------------------------------|-----------------------|--------------------------|--------------------------|-----------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------|
|                                       |                       |                          |                          |                             |                                                        | Minimum Shade Required (%)                                                              | Shade met per FPBM – Section 1? (Y or N) |
|                                       |                       |                          |                          |                             |                                                        |                                                                                         |                                          |
|                                       |                       |                          |                          |                             |                                                        |                                                                                         |                                          |
|                                       |                       |                          |                          |                             |                                                        |                                                                                         |                                          |
|                                       |                       |                          |                          |                             |                                                        |                                                                                         |                                          |

24. Are you harvesting within 29 feet of a Type Np Water on an exempt 20-acre parcel?

- ☐ No Skip to Question 27.
- ☐ Yes Describe leave tree strategy in Question 28 and Skip to Question 27. See FPA/N instructions for details.

25. If harvesting within 200 feet of any Type S or F Water or periodically inundated areas of their associated wetlands, complete the table below. Include Desired Future Condition (DFC) for all inner zone harvests unless you have an HCP prescription. If you are harvesting within 75 feet or within the maximum RMZ (whichever is less), stream shade must be assessed and met following harvest. In order to show that you have assessed shade and determined it to be met per the method described in Forest Practices Board Manual (FPBM) Section 1, fill out the minimum required shade cover percentage below or use 'Appendix F. Stream Shade Assessment Worksheet' if necessary. Show RMZs and stream segment identifiers on the Activity Map.

| Stream Segment Identifier<br>(letter) | Water Type<br>(S, F,) | Site Class<br>(I - V) | Stream Width<br>(feet) | Is there a CMZ?<br>(Y or N) | RMZ Harvest Code(s)<br>(see instructions) | DFC Run Number | Total width of RMZ<br>(feet) | Only complete if harvesting within 75 feet or within the maximum RMZ, whichever is less |                                          |
|---------------------------------------|-----------------------|-----------------------|------------------------|-----------------------------|-------------------------------------------|----------------|------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------|
|                                       |                       |                       |                        |                             |                                           |                |                              | Minimum Shade Required (%)                                                              | Shade met per FPBM – Section 1? (Y or N) |
|                                       |                       |                       |                        |                             |                                           |                |                              |                                                                                         |                                          |
|                                       |                       |                       |                        |                             |                                           |                |                              |                                                                                         |                                          |
|                                       |                       |                       |                        |                             |                                           |                |                              |                                                                                         |                                          |
|                                       |                       |                       |                        |                             |                                           |                |                              |                                                                                         |                                          |

26. If harvesting within 50 feet of Type Np Water, complete the table below. Show RMZs and stream segment identifiers on the Activity Map.

| Stream Segment Identifier<br>(letter) | Total Stream Length in Harvest Unit<br>(feet) | Length of No-harvest 50-foot Buffers in Harvest Unit (feet) |
|---------------------------------------|-----------------------------------------------|-------------------------------------------------------------|
| A                                     | 500                                           | 500                                                         |
| B                                     | 450                                           | 450                                                         |
|                                       |                                               |                                                             |

| Stream Segment Identifier<br>(letter) | Total Stream Length in Harvest Unit<br>(feet) | Length of No-harvest 50-foot Buffers in Harvest Unit (feet) |
|---------------------------------------|-----------------------------------------------|-------------------------------------------------------------|
|                                       |                                               |                                                             |
|                                       |                                               |                                                             |
|                                       |                                               |                                                             |

**27. How are the following currently marked on the ground? (Flagging color, paint color, road, fence, etc.)**

Harvest/Salvage Boundaries: Pink Flagging

Clumped Wildlife Reserve Trees | Green Recruitment Trees: Orange LT paint on bole

Right-of-Way Limits | Road Centerlines: Orange flagging at CL

Stream Crossing Work: Blue and orange at CL

Riparian Management Zone Boundaries and Leave/Take Trees: Pink Flagging

Channel Migration Zone: N/A

Wetland Management Zone Boundaries and Leave/Take Trees: N/A

**28. Additional information (attach additional pages if necessary):**

- See FPA/N instructions for required plan information for hydraulic projects in or over Type S, F, or complex N Water.
- If applicable, include mitigation measures from a geotechnical memo, letter, or report.

Road A is being constructed and connected to Road B to access future timber located to the east of this FPA.

Crossings 1 and 3 will only be hauled across when stream flow infiltrates under ford crossing.

All crossings will be monitored on a yearly basis while this FPA is active. Typical road maintenance monitoring schedules will be in place after FPA has expired.

Icicle Creek Engineers will be retained to do post construction inspection and or monitoring while FPA is active.

Crossing 4, 5, 6, 7 will be constructed using dipped shot rock fills

Any trees that are tree length and half away from occupied structures are not under the jurisdiction of the DNR.

Additional Info for Question #14 in FPA:

Crossing 7 – Ns -- Install – Culvert – 36" x 30' – N/A -- N/A -- N/A -- N

Crossing 2 will use a ~65' x ~15' temporary log stringer to move equipment across the bridge location for bridge installation.



**29. We acknowledge the following:**

- The information on this application/notification is true.
- We understand this proposed forest practice is subject to:
  - The Forest Practices Act and Rules, AND
  - All other federal, state or local regulations.
- Compliance with the Forest Practices Act and Rules does not ensure compliance with the Endangered Species Act or other federal, state or local laws.
- If we said that we would not convert the land to non-forestry use, the county or city may deny development permits on this parcel for the next six (6) years.
- The following may result in an unauthorized incidental take of certain endangered or threatened fish species:
  - Conversion of land to non-forestry use.
  - Harvesting within the maximum RMZ on a 20-acre exempt parcel that was acquired after June 5, 2006.
  - Equipment crossings or fords that are in or over Type S and F Waters.
- Inadvertent Discovery – Chapter 27.44, 27.53, 68.50 and 68.60 RCW
  - If you find or suspect you have found an archeological object or Native American cairn, grave, or glyptic record, immediately cease disturbance activity, protect the area and promptly contact the Department of Archaeology and Historic Preservation at 360-586-3077.
  - If you find or suspect you have found human skeletal remains, immediately cease disturbance activity, protect the area, and contact the County Coroner or Medical Examiner and local law enforcement as soon as possible. Failure to report human remains is a misdemeanor.

The landowner understands that by signing and submitting this FPA/N they are authorizing the Department of Natural Resources to enter the property in order to review the proposal, inspect harvest operations, and monitor compliance for up to three years after its expiration date. RCW 76.09.150

|                                                                                                                            |                                                                             |                                                                     |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------|
| <b>Signature of Legal Landowner</b><br> | <b>Signature of Legal of Timber Owner*</b><br>(if different than landowner) | <b>Signature of Legal Operator</b><br>(if different than landowner) |
| <b>Print Name:</b><br>Sam Petstka                                                                                          | <b>Print Name:</b>                                                          | <b>Print Name:</b>                                                  |
| <b>Date:</b><br>8-16-24                                                                                                    | <b>Date:</b>                                                                | <b>Date:</b>                                                        |

**\*NOTE:** if you are a "Perpetual Timber Rights Owner," and are submitting this without the landowner's signature, provide written evidence the landowner has been notified.

- Please make a copy of this FPA/N for your records.
- If this FPA/N contains a hydraulic project requiring WDFW concurrence review, it will not be available online for public review until after the WDFW concurrence review period.



11029648

11029740

Lake Cavanaugh

Waste Area Location

Waste area will be placed at location shown in a stable manner that will not deliver to public resources.

T33-0N R6-0E S28

T33-0N R6-0E S27

W1

Unit 1

11029628

Road B

South Shore Dr.

11029720

A-1

A

C

D

H1

1 2 3 4 5 6 7

- |                                                                                     |                                |                                                                                     |                |                                                                                      |                   |
|-------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------|-------------------|
|  | Cavanaugh Road A unit 1        |  | Existing Road  |  | FPA TICS          |
|  | Cav Road A Extension Crossings |  | 20ft Contours  |  | Section           |
|  | Cav Road A Extension           |  | Lake Cavanaugh |  | Landing           |
|  | Cavanaugh Road A Streams       |  | Structures RMZ |  | Stream Type Break |
|  | Alluvial Fan(Active)           |  |                |                                                                                      |                   |

update  
9/13/24  
5/14/24  
SP

## Appendix D. Slope Stability Informational Form

Complete and submit this form with your FPA/N if you indicated you are working in or around potentially unstable slopes or landforms.

- Instructions for Appendix D. Slope Stability Informational Form is located in the Forest Practices Application/Notification Instructions document.
- Refer to WAC 222-16-050(1)(d) and Forest Practices Board Manual Section 16 - *Guidelines for Evaluating Potentially Unstable Slopes* for definitions and descriptions of potentially unstable slopes or landforms.

**1.a. What preliminary screening tools were used to identify unstable slopes or landform features in and/or around your proposal?**

- ☒ Aerial Photo    ☒ LiDAR    ☒ Landslide Inventory    ☒ GIS    ☒ Field Review  
☐ Forest Practices Application Mapping Tool (FPAMT) Resource Map    ☐ Other. Describe:

**b. Did any of the features identified during the preliminary screening not exist when you performed a field review?**

- ☒ No.    ☐ Yes. Describe:

**2.a. Are you conducting forest practices activities in or over potentially unstable slopes or landforms?**

- ☐ No. Skip to Question 3.a    ☒ Inner Gorge    ☒ Bedrock Hollow    ☐ Convergent Headwall  
☐ Groundwater recharge area of glacial deep-seated landslides    ☐ Outer edges of meander bends  
☐ Toe of deep-seated landslide with slopes  $\geq 65\%$     ☐ Category E. Describe in "Other" below.  
☐ Other. Describe:

**b. What activities may occur in or over potentially unstable slopes or landforms? Check all that apply:**

- ☒ Timber Harvest    ☒ Road Construction    ☐ Road Maintenance    ☐ Suspending Cables  
☐ Yarding    ☐ Tailholds    ☐ Other. Describe:

**3.a. Are you conducting forest practices activities around potentially unstable slopes or landforms?**

- ☐ No. Skip to Question 4.a    ☒ Inner Gorge    ☐ Bedrock Hollow    ☐ Convergent Headwall  
☐ Groundwater recharge area of glacial deep-seated landslides    ☐ Outer edges of meander bends  
☐ Toe of deep-seated landslide with slopes  $\geq 65\%$     ☐ Category E. Describe in "Other" below.  
☐ Other. Describe:

**b. What activities may occur around potentially unstable slopes or landforms? Check all that apply:**

- ☒ Timber Harvest    ☒ Road Construction    ☐ Road Maintenance    ☐ Suspending Cables  
☐ Yarding    ☐ Tailholds    ☐ Other. Describe:

**4.a. Were any features identified in Question 3.a. excluded from your forest practices activity?**

☐ No. Skip to Question 5      ☒ Yes. Continue to Question 4.b

**b. Describe the field indicators you used to exclude potentially unstable slopes or landforms from your forest practices activity (example: flagging was placed a crown width away from the break in slope of the inner gorge):**

Any inner gorge that is not already excluded from RMZ's was removed from the harvest area. The inner gorge features were marked at the break in slope, trees that were deemed to be "within" the feature or affecting the feature (roots) were left as non-harvest trees.

**5. Are there areas of public use located in or around the area of your proposed forest practices activity?**

☐ No.      ☒ Yes. Check all that apply and show locations on map (Question 7).

☒ Public Road(s)      ☐ Utilities      ☐ Designated Recreation Area(s)      ☒ Structure(s)  
☐ Other. Describe:

**6. Complete the table below with date(s) and person(s) that conducted field review(s):**

| Date    | Name         | Title/Position |
|---------|--------------|----------------|
| 9/18/23 | Sam Petska   | Forester       |
| 9/18/23 | Shane Markus | Geologist      |
|         |              |                |
|         |              |                |
|         |              |                |

**7. Attach a map showing the following:**

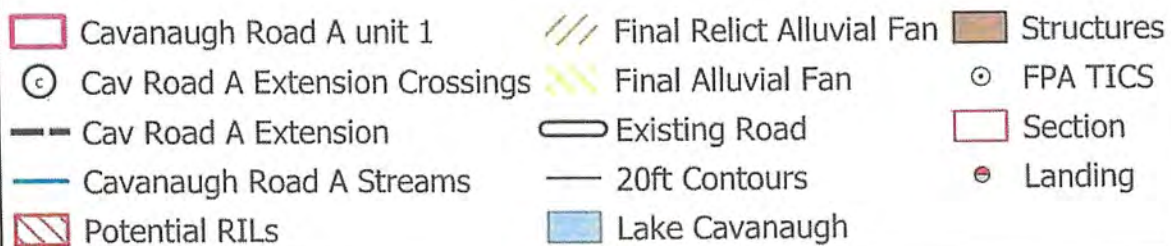
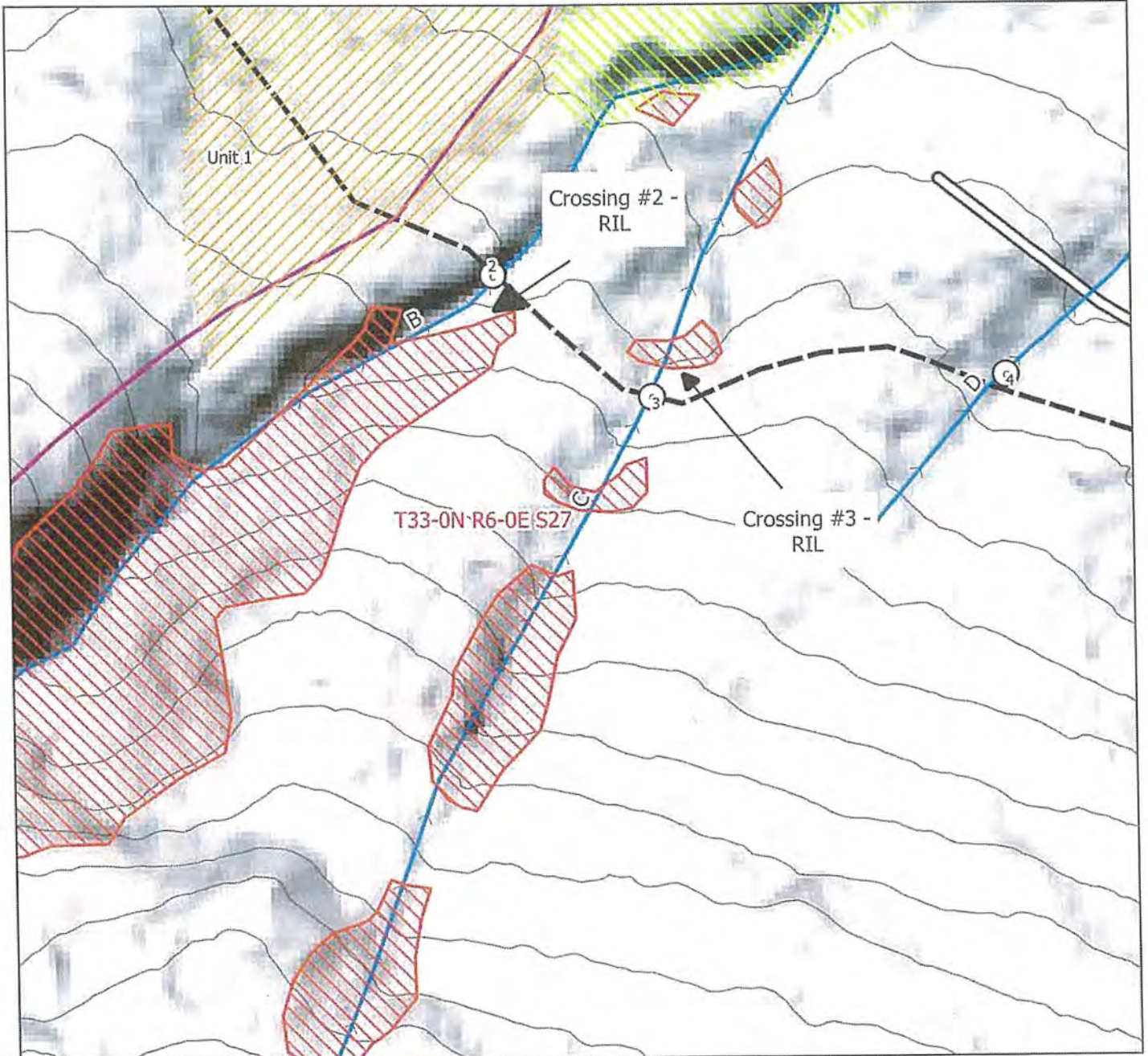
- All areas reviewed.
- Locations of unstable slopes and landforms that were identified as described in Question 2.a. and 3.a.
- Locations where areas of public use exist as described in Question 5 above.

This map is intended to be developed by the field practitioner.

This can be a forest practices activity map, harvest map, or GIS map – See FPA/N instructions for example map.



WA DNR FPA Map - FPA # 2819391 - Slope Stability Detail  
 Township 33N Range 06E Section 27 - Parcel# P67021 Skagit County  
 Timberline Logging LLC  
 Elevation: 1200'  
 Road Construction: ~1325' -- Unit 1 Harvest Area: 1.4 acres

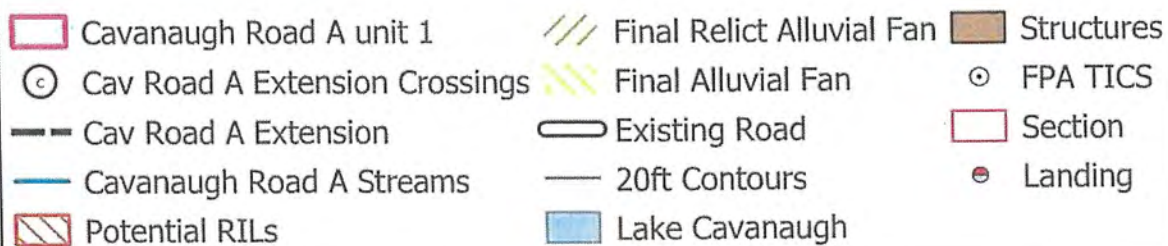
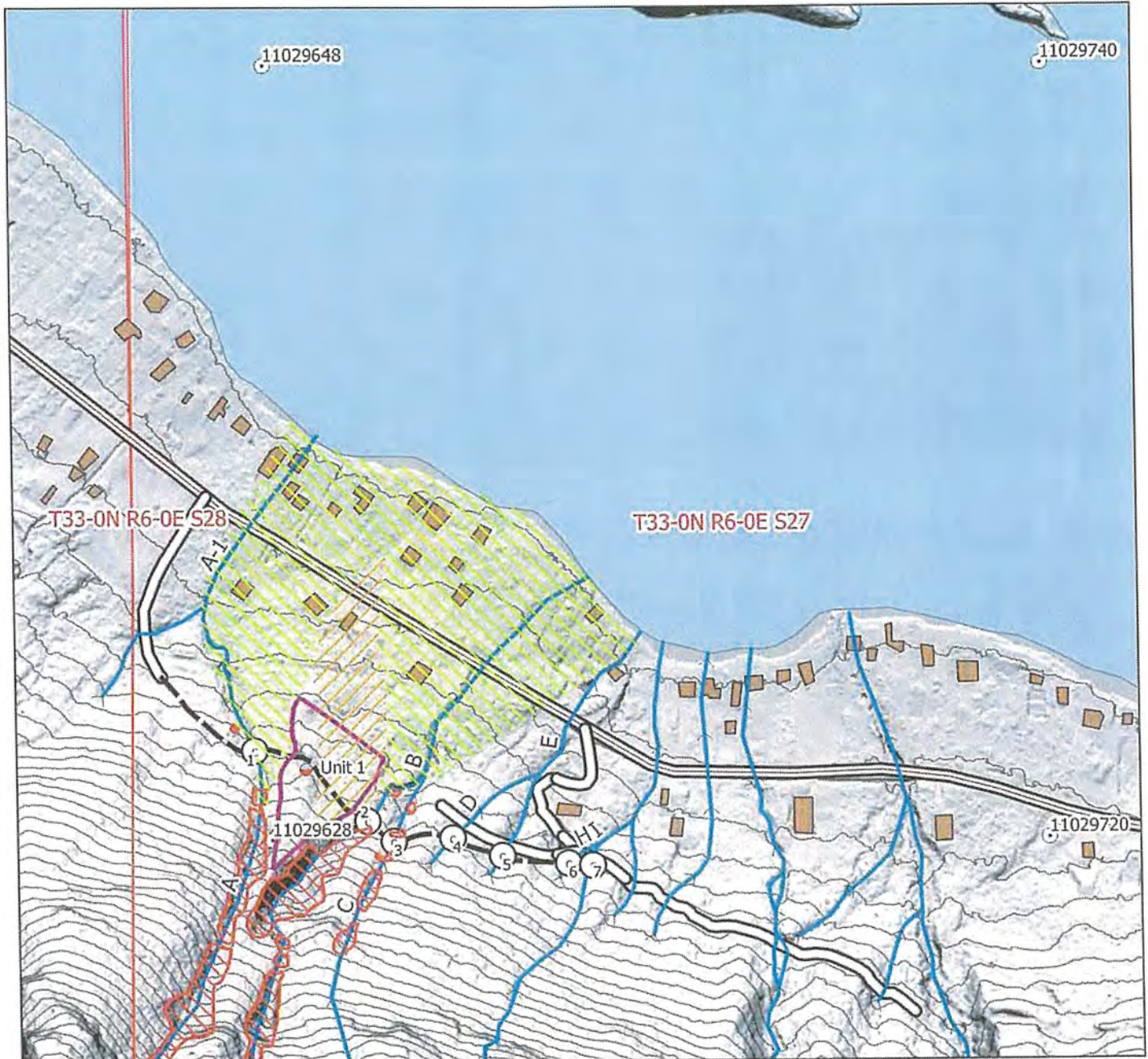


N  
 1:800

5/14/24  
 SP  
 5/29/24\*



WA DNR FPA Map - FPA #  
 Township 33N Range 06E Section 27 - Parcel# P67021 Skagit County  
 Timberline Logging LLC  
 Elevation: 1200'  
 Road Construction: ~1325' -- Unit 1 Harvest Area: 1.4 acres



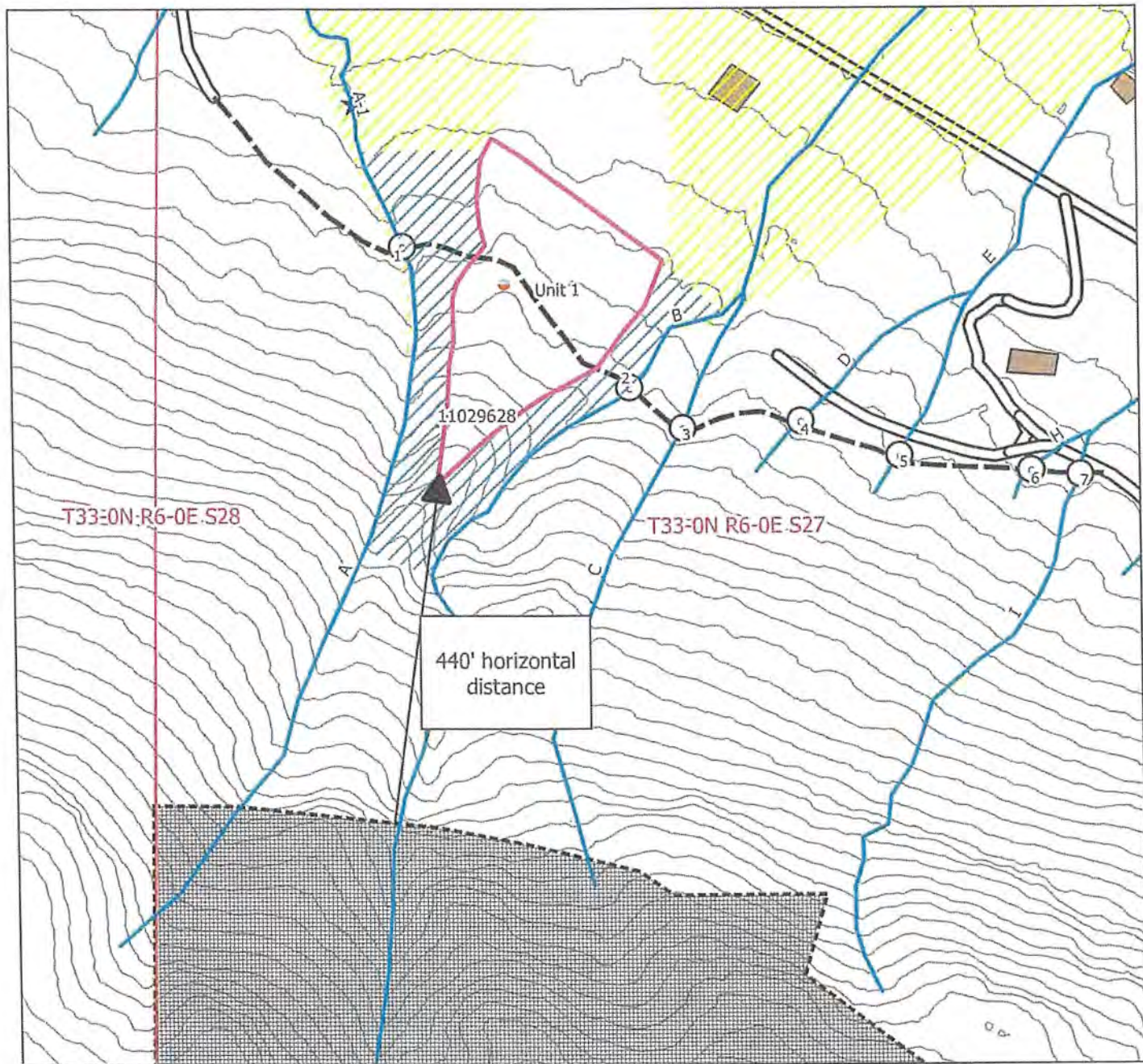
N  
 1:4800

5/14/24  
 SP



WA DNR FPA Map - FPA #2819391  
 Township 33N Range 06E Section 27 - Parcel# P67021 Skagit County  
 Timberline Logging LLC  
 Elevation: 1200'  
 Road Construction: ~1325' -- Unit 1 Harvest Area: 1.4 acres

MM info map  
 addition -  
 6/3/24



- |                                                                                                                                                 |                                                                                                                     |                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <span style="border: 1px solid pink; padding: 2px;"> </span> Cavanaugh Road A unit 1                                                            | <span style="border-bottom: 1px solid black; width: 50px; display: inline-block;"></span> Existing Road             | <span style="border: 1px solid black; border-radius: 50%; padding: 2px;"> </span> FPA TICS                                               |
| <span style="border: 1px solid black; border-radius: 50%; padding: 2px;"> </span> Cav Road A Extension Crossings                                | <span style="border-bottom: 1px solid black; width: 50px; display: inline-block;"></span> 20ft Contours             | <span style="border: 1px solid pink; padding: 2px;"> </span> Section                                                                     |
| <span style="border-bottom: 2px dashed black; width: 50px; display: inline-block;"></span> Cav Road A Extension                                 | <span style="background-color: lightblue; width: 50px; height: 10px; display: inline-block;"></span> Lake Cavanaugh | <span style="border: 1px solid black; border-radius: 50%; padding: 2px;"> </span> Landing                                                |
| <span style="border-bottom: 1px solid blue; width: 50px; display: inline-block;"></span> Cavanaugh Road A Streams                               | <span style="background-color: brown; width: 50px; height: 10px; display: inline-block;"></span> Structures         | <span style="color: blue;">★</span> Stream Type Break                                                                                    |
| <span style="background-color: yellow; border: 1px solid black; width: 50px; height: 10px; display: inline-block;"></span> Alluvial Fan(Active) | <span style="border-bottom: 1px dashed black; width: 50px; display: inline-block;"></span> RMZ                      | <span style="background-color: gray; border: 1px solid black; width: 50px; height: 10px; display: inline-block;"></span> MM habitat area |

1:2400



5/14/24  
 SP  
 \*6/3/24



## Appendix E. CMZ Assessment Form

Stream Identifier: A-1

Complete and attach this informational form to your FPA/N if you answered 'Yes' to FPA Question 11j. Refer to Forest Practices Board Manual Section 2—*Standard Methods for Identifying Bankfull Channel Features and Channel Migration Zones* for guidance on evaluating Channel Migration Zones (forms within Forest Practices Board Manual 2 are optional).

### Applicant Office Review:

#### 1. Screening tools used:

- ☒ GIS   ☒ LiDAR   ☐ USGS Topographic Map   ☒ Aerial Photo. Years: 1953, 1979  
☐ Other, Describe: \_\_\_\_\_

#### 2. Are you aware of channel movement or did you observe obvious channel movement between aerial photograph years?

- ☒ No. Continue to Question 3   ☐ Yes. Continue to Question 5

#### 3. Evaluate valley confinement using USGS topographic map(s) or aerial photographs.

- ☒ Valley floor is significantly wider than the channel. Channel migration may be occurring.  
☐ Valley floor is very narrow, obviously less than twice as wide as the channel. If you can clearly see this circumstance on the aerial photographs, it is unlikely that channel migration is occurring.

#### 4. Did you observe any of the following on the aerial photographs?

- ☐ Side channels   ☐ Large gravel bars   ☐ Eroding banks   ☐ High sinuosity or sharp channel bends  
☐ Wood jams   ☐ Multiple channels (braiding)   ☐ New channels occurring between photo years (avulsions)

#### 5. If CMZ is present, check the component(s) present in your delineation.

- ☒ Avulsion hazard area   ☐ Erosion hazard area (attach erosion rate calculations)

#### 6. What was the distance of channel walked? What was the length of CMZ boundary delineated?

450' of channel walked. --- CMZ delineated is 450'

#### 7. Briefly describe how you determined a CMZ exists, how you delineated the outer edge of the CMZ, and how you marked the outer edge of the CMZ on the ground (flagging color, paint, etc.):

Stream A is a Np above stream A-1 which becomes a F bearing stream based on physical characteristics. Stream A has an associated alluvial fan which is shown in the slope stability map. By rule, the Np alluvial fan becomes a CMZ where the stream A turns into stream A-1, the F break based on physical characteristics. The edge of the CMZ then is related to the alluvial fan location as shown on the slope stability map and the geo report.

### Field Review:

Date(s) of Field Review: 9/18/23

|                                        |                      |                       |
|----------------------------------------|----------------------|-----------------------|
| Person(s) that conducted field review: | <u>Samuel Petska</u> | <u>Forester</u>       |
|                                        | <u>Name</u>          | <u>Title/position</u> |
|                                        | <u>Shane Markus</u>  | <u>Geologist</u>      |
|                                        | <u>Name</u>          | <u>Title/position</u> |



**Revised Report of Geotechnical Services  
Evaluation of Potentially Unstable Slopes and Landforms  
and Alluvial Fans**

**Proposed Road A Extension and Harvest Unit  
SW¼ Section 27, Township 33 North, Range 6 East  
Lake Cavanaugh Area, Skagit County, Washington**

**September 12, 2024  
ICE File No. 1319-005**

**Revised Report of Geotechnical Services  
Evaluation of Potentially Unstable Slopes and Landforms  
and Alluvial Fans  
Proposed Road A Extension and Harvest Unit  
SW¼ Section 27, Township 33 North, Range 6 East  
Lake Cavanaugh Area, Skagit County, Washington**

**September 12, 2024  
ICE File No. 1319-005**

**Prepared For:  
Timberline Logging Inc.**

**Prepared By:  
Icicle Creek Engineers, Inc.**





September 12, 2024

Sam Petska  
Timberline Logging Inc.  
900 Dupont Street  
Bellingham, Washington 98225

Revised Report  
Geotechnical Services  
Evaluation of Potentially Unstable Slopes and  
Landforms and Alluvial Fans  
Proposed Road A Extension and Harvest Unit  
SW¼ Section 27, Township 33 North, Range 6  
East  
Lake Cavanaugh Area, Skagit County,  
Washington  
ICE File No. 1319-005

## 1.0 INTRODUCTION

This revised report presents the results of Icicle Creek Engineers' (ICE's) geotechnical services regarding our evaluation of Potentially Unstable Slopes and Landforms and Alluvial Fans related to the proposed extension of Road A, and proposed timber harvest of an area adjacent to the road (collectively referred to as the Proposed Road A Extension and Harvest Unit), located in the southwest quarter of Section 27, Township 33 North, Range 6 East, Willamette Meridian, near Lake Cavanaugh in Skagit County, Washington. The location of the Proposed Road A Extension and Harvest Unit is shown relative to nearby physical features on the Vicinity Map, the WA DNR FPA Map, and the Field Review Route Map, Figures 1, 2 and 3, respectively.

Our services were provided in general accordance with our Budget Update #3 dated June 17, 2024 and were authorized in writing by Sam Petska with Timberline Logging Inc. (TLI) on July 8, 2024.

This revised report was prepared by Shane J. Markus, PE, LEG, and Brian R. Beaman, PE, LEG, LHG with ICE. Mr. Beaman and Mr. Markus are "Qualified Experts" (Washington State Department of Natural Resources - DNR Qualified Experts List, Engineering Geologist License Nos. 671 and 21013996, respectively). Mr. Beaman is licensed by the State of Washington as a Professional Engineer (PE), Engineering Geologist (LEG) and Hydrogeologist (LHG). Mr. Markus is licensed by the State of Washington as a PE and a LEG.

This revised report is intended to replace our report dated November 1, 2023.

## 2.0 SELECTED REFERENCES

For the purpose of this evaluation, ICE reviewed the following information:

- DNR, August 21, 2023, *Chapter 222-16 Washington Administrative Code (WAC), Definitions.*
- DNR, August 21, 2023, *Chapter 222-10 WAC, State Environmental Policy Act Guidelines.*
- DNR, February 22, 2021, *Chapter 222-30 WAC, Timber Harvesting.*

- DNR, May 2016, *Forest Practices Board Manual, Section 16, Guidelines for Evaluating Potentially Unstable Slopes and Landforms*, 93 pages.
- DNR, October 8, 2013, *Chapter 222-14 WAC, Road Construction and Maintenance*.
- DNR, August 2013, *Forest Practices Board Manual, Section 3, Guidelines for Forest Roads*, 27 pages.
- DNR, February 2010, *Forest Practices Board Manual, Section 7, Guidelines for Riparian Management Zones*, 29 pages.
- DNR, June 2004, *Geologic Map of the Stimson Hill 7.5-Minute Quadrangle, Skagit and Snohomish Counties, Washington*, Open File Report 2004-9.
- DNR, Forest Practices Application Mapping Tool (FPAMT), <https://fpamt.dnr.wa.gov/>.
- DNR, Geologic Information Portal, regional geologic mapping and landslide compilations and inventory, <http://www.dnr.wa.gov/geologyportal>.
- DNR, GIS Data, Open Data, Climatology, Rain-on-Snow, <http://data-wadnr.opendata.arcgis.com/>.
- DNR, Geology GIS Data and Databases and Landslide Compilation/Inventory, <https://www.dnr.wa.gov/programs-and-services/geology/publications-and-data/gis-data-and-databases>.
- DNR, Washington LiDAR Portal, Light Detection and Ranging (LiDAR) Digital Terrain Model (DTM) raw data and hillshade image downloads, North Puget 2017 acquisition, <http://lidarportal.dnr.wa.gov/>.
- Environmental Systems Research Institute (Esri) ArcGIS version 10.6.0.8321, used to process the LiDAR raw DTM data for 5-foot topographic contour intervals and 70- and 100-percent slope inclination.
- Google Earth, aerial photographs dated July 19, 1990 and August 21, 2022.
- Skagit County, iMap property map, <https://skagitcounty.net/maps/imap/>.
- TLI, May 14, 2024, *WA DNR FPA Map – FPA #*, one sheet.
- TLI, September 22, 2023, *Plan Views and Road Profiles for Stream Crossings*, four sheets.
- TLI, September 20, 2023, *Cavanaugh Road A Extension Draft*, scale 1:2,000.
- USGS EarthExplorer, aerial photographs dated August 13, 1953 and July 18, 1979, <http://earthexplorer.usgs.gov/>.

### 3.0 REGULATORY CONSIDERATIONS

Based on our information review and discussions with Mr. Petska, we understand that TLI is proposing to extend the existing Road A to the southeast as shown on Figures 2 and 3 and will cross seven streams as shown on Figure 2. The Road A Extension crossings of Streams 1, 2 and 3 are the primary focus of this evaluation and are referred to in this revised report as Stream Crossing #1, Stream Crossing #2 and Stream Crossing #3.

Based on our initial review, Stream Crossing #2 and Stream Crossing #3 occur within or around Potentially Unstable Slopes or Landforms (referred to as a “Rule-Identified Landforms” or “RILs”). RILs are defined by WAC 222-16-050(1)(d)(i) A, B, C, D and E, and are further described in Section 16 of the DNR (May 2016) Forest Practices Board Manual (sections 4.1 through 4.5). For this reason, TLI intends to submit the Proposed Road A Extension and Harvest Unit as a Class IV-Special Forest Practices Application (FPA). This report is intended to supplement the Class IV-Special FPA as a means to provide the DNR with additional information that assists the agency in evaluating if the project could cause a “probable significant adverse impact” in accordance with WAC 222-10-030(1)(a,b,c) (*SEPA Policies for Potentially Unstable Slopes and Landforms*).

Based on our initial review, proposed forest practices may occur within or around Alluvial Fan landforms. According to WAC 222-30-021(2)(b)(vi), “No timber harvest is permitted within an Alluvial Fan.”

The definition of an Alluvial Fan is presented in Section 2 and Section 7 of the DNR (2007; 2010) Forest Practices Board Manual, and WAC 222-16-010("Sensitive Sites")(5). The definition of an Alluvial Fan *"...does not include features that were formed under climatic or geologic conditions which are not currently present or that are no longer dynamic"* (WAC 222-16-010 ("Sensitive Sites")(5)); for the purpose of this revised report, such features are referred to as "relict" Alluvial Fan landforms.

TLI requested that ICE evaluate RILs (Potentially Unstable Slopes and Landforms) and Alluvial Fans (Sensitive Sites), as they pertain to the road construction plans (including Stream Crossing #1, Stream Crossing #2, and Stream Crossing #3), and the proposed harvest.

#### **4.0 PROPOSED FOREST PRACTICES DESCRIPTION**

##### **4.1 PROPOSED ROAD A EXTENSION**

###### **4.1.1 General**

Based on discussions with Mr. Petska and information provided by TLI, we understand that the Proposed Road A Extension includes new construction of about 1,100 feet of 14-foot-wide gravel-surfaced forest road (area of about 0.6 acres where timber harvest will occur) which extends off the end of the existing Road A to the southeast to connect to Road B as shown on Figures 2 and 3. As previously described, the new road extension will cross three streams targeted in this report; the three stream crossings are described in detail below.

###### **4.1.2 Stream Crossing #1 and Stream Crossing #3**

Stream Crossing #1 and Stream Crossing #3 are planned as unvented fords, with the road surface dipping down to the stream bed elevation and matching the existing topography and stream longitudinal flow-line as closely as possible. We understand that the road will be constructed with a base layer of "two-man quarry rocks" (about 200 to 700 pounds; 18 to 28 inches in diameter) and surfaced with 4- to 8-inch quarry spalls at the stream channel. We further understand that water bars to divert and disperse road runoff are planned on each side of the ford at Stream Crossing #1, and on the west side of the ford at Stream Crossing #3. The ford at Stream Crossing #3 will have cut slopes on the uphill side of the approaches that will be buttressed with a 6- to 8-foot high "slope facing" using "one-man" (50 to 200 pounds; 12 to 18 inches across) to two-man quarry rocks to provide erosion protection for the cut slope.

###### **4.1.3 Stream Crossing #2**

Stream Crossing #2 is planned as an 88-foot-long prefabricated bridge. The left (west) abutment will be raised about 3 feet above the existing grade, and the right (east) abutment will be constructed at grade, resulting in about 15 feet of clearance between the bottom of the bridge structure and the estimated high water flow level in the channel.

##### **4.2 PROPOSED HARVEST UNIT**

TLI is proposing clearcut harvest of an approximately 1.4 acre area vegetated with primarily mature conifer trees using ground-based equipment. The existing Road A and the Proposed Road A Extension will be used to access the harvest area with harvesting equipment and for log haul.

#### **5.0 PUBLIC RESOURCES AND PUBLIC SAFETY**

Based on our review of TLI's WA DNR FPA Map (May 14, 2024) as shown on Figure 2 and discussions with Mr. Petska, we understand that the three streams crossed by the Road A Extension are likely to be Type Np (no fish, perennial flow) (Stream Crossing #1 and Stream Crossing #2) or Type Ns (no fish, seasonal

flow) (Stream Crossing #3) at the crossing locations, and Type F (fish use) downstream of the crossing locations. Lake Cavanaugh, an approximately 833-acre freshwater lake, is located about 750 to 1,250 feet downgradient (north) of the Proposed Road A Extension and Harvest Unit area.

The Proposed Road A Extension and Harvest Unit are located upslope of South Shore Drive, a county-maintained rural two-lane road, and about 30 private residential lots (based on our review of Skagit County iMap). Based on our review of the 2022 aerial photograph, the approximate distribution of residential structures on these lots is shown on Figure 3.

As shown, several residential structures border each of the streams crossed by the Proposed Road A Extension. We expect that residential structures in this area are served by domestic water wells, lake water, or unauthorized water diversions from the hillside streams, all of which were taken into consideration as part of this evaluation. South Shore Drive and all of the residential structures, except for one, are located on Alluvial Fan landforms (DNR Sensitive Sites).

## **6.0 SITE CONDITIONS**

### **6.1 GENERAL**

The surficial geologic conditions and geomorphic character of the Proposed Road A Extension and Harvest Unit and surrounding areas were evaluated based on regional geologic mapping and landslide inventories by the DNR (June 2004; Geologic Information Portal), review of historical aerial photographs dating back to 1953 (obtained from USGS EarthExplorer and Google Earth), review of LiDAR DTM-based bare-earth hillshade imagery (<http://lidarportal.dnr.wa.gov/>, North Puget 2017 acquisition), topographic contours and slope mapping (<http://lidarportal.dnr.wa.gov/>, North Puget 2017 acquisition; Esri ArcGIS 10.6), and field review of the area.

### **6.2 GEOGRAPHIC, TOPOGRAPHIC AND HYDROLOGIC SETTING**

The Proposed Road A Extension and Harvest Unit are located on the generally north-facing hillside of Frailey Mountain overlooking the Lake Cavanaugh valley. The Proposed Road A Extension traverses the lower part of this hillside, rising from about Elevation 1,120 feet where it extends off of Road A to about Elevation 1,170 feet near Stream Crossing #3, then descending to about Elevation 1,135 feet at the east end where it connects to Road B. The Proposed Harvest Unit varies from about Elevation 1,105 feet along the north end of the unit, to about Elevation 1,280 feet in the south end of the unit. Based on our review of climatology data available from the DNR (GIS Data, Open Data, Climatology), the Proposed Road A Extension and Harvest Unit are located within the Rain-on-Snow Precipitation Zone.

Stream #1, Stream #2 and Stream #3 drain topographic watersheds of about 13 acres, 22 acres and 2 acres, respectively, upstream of their respective proposed road crossings. Based on our review of climatology data available from the DNR (GIS Data, Open Data, Climatology), these watersheds are also located within the Rain-on-Snow Precipitation Zone.

Based on the LiDAR DTM (<http://lidarportal.dnr.wa.gov/>, North Puget 2017 acquisitions), we mapped slopes that exceed 70- and 100-percent grade within and around the Proposed Road A Extension and Harvest Unit using Esri ArcGIS 10.6 as shown on the Slope Map, Figure 4. Slope inclinations were checked in the field at various locations for accuracy.



The LiDAR DTM-based bare-earth hillshade image (<http://lidarportal.dnr.wa.gov/>, North Puget 2017 acquisition) is shown on the LiDAR Image, Figure 5. The LiDAR image shows relatively high resolution data in the general area of the Proposed Road A Extension and Harvest Unit.

### 6.3 GEOLOGIC SETTING

The regional geologic mapping by the DNR (June 2004) is shown on the Geologic Map, Figure 6 (modified by ICE based on our review of improved topographic data, LiDAR and field review). Based on this mapping (DNR and ICE) and our field review, the following is a summary of the geologic units.

**Alluvial Fan Deposits (Qaf)** – Debris-flow diamicton and alluvial sand and gravel; mostly poorly sorted; massive to weakly stratified; contains mostly angular to subangular, locally derived clasts. Some alluvial fans may have been initiated during late Pleistocene deglaciation.

**Glacial Till (Qgt<sub>v</sub>)** – Sediments deposited at the base of the Vashon-age continental ice sheet, typically consisting of an unsorted mixture of silty sand with gravel, cobbles and occasional boulders in a dense condition as a result of being overridden by glacial ice.

**Advance Outwash (Qga<sub>v</sub>)** – Stream and river sediments deposited at the front of the advancing Vashon-age ice sheet, typically consisting of stratified to massive medium to coarse sand, pebbly sand, and sandy pebble gravel with scattered beds of cobble gravels and with silt/clay interbeds, in a dense/stiff condition as a result of being overridden by glacial ice.

**Advance Glaciolacustrine Deposits (Qgl<sub>v</sub>)** – Lakebed sediments deposited at the front of the advancing Vashon-age ice sheet, typically consisting of clay, silt, and silty clay with local dropstones, in a very stiff to hard condition as a result of being overridden by glacial ice.

**Rocks of Bulson Creek (ØEc<sub>bcg</sub>)** – Oligocene- to Eocene-age sedimentary bedrock, typically consisting of conglomerate with local interbeds and lenses of sandstone and siltstone.

**Rocks of the Eastern Mélange Belt (JTMv<sub>e</sub>)** – Jurassic- to Triassic-age metamorphic bedrock, typically consisting of metamorphosed basalt, basaltic andesite and andesite, with local thick beds of metasandstone, and thin beds of breccia and tuff.

### 6.4 GEOMORPHIC SETTING

#### 6.4.1 Regional Landslide Inventory and Geologic Map

The DNR regional landslide inventory (<http://www.dnr.wa.gov/geologyportal>) maps a landslide in the headwaters of Stream #2 (DNR Landslide ID No. 49519), presumably by aerial photograph review.

The DNR (June 2004) geologic map shows Landslide Complexes (Qls) and Alluvial Fan Deposits (Qaf) in the vicinity of the Proposed Road A Extension and Harvest Unit, on the lower hillside of Frailey Mountain. Based on our review of available information and field review, we have collectively remapped these geologic units as Alluvial Fan Deposits (Qaf) using improved topographic data and field review observations, as shown on Figure 6.

#### **6.4.2 LiDAR Image Review**

Based on our review of the LiDAR Image (Figure 5), the north-facing slopes upgradient of the Proposed Road A Extension and Harvest Unit are characterized by bands of oversteepened, rugged topography indicating near-surface bedrock. The Stream #1, Stream #2 and Stream #3 areas are characterized by moderately incised, deeply incised and lightly incised (respectively) channels, occasionally containing oversteepened segments suggesting differential erosion and/or shallow landsliding.

The lower slopes in the vicinity of the Proposed Road A Extension and Harvest Unit and the Lake Cavanaugh shoreline area are characterized by undulating, fan-shaped topography consistent with long-term (measured in thousands of years) alluvial fan building depositional processes.

#### **6.4.3 Aerial Photograph Review**

ICE reviewed historical aerial photographs dated August 13, 1953 and July 18, 1979 (USGS EarthExplorer), and July 19, 1990 and August 21, 2022 (Google Earth), as shown on Figures 7 through 10. The following is a summary of this review. No evidence of erosion or slope instability was observed in the vicinity of or upgradient of the Proposed Road A Extension and Harvest Unit during our aerial photograph review.

**1953 Aerial Photograph** – The 1953 aerial photograph (Figure 7 – fair image quality) shows the Proposed Road A Extension and Harvest Unit area as undeveloped and forested. The trees appear smaller and denser than trees further up the hillside, suggesting that the forest in this area may be second-growth. South Shore Drive is visible along with several driveways, perhaps accessing scattered residential structures that are subtly visible.

**1979 Aerial Photograph** – The 1979 aerial photograph (Figure 8 – poor image quality) shows the Proposed Road A Extension and Harvest Unit area as undeveloped and forested. South Shore Drive is visible, and clearings on the shores of Lake Cavanaugh and docks on the lake suggest further residential development.

**1990 Aerial Photograph** – The 1990 aerial photograph (Figure 9 – good image quality) shows the Proposed Road A Extension and Harvest Unit area as undeveloped and forested. South Shore Drive is visible, and additional residential structures (as compared to the 1979 aerial photograph) are visible along the shores of Lake Cavanaugh.

**2022 Aerial Photograph** – The 2022 aerial photograph (Figure 10 – very good image quality) shows new forest roads (Road A and Road B) along with recent clearcuts west and east of the Proposed Road A Extension and Harvest Unit, though the immediate vicinity is still undeveloped and forested. South Shore Drive is visible, and additional residential structures (as compared to the 1990 photograph) are visible on the shores of Lake Cavanaugh.

### **6.5 SITE OBSERVATIONS**

#### **6.5.1 General**

Mr. Markus and Mr. Petska completed a field review of the Proposed Road A Extension and Harvest Unit and surrounding areas on September 18, 2023 to observe the character of the Proposed Road A Extension alignment (including the proposed stream crossings) and the Alluvial Fan landforms in the area. The weather during this site visit was mostly sunny, with temperatures in the 60s and 70s. Mr. Beaman and Mr. Petska previously completed field reviews in the area on April 11 and July 9, 2019. The routes of our field reviews (foot traverses) are shown on Figure 3. Our site observations are separated into the Proposed

Road A Extension alignment (section 5.5.2 of this report), the Stream #1, Stream #2 and Stream #3 valleys (section 5.5.3 of this report), and the Alluvial Fan landforms (section 5.5.4 of this report). The descriptions of our site observations are provided below.

#### **6.5.2 Proposed Road A Extension Alignment**

Our site observations regarding the Proposed Road A Extension alignment are provided below, by approximate station interval. The Proposed Road A Extension alignment is approximately stationed from Station 0+00 (the current end of Road A) to Station 13+25 (the connection with Road B), as shown on Figure 2.

**Stations 0+00 to 3+15** – The Proposed Road A Extension alignment completes a rising traverse from the end of Road A (approximately Station 0+00; from TLI, September 22, 2023) to Stream Crossing #1 (approximately Station 3+15). This segment of the road alignment is characterized by undulating topography suggestive of normal hillside erosional processes. This area is vegetated with mature conifer and occasional deciduous trees and medium dense brush, with occasional old-growth stumps. We did not observe surface water or seasonal groundwater seepage (such as dry channels) or evidence of recent slope instability or debris flow activity in this area.

**Stations 3+15 to 6+85** – After Stream Crossing #1 (approximately Station 3+15), the alignment continues its rising traverse steeply (about 12-percent grade) southeast to Stream Crossing #2 (approximately Station 6+85). This segment of the road alignment is characterized by gently undulating topography, with a distinct ridgeline separating two Alluvial Fan landforms (see section 5.5.4 of this report). This area is vegetated with mature conifer trees and light brush. We did not observe surface water or seasonal groundwater seepage (such as dry channels) or evidence of recent slope instability or debris flow activity in this area.

**Stations 6+85 to 7+80** – After Stream Crossing #2 (approximately Station 6+85), the alignment gradually descends and crosses a ridge before entering Stream Crossing #3 (approximately Station 7+80), where the road grade dips to the channel. This segment of the road alignment is characterized by broadly divergent, smooth topography, and is vegetated with mature conifer and occasional deciduous trees and medium dense brush. We did not observe surface water or seasonal groundwater seepage (such as dry channels) or evidence of recent instability or debris flow activity in this area.

**Stations 7+80 to 13+25** – After Stream Crossing #3 (approximately Station 7+80), the alignment then descends the hillside to where it connects with Road B (approximately Station 13+25). This segment of the road alignment is characterized by rolling, irregular topography across a recent clearcut, which is currently reforesting with young (less than 5 years old) conifer saplings, deciduous trees, and medium dense brush. We did not observe surface water or seasonal groundwater seepage (such as dry channels) or evidence of recent instability or debris flow activity in this area.

#### **6.5.3 Stream #1, Stream #2 and Stream #3**

As previously described, we observed landforms consistent with RILs within and/or around the Road A crossings of Stream #1, Stream #2 and Stream #3 as shown on the Potentially Unstable Slopes and Landforms Map, Figure 11. Our site observations regarding road/stream crossings and RILs are described below.

**Stream #1** – Stream #1 at the proposed Road A crossing is contained within a widely convergent swale with smooth, moderately-sloping (about 40- to 60-percent grade) side slopes. The swale is vegetated with mature conifer trees, occasional deciduous trees, dense to very dense brush, and old-growth stumps adjacent to the channel edge. The channel is about 2- to 4-feet wide and is lined with cobbles and boulders up to about 18 inches in diameter. The stream was flowing at less than 1 gallon per minute (gpm) at the time of our September 18, 2023 field review. We did not observe evidence of recent debris flow scour/accumulation, slope instability or surface erosion at the Road A Stream #1 crossing site.

Upstream of the proposed crossing, Stream #1 is contained within a 15- to 30-foot-deep ravine with steep (70- to 100-plus-percent grade) side slopes (Inner Gorge RIL). The ravine side slopes are vegetated with light to medium dense brush. Local bare soil on the ravine side slopes suggests surficial erosion; bedrock is also exposed in places. The stream channel is scoured to bedrock.

Based on our review of the project plans and field review observations, the proposed crossing should not require ground disturbance within the Inner Gorge RIL that is upstream of the Road A Stream #1 crossing site.

**Stream #2** – Stream #2 at the proposed Road A crossing is contained within an approximately 10- to 15-foot-deep distinct stream ravine, with steep (about 70-percent grade) side slopes (Inner Gorge RIL). The ravine side slopes are vegetated with mature conifer trees, deciduous trees, and dense brush. The channel is about 4-feet wide and is lined with cobbles and boulders up to about 18 inches in diameter. The stream was flowing at less than 1 gpm at the time of our September 18, 2023 field review. We did not observe evidence of recent debris flow scour/accumulation, slope instability or surface erosion at the Road A Stream #2 crossing site.

Upstream of the proposed crossing, Stream #2 is contained within an approximately 15- to 30-foot-deep ravine with steep (70- to 100-plus-percent grade) side slopes (Inner Gorge RIL). The side slopes are vegetated with light to medium dense brush. Local surficial landsliding is present on the side slopes, and bedrock is exposed in places. The stream channel is scoured to bedrock. Based on our review of the project plans and field review observations, mitigation will be needed to reduce impacts to the Road A Stream #2 crossing to an acceptable level.

**Stream #3** – Stream #3 at the proposed Road A crossing is contained within a widely convergent swale with smooth, moderately- to steeply-sloping (about 50- to 70-percent grade) side slopes (locally an Inner Gorge RIL). The swale is vegetated with mature conifer and deciduous trees, and dense brush. The channel, about 2-feet wide, is lined with sand and gravel and is scoured to bedrock in places. The stream channel was dry at the time of our September 18, 2023 field review. We did not observe evidence of recent debris flow scour/accumulation, slope instability or surface erosion at the Road A Stream #3 site.

Upstream of the proposed crossing, Stream #3 is contained within a convergent swale (locally sharply convergent) with 10- to 20-feet-high steeply-sloping (60- to 100-percent grade) side slopes (locally Inner Gorge RIL). The swale is vegetated with mature conifer and deciduous trees, and dense brush. Bedrock is exposed in places. We observed Stream #3 to be flowing less than 1 gpm during our July 9, 2019 field review. We did not observe evidence of recent debris flow scour, conveyance, slope instability or surface erosion at the Road A Stream #3 crossing. Based on our review of the project plans and field review



observations, mitigation will be needed to reduce impacts related to the Road A Stream #3 crossing to an acceptable level.

#### **6.5.4 Alluvial Fan Landforms**

As previously described, we observed features consistent with Alluvial Fan landforms within and around the proposed forest practices. These landforms are shown on the Alluvial Fan Map, Figure 12, as AF-1 through AF-3. Our field review observations regarding each Alluvial Fan landform are described below.

**AF-1 (active)** – AF-1 is characterized by widely divergent, smooth topography, with Stream #1 bordering the west side of AF-1. Stream #1 is incised into AF-1 about 5 to 10 feet and is vegetated with mature conifer trees, with light to medium dense brush. We did not observe recent evidence of channel avulsion, overtopping or accumulation on this surface. Based on our field review of the apex area, it is our opinion that there is a moderate risk that the channel could relocate to another part of AF-1 considering the likelihood of periodic debris flows from the upper watershed of Stream #1 and the condition of the AF-1 apex area.

**AF-2 (Relict)** – AF-2 is characterized by broadly divergent, smooth topography; the feature no longer contains a stream channel, though Stream #2 borders the upper (southeast) edge of AF-2 for about 100 feet before the stream diverts east. At the apex of AF-2, Stream #2 is incised into the adjacent topography about 10 to 15 feet and is lined with bedrock. AF-2 is vegetated with mature conifer trees and occasional deciduous trees, and light to medium dense brush.

We did not observe evidence of recent or historic channel avulsion, overtopping or accumulation on this surface. We did not observe evidence of streambank erosion or high water (such as scouring or sediment/woody debris deposition) at the apex, which could indicate a history of high flow events or debris flows with potential to avulse resulting in channel relocation. In our opinion, AF-2 was formed when Stream #2 was at a higher base elevation, and therefore under geologic conditions which are not currently present and are no longer dynamic; based on our evaluation, AF-2 should be considered **Relict**, and is not considered an Alluvial Fan from a regulatory perspective (WAC 222-16-010("Sensitive Sites"))(5)).

**AF-3 (active)** – AF-3 is characterized by widely divergent, undulating topography dissected by Stream #2 and Stream #3 (downstream of the confluence). Stream #2 and Stream #3 are incised into AF-3 about 5 to 10 feet. AF-3 is vegetated with conifer trees, occasional deciduous trees, and medium dense to dense brush. We did not observe recent evidence of channel avulsion, overtopping or accumulation on this surface. Based on our field review of the apex area, it is our opinion that there is a moderate risk that the channel could relocate to another part of AF-3 considering the likelihood of periodic debris flows from the upper watersheds of Stream #2 and Stream #3 and the condition of the AF-3 apex area.

## **7.0 CONCLUSIONS AND RECOMMENDATIONS**

### **7.1 GENERAL**

The surficial geologic conditions and geomorphic character of the Proposed Road A Extension and Harvest Unit and surrounding areas were evaluated based on regional geologic mapping and landslide inventories by the DNR (June 2004; Geologic Information Portal), review of historical aerial photographs dating back to 1953 (obtained from USGS EarthExplorer and Google Earth), review of LiDAR DTM-based bare-earth hillshade imagery (<http://lidarportal.dnr.wa.gov/>, North Puget 2017 acquisition), topographic contours

and slope mapping (<http://lidarportal.dnr.wa.gov/>, North Puget 2017 acquisition; Esri ArcGIS 10.6), and field review of the area.

Based on our evaluation as described above, it is our opinion that the Forest Practices for the Proposed Road A Extension and Harvest Unit can be successfully/safely completed as planned, provided that the mitigations (including avoidance) presented in the following sections are implemented. Other buffers (riparian, wildlife and other buffers) may be applicable. Standard Forest Practices should apply. The harvest area should be replanted as soon as practical.

## **7.2 POTENTIALLY UNSTABLE SLOPES AND LANDFORMS**

### **7.2.1 General**

Based on discussions with Mr. Petska, review of TLI's WA DNR FPA Map dated May 14, 2014 (Figure 2), our review of other available information and field review, the Proposed Harvest Unit and Road A Extension at the Stream Crossing #3 will exclude (avoid) RILs as part of the harvest plan; therefore, no SEPA response is required.

As shown on Figure 11, the Proposed Road A Extension will include crossing two RILs (Inner Gorge landforms at Stream Crossing #2 and Stream Crossing #3). As such, our responses to WAC 222-10-030 (1)(a, b, c) regarding Stream Crossing #2 and Stream Crossing #3 are given in sections 7.2.2, 7.2.3 and 7.2.4 of this revised report.

### **7.2.2 WAC 222-10-030 (1)a – The likelihood that the proposed forest practices will cause movement on the potentially unstable slopes and landforms; or contribute to further movement of a potentially unstable slope or landform.**

**Stream Crossing #2** – Based on our field review and review of available information, the Inner Gorge RIL adjacent to Stream Crossing #2 has a **moderate** likelihood of failure; the Inner Gorge RIL upgradient of the Stream Crossing #2 has a **high** likelihood of failure regardless of whether or not the harvest and/or Road A extension occurs.

If the mitigations presented in section 7.2.4 of this revised report are implemented, we do not expect that the proposed Forest Practices (installation of the pre-fabricated bridge) at Stream Crossing #2 will cause or contribute to further movement of the potentially unstable slope or landform.

**Stream Crossing #3** – Based on our field review and review of available information, the Inner Gorge RIL adjacent to Stream Crossing #3 has a **low** likelihood of failure; the Inner Gorge RIL upgradient of Stream Crossing #3 has a **moderate** likelihood of failure regardless of whether or not the harvest and/or Road A extension occurs.

If the mitigations presented in section 7.2.4 of this revised report are implemented, we do not expect that the proposed Forest Practices (installation/use of the unvented ford crossing at Stream Crossing #3) will cause or contribute to further movement of the potentially unstable slope or landform.

### **7.2.3 WAC 222-10-030 (1)b – The likelihood of delivery of sediment or debris to any public resource, or in a manner that would affect public safety.**

**Stream Crossing #2** – If the mitigations presented in section 7.2.4 of this revised report are implemented, we do not expect that the proposed Forest Practices (installation of the pre-fabricated bridge) at Stream Crossing #2 will affect the likelihood of delivery of sediment or debris to a public resource, or affect public safety.

**Stream Crossing #3** – If the mitigations presented in section 7.2.4 of this revised report are implemented, we do not expect that the proposed Forest Practices (limited tree cutting and vegetation clearing, minor grading (primarily cut), and installation of the unvented ford crossing) at Stream Crossing #3 will affect the likelihood of delivery of sediment to a public resource, or affect public safety.

#### **7.2.4 WAC 222-10-030 (1)c – Any possible mitigation for the identified hazards and risks.**

As part of our evaluation, ICE considered other forms of mitigation including other road route alignments. These route alignment alternatives were described in previous proposals and were eliminated because of legal requirements; other alternatives were eliminated because of possible increased ecological and geomorphic impacts. For the current road route alternative as described in this revised report, RILs and Sensitive Site (Alluvial Fan) are either avoided or effectively mitigated.

**Stream Crossing #2** – Based on our evaluation, in our opinion, Stream Crossing #2 can be successfully/safely constructed using a pre-fabricated bridge as planned, implementing standard Forest Practices as described in WAC Chapter 222-24 (*Road Construction and Maintenance*) and the Forest Practices Board Manual (section 3 – *Guidelines for Forest Roads*), provided that the following specific mitigation recommendations are implemented.

- The bridge should be constructed as high above the channel as possible, to allow natural conveyance of water, sediment and debris under the bridge. We understand that the current plan results in about 15 feet of clearance between the bottom of the bridge and higher historic storm and debris flows based on our observations of the upstream channel areas (scour evidence of the ravines side slopes terrace accumulations).
- The bridge abutments should be set at least 10 feet back from the slope break.
- Tree cutting, brush clearing and grading should be limited within the Inner Gorge RIL to the minimum extent needed to install the bridge.
- Road drainage (ditches and culverts/water bars) should be installed along the road approach sections as needed to divert runoff from the road surface and allow for dispersion into forested areas prior to entering the Inner Gorge RIL. If dispersion near the abutments is not possible then the collected runoff should be armored with quarry spalls to slow runoff and reduce erosion.
- We understand that the bridge footings will be supported on a bearing pad of compacted shot rock, surfaced with a leveling course pad of processed crushed rock. The bearing pad and leveling course pad should be placed and mechanically compacted to a firm and unyielding condition. These recommendations are essential to maintain a stable abutment. An engineering geologist from ICE or other responsible engineer with experience in foundation subgrade preparation should observe the condition of the footing subgrade prior to placement of the bearing pad/leveling course pad to evaluate whether the subgrade material is suitable for foundation support and to recommend subgrade improvements (as needed).

**Stream Crossing #3** – Based on our evaluation, in our opinion, Stream Crossing #3 can be successfully/safely constructed using an unvented ford as planned, implementing standard Forest

Practices as described in WAC Chapter 222-24 (*Road Construction and Maintenance*) and the Forest Practices Board Manual (section 3 – *Guidelines for Forest Roads*), provided that the following specific mitigation recommendations are implemented.

- The new road grade should be aligned with existing topography as closely as possible, to maintain natural flow paths and minimize the potential to impact natural streamflow.
- The crossing should be constructed as low as possible at the channel location to minimize the potential for “pirating” (capturing) the stream channel by the road grade.
- Tree removal and brush clearing should be limited within the Inner Gorge RIL to the minimum extent needed to install the crossing.
- Road drainage (ditches and culverts/water bars) should be installed along the road approach sections as needed to divert runoff from the road surface and allow for dispersion into forested areas prior to entering the Inner Gorge RIL.
- We recommend against using sidecast fill to create road width in the proximity of Stream #3.
- Permanent cuts in glacial soils or weathered bedrock should be made at a maximum of 1H:1V (horizontal to vertical) in the Stream Crossing #3 area. Permanent cuts in intact bedrock can be made near vertical depending on the character of fractures in the bedrock.
- As previously described, a ford at Stream Crossing #3 will have cut slopes on the uphill side of the approaches that will be buttressed with a 6- to 8-foot high “slope facing” using one- to two-man quarry rocks to provide erosion protection for the cut slope. We recommend that the rock buttress/slope facing should be embedded at least 6 inches and consist of a base and second layer of two-man quarry rocks (200 to 700 pounds; 18 to 28 inches across). Subsequent layers of the slope facing should consist of one-man quarry rocks (50 to 200 pounds; 12 to 18 inches across). The inclination of the rock slope should be no steeper than 1H:4V.
- Stream Crossing #3 should be periodically monitored (visually) for erosion that may require maintenance.
- An engineering geologist from ICE or other responsible engineer should be retained to observe the condition of the unvented ford crossing after construction, to recommend erosion control and/or additional grading, as needed.

### **7.3 ALLUVIAL FAN LANDFORMS (SENSITIVE SITES)**

#### **7.3.1 General**

Based on our evaluation, and our understanding of road construction and timber harvest plans, the proposed forest practices within AF-1, an active Alluvial Fan, can be completed successfully/safely as planned, provided the following mitigation recommendations are implemented for the proposed Road A Extension and Stream Crossing #1.

#### **7.3.2 Proposed Road A Extension at AF-1**

- New road construction and maintenance should be completed in accordance with Section 3 of the DNR Forest Practices Board Manual (August 2013).
- Cutting of trees and removal of vegetation within AF-1 should be limited to only those trees/vegetation necessary to construct the Proposed Road A Extension.
- The proposed forest road should be outsloped within AF-1 with cuts and fills minimized to the extent it is practical to reduce the potential for redirecting stream flow should an avulsion occur.
- Excess topsoil and soil/rock related to road construction should be placed at an appropriate disposal location on higher ground to reduce erosion or diversion of surface water runoff.



### **7.3.3 Stream Crossing #1**

Based on our evaluation, Stream Crossing #1 (unvented ford) can be completed successfully/safely as planned, provided the following mitigation recommendations are implemented for Stream Crossing #1.

- The unvented ford crossing should cross at a right angle to the Stream #1 channel as well as being sloped to provide a natural flowpath for stream flow.
- Tree removal and brush clearing along the approach to the unvented ford should be limited to the extent needed to create the crossing.
- Road drainage (ditches and culverts/water bars) should be installed along the road approach sections as needed to minimize excess runoff into the crossing area.
- Stream Crossing #1 should be periodically monitored (visually) for erosion that may require maintenance.
- ICE should be retained to observe the condition of the unvented ford crossing after construction, to recommend erosion control and/or additional grading, as needed.

### **8.0 USE OF THIS REVISED REPORT**

We have prepared this revised report for use by TLI to supplement the FPA permit process for the Proposed Road A Extension and Harvest Unit; this revised report is not applicable to other locations or for other purposes. Our revised report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

There are always risks related to slope stability issues in mountainous areas. These areas are naturally active geologically with respect to mass wasting, erosional and sedimentation processes exacerbated by other factors such as earthquakes, extreme precipitation events and climate change. This risk related to slope stability issues can be reduced by using currently accepted prescribed methods, but the risk cannot be eliminated. Proper logging methods, including road construction/decommissioning, drainage, and erosion control, before and after logging, are key to reducing risks of slope instability.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in this area at the time this revised report was prepared. No warranty, express or implied, should be understood.

\*\*\*\*\*

We trust this revised report meets your present needs. Please contact us if you have any questions or need additional information.



Yours very truly,  
Icicle Creek Engineers, Inc.

Shane J. Markus, PE, LEG  
Senior Project Engineer/Geologist



Brian R. Beaman, PE, LEG, LHG  
Principal Engineer/Geologist/Hydrogeologist

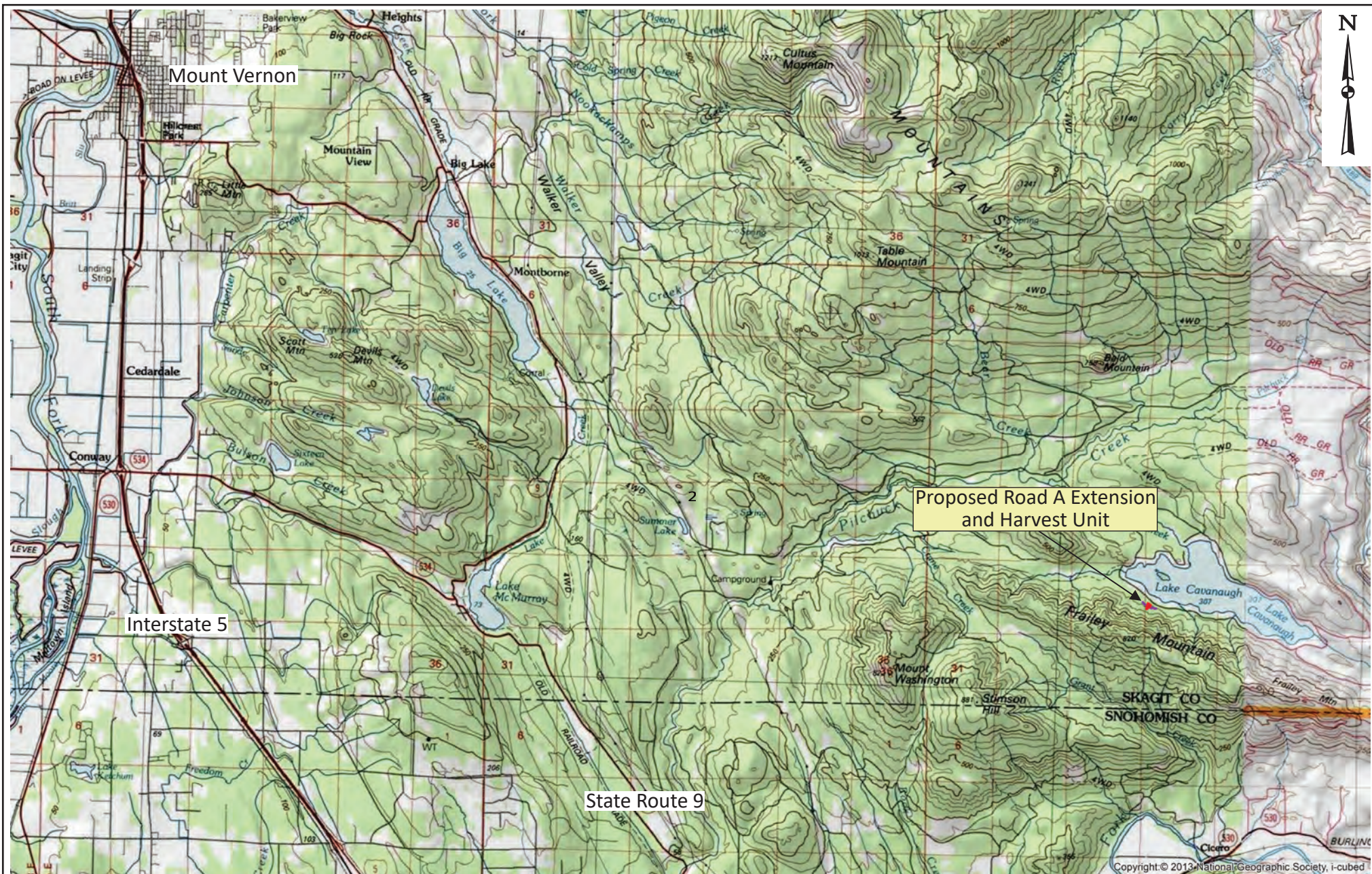
Document ID: 1319005.RevisedReport

Attachments: Vicinity Map – Figure 1  
WA DNR FPA Map – Figure 2  
Field Review Route Map – Figure 3  
Slope Map – Figure 4  
LiDAR Image – Figure 5  
Geologic Map – Figure 6  
1953 Aerial Photograph – Figure 7  
1979 Aerial Photograph – Figure 8  
1990 Aerial Photograph – Figure 9  
2022 Aerial Photograph – Figure 10  
Potentially Unstable Slopes and Landforms Map – Figure 11  
Alluvial Fan Map – Figure 12

Submitted via email

## FIGURES





Base map from Environmental Systems Research Institute (Esri) USA Topo Maps layer.

0 1 2 3  
Approximate Scale in Miles

#### VICINITY MAP

#### PROPOSED ROAD A EXTENSION AND HARVEST UNIT

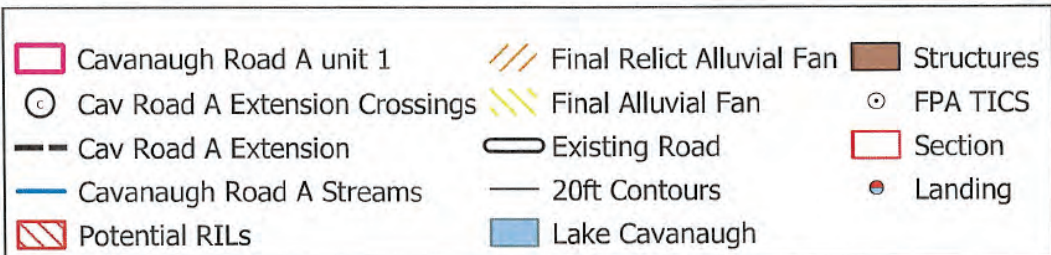
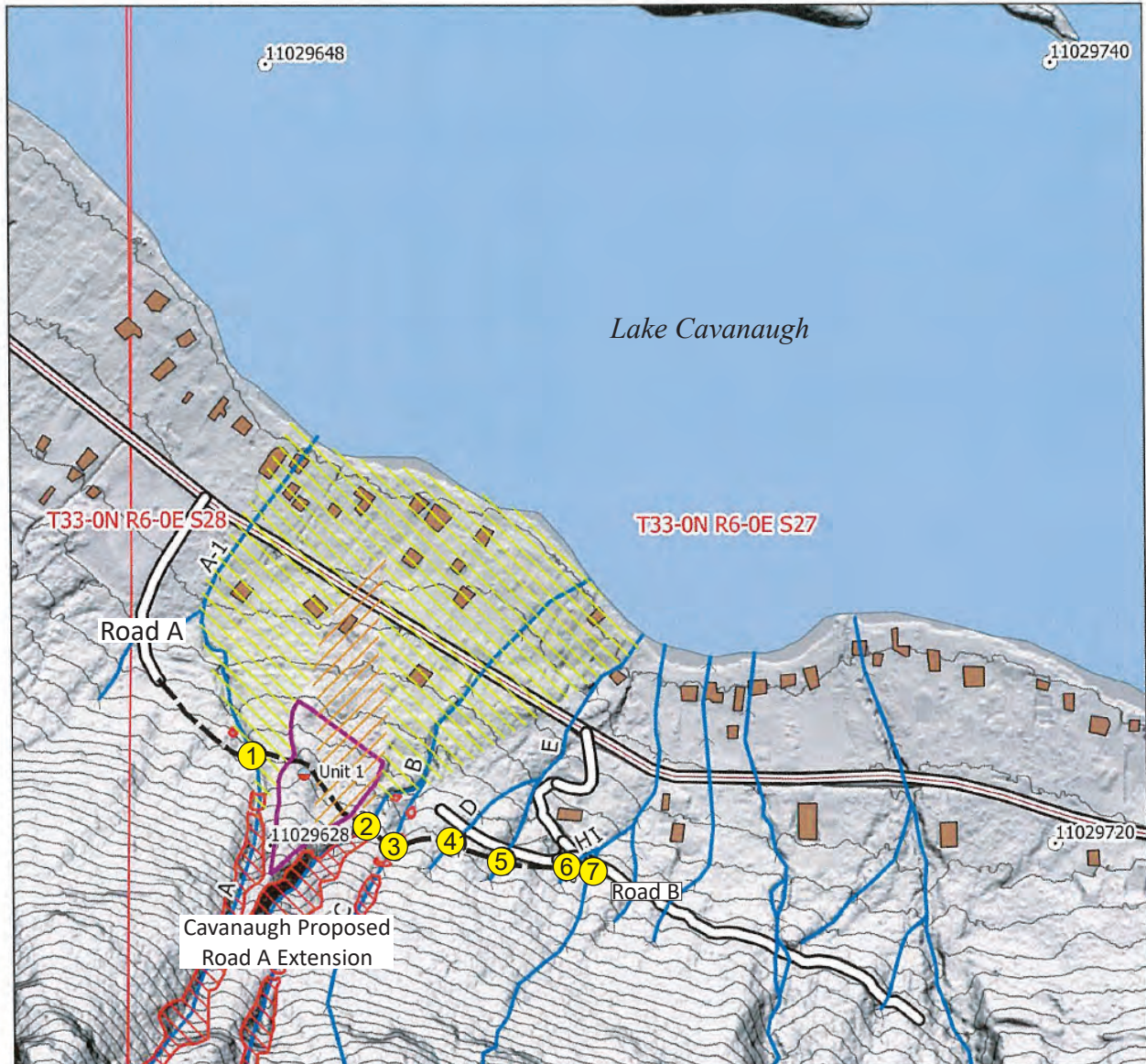
**ICICLE CREEK  
ENGINEERS**  
29335 NE 20th Street  
Carnation, Washington 98014  
(425) 333-0093

|                  |              |
|------------------|--------------|
| SCALE: As Shown  | ICE FILE NO. |
| DESIGNED: ---    | 1319-005     |
| DRAWN: SIM       | Figure       |
| CHECKED: BRB/KSK | 1            |
| DATE: 09/12/24   |              |
| 2819518          |              |

revision rcv'd 9/13/2024



WA DNR FPA Map - FPA #  
 Township 33N Range 06E Section 27 - Parcel# P67021 Skagit County  
 Timberline Logging LLC  
 Elevation: 1200'  
 Road Construction: ~1325' -- Unit 1 Harvest Area: 1.4 acres



5/14/24  
 SP

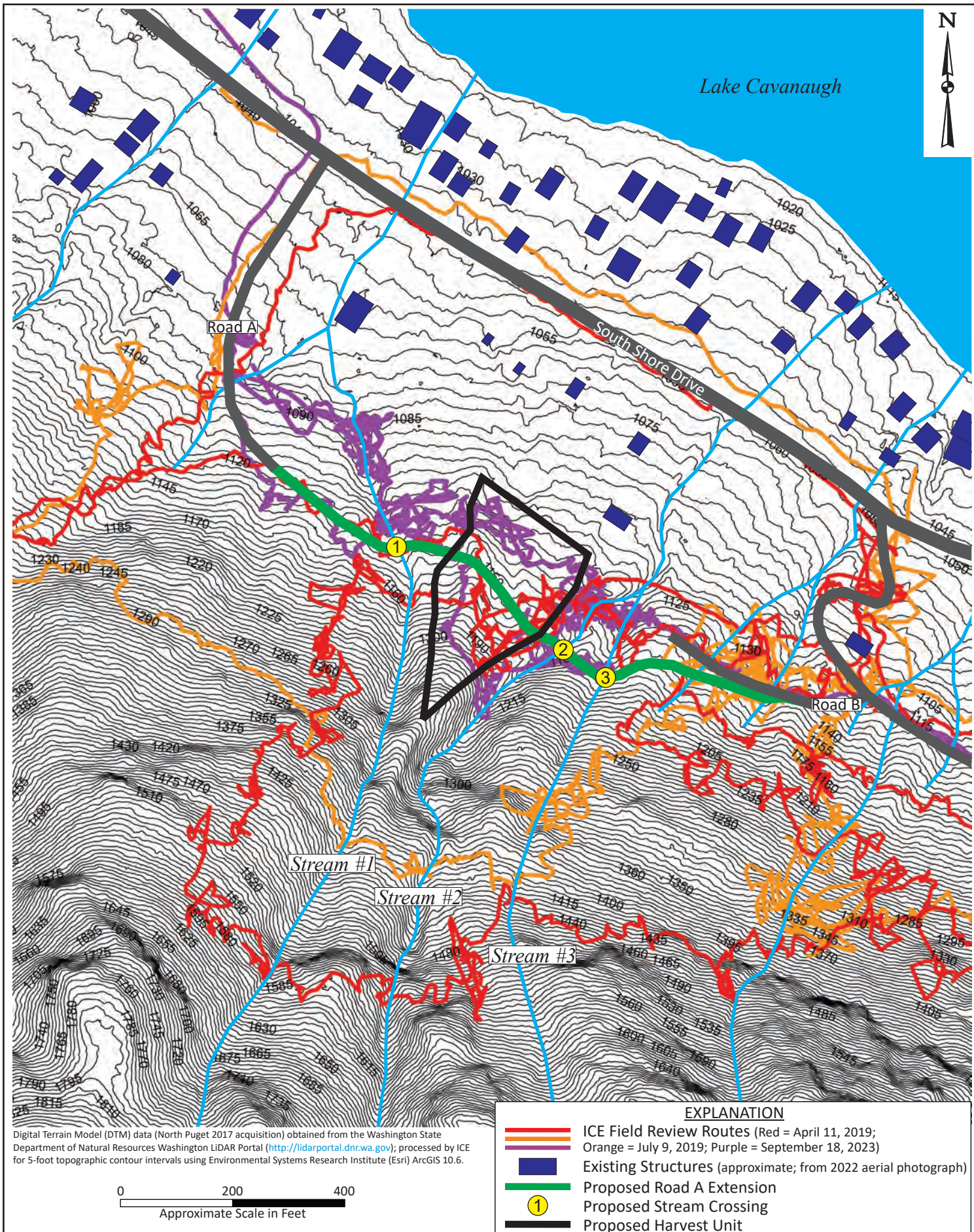
Notes: 1) The WA DNR FPA Map dated May 14, 2024 was provided by Timberline Logging Inc.; modified by ICE to show proposed stream crossing labels.  
 2) Inactive and Active Alluvial Fans are more accurately shown on Figure 6 of this report.

Proposed Stream Crossing

|                                                                                           |                                                                                                                                                                                    |                  |              |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------|
| 2) Inactive and Active Annual Plans are more accurately shown on Figure 6 of this report. |                                                                                                                                                                                    |                  |              |
| WA DNR FPA MAP                                                                            | <div><div>29335 NE 20th Street<br/>Carnation, Washington 98014<br/>(425) 333-0093</div></div> | SCALE: None      | ICE FILE NO. |
| PROPOSED ROAD A EXTENSION AND HARVEST UNIT                                                |                                                                                                                                                                                    | DESIGNED: ---    | 1319-005     |
|                                                                                           |                                                                                                                                                                                    | DRAWN: SJM       | Figure       |
|                                                                                           |                                                                                                                                                                                    | CHECKED: BRB/KSK | 2            |
|                                                                                           |                                                                                                                                                                                    | DATE: 09/12/24   |              |

2819518  
 revision rcv'd 9/13/2024





# FIELD REVIEW ROUTE MAP

## PROPOSED ROAD A EXTENSION AND HARVEST UNIT



29335 NE 20th Street  
Carnation, Washington 98014  
(425) 333-0093

SCALE: As Shown

DESIGNED: ---

DRAWN: SIM

CHECKED: BRB/KSK

DATE: 09/12/24

2819518

ICE FILE NO.

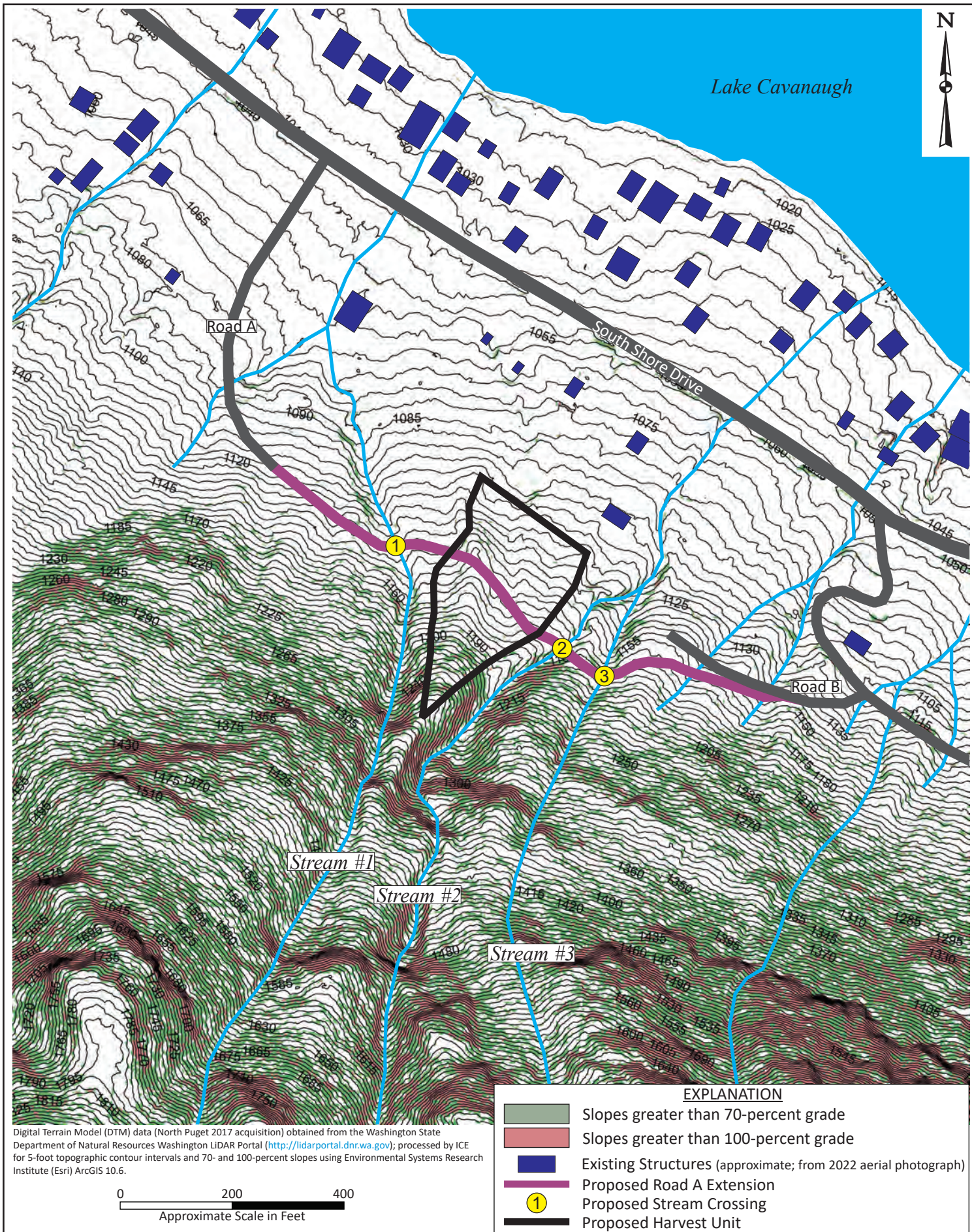
1319-005

Figure

3

revision rcv'd 9/13/2024





# **SLOPE MAP**

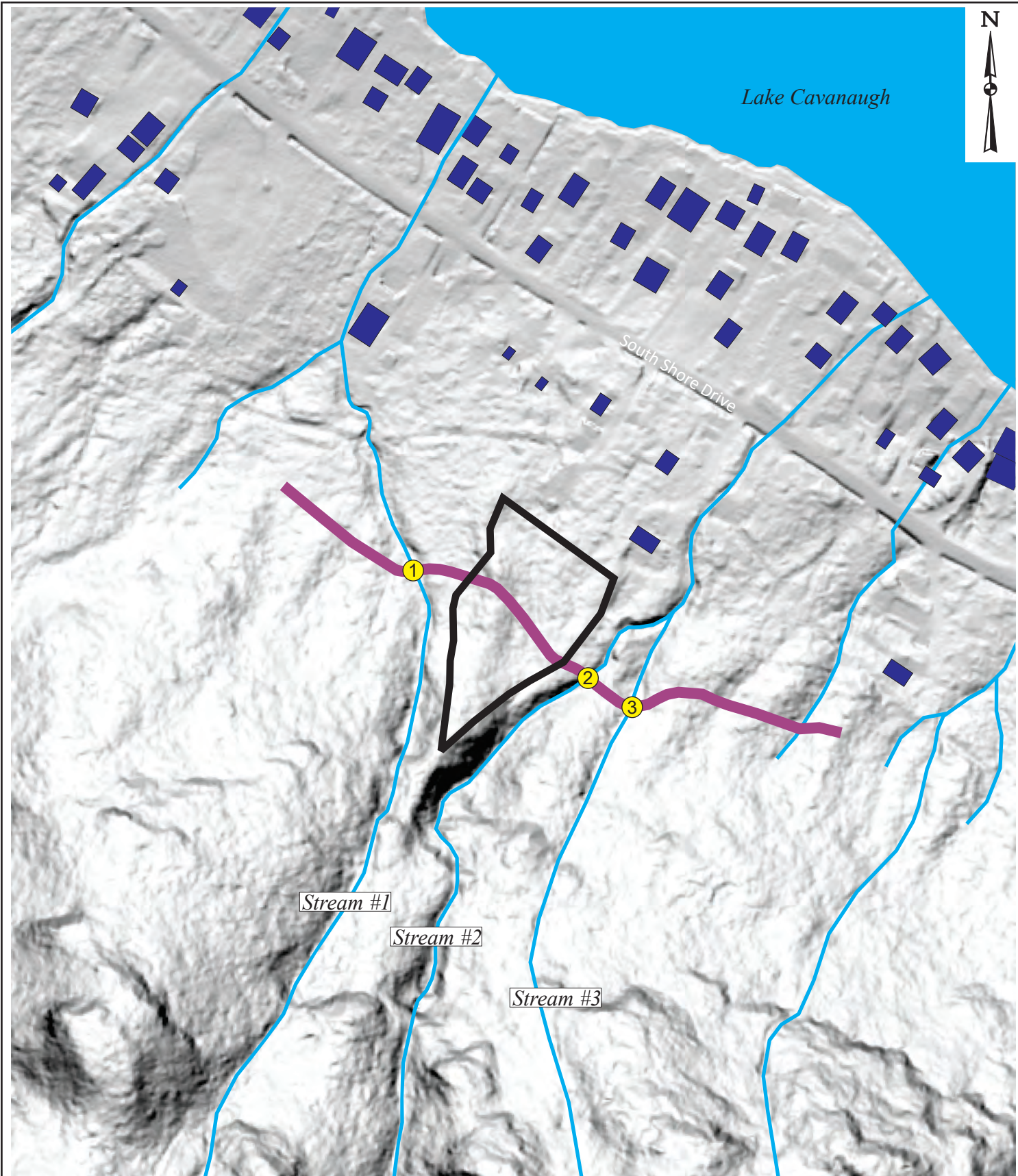
## **PROPOSED ROAD A EXTENSION AND HARVEST UNIT**

**ICICLECREEK  
ENGINEERS**  
29335 NE 20th Street  
Carnation, Washington 98014  
(425) 333-0093

SCALE: As Shown  
DESIGNED: ---  
DRAWN: SJM  
CHECKED: BRB/KSK  
DATE: 09/12/24  
**2819518**

ICE FILE NO.  
**1319-005**  
Figure  
**4**





Digital Terrain Model (DTM) bare-earth hillshade image (North Puget 2017 acquisition) obtained from the Washington State Department of Natural Resources Washington LiDAR Portal (<http://lidarportal.dnr.wa.gov>).

0 200 400  
Approximate Scale in Feet

#### EXPLANATION

- Existing Structures (approximate; from 2022 aerial photograph)
- Proposed Road A Extension
- 1 Proposed Stream Crossing
- Proposed Harvest Unit

LIDAR IMAGE

PROPOSED ROAD A EXTENSION AND HARVEST UNIT

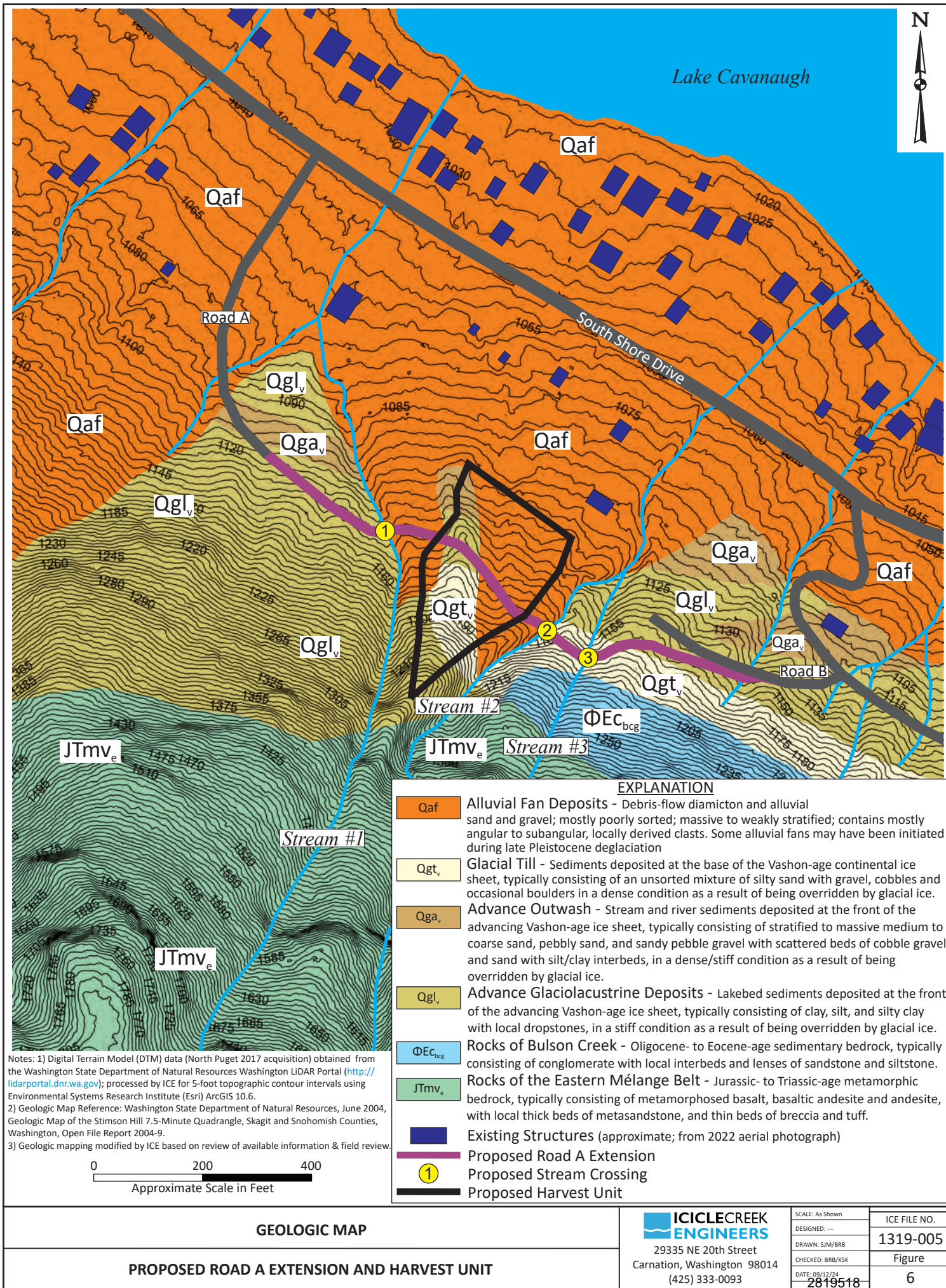
**ICICLE CREEK  
ENGINEERS**  
29335 NE 20th Street  
Carnation, Washington 98014  
(425) 333-0093

SCALE: As Shown  
DESIGNED: ---  
DRAWN: SJM  
CHECKED: BRB/KSK  
DATE: 09/12/24  
**2819518**

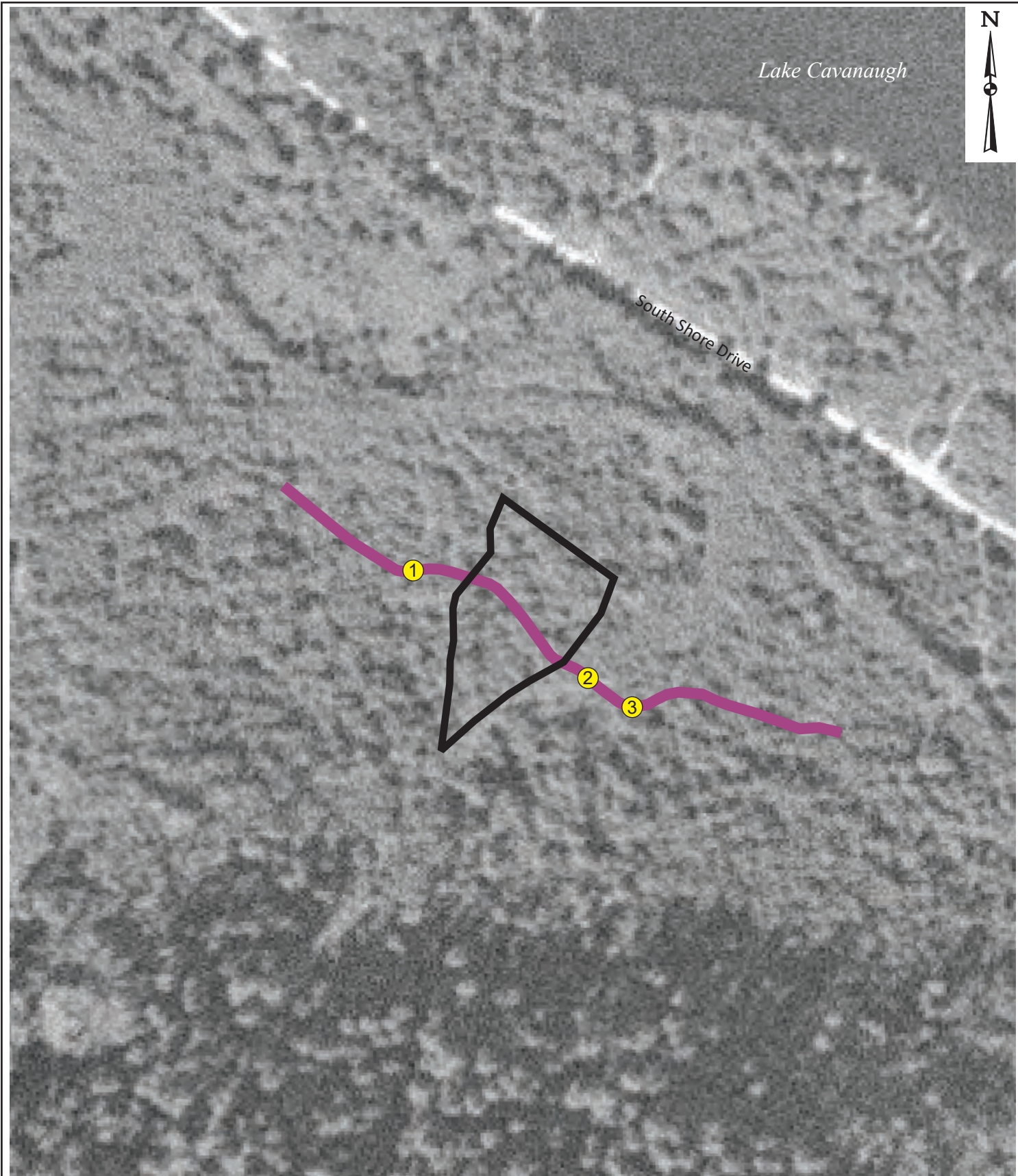
ICE FILE NO.  
**1319-005**  
Figure  
**5**

revision rcv'd 9/13/2024

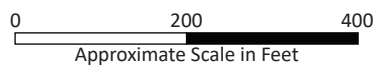








Aerial photograph dated August 13, 1953 obtained from USGS EarthExplorer (<https://earthexplorer.usgs.gov/>).

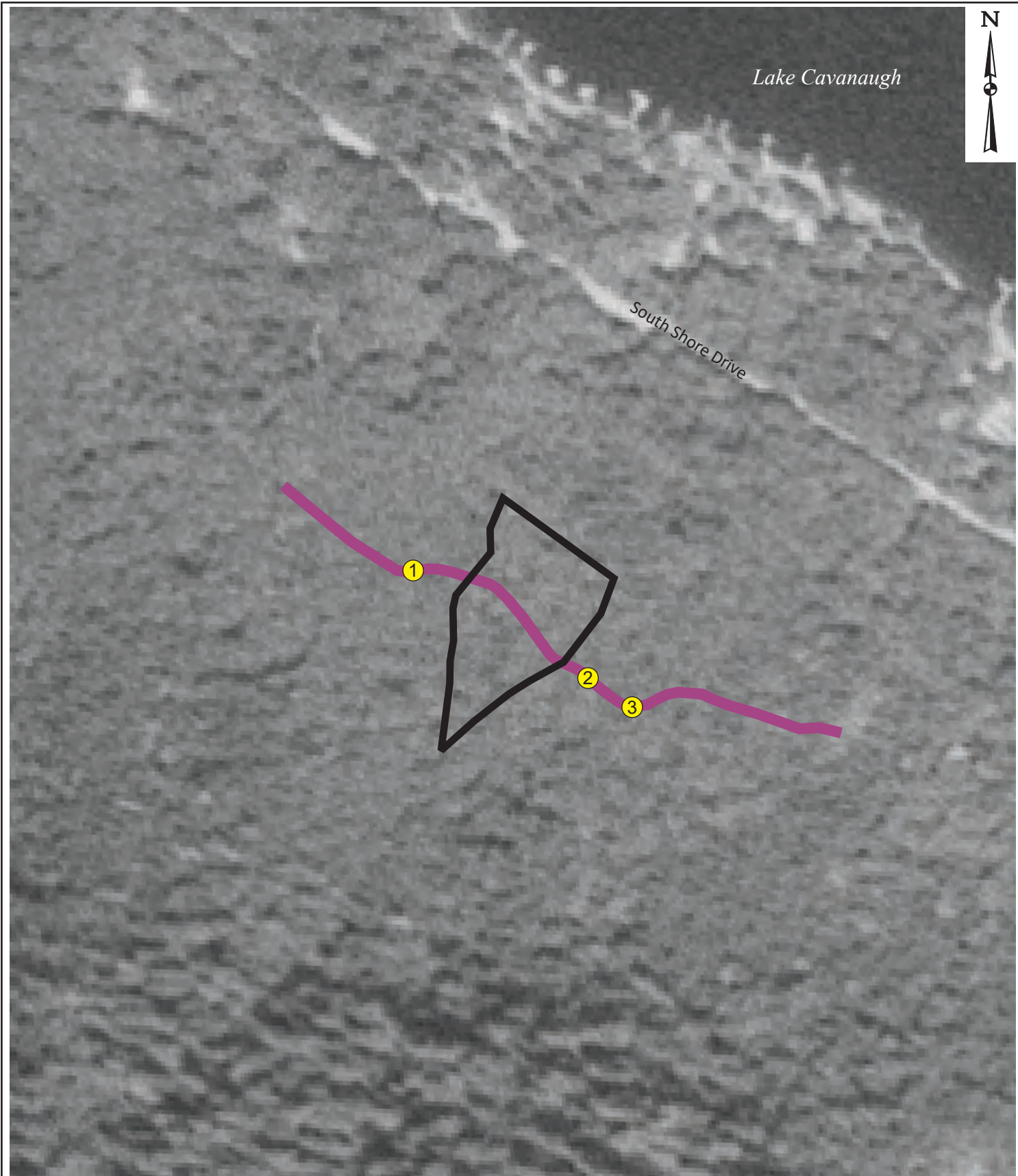


| EXPLANATION |                           |
|-------------|---------------------------|
|             | Proposed Road A Extension |
|             | Proposed Stream Crossing  |
|             | Proposed Harvest Unit     |

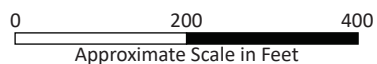
|                                            |                                                                                                                                                                |                           |              |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------|
| 1953 AERIAL PHOTOGRAPH                     | <br>29335 NE 20th Street<br>Carnation, Washington 98014<br>(425) 333-0093 | SCALE: As Shown           | ICE FILE NO. |
|                                            |                                                                                                                                                                | DESIGNED: ---             | 1319-005     |
| PROPOSED ROAD A EXTENSION AND HARVEST UNIT |                                                                                                                                                                | DRAWN: SJM                | Figure       |
|                                            |                                                                                                                                                                | CHECKED: BRB/KSK          |              |
|                                            |                                                                                                                                                                | DATE: 09/12/24<br>2819518 | 7            |

revision rcv'd 9/13/2024





Aerial photograph dated July 18, 1979 obtained from USGS EarthExplorer (<https://earthexplorer.usgs.gov/>).

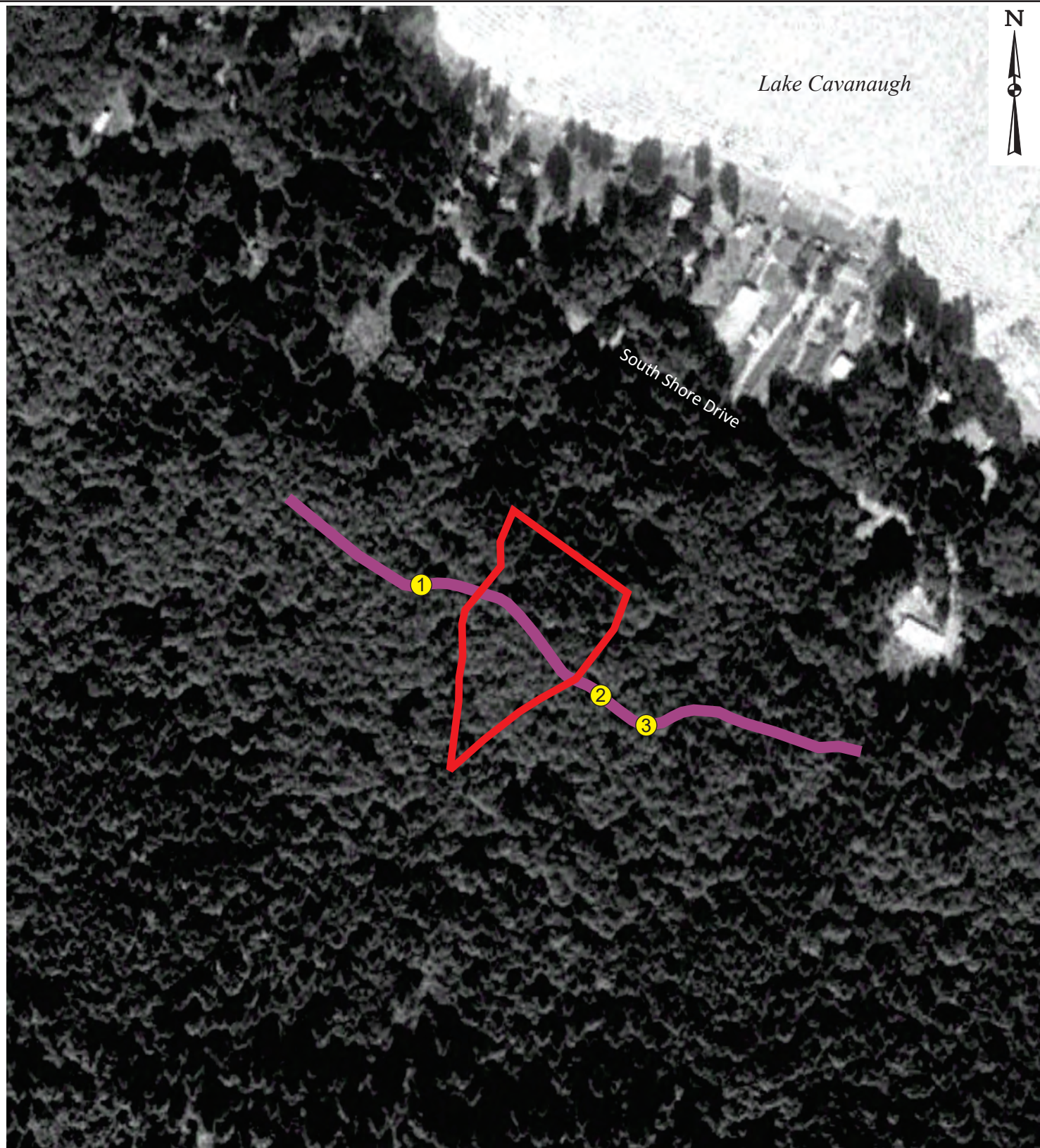


| EXPLANATION |                           |
|-------------|---------------------------|
|             | Proposed Road A Extension |
|             | Proposed Stream Crossing  |
|             | Proposed Harvest Unit     |

|                                            |                                                                                                                                                                |                  |              |  |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------|--|
| 1979 AERIAL PHOTOGRAPH                     | <br>29335 NE 20th Street<br>Carnation, Washington 98014<br>(425) 333-0093 | SCALE: As Shown  | ICE FILE NO. |  |
|                                            |                                                                                                                                                                | DESIGNED: ---    | 1319-005     |  |
| PROPOSED ROAD A EXTENSION AND HARVEST UNIT |                                                                                                                                                                | DRAWN: SJM       | Figure       |  |
|                                            |                                                                                                                                                                | CHECKED: BRB/KSK | 8            |  |
|                                            |                                                                                                                                                                | DATE: 09/12/24   |              |  |
|                                            |                                                                                                                                                                | 2819518          |              |  |

revision rcv'd 9/13/2024





Lake Cavanaugh

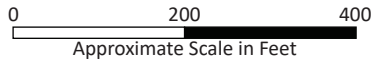
South Shore Drive

1

2

3

Aerial photograph dated July 19, 1990 obtained from Google Earth.



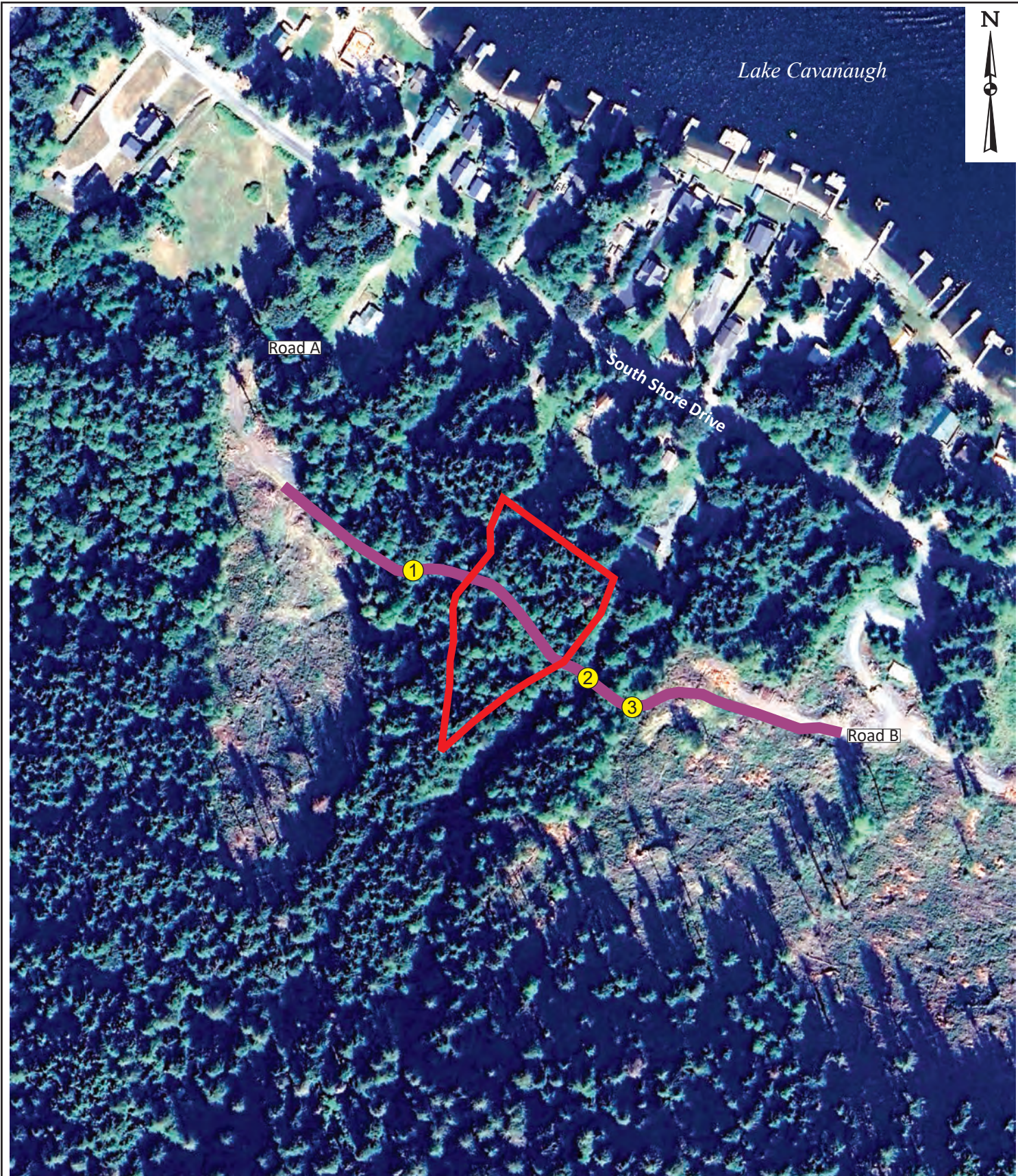
**EXPLANATION**

- Proposed Road A Extension
- 1 Proposed Stream Crossing
- Proposed Harvest Unit

|                                                   |                                                                                                                                                                |                                                                                                        |                                                       |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| <b>1990 AERIAL PHOTOGRAPH</b>                     | <br>29335 NE 20th Street<br>Carnation, Washington 98014<br>(425) 333-0093 | SCALE: As Shown<br>DESIGNED: ---<br>DRAWN: SJM<br>CHECKED: BRB/KSK<br>DATE: 09/12/24<br><b>2819518</b> | ICE FILE NO.<br><b>1319-005</b><br>Figure<br><b>9</b> |
| <b>PROPOSED ROAD A EXTENSION AND HARVEST UNIT</b> |                                                                                                                                                                |                                                                                                        |                                                       |

revision rcv'd 9/13/2024





Aerial photograph dated August 21, 2022 obtained from Google Earth.

0 200 400  
Approximate Scale in Feet

#### EXPLANATION

- Proposed Road A Extension
- Proposed Stream Crossing
- Proposed Harvest Unit

#### 2022 AERIAL PHOTOGRAPH

#### PROPOSED ROAD A EXTENSION AND HARVEST UNIT

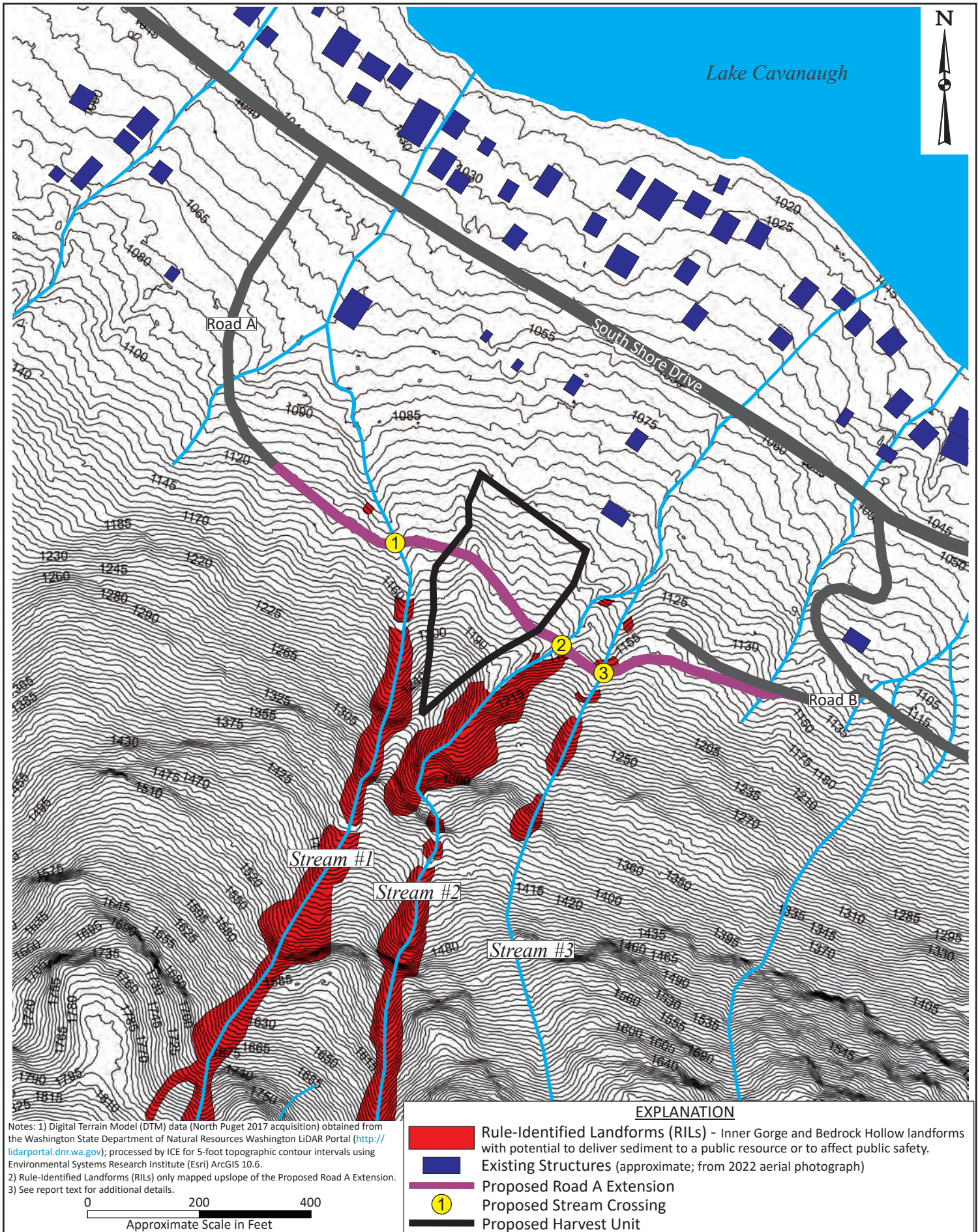
**ICICLE CREEK ENGINEERS**  
29335 NE 20th Street  
Carnation, Washington 98014  
(425) 333-0093

SCALE: As Shown  
DESIGNED: ---  
DRAWN: SJM  
CHECKED: BRB/KSK  
DATE: 09/12/24  
**2819518**

ICE FILE NO.  
**1319-005**  
Figure  
**10**

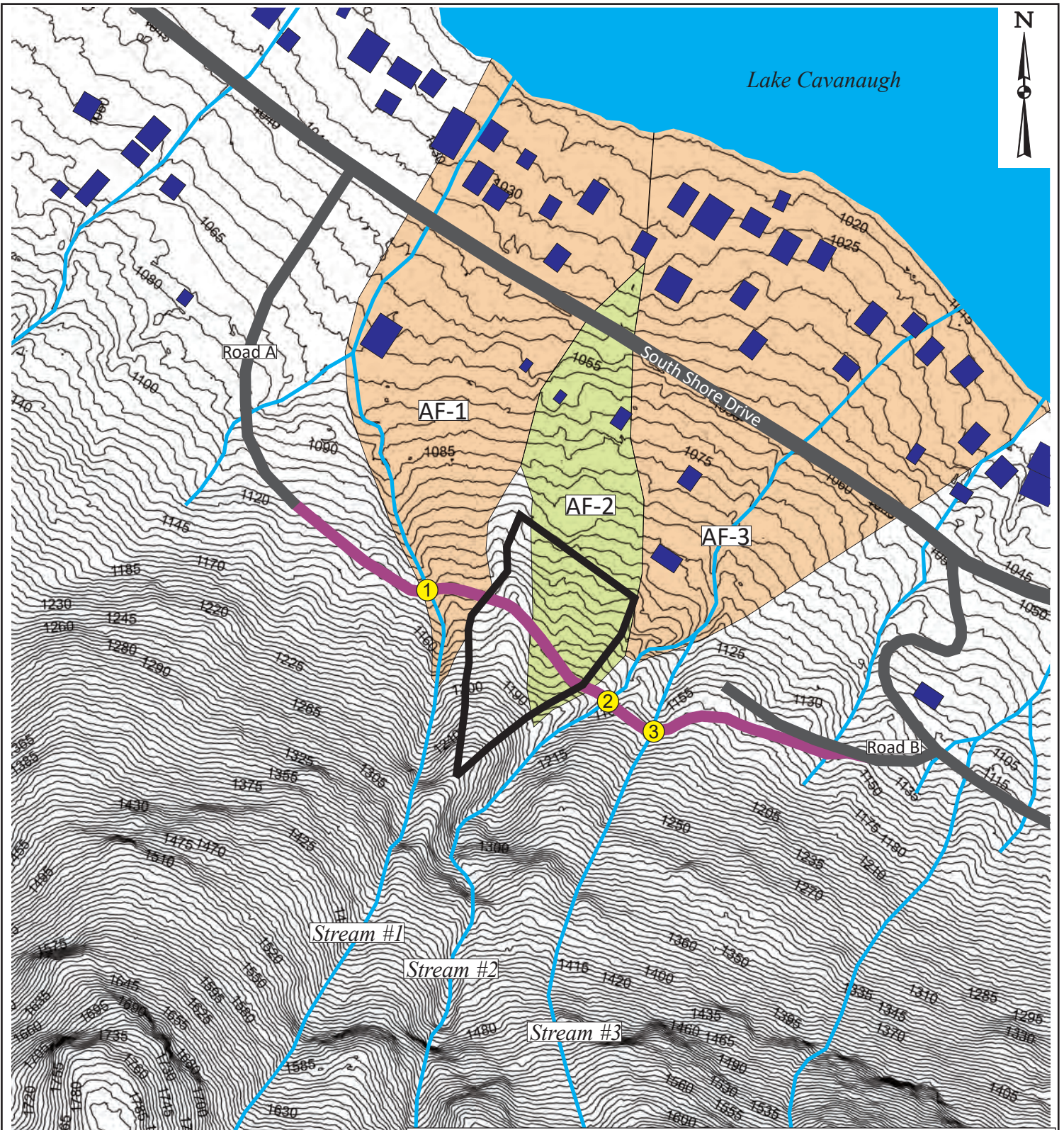
revision rcv'd 9/13/2024



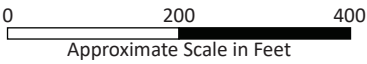


|                                               |                                                                                                                                                                |                  |              |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------|
| POTENTIALLY UNSTABLE SLOPES AND LANDFORMS MAP | <br>29335 NE 20th Street<br>Carnation, Washington 98014<br>(425) 333-0093 | SCALE: As Shown  | ICE FILE NO. |
| PROPOSED ROAD A EXTENSION AND HARVEST UNIT    |                                                                                                                                                                | DESIGNED: ---    | 1319-005     |
|                                               |                                                                                                                                                                | DRAWN: SJM/BRB   | Figure       |
|                                               |                                                                                                                                                                | CHECKED: BRB/KSK | 11           |
|                                               |                                                                                                                                                                | DATE: 09/12/24   | 2819518      |





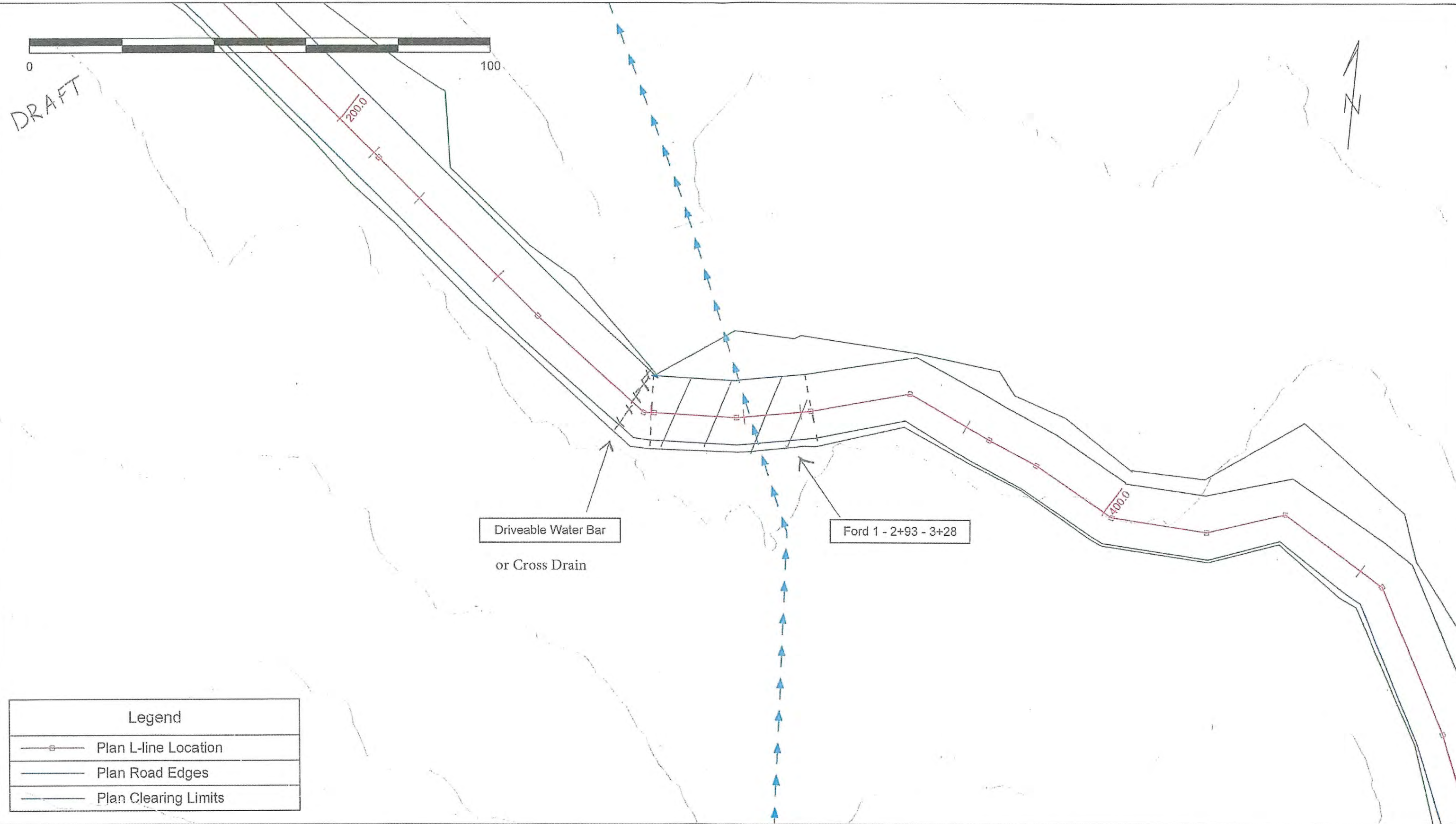
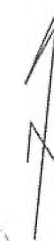
Notes: 1) Digital Terrain Model (DTM) data (North Puget 2017 acquisition) obtained from the Washington State Department of Natural Resources Washington LiDAR Portal (<http://lidarportal.dnr.wa.gov>); processed by ICE for 5-foot topographic contour intervals using Environmental Systems Research Institute (Esri) ArcGIS 10.6.  
 2) Alluvial Fan landforms only shown immediately adjacent to the proposed forest practices.  
 3) See report text for additional details.



| EXPLANATION            |                                                                                                                                                                                                                                                             |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AF-1                   | Alluvial Fan (active) - Alluvial Fan landform that may be subject to avulsion; recommend exclusion (avoidance) from the harvest area, and implementation of specific mitigation recommendations for road construction; see report text for more details.    |
| AF-2                   | Alluvial Fan (relict) - Alluvial Fan landform that was formed under climatic or geologic conditions which are not currently present or that are no longer dynamic (WAC 222-16-010 ("Sensitive Sites")(5)). OK to harvest; see report text for more details. |
| [Blue square]          | Existing Structures (approximate; from 2022 aerial photograph)                                                                                                                                                                                              |
| [Pink line]            | Proposed Road A Extension                                                                                                                                                                                                                                   |
| [Yellow circle with 1] | Proposed Stream Crossing                                                                                                                                                                                                                                    |
| [Black outline]        | Proposed Harvest Unit                                                                                                                                                                                                                                       |



DRAFT



| Legend |                      |
|--------|----------------------|
|        | Plan L-line Location |
|        | Plan Road Edges      |
|        | Plan Clearing Limits |

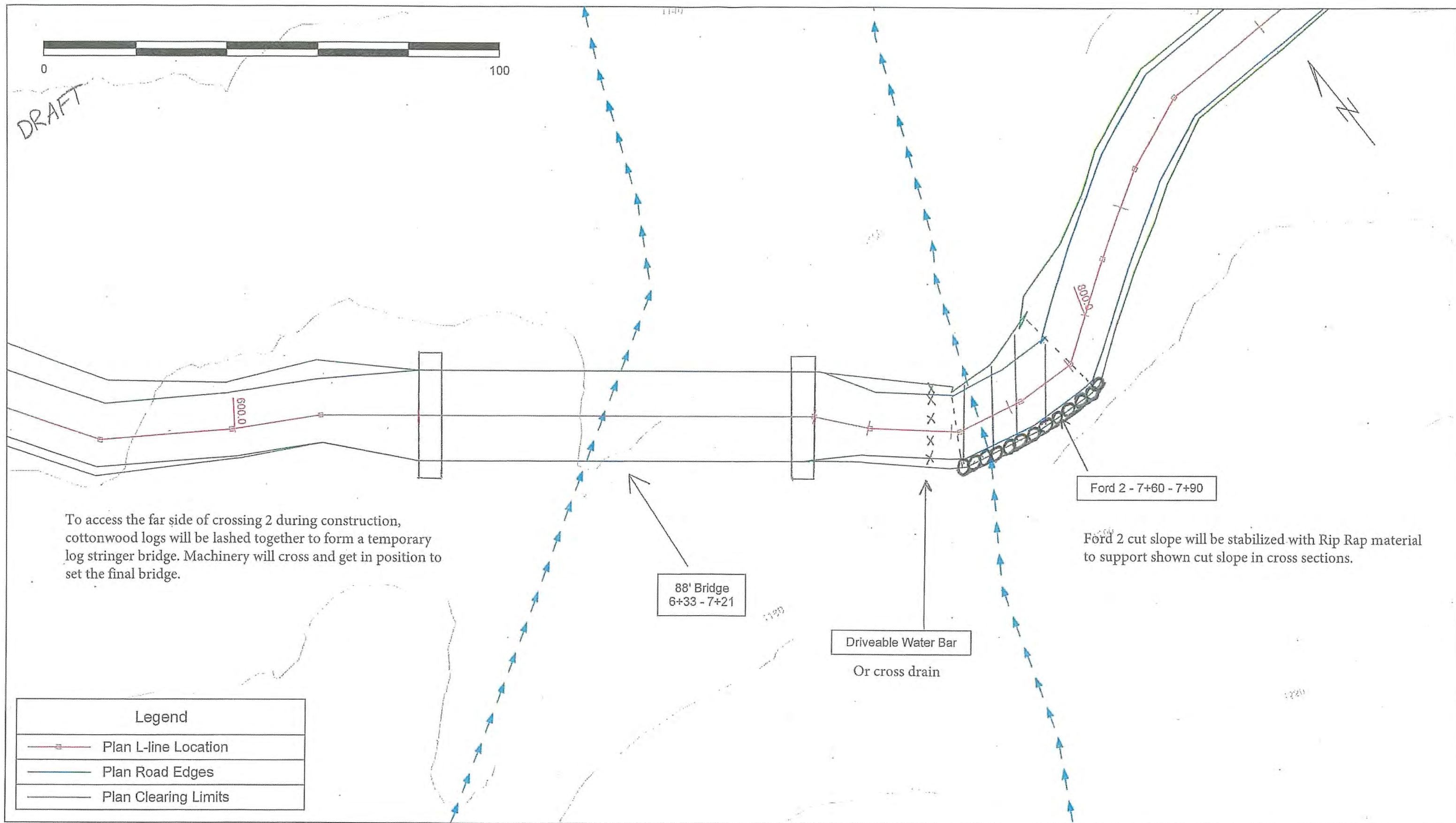
Plan View - Cavanaugh Road A Extension  
Ford 1 - 2+93 - 3+28

Drawn By: S.Petska  
Timberline Logging Inc.  
PO Box 2789  
Bellingham, WA 98227

Sheet **1/4**

9/22/23  
update 6/26/24

Plan Scale 1:240



Plan View - Cavanaugh Road A Extension  
 88' Bridge  
 Station 6+40 - 7+28  
 Ford 2  
 7+60 - 7+90

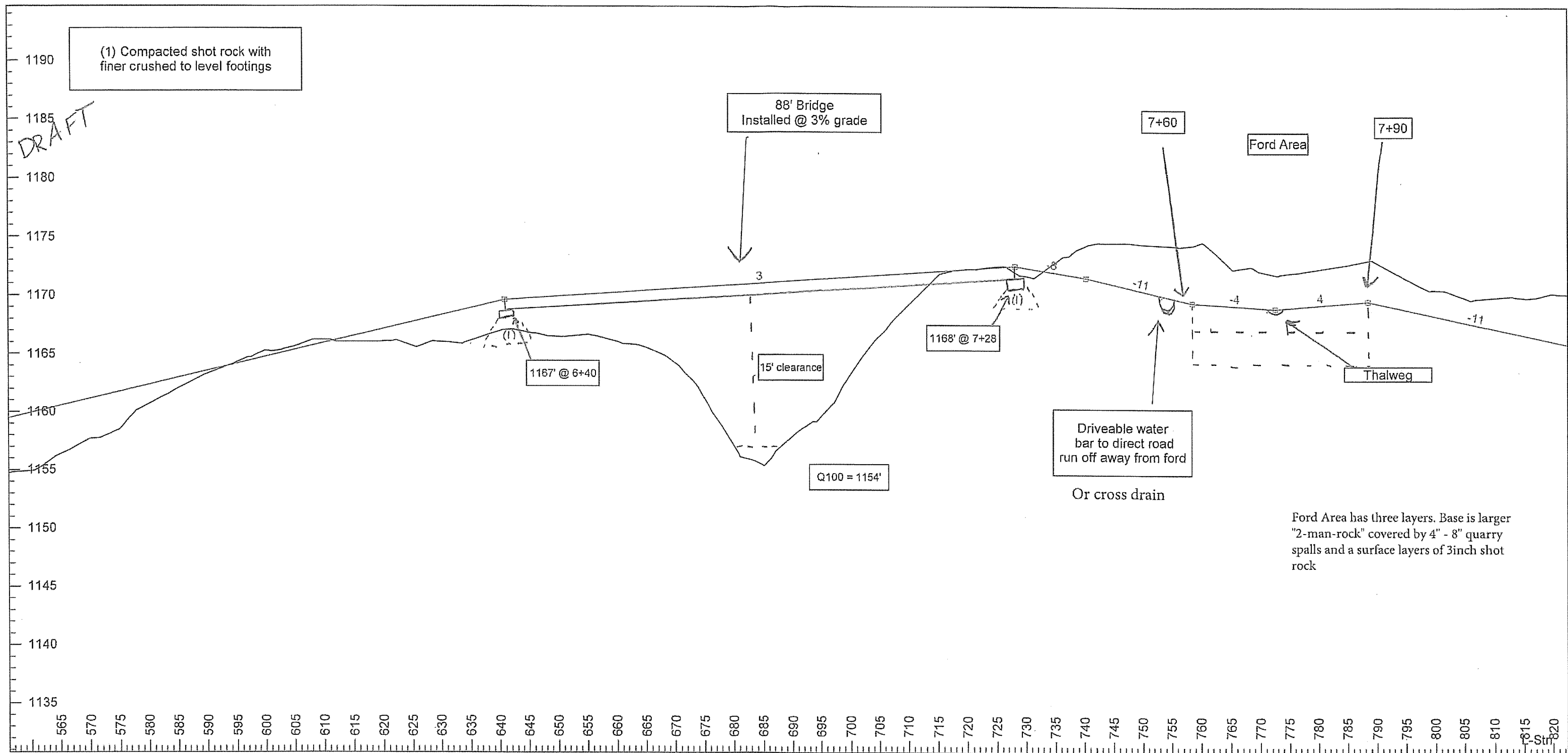
Drawn By: S.Petska  
 Timberline Logging Inc.  
 PO Box 2789  
 Bellingham, WA 98227

Sheet **2/4**

9/20/23  
 update\* 6/26/24

Plan Scale 1:240





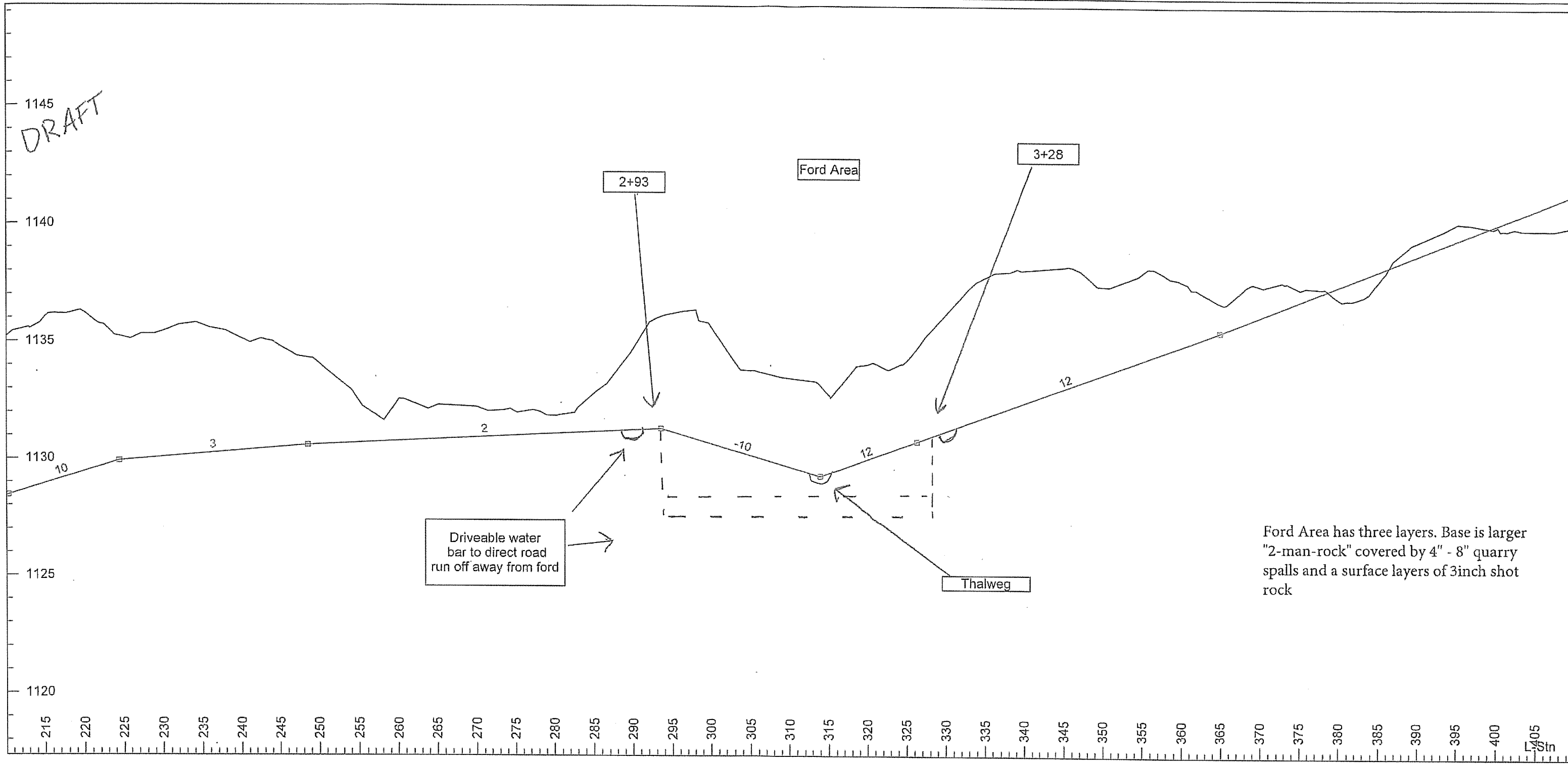
Road Profile - Cavanaugh Road A Extension  
88' Bridge - Ford 2

Drawn By: S. Petska  
Timberline Logging Inc.  
PO Box 2789  
Bellingham, WA 98227

Sheet **3/4**

9/20/23  
update 6/26/24

Profile Vert Scale 1:100  
Profile Horz Scale 1:200



| Legend |                 |
|--------|-----------------|
|        | Finished Road   |
|        | Existing Ground |

Road Profile - Cavanaugh Road A Extension  
Ford 1

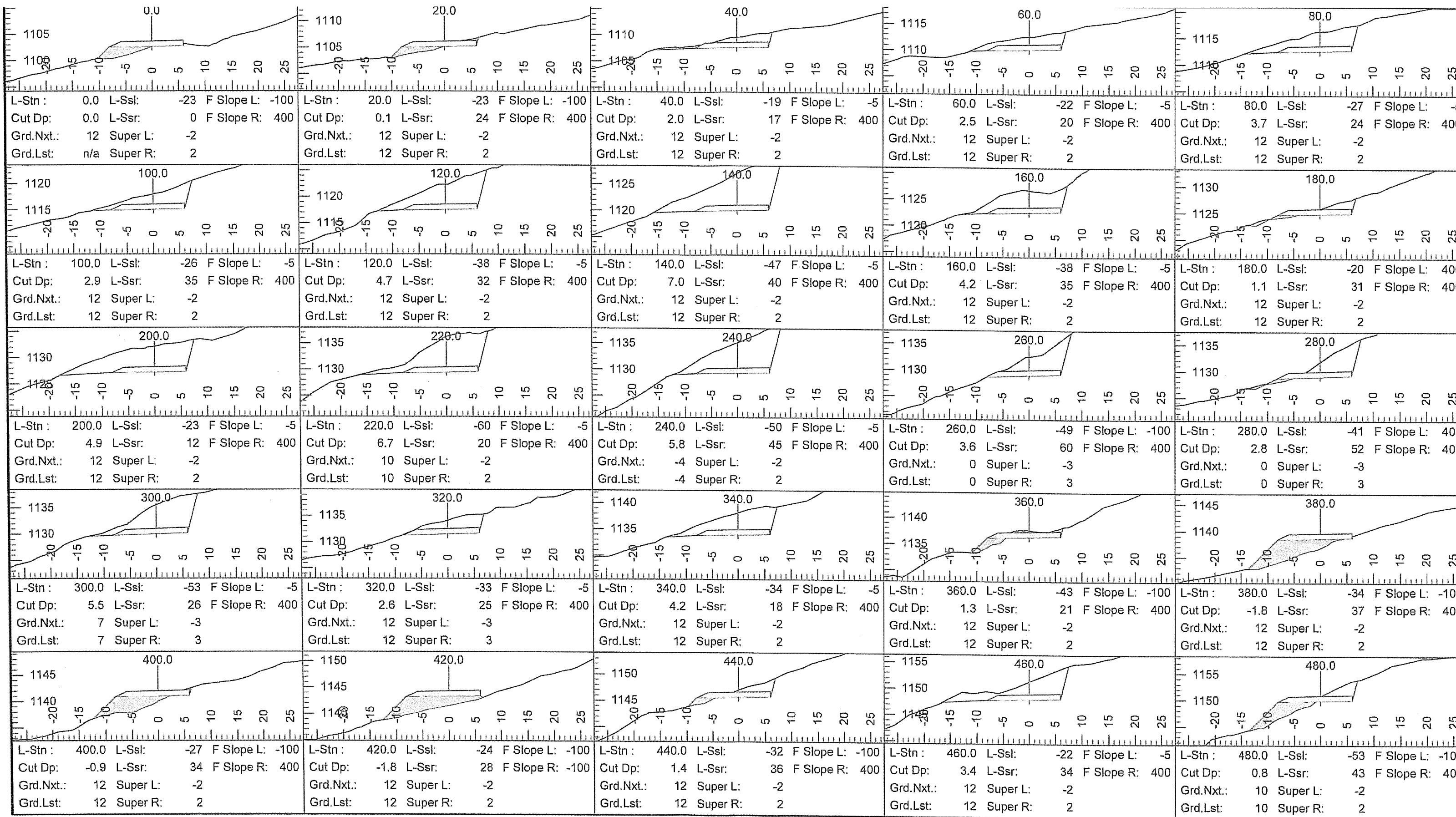
Drawn By: S. Petska  
Timberline Logging Inc.  
PO Box 2789  
Bellingham, WA 98227

Sheet *4/4*

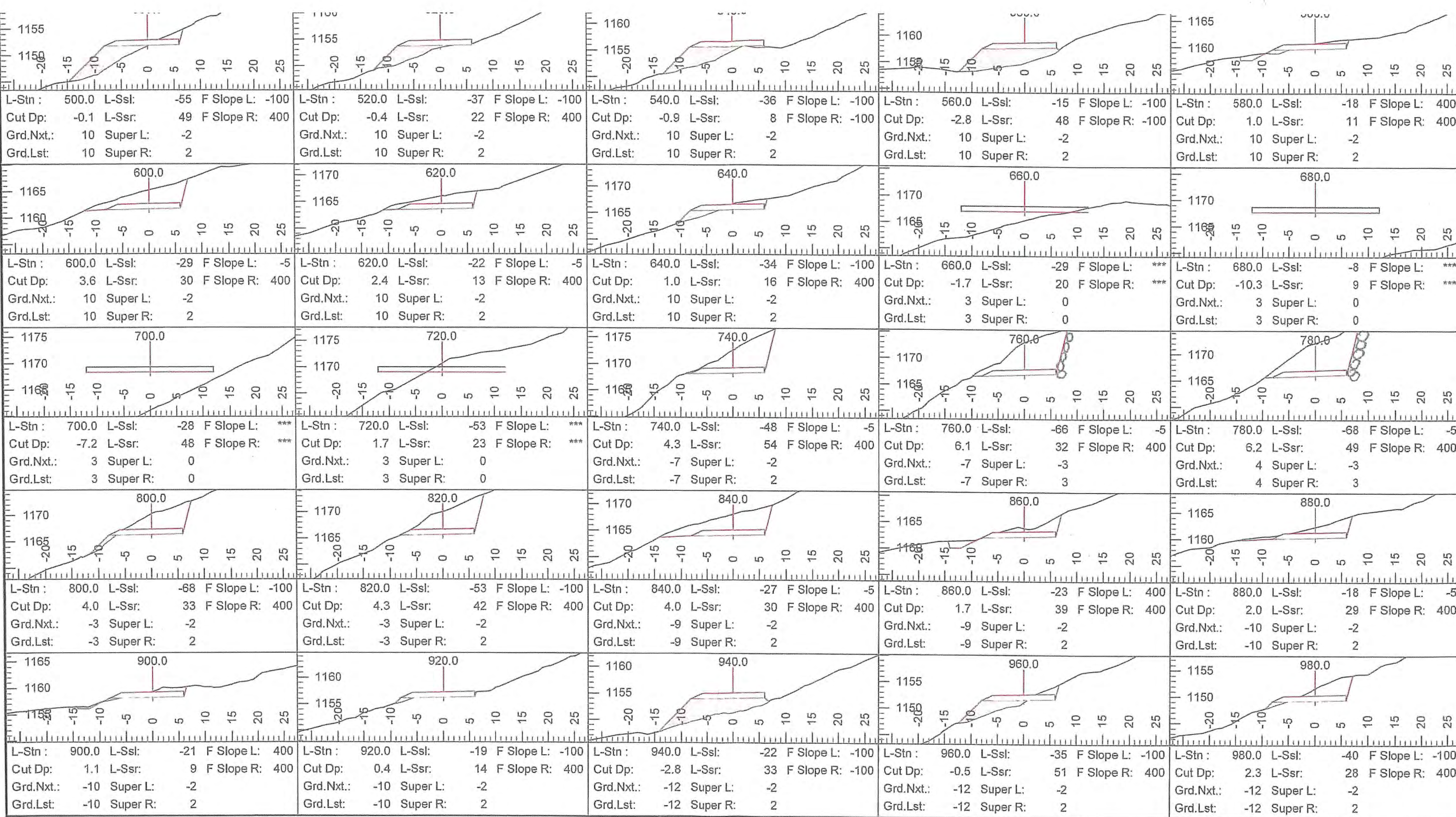
9/22/23  
update 6/26/24

Profile Vert Scale 1:50  
Profile Horz Scale 1:150

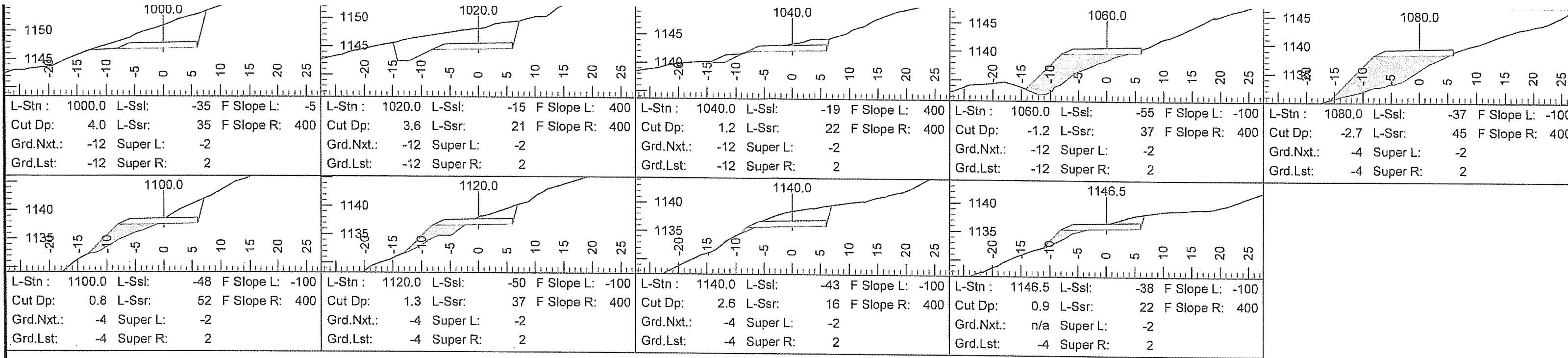








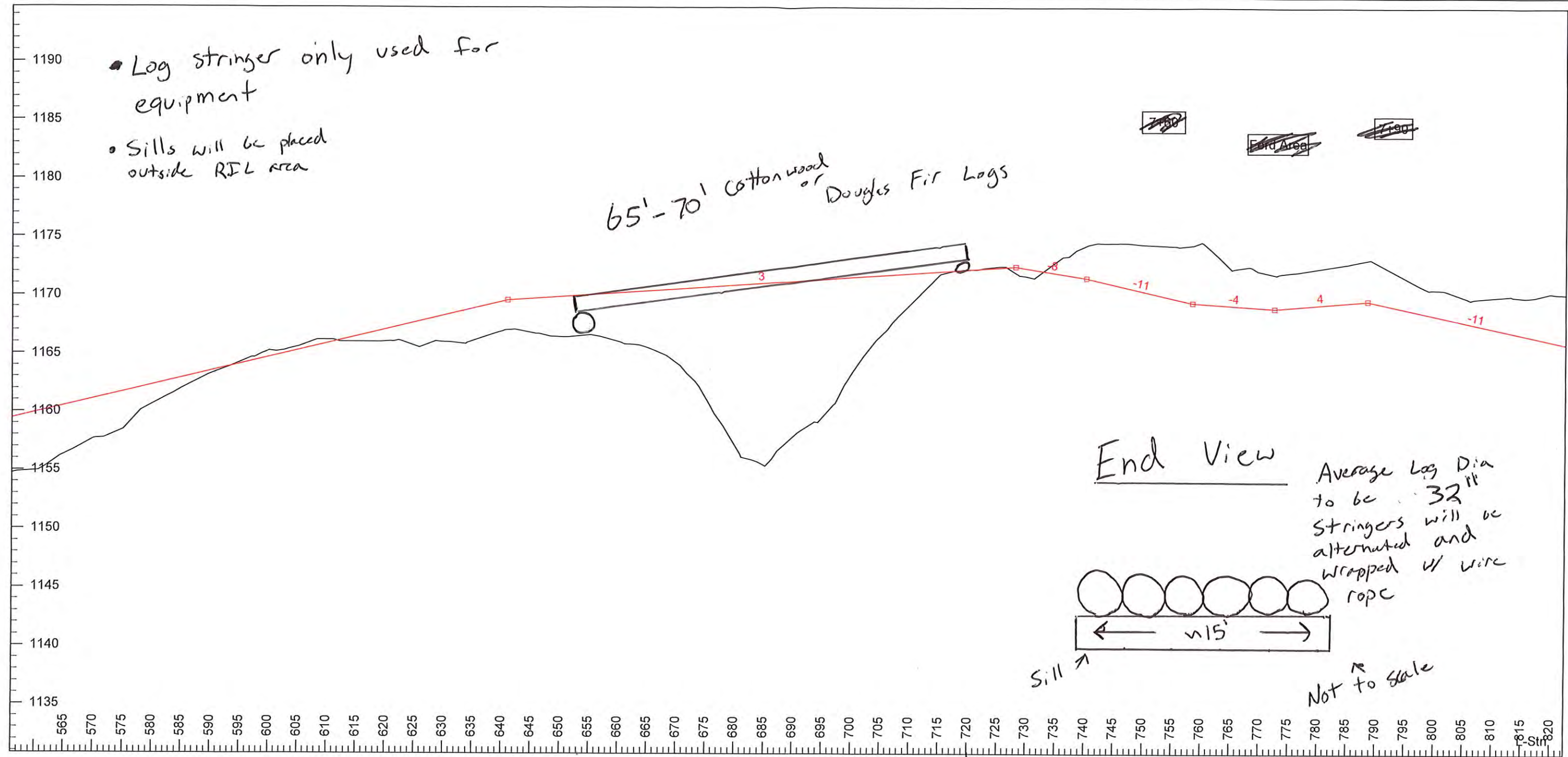




|               |        |                     |
|---------------|--------|---------------------|
| Station Range |        | Section Scale 1:200 |
| 990.0         | 1146.5 |                     |

|        |                                             |                                                 |
|--------|---------------------------------------------|-------------------------------------------------|
| Notes: | Cross Section<br>Cavanaugh Road A Extension | Company Name:<br>Timberline Logging Inc.        |
|        |                                             | Address:<br>PO Box 2789<br>Bellingham, WA 98227 |

|                        |                           |
|------------------------|---------------------------|
| Designed By: S. Petska |                           |
| Sheet 3 of 3           | update 6/26/24<br>9/20/23 |
| 2819518                |                           |



| Legend                                             |                                                       |
|----------------------------------------------------|-------------------------------------------------------|
| <span style="color: red;">—□—</span> Finished Road | <span style="color: black;">——</span> Existing Ground |

Road Profile - Cavanaugh Road A Extension  
~~See Bridge - Road 2~~  
 Temp Stringer for Equipment

Drawn By: S. Petska  
 Timberline Logging Inc.  
 PO Box 2789  
 Bellingham, WA 98227

Sheet 1 of 1

9/10/24

Profile Vert Scale 1:100  
 Profile Horz Scale 1:200



# Appendix A. Water Type Classification Worksheet

## Western Washington

|                   |                   |                   |
|-------------------|-------------------|-------------------|
| Stream/Segment ID | Stream/Segment ID | Stream/Segment ID |
| A, B, C,          | D, E, H, I        |                   |
| Date(s) Observed  | Date(s) Observed  | Date(s) Observed  |
| 9/18/23           | 9/18/23           |                   |

**1. Did you determine fish use as described in the Forest Practices Board Manual Section 13? Or, does the stream have waiver characteristics? See WAC 222-16-031(3)(b)(ii).**

|                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> No. Continue to 2.<br><input type="checkbox"/> Yes. Meets waiver criteria. Skip to 6.<br><input type="checkbox"/> Yes. Attach documentation or provide approved WTMF number:<br><div style="border: 1px solid black; height: 1.2em; margin-top: 5px;"></div> <input type="checkbox"/> Fish found. <b>Stop:</b> Type F water.<br><input type="checkbox"/> No fish. Skip to 6. | <input checked="" type="checkbox"/> No. Continue to 2.<br><input type="checkbox"/> Yes. Meets waiver criteria. Skip to 6.<br><input type="checkbox"/> Yes. Attach documentation or provide approved WTMF number:<br><div style="border: 1px solid black; height: 1.2em; margin-top: 5px;"></div> <input type="checkbox"/> Fish found. <b>Stop:</b> Type F water.<br><input type="checkbox"/> No fish. Skip to 6. | <input type="checkbox"/> No. Continue to 2.<br><input type="checkbox"/> Yes. Meets waiver criteria. Skip to 6.<br><input type="checkbox"/> Yes. Attach documentation or provide approved WTMF number:<br><div style="border: 1px solid black; height: 1.2em; margin-top: 5px;"></div> <input type="checkbox"/> Fish found. <b>Stop:</b> Type F water.<br><input type="checkbox"/> No fish. Skip to 6. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**2. Were fish observed, or are fish known to use the stream any time of the year?**

|                                                                                                                    |                                                                                                                    |                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> No. Continue to 3.<br><input type="checkbox"/> Yes. <b>Stop:</b> Type F water. | <input checked="" type="checkbox"/> No. Continue to 3.<br><input type="checkbox"/> Yes. <b>Stop:</b> Type F water. | <input type="checkbox"/> No. Continue to 3.<br><input type="checkbox"/> Yes. <b>Stop:</b> Type F water. |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|

**3. Is there an impoundment (ponded water) upstream of the assessed segment that is greater than 0.5 acres?**

|                                                                                                                    |                                                                                                                    |                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> No. Continue to 4.<br><input type="checkbox"/> Yes. <b>Stop:</b> Type F water. | <input checked="" type="checkbox"/> No. Continue to 4.<br><input type="checkbox"/> Yes. <b>Stop:</b> Type F water. | <input type="checkbox"/> No. Continue to 4.<br><input type="checkbox"/> Yes. <b>Stop:</b> Type F water. |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|

**4. Are there segments within or upstream of the assessed portion of the stream where the average bankfull width is two feet or greater? AND, is the average stream gradient less than or equal to 16%?**

|                                                                                                                    |                                                                                                                    |                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> No. Continue to 5.<br><input type="checkbox"/> Yes. <b>Stop:</b> Type F water. | <input checked="" type="checkbox"/> No. Continue to 5.<br><input type="checkbox"/> Yes. <b>Stop:</b> Type F water. | <input type="checkbox"/> No. Continue to 5.<br><input type="checkbox"/> Yes. <b>Stop:</b> Type F water. |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|

**5. Are there segments within or upstream of the assessed portion of the stream where the average bankfull width is two feet or greater? AND, is the average stream gradient between 16 and 20%? AND, is the contributing basin to the stream greater than 50 acres?**

|                                                                                                                    |                                                                                                                    |                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> No. Continue to 6.<br><input type="checkbox"/> Yes. <b>Stop:</b> Type F water. | <input checked="" type="checkbox"/> No. Continue to 6.<br><input type="checkbox"/> Yes. <b>Stop:</b> Type F water. | <input type="checkbox"/> No. Continue to 6.<br><input type="checkbox"/> Yes. <b>Stop:</b> Type F water. |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|

**6. Does the stream segment contain water at all times during a normal rainfall year?**

|                                                                                                                  |                                                                                                                  |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> No. Continue to 7.<br><input checked="" type="checkbox"/> Yes. Type Np water. Skip to 9 | <input checked="" type="checkbox"/> No. Continue to 7.<br><input type="checkbox"/> Yes. Type Np water. Skip to 9 | <input type="checkbox"/> No. Continue to 7.<br><input type="checkbox"/> Yes. Type Np water. Skip to 9 |
|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

**7. Is the stream segment downstream of a perennial source of water?**

|                                                                                                       |                                                                                                                  |                                                                                                       |
|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> No. Continue to 8.<br><input type="checkbox"/> Yes. Type Np water. Skip to 9 | <input checked="" type="checkbox"/> No. Continue to 8.<br><input type="checkbox"/> Yes. Type Np water. Skip to 9 | <input type="checkbox"/> No. Continue to 8.<br><input type="checkbox"/> Yes. Type Np water. Skip to 9 |
|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

**8. Is the stream physically connected by an above-ground channel to Type S, F or Np water?**

|                                                                                               |                                                                                                          |                                                                                               |
|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <input type="checkbox"/> No. Non-typed water.<br><input type="checkbox"/> Yes. Type Ns water. | <input type="checkbox"/> No. Non-typed water.<br><input checked="" type="checkbox"/> Yes. Type Ns water. | <input type="checkbox"/> No. Non-typed water.<br><input type="checkbox"/> Yes. Type Ns water. |
|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|

**9. Describe how you determined the uppermost point of perennial flow. Include a description of its location and show the point on a map. Use a separate piece of paper if necessary.**

|                     |  |  |
|---------------------|--|--|
| Entire stream is Np |  |  |
|---------------------|--|--|

## Small Forest Landowner Checklist Road Maintenance and Abandonment Plan

Use the following questions to determine if a SFL Checklist RMAP is required.

|                                     |                                                                                                                                                                 |                                     |                                                |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------------------|
| A)                                  | Does your FPA/N include timber harvest or salvage?                                                                                                              |                                     |                                                |
| <input checked="" type="checkbox"/> | Yes. Continue to B.                                                                                                                                             | <input type="checkbox"/>            | No. <b>Stop</b> , a checklist is not required. |
| B)                                  | Are you hauling timber on existing forest roads on your property? <i>Not including: residential driveways; skid trails; haul roads on neighboring property;</i> |                                     |                                                |
| <input checked="" type="checkbox"/> | Yes. Continue to C.                                                                                                                                             | <input type="checkbox"/>            | No. <b>Stop</b> , a checklist is not required. |
| C)                                  | Do you own <u>more</u> than 80 acres of forest land in Washington?                                                                                              |                                     |                                                |
| <input type="checkbox"/>            | Yes. A checklist is required.                                                                                                                                   | <input checked="" type="checkbox"/> | No. Continue to D.                             |
| D)                                  | Is this FPA/N on a block of forest land that contains more than 20 contiguous acres?                                                                            |                                     |                                                |
| <input checked="" type="checkbox"/> | Yes. A checklist is required                                                                                                                                    | <input type="checkbox"/>            | No. <b>Stop</b> , a checklist is not required. |

**1. This checklist applies to:** Select one.

- ☒ The existing forest roads on my forestland that I will use for this FPA/N. *(minimum required)*
- ☐ I assessed all existing forest roads on my forestland. *Assessing all your forest roads is optional. If you choose this, you will not be required to submit additional checklists with future FPA/Ns.*
- If you check this box, include a Forest Practices Activity Map that shows all your forest roads.

**2. What is the approximate total number of miles of existing forest road assessed:** .1

**3. Forest Road Assessment.** Complete this question after you have assessed your existing forest roads.

**Select all sediment and road issues that are known to be associated with your existing forest roads.**

- ☐ I would like DNR to contact me for help with this section. *(If you check this box, you may leave the rest of the boxes in this question blank. DNR will contact you.)*
- ☐ Water from the road or ditch runs directly into typed water.
- ☐ Water flows under, over, or around the culvert.
- ☐ The culvert keeps filling with dirt.
- ☐ The road has large cracks or ruts.
- ☐ The road has sinkholes. *(not a pothole, but a hole that you can't drive over)*
- ☐ Dirt from the uphill side of the road keeps falling into the ditch-line before regularly scheduled maintenance.
- ☐ Dirt from the cut-slope keeps falling downhill into or near a stream, pond, or wetland.
- ☐ There are indications of past surface erosion.
- ☐ The road crosses typed water (a culvert, bridge, or ford exist)
- ☒ I have assessed my existing forest roads and they do not have any of the above issues.



#### 4. Family Forest Fish Passage Program

The Family Forest Fish Passage Program (FFFPP) is a program to fix fish passage barriers, such as culverts. Not all culverts are fish passage barriers. For an evaluation of your potential fish passage barrier please contact DNR's Small Forest Landowners Office at 360-902-1404 or visit [www.dnr.wa.gov/fffpp](http://www.dnr.wa.gov/fffpp) for more information.

Check the box that applies:

- ☒ Not applicable.
- ☐ I choose to enroll in the FFFPP and would like to have my potential barrier evaluated for eligibility. I understand by checking this box, I may be required to provide cost-share associated with the barrier removal or replacement.
- ☐ I choose not to enroll in the FFFPP and accept responsibility for removing or repairing any artificial fish barriers on my forest roads at my own expense.
- ☐ This barrier is already enrolled in the FFFPP.

#### 5. Orphaned Roads

State law requires DNR to keep an inventory of orphaned roads that pose a risk to public safety or to the public resources. Your help with this inventory is requested.

Orphaned roads are roads on your forestland that have not been used for forest activities since 1974. Forest Practices activities include timber cutting, timber hauling, tree planting, brush control, pre-commercial thinning, timber salvage, etc.

Check the box that applies:

- ☒ I do not have orphaned roads that I think pose a risk to public resources or public safety; *e.g. houses, highways, county roads, streams, ponds, or wetlands.*
- ☐ I have orphaned roads that I think may pose a risk to public resources or public safety; *e.g. houses, highways, county roads, streams, ponds, or wetlands.* Please show locations of all orphaned roads on a separate Forest Practices Activity Map. *(This is not the same map that shows your harvest.)*
- ☐ I need help identifying orphaned roads.

#### 6. Road Maintenance Obligations

All forest landowners have a legal obligation to maintain all their forest roads on their forestland to the extent necessary to prevent damage to public resources. This includes forest roads not shown on this assessment. See [WAC 222-24-052](#). Best Management Practices (BMPs) for road maintenance are located in [Section 3](#) of the Forest Practices Board Manual. Both are available on the DNR website at: [www.dnr.wa.gov](http://www.dnr.wa.gov).

Road maintenance includes:

- Inspecting forest roads and fixing damage before, during and after hauling timber and/or rock.
  - Keeping drainage structures (*relief culverts, ditches, water bars, dips, etc.*) and water crossings functional.
  - Making sure water from roads and ditches do not flow directly into streams, ponds, or wetlands.
- ☒ My existing roads are maintained to Forest Practices standards.

5/29/24

#### Road B Abandonment Plan

- Road B is planned to be abandoned on date shown in FPA Q16
- Road will be abandoned in accordance with FP Board Manual Section 3 and follow all rules in WAC 222-24-052(3)
- Rock surfacing will be removed, road area will be scarified and straw and grass seed will be used to re-vegetate the ground and control erosion.
- Water bars will be used if necessary to divert any potential storm water to the forest floor.
- Natural Drainage will be re-established as best as possible.
- Conifer seedlings will be planted
- Logs and stumps will be used to block the road to prevent 4wheeled highway and off highway vehicles.





## Forest Practices Application/Notification (FPA/N) Revision

**Date:** 9/13/2024

**FPA/N:** 2819518

### Application Revisions

### Description

☐ FPA Page 1

☐ FPA Page 2

☐ FPA Page 3

☐ FPA Page 4

☒ FPA Page 5

☐ FPA Page 6

☐ FPA Page 7

☒ FPA Page 8

Question 17: added waste area ("W1").

Added info. for temporary equipment crossing associated with crossing #2.

### Associated Documents

### Description

☒ Activity Map

☐ Appendix A

☐ Appendix D

☐ Slope Stability Map

☒ FPHP Plans/Specifications

☒ Other

Added waste area ("W1").

Added plans for temporary equipment crossing associated with crossing #2.

Updated Geotech report to include additional info. re: crossing #3 (pgs 3 & 12)

**Additional Information/Comments:**

Processed By: TG



## Forest Practices Application/Notification Notice of Decision

FPA/N No: 2819518

Effective Date: 9/18/2024

Expiration Date: 9/18/2027

Shut Down Zone: 658

EARR Tax Credit: ☒ Eligible ☐ Non-eligible  
Cavanaugh Road A

Reference: Extension

### Decision

- ☐ **Notification Accepted** Operations shall not begin before the effective date.
- ☒ **Approved** This Forest Practices Application is subject to the conditions listed below.
- ☐ **Disapproved** This Forest Practices Application is disapproved for the reasons listed below.
- ☐ **Withdrawn** Applicant has withdrawn the Forest Practices Application/Notification (FPA/N).
- ☐ **Closed** All forest practices obligations are met.

### FPA/N Classification

☐ Class II ☐ Class III ☐ Class IVG ☒ Class IVS

### Number of Years Granted on Multi-Year Request

☐ 4 years ☐ 5 years

### Conditions on Approval/Reasons for Disapproval

#### **Condition(s) required for approval/disapproval:**

Notify the Department of Natural Resources Forest Practices Forester at least 2 business days before beginning work. Provide the application number and legal description for your activity.

#### **Notes:**

- Forest practice activities located within 0.25 miles of an occupied marbled murrelet site are subject to disturbance avoidance timing restrictions per WACs 222-24-030, 222-30-050, 222-30-060, 222-30-065, 222-30-070, and 222-30-100.
- Apply grass seed and mulch to exposed soils adjacent to stream crossings immediately after construction. See WAC 222-24-030 (4).

Issued By: Jared Coleman

Region: Northwest Region

Title: Resource Protection Forester

Date: 9/18/2024

Copies to: ☒ Landowner, Timber Owner, and Operator

Issued in person: ☐ LO ☐ TO ☐ OP By: \_\_\_\_\_ Date: \_\_\_\_\_



### **Appeal Information**

You have thirty (30) days to **file** (i.e., **actually deliver**) an appeal in writing of this Decision and any related State Environmental Policy Act (SEPA) determinations to the Pollution Control Hearings Board, the Attorney General's Office, and the Department of Natural Resources' region office. See [RCW 76.09.205](#). The appeal period starts when the applicant receives this decision, which usually happens electronically on the date indicated below.

**You must file your appeal at all three addresses below:**

| <b>Pollution Control Hearings Board</b>                                                                                                                         | <b>Office of the Attorney General<br/>Natural Resources Division</b>                                                                                        | <b>Department Of Natural Resources<br/>Northwest Region</b>                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>Physical Address</u><br>1111 Israel Road SW Suite 301<br>Tumwater, WA 98501<br><br><u>Mailing address</u><br>Post Office Box 40903<br>Olympia, WA 98504-0903 | <u>Physical Address</u><br>1125 Washington Street, SE<br>Olympia, WA 98504<br><br><u>Mailing Address</u><br>Post Office Box 40100<br>Olympia, WA 98504-0100 | <u>Physical Address</u><br>919 North Township Street<br>Sedro-Woolley, WA 98284<br><br><u>Mailing Address</u><br>919 North Township Street<br>Sedro-Woolley, WA 98284 |

Information regarding the Pollution Control Hearings Board can be found at: <https://eluh0.wa.gov/>

### **Other Applicable Laws**

Operating as described in this application/notification does not ensure compliance with the Endangered Species Act, or other federal, state, or local laws.

### **Transfer of Forest Practices Application/Notification (WAC 222-20-010)**

Use the "Notice of Transfer of Approved Forest Practices Application/Notification" form. This form is available at region offices and on the Forest Practices website <https://www.dnr.wa.gov/programs-and-services/forest-practices/review-applications-fpars/forest-practices-forms-and>. Notify DNR of new Operators within 48 hours.

### **Continuing Forestland Obligations (RCW 76.09.060, RCW 76.09.070, RCW 76.09.390, and WAC 222-20-055)**

Obligations include reforestation, road maintenance and abandonment plans, conversions of forestland to non- forestry use and/or harvest strategies on perennial non-fish habitat (Type Np) waters in Eastern Washington.

Before the sale or transfer of land or perpetual timber rights subject to continuing forest and obligations, the seller must notify the buyer of such an obligation on a form titled "Notice of Continuing Forest Land Obligation". The seller and buyer must both sign the "Notice of Continuing Forest Land Obligation" form and send it to the DNR Region Office for retention. This form is available at DNR region offices.

If the seller fails to notify the buyer about the continuing forestland obligation, the seller must pay the buyer's costs related to continuing forestland obligations, including all legal costs and reasonable attorneys' fees incurred by the buyer in enforcing the continuing forestland obligation against the seller.

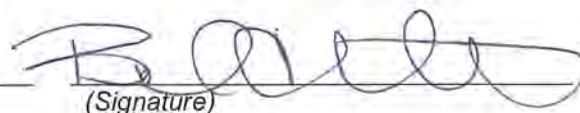
Failure by the seller to send the required notice to DNR at the time of sale will be prima facie evidence in an action by the buyer against the seller for costs related to the continuing forestland obligation prior to sale.

### **DNR Declaration of Mailing**

I **Braelyn Hamilton**, caused the Notice of Decision for FPA/N No. 2819518 to be placed in the United States mail at **Sedro-Woolley, WA**; postage paid. I declare under penalty of perjury of the laws of the State of Washington, that the foregoing is true and correct.

9/19/2024  
(Date)

Sedro-Woolley, WA  
(City & State where signed)

  
(Signature)

**Wyatt Golding Declaration**  
**EXHIBIT B**





**DEPARTMENT OF  
NATURAL RESOURCES**

**NORTHWEST REGION**

919 NORTH TOWNSHIP STREET  
SEDRO-WOOLLEY, WA 98284-9384

**360-856-3500**

northwest.region@DNR.WA.GOV  
WWW.DNR.WA.GOV

September 18, 2024

**Notice of Final Determination SEPA**

**File No. 24-053001**

**FPA No. 2819518**

**Landowner: Timberline Logging Inc.**

The Department of Natural Resources issued a ☒ Determination of Non-significance (DNS), ☐ Mitigated Determination of Non-significance (MDNS), ☐ Modified DNS/MDNS on **May 30, 2024** for this proposal under the State Environmental Policy Act (SEPA) and WAC 197-11-340(2).

This threshold determination is hereby:

☐ Retained.

☒ Modified. Modifications to this threshold determination include the following:

- FPA number changed from 2819391 to 2819518.
- Revised Question A.7 of the SEPA to add that the planned road will be used for future forestry/logging uses. Including but not limited to, equipment hauling, rock hauling, timber hauling, road maintenance, timber harvest, and silviculture activities.
- Revised Question A.8 of the SEPA to update the Geotechnical Report date to September 12th, 2024.
- Revised Question B.1.b of the SEPA- the steepest slope in the proposal area has been updated to 70 percent. Slopes greater than 70 percent have been bound out of the proposal.
- Revised the margin note for SEPA Question B.4.b to fix error in the harvest volume (mbf) to match the volume listed on the DNS. Updated volume to 45mbf.
- Added additional info to the margin note for SEPA Question B.5.b. Information supplied by the proponent indicates that the proposal is within 0.25mi of Marbled Murrelet Occupied Site; this has been verified by the Department.
- Revised Question B.7.b.2 of the SEPA to add that most noise would occur between 5am and 4pm at the site. This info is also listed in B.14.e of the SEPA Checklist.

☐ Withdrawn. This threshold determination has been withdrawn due to the following:

☐ Delayed. A final threshold determination has been delayed due to the following:

Summary of Comments and Responses (if applicable):

One comment letter from Zachary Griefen, Bricklin & Newman LLP, on behalf of the Lake Cavanaugh Trust, dated June 13, 2024. Concerns about the proposal include but are not limited to the forestland ownership status of the proponent, project revisions, impacts to fish/wildlife, cumulative impacts of future activity, water quality, slope stability in regards to alluvial fans, and impacts to nearby residents such as noise, aesthetics, transportation, and public safety. The Department is preparing a response to this comment.



**DEPARTMENT OF  
NATURAL RESOURCES**

**NORTHWEST REGION**

919 NORTH TOWNSHIP STREET  
SEDRO-WOOLLEY, WA 98284-9384

**360-856-3500**

northwest.region@DNR.WA.GOV  
WWW.DNR.WA.GOV

After reviewing the comment received, no new probable significant environmental risks were identified and the original determination of non-significance is retained.

Responsible Official: Kevin Killian

Position/title: Assistant Region Manager, Forest Practices Phone: 360-856-3500

Address: 919 N Township St, Sedro-Woolley, WA 98284

Date: 9/18/2024

Signature: \_\_\_\_\_

A handwritten signature in blue ink, appearing to read "Kevin Killian", is written over a horizontal line.

There is no agency SEPA appeal.





**DEPARTMENT OF  
NATURAL RESOURCES**

**ENVIRONMENTAL & LEGAL AFFAIRS –  
SEPA CENTER**  
PO BOX 47015  
OLYMPIA, WA 98504-7015

**360-902-1750**  
SEPACENTER@DNR.WA.GOV  
WWW.DNR.WA.GOV

**MEMORANDUM**

May 30, 2024

File No. 24-053001

TO: Skagit County Planning Director  
D. Lowery, DFW  
B. Brokes/M. Kuttel, DFW  
K. Weilert/J. Ingram, DFW  
DFW Region 4  
Dept. of Labor & Industries  
Natural Heritage Section  
M. Comisky, AMRC  
E. Uloth, USDA  
Lummi Fisheries Tribe  
Samish Indian Tribe  
Sauk Suiattle Tribe  
Stillaguamish Indian Tribe  
Tulalip Indian Fisheries  
N. Dudley/A. Schmidt, DNR  
Timber Logging, Inc., Proponent

SEPA Register, ECY  
S. Reinbold, DFW  
DAHP SEPA Desk  
Kara Briggs  
Forest Tax Division, DOR  
Parks & Recreation  
Skagit River Systems Cooperative  
Andy Ingram  
Skagit Audubon Society  
Snoqualmie Indian Tribe  
Upper Skagit Tribe  
Swinomish Indian Tribe  
Nooksack Indian Tribe  
Other Interested Parties  
NW Forest Practices  
J. Coleman/B. Hamilton, DNR

FROM: Tracy Cooper, SEPA Center

SUBJECT: **SEPA LEAD AGENCY & DETERMINATION OF NONSIGNIFICANCE**

This is to advise you that pursuant to WAC 197-11-900 (922 through 948), the Department of Natural Resources has determined that it is Lead Agency for the following:

**Forest Practice Application #2819391 proposal is for an even-aged and right of way timber harvest of approximately 45 MBF on approximately 2 acres. The proposal includes approximately 1,325 feet of road construction and 380 feet of road abandonment, including portions of road construction across inner gorge and bedrock hollow rule-identified landforms. Located in Section 27, Township 33 North, Range 06 East, W.M., Skagit County.**

Information about this proposal including the Threshold Determination, SEPA Checklist and Forest Practice Application can be accessed through DNR's website at:

<http://www.dnr.wa.gov/state-environmental-policy-act-sepa>

Pursuant to WAC 332-41-504, this proposal was filed in the department's SEPA Center at the Natural Resources Building, 1111 Washington Street SE, P.O. Box 47015, Olympia, Washington, on **May 30, 2024**. We will consider comments on this proposed DNS received by 4:30 p.m. on **June 13, 2024**. Comments should be submitted to the SEPA Center at, [sepacenter@dnr.wa.gov](mailto:sepacenter@dnr.wa.gov) or P.O. Box 47015, Olympia, Washington 98504-7015 for distribution to the responsible official. Please include the file number listed above on all comments.



**DEPARTMENT OF  
NATURAL RESOURCES**

**NORTHWEST REGION**  
919 N TOWNSHIP ST  
SEDRO-WOOLLEY WA 98284

**360-856-3500**  
NORTHWEST.REGION@DNR.WA.  
GOV  
WWW.DNR.WA.GOV

## **DETERMINATION OF NONSIGNIFICANCE**

**Forest Practice Application Number: 2819391**

**Description of proposal:** Even-aged and right of way timber harvest of 45 MBF on approx. 2 acres, approx. 1,325 feet of road construction and 380 feet of road abandonment, including portions of road construction across inner gorge and bedrock hollow rule-identified landforms.

**Proponent: Timberline Logging Inc.**

**Location of proposal, including street address, if any:** Portions of Section 27, Township 33 North, Range 06 East, all in Skagit County, WA.

**Lead agency: Washington State Department of Natural Resources**

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21c.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

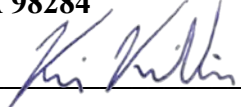
☐ **There is no comment period for this DNS**

☒ **This DNS is issued under 197-11-340(2); the lead agency will not act on this proposal for 14 days from May 30, 2024 . Comments must be submitted by June 13, 2024.**

**Responsible official: Kevin Killian**

**Position/Title: Assistant Region Manager, Forest Practices      Phone: 360-856-3500**

**Address: 919 N Township St, Sedro-Woolley WA 98284**

**Date:** May 29, 2024      **Signature:** 

There is no DNR administrative SEPA appeal.



# SEPA<sup>1</sup> Environmental Checklist

## Purpose of checklist

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization, or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

## Instructions for applicants

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. **You may use “not applicable” or “does not apply” only when you can explain why it does not apply and not when the answer is unknown.** You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to **all parts of your proposal**, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

## Instructions for lead agencies

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

## Use of checklist for nonproject proposals

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B, plus the Supplemental Sheet for Nonproject Actions (Part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in "Part B: Environmental Elements" that do not contribute meaningfully to the analysis of the proposal.

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<sup>1</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/Checklist-guidance>

## A. Background

[Find help answering background questions<sup>2</sup>](https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-A-Background)

**1. Name of proposed project, if applicable:**

Cavanaugh Road A Extension

**2. Name of applicant:**

Timberline Logging Inc.

**3. Address and phone number of applicant and contact person:**

PO Box 2789, Bellingham, WA 98227 – Sam Petska – (360)630-0725

**4. Date checklist prepared:**

May 14, 2024

**5. Agency requesting checklist:**

WA State DNR Forest Practices

**6. Proposed timing of schedule (including phasing, if applicable):**

Road Construction/Timber harvest 2024/2025 -

**7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.**

No.

**8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.**

Icicle Creek Engineers Geotechnical Report No.1319-005 - Dated Nov 1<sup>st</sup>. 2023.

[Geotech Report is available w/FPA 2819391 on FPARS 5/22/2024 BH](#)

**9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.**

No.

**10. List any government approvals or permits that will be needed for your proposal, if known.**

WA DNR Forest Practices Application

[FPA 2819391 is available on FPARS 5/22/2024 BH](#)

**11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)**

- Approximately 1,325 feet of forest road construction
- Installation of 7 typed water crossings.

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<sup>2</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-A-Background>



- Timber harvest of approximately 30 mbf across approximately 1.4 acres.
- Activity is on private property in Skagit County on land that is zoned as Rural Reserve. **FPA 2819391 includes right of way harvest of 15mbf on 0.6 acres and 380 feet of road abandonment 5/22/2024 BH**

**12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.**

Proposal is located on parcel #P67021 in Skagit County. This parcel is in Township 33 North Range 06 East Section 27. The Legal description of the property is Lot A, Lake Cavanaugh Subdivision, Division No. 3 as Per Plat Recorded in Volume 6 of Plats, Pages 25 through 31, inclusive, records of Skagit County, Washington.

## B.Environmental Elements

### 1. Earth

[Find help answering earth questions<sup>3</sup>](#)

#### a. General description of the site:

Circle or highlight one: Flat, rolling, **hilly**, **steep slopes**, **mountainous**, other:

#### b. What is the steepest slope on the site (approximate percent slope)?

80% **FPA 2819391 indicates that the steepest slope in the harvest unit is 60% 5/22/2024 BH**

#### c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them, and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

The site has two soil types shown:

1. Sorenson Very Gravelly Silt Loam
2. Andic Xerochrepts Rock Outcrop Complex.

These soils are **not** agricultural soils of long-term commercial significance. And the proposal will not remove any soils.

<sup>3</sup> <https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-earth>



- d. **Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.**

Yes, the site has potentially unstable landforms. See attached Geotechnical report for more details related to unstable soils.

- e. **Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.**

Approximately 1,325 feet of new road construction will be installed. This will cover approximately 1.8 acres. The fill source will be hard rock from existing forestry rock pits.

- f. **Could erosion occur because of clearing, construction, or use? If so, generally describe.**

Yes, erosion could occur during road construction related to culverts and during timber harvest and timber haul.

- g. **About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?**

Less than 1% of the site will be covered with impervious surfaces after project completion.

- h. **Proposed measures to reduce or control erosion, or other impacts to the earth, if any.**

Rule Identified features have been removed from the harvest area. Road construction will meet forest practices standards and exposed soils will be vegetated using straw and grass seed. Drainage control will be used to reduce surface erosion where necessary.

## 2. Air

Find help answering air questions<sup>4</sup>

- a. **What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.**

Timber harvest and road building activities will release a small amount of engine exhaust from heavy equipment including but not limited to, road building equipment, logging equipment, off/on highway dump trucks, pickup trucks and chainsaws.

- b. **Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.**

Slash materials may be burned as part of hazard reduction activities.

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<sup>4</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-Air>

c. **Proposed measures to reduce or control emissions or other impacts to air, if any:**

If slash materials are burned, a burn permit will be obtained through WA DNR and all rules and regulations regarding hazard fuels reductions burnings will be followed.

### 3. **Water**

[Find help answering water questions<sup>5</sup>](#)

a. **Surface:**

[Find help answering surface water questions<sup>6</sup>](#)

1. **Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.**

There are multiple streams in the project area. See FPA for details and locations of waters.

| Stream ID | Type                     |
|-----------|--------------------------|
| A         | Np (non-fish, perennial) |
| B         | Np                       |
| C         | Np                       |
| D         | Ns (non-fish, seasonal)  |
| E         | Ns                       |
| H         | Ns                       |
| I         | Ns                       |

All streams flow generally north east and eventually end up in Lake Cavanaugh. Before reaching Lake Cavanaugh, some streams are potentially F(fish) waters based on physicals. (This has not been verified. These areas are 200ft away from proposed activity.)

2. **Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**

Yes the project will require 7 typed water crossings. See attached FPA map for more details about water crossings and locations.

Available with FPA #2819391 on FPARS SEPA Center TC 5/30/24

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<sup>5</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water>

<sup>6</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water/Environmental-elements-Surface-water>



3. Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None.

4. Will the proposal require surface water withdrawals or diversions? Give a general description, purpose, and approximate quantities if known.

Yes, if necessary, stream flows will be temporarily diverted around stream crossing area to facilitate culvert installation. Once crossings are installed stream flows will be restored to natural drainage patterns.

5. Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No.

6. Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No, no discharges of waste materials are planned for any surface waters. However minor amounts of fuel, oils or other heavy machinery waste materials may inadvertently reach surface waters because of heavy equipment use or failures.

**b. Ground:**

[Find help answering ground water questions<sup>7</sup>](https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water/Environmental-elements-Groundwater)

1. Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give a general description, purpose, and approximate quantities if known.

No water will be withdrawn or discharged.

2. Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Small amounts of heavy equipment waste material may be discharged to the ground as result of heavy equipment use. No materials will be disposed of on site. All spills will be contained and reported if necessary. These discharges should not have negative effects to ground water.

**c. Water Runoff (including stormwater):**

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<sup>7</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water/Environmental-elements-Groundwater>

1. Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Water runoff will be directed to suitable road drainage systems and then dispersed to the forest floor. Drainage systems will be designed to not flow into other waters.

2. Could waste materials enter ground or surface waters? If so, generally describe.

Slash or sediment from road building and logging could enter surface waters.

3. Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No, drainage systems for planned roads will not alter patterns in the vicinity.

- d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

No water is planned to be drained into surface waters. All added stormwater is planned to be dispersed to the forest floor. All DNR Forest Practice rules will be followed during operations. See DNR FPA road construction rules for more information.

#### 4. Plants

[Find help answering plants questions](#)

- a. Check the types of vegetation found on the site:

- ☒ deciduous tree: alder, maple, aspen, other
- ☒ evergreen tree: fir, cedar, pine, other
- ☒ shrubs
- ☒ grass
- ☐ pasture
- ☐ crop or grain
- ☐ orchards, vineyards, or other permanent crops.
- ☐ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- ☐ water plants: water lily, eelgrass, milfoil, other
- ☐ other types of vegetation

- b. What kind and amount of vegetation will be removed or altered?

In the harvest unit, mature timber will be removed and re forested with suitable western Washington conifer. Understory vegetation will be left but may be disturbed by logging activities. In the new planned road location, all vegetation will be removed in the construction of the road.

FPA 2819391 indicates removal of 30 mbf of timber 5/22/2024 BH

- c. List threatened and endangered species known to be on or near the site.

None known. None found per FPRAM 5/22/2024 BH



- d. **Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any.**

Conifer will be replanted after timber harvest. Disturbed soils will be re vegetated with straw and grass seed if necessary. No harvest buffers will be left around Np streams and in areas that are considered alluvial fans. These will help to preserve the vegetation on site.

- e. **List all noxious weeds and invasive species known to be on or near the site.**

None known. Project is located near highly trafficked county roads and home sites which may contain noxious weeds and invasive species.

## 5. Animals

[Find help answering animal questions<sup>8</sup>](#)

- a. **List any birds and other animals that have been observed on or near the site or are known to be on or near the site.**

Examples include:

- Birds: hawk, heron, eagle, songbirds, other:
- Mammals: deer, bear, elk, beaver, other:
- Fish: bass, salmon, trout, herring, shellfish, other:

Fish a known in Lake Cavanaugh.

- b. **List any threatened and endangered species known to be on or near the site.**

There is a marbled murrelet occupied site located in Township 33N Range 6E Section 27 & 28. This proposal is affected by marbled murrelet timing restrictions.

Marbled Murrelet Detection Area  
and within 1.5 mile buffer of a  
Marbled Murrelet Occupied Site  
per FPRAM 5/22/2024 BH

- c. **Is the site part of a migration route? If so, explain.**

All of Washington state is part of the pacific flyway, no impacts are anticipated due to this project.

- d. **Proposed measures to preserve or enhance wildlife, if any.**

All DNR Forest practice rules will be followed regarding buffers, leave areas and timing restrictions. See more details in forest practice rules.

- e. **List any invasive animal species known to be on or near the site.**

None known.

<sup>8</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-5-Animals>

## 6. Energy and natural resources

[Find help answering energy and natural resource questions<sup>9</sup>](#)

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Fuel will be used in trucks, and heavy equipment during timber harvest and road building operations. No energy will be needed following project completion.

- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.

None.

## 7. Environmental health

[Health Find help with answering environmental health questions<sup>10</sup>](#)

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur because of this proposal? If so, describe.

None known.

1. Describe any known or possible contamination at the site from present or past uses.

None known.

2. Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

None known.

3. Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Fuels and heavy equipment service materials may be used and stored for short time periods on site, but will not be left or stored long term. No chemicals will be produced.

4. Describe special emergency services that might be required.

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<sup>9</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-6-Energy-natural-resou>

<sup>10</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-7-Environmental-health>



In the event of a fire, DNR and local fire protection services may be required.

In the event of a medical emergency related to timber harvest or road building, emergency medical services may be required.

In the event of hazardous materials spills, county or state ecology services may be required.

**5. Proposed measures to reduce or control environmental health hazards, if any.**

No heavy equipment fuel or waste materials will be disposed of on site. If spills occur materials will be controlled and cleaned. Spill kits will be on site during operations. DNR fire protections rules will be followed.

**b. Noise**

**1. What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?**

None.

**2. What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site)?**

Short term noise will be created from timber harvesting and road building equipment. This noise is common in this area.

**3. Proposed measures to reduce or control noise impacts, if any:**

Noise ordinances and regulations will be followed during this project.

## **8. Land and shoreline use**

[Find help answering land and shoreline use questions<sup>11</sup>](#)

**a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.**

The property is zoned rural reserve and is currently being used as long term forestry lands. The adjacent properties include commercial forest, and rural residential. The proposed project should have no affect t the site or adjacent sites.

**b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses because of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?**

The site is currently being used as working forest. The proposal is planning to keep the site in working forest and allows for access to the site for forestry use. No areas are being converted away from forestry.

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<sup>11</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-8-Land-shoreline-use>

- 1. Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how?**

No, the proposal should not have any affects on surrounding working farms for forests.

- c. Describe any structures on the site.**

None.

- d. Will any structures be demolished? If so, what?**

No.

- e. What is the current zoning classification of the site?**

Rural Reserve, this site is being used as forest land.

- f. What is the current comprehensive plan designation of the site?**

Rural Reserve.

- g. If applicable, what is the current shoreline master program designation of the site?**

Not applicable.

- h. Has any part of the site been classified as a critical area by the city or county? If so, specify.**

No.

- i. Approximately how many people would reside or work in the completed project?**

None.

- j. Approximately how many people would the completed project displace?**

None.

- k. Proposed measures to avoid or reduce displacement impacts, if any.**

Does not apply.

- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.**

This project is consistent with the current comprehensive plan and zoning. See rural reserve Skagit county code, 14.16.320(2)(e).

- m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:**

This project will continue the forestry use of this property by following DNR FPA rules and regulations.



## 9. Housing

[Find help answering housing questions](#)<sup>12</sup>

- a. **Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.**  
Does not apply.
- b. **Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.**  
Does not apply.
- c. **Proposed measures to reduce or control housing impacts, if any:**  
Does not apply.

## 10. Aesthetics

[Find help answering aesthetics questions](#)<sup>13</sup>

- a. **What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?**  
Does not apply, no structures are proposed.
- b. **What views in the immediate vicinity would be altered or obstructed?**  
Proposal is visible from the lake Cavanaugh area.
- c. **Proposed measures to reduce or control aesthetic impacts, if any:**  
Standing trees will be left in no harvest buffers and conifer will be replanted.

## 11. Light and glare

[Find help answering light and glare questions](#)<sup>14</sup>

- a. **What type of light or glare will the proposal produce? What time of day would it mainly occur?**  
None.
- b. **Could light or glare from the finished project be a safety hazard or interfere with views?**  
No.
- c. **What existing off-site sources of light or glare may affect your proposal?**  
None.
- d. **Proposed measures to reduce or control light and glare impacts, if any:**

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<sup>12</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-9-Housing>

<sup>13</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-10-Aesthetics>

<sup>14</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-11-Light-glare>

None.

## 12. Recreation

[Find help answering recreation questions](#)

- a. **What designated and informal recreational opportunities are in the immediate vicinity?**

Hiking, walking, hunting may occur on the site.

- b. **Would the proposed project displace any existing recreational uses? If so, describe.**

These activities may be disrupted for short periods during road building and timber harvest.

- c. **Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:**

None.

## 13. Historic and cultural preservation

[Find help answering historic and cultural preservation questions](#)<sup>15</sup>

- a. **Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.**

None known. **None found per FPRAM 5/22/2024 BH**

- b. **Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.**

None known. **None found per FPRAM 5/22/2024 BH**

- c. **Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.**

Department of Archeology website was used to review the area for cultural sources.

- d. **Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.**

If unknown cultural resources are discovered, work will be suspended and DNR and Department of Archaeology will be notified.

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<sup>15</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-13-Historic-cultural-p>



## 14. Transportation

[Find help with answering transportation questions](#)<sup>16</sup>

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The project is adjacent to South Shore Drive in the Lake Cavanaugh Area. Pickup trucks with crew and logging trucks with logs will use South Shore Drive.

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

No.

- c. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No.

- d. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

- e. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

Approximately 10-15 trips per day while the logging/road building work is active. Most traffic would occur between 5am and 4pm at the site. Once completed the project will generate less than 1 trip per day on average.

- f. Will the proposal interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No.

- g. Proposed measures to reduce or control transportation impacts, if any:

None.

## 15. Public services

[Find help answering public service questions](#)<sup>17</sup>

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<sup>16</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-14-Transportation>

<sup>17</sup> <https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-15-public-services>

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No,

- b. Proposed measures to reduce or control direct impacts on public services, if any.

None.

## 16. Utilities

Find help answering utilities questions<sup>18</sup>

- a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other:

None.

- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None.

## C. Signature

Find help about who should sign<sup>19</sup>

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

X Samuel Petška

Type name of signee: Samuel Petška

Position and agency/organization: Forester / Nielsen Brothers Inc.

Date submitted: 5/15/24

<sup>18</sup> <https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-16-utilities>

<sup>19</sup> <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-C-Signature>



**Wyatt Golding Declaration**  
**EXHIBIT C**

# ZIONTZ CHESTNUT

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Re: Forest Practices Application/Notification No. 2819518

To the Forest Regulation Division and Northwest Region Office,

We submit this comment on behalf of Lake Cavanaugh Trust regarding the Forest Practices Application/Notification No. 2819518 submitted by Timberline Logging, Inc. (Nielsen Brothers) on August 19, 2024. Lake Cavanaugh Trust incorporates previous comments and materials submitted on FPA No. 2819391 and the associated SEPA File No. 24-053001 by reference, including comments on the FPA submitted on May 30, 2024, SEPA comments submitted on June 13, 2024, and the expert report prepared by Dan McShane, L.E.G., M.Sc., dated May 27, 2024.

The application is the Nielsen Brothers' latest attempt at an extraordinarily risky proposal for logging and extensive road construction directly above private homes, a road, drinking water supply, and fisheries. It includes a revised report from Icicle Creek Engineering (ICE) but does not address the deficiencies identified in Lake Cavanaugh Trust's prior comments with respect to the prior FPA. The application still proposes unlawful forest practices on an alluvial fan and within a channel migration zone. The consequences of the likely impacts to public safety and public resources remain exceptionally high. Moreover, the proposal involves logging in or around a documented marbled murrelet nesting site, causing illegal "take" under the Endangered Species Act. The road construction is clearly linked to and premised on extensive future logging with similar environmental concerns.

As detailed below, DNR should deny the application because it is incomplete, inaccurate, and violates the Forest Practices Act and Forest Practices Rules. If DNR does not deny the



application outright, the agency must deny the application based on inadequate SEPA and initiate a SEPA process and fully consider the direct, indirect, and cumulative effects of the proposal. To avoid unlawful segmentation, the effects considered must include the reasonably foreseeable impacts of logging facilitated by the proposed road construction. DNR should make a determination of significance and require a preparation of an environmental impact statement, and then exercise its substantive SEPA authority to deny the application. WAC 332-41-665(3).

In addition to its statutory and regulatory authorities and duties, DNR faces potential legal liability for its decisions. Approval of the proposal and associated logging would create potential tort liability for both DNR and the Applicant for damage to private property and life. Approval also creates potential liability under the ESA, because “a governmental third party such as [Washington], pursuant to whose authority an actor exacts a taking of a threatened or endangered species, may be deemed to have violated the provisions of the ESA.” *Ctr. for Biological Diversity v. Little*, No. 1:21-CV-00479-CWD, 2024 WL 1178565, at \*12 (D. Idaho Mar. 19, 2024) (citing *Strahan v. Cox*, 127 F.3d 155, 163 (1st Cir. 1997)).

## Legal Background

DNR has the duty and authority to strictly enforce the Forest Practices Act and associated Forest Practices Rules, as informed by the Forest Practices Board Manual. The Forest Practices Act was passed in association with the Forest Practices Habitat Conservation Plan, which provides incidental take protection for harm to aquatic species, but not upland species such as the marbled murrelet.

DNR is also the lead agency under the State Environmental Policy Act, and therefore has a statutory responsibility to fully evaluate the potential impacts of the proposal and to public safety, drinking water quality, and environmental quality. The new FPA, FPA No. 2819518, constitutes a new proposal under SEPA that requires preparation of a new SEPA checklist and a new threshold determination. DNR has failed to identify FPA No. 2819518 on its SEPA Center website or otherwise solicit or consider public comment.<sup>1</sup>

SEPA policies related to the review of environmental impacts, conditioning, and disapproval of forest practices are adopted by the forest practices board and are contained in chapter 222-10 WAC. WAC 222-10-010 adopts by reference policies of SEPA as set forth in RCW 43.21C.020. Additionally, pursuant to WAC 332-42-665(2), DNR has adopted “the policies set forth in the State Environmental Policy Act, RCW 43.21C.020, as further basis for conditioning or denying a public or private proposal under SEPA.”

Those incorporated SEPA policies are to:

- (a) Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- (b) Assure for all people of Washington safe, healthful, productive, and

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<sup>1</sup> <https://www.dnr.wa.gov/northwest-0>

esthetically and culturally pleasing surroundings;

(c) Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

(d) Preserve important historic, cultural, and natural aspects of our national heritage;

(e) Maintain, wherever possible, an environment which supports diversity and variety of individual choice;

(f) Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

(g) Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

### Identity of the Landowner

Like its predecessor, the application is deficient in that it incorrectly identifies the landowner as a small forest landowner as defined at RCW 76.09.450, with associated reduced compliance requirements for marbled murrelet surveys and road maintenance and abandonment planning. This incorrect information requires denial.

As detailed in their filings with the Washington Secretary of State, *see* Exh. A attached hereto, Timberline Logging, Inc., is a corporation held and controlled by Robert Nielsen and David Nielsen. The relationship between the Nielsen Brothers, Inc and Timberline Logging, Inc. is detailed in previous comments. Robert and David Nielsen are owners of Nielsen Brothers, Inc., a timberland manager, logging company, and associated flooring company that do not constitute small forest landowners. Notably, the Nielsen brothers also own West Side Logging, LLC, and through that company own the forested parcels that the road connects to. *See* Exh. B (tax parcel map and Secretary of State information for West Side Logging, LLC).

RCW 76.09.450 defines a small forestland owner as “an owner of forestland who, at the time of submission of required documentation to the department, **has harvested from his or her own lands** in this state no more than an average timber volume of two million board feet per year during the three years prior to submitting documentation to the department and who certifies that he or she does not expect to harvest from his or her own lands in the state more than an average timber volume of two million board feet per year during the ten years following the submission of documentation to the department.” (emphasis added). The statutory definition is focused on the actual person exerting the underlying control and ownership. This includes an accounting of all corporations owned and/or controlled by the underlying landowners. Here, those persons are the Nielsen brothers, not the corporate entity owned by the brothers.

This conclusion is buttressed by the regulatory definition of “forestland owner.” Under WAC 222-16-010, “‘Forest landowner’ means **any person in actual control of forest land**, whether such control is based either on legal or equitable title, or on any other interest entitling the holder to sell or otherwise dispose of any or all of the timber on such land in any manner.” (emphasis added). The Nielsen Brothers, as the sole governors of Timberline Logging, are the

“person” that have “actual control” of the forest land at issue, and thus are the owners.

There is precedent for DNR denying an application based on a similarly transparent attempt to work around the legal requirements for large forest landowners. In King County, DNR denied an FPA submitted by a corporation controlled by Erickson Logging, in part because it incorrectly identified as a small forestland owner to avoid marbled murrelet survey requirements. Erickson Logging later resubmitted a revised application based on correct information.<sup>2</sup>

The FPA must be denied based on incomplete and inaccurate information. Approval would bless an obvious and unlawful loophole circumventing the Forest Practices Act and Rules.

### **Alluvial Fans**

Timber harvest is forbidden on alluvial fans. This is a flat prohibition. WAC 222-30-021(2)(b)(vi) (“No timber harvest is permitted within an alluvial fan”). The Icicle Creek Engineers (ICE) report attached to the application concedes that the proposed road crosses what it characterizes as three alluvial fans, and that harvest is proposed on an alluvial fan. These concessions require denial of the application.

The applicant and ICE assert that the proposal complies with Forest Practices Rules because there is only timber harvest proposed on an alluvial fan that ICE describes as “relict.” These arguments fail for at least three reasons.

First, there is timber harvest proposed across all the alluvial fans. The proposal concedes that there would be timber harvest to facilitate road construction across the alluvial fans. Page 5 of the FPA describes “Unit 2” as for the “ROW” (right of way) and includes harvest of 15 mbf of timber. This proposed timber harvest would be on all the alluvial fan areas identified by the Applicant. Such timber harvest on alluvial fans is prohibited. There is no provision or basis for the Applicant’s attempt to “mitigate” the risk of timber harvest and road construction across the alluvial fans. The permit application must be denied.

Second, as explained in the McShane report, the asserted alluvial fan 2 is really a part of alluvial fan 3. Together they are one alluvial fan as defined under WAC 222-16-010. As explained in Mr. McShane’s report and not refuted in the revised ICE memo, there is no regulatory or scientific basis for the attempt to segregate off a portion of the alluvial fan for timber harvest.

Third, there is no scientific or regulatory basis for the assertion that logging may be permitted on a “relict” alluvial fan. The ICE report explains that they are referring to a sentence in the regulatory definition, which reads that “[a]lluvial fan does not include features that were formed under climatic or geologic conditions which are not currently present or that are no longer dynamic.” ICE reads that provision far too broadly to suggest that any temporary stability

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<sup>2</sup> <https://www.issaquahreporter.com/news/erickson-files-for-new-logging-permit-on-squak-mountain/>



of a feature means it is “relict” and not an alluvial fan. To the contrary, the regulatory definition refers to very long-term processes of climate and geology. In order to not qualify as an alluvial fan, the land feature must not have been dynamic for a period of time that is significant in a climatic or geological sense.

Here, Mr. McShane has documented a dynamic landscape with very recent and recurring debris flows and LiDAR evidence of swales and channels that suggest recent active channels. This evidence confirms that the alluvial fan is dynamic. The ICE report fails to rebut these documented examples. Instead, the ICE report relies on the assertion that the stream channel is incised. This argument fails because the relatively modest incision identified does not evidence different “climatic or geological conditions.” As noted by Mr. McShane, the Forest Practices Board Manual states that “[t]he degree of channel incision at the fan head is not a reliable indicator of the lack of channel shifting potential, as infrequent but large flood events or debris flows can rapidly fill the channel.” (page M2-37 of Manual). This guidance is applicable to and supported by the documented conditions on the landforms at issue, and there is no basis to deviate from the Board Manual’s guidance.

For all the reasons stated above, the application must be denied for violation of WAC 222-30-021(2)(b)(vi).

### **Channel Migration Zone**

No logging is permitted in a channel migration zone. “No harvest, construction or salvage will be permitted within the boundaries of a channel migration zone except for the construction and maintenance of road crossings in accordance with applicable rules and the creation and use of yarding corridors consistent with WAC 222-24-020(6), 222-30-060(1), and 222-30-045(2).” WAC 222-30-020(13). “RMZs are measured horizontally from the outer edge of the bankfull width or channel migration zone, whichever is greater.” WAC 222-30-021.

Under Forest Practices Rules, a channel migration zone “means the area where the active channel of a stream is prone to move and this results in a potential near-term loss of riparian function and associated habitat adjacent to the stream, except as modified by a permanent levee or dike. For this purpose, near-term means the time scale required to grow a mature forest. (See board manual section 2 for descriptions and illustrations of CMZs and delineation guidelines.)” WAC 222-16-010.

The “near-term” in western Washington is generally 140 years. Chapter 2 of the Board Manual provides instructive guidance:

**By definition, the channels on alluvial fans migrate and are therefore subject to CMZ delineation.** Alluvial fans are also identified as “sensitive sites” in WAC 222-16-010 and no timber harvest is permitted within an alluvial fan (WAC 222-30-021(2)(b)(vi) and -022(2)(b)(ii)(C)(IV)). An alluvial fan will need CMZ delineation where historical map and aerial photograph and field evidence demonstrate that channel migration has occurred or can occur due to active fan

building processes upstream. Channels can be located anywhere on the fan and are best observed starting from the apex or upstream portion of the fan and following them downstream. **The CMZ will generally encompass the entire fan surface because of the difficulty in predicting the future channel location.**

All or some portions of the fan may no longer be subject to channel shifting if the fan-building processes have ceased or diminished. The degree of channel incision at the fan head is not a reliable indicator of the lack of channel shifting potential, as infrequent but large flood events or debris flows can rapidly fill the channel. A relict fan may have one or more small modern fans building at the downstream margin of the larger feature. In this situation, only the smaller, active fan has a CMZ. Technical expertise may be necessary to evaluate the age and frequency of fanbuilding processes.

Board Manual M2-36 to 37 (emphasis added). Here, there should be channel migration zones identified for each of the streams crossed, with particular emphasis on the streams identified as Stream 1 and Stream 2.

The FPA includes “Appendix E,” which is the CMZ Assessment Form. The analysis fails to delineate the CMZ for the entirety of Stream 1 or any other stream based on the assertion that “[b]y rule” the CMZ only begins below the transition point from non-fish bearing stream to fish bearing (“Type F”) stream.

There is no scientific or regulatory basis for the assertion that a CMZ only exists for fish-bearing streams. The regulatory definition contains no such distinction, and the 64-page Board Manual Chapter 2 contains no reference to fish presence or water typing. The purpose of the CMZ rule is to protect riparian function, which includes water quality, and exists in both fish bearing streams and Np headwater streams. That is particularly true here, where the streams are all directly above homes, drinking water sources, and fish-bearing waters.

The application must be denied for a deficient CMZ analysis.

## **SEPA Timing and Comments**

The FPA is properly categorized as a “Class IV Special,” which constitutes an acknowledgment of the potential for probable significant, adverse environmental effects.

The Applicant resubmitted the FPA based on past deficiencies. There is a new FPA number, and it is a new application with new timelines. Accordingly, DNR must also restart the SEPA process and public comment opportunity. If DNR is pursuing an alternative strategy of preparing a SEPA Addendum based on new information, it must so notify the public and provide opportunity for comment and review.

Lake Cavanaugh Trust incorporates by reference its prior SEPA comments on the preceding FPA. We also request that DNR consider these comments as part of its decision

whether to require additional SEPA analysis.

In addition to the concerns already raised, we emphasize three points.

First, the current SEPA constitutes unlawful segmentation, also known as piecemealing. The clear purpose of the FPA is to construct a road to allow access to significant additional logging. The Nielsen brothers also own and control West Side Logging, LLC, which owns the forested parcels that the road connects to. *See* Exh. B. Those forested parcels contain mature timber that the current proposed road would be used to access. Road and bridge construction is very expensive. It is safe to say that but for the future logging, there would be no road.

Phased review is not appropriate or lawful because it “would merely divide a larger system into exempted fragments or avoid discussion of cumulative impacts.” WAC 197-11-060(5)(d)(ii). The classic, paradigmatic example of segmentation is this exact situation—in which the Forest Service attempted to separately analyze the impacts of a road from the anticipated logging, even though the logging was the purpose of construction of the road. *Thomas v. Peterson*, 753 F.2d 754 (9th Cir. 1985).

Under WAC 197-11-060(3), which defines the appropriate scope of environmental review under SEPA:

- (b) Proposals or parts of proposals that are related to each other closely enough to be, in effect, a single course of action shall be evaluated in the same environmental document. (Phased review is allowed under subsection (5).) Proposals or parts of proposals are closely related, and they shall be discussed in the same environmental document, if they:
  - (i) Cannot or will not proceed unless the other proposals (or parts of proposals) are implemented simultaneously with them; or
  - (ii) **Are interdependent parts of a larger proposal and depend on the larger proposal as their justification or for their implementation.**

(emphasis added). Here, the proposed road and the future logging are clearly interdependent parts of a larger proposal. The Applicant would never build the proposed road, with its extensive, permanent infrastructure, but for the anticipated logging. The SEPA checklist must disclose, and DNR must analyze, not only the construction and timber harvest in the current FPA, but the reasonably foreseeable and connected actions of forest practices dependent on the road.

Second, DNR must consider the magnitude of consequence in evaluating impacts to public safety. The proposal is upslope of houses, drinking water supplies,<sup>3</sup> a public road, and an environmentally valuable lake. Meanwhile, the Applicant’s own report identifies “moderate risk” of channel avulsion on alluvial fan number one (*see* ICE Report at 5), and the construction,

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<sup>3</sup> The ICE Report refers to “unauthorized diversion” of streams for drinking water. Our understanding is that there are lawful, authorized diversions from one or more of the creeks impacted by the FPA for domestic water use.



use, and rainwater collection and diversion imposed by a new road would create ongoing increased risk of landslides. Under SEPA rules, significance depends on “context and intensity,” and “[t]he severity of an impact should be weighed along with the likelihood of its occurrence. An impact may be significant if its chance of occurrence is not great, but the resulting environmental impact would be severe if it occurred.” WAC 197-11-794(2). Here, the impacts are significant because there is at least moderate risk of debris flow, landslide, or other landform changes which would be catastrophic downstream.

Third, DNR must account for the disclosed and ongoing impacts to marbled murrelets and likely violation of the Federal Endangered Species Act. Under WAC 197-11-330(3)(e),

A proposal may to a significant degree:

- (i) Adversely affect environmentally sensitive or special areas, such as loss or destruction of historic, scientific, and cultural resources, parks, prime farmlands, wetlands, wild and scenic rivers, or wilderness;
- (ii) Adversely affect endangered or threatened species or their habitat;
- (iii) Conflict with local, state, or federal laws or requirements for the protection of the environment

Here, the timber harvest and construction of a road in and around a marbled murrelet nesting site would fragment marbled murrelet habitat, expose nesting murrelets to predation, and create long-term impacts through the noise and disturbance associated with road use. These impacts are well-documented in DNR’s own State Trust Lands Habitat Conservation Plan Marbled Murrelet Long-term Conservation Strategy and associated environmental review documents.

The Biological Opinion for the MMLTCS states that “[t]imber harvesting and road construction can result in both direct and indirect effects to murrelets. These effects can include the direct loss and fragmentation of nesting habitat, increased risk of nest predation near clearcut edges, habitat degradation associated with clearcut edges, disruption of nesting behaviors associated with audio and visual disturbance, and the potential for direct injury or mortality of murrelet eggs or chicks.”<sup>4</sup> The BiOp expressly recognizes “New Roads and Yarding Corridors in Occupied Sites and Buffers” as a significant source of “take” of marbled murrelets under the ESA.<sup>5</sup> Marbled murrelets have nesting fidelity to specific locations, so whether or not timing restrictions or other mitigation is imposed, fragmenting the nesting habitat and associated buffer is likely to cause take and inhibit reproduction.<sup>6</sup>

DNR’s SEPA analysis must disclose and consider impacts to marbled murrelets and violations of the Endangered Species Act. These impacts are one of several factors that require a determination of significance, preparation of an EIS, and denial of the application.

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<sup>4</sup> [https://www.dnr.wa.gov/publications/lm\\_mm\\_usfws\\_biological\\_opinion.pdf](https://www.dnr.wa.gov/publications/lm_mm_usfws_biological_opinion.pdf) at 85. Please review and incorporate the Biological Opinion into DNR’s permit file and SEPA record.

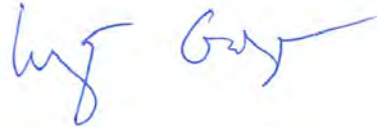
<sup>5</sup> *Id.* at 65-66.

<sup>6</sup> *Id.* at 86.

**Conclusion**

The application and associated SEPA review are deficient and violate the Forest Practices Act, SEPA, and the Endangered Species Act. The proposed activities also impose unacceptable risk to public health and safety. We respectfully request that DNR must deny the application.

Ziontz Chestnut

A handwritten signature in blue ink, appearing to read "Wyatt Golding", is written over a faint, circular official stamp.

Wyatt Golding

*Attorney for Lake Cavanaugh Trust*

Encl.

## **EXHIBIT A**



BUSINESS INFORMATION

Business Name:  
**TIMBERLINE LOGGING, INC.**

UBI Number:  
**601 298 396**

Business Type:  
**WA PROFIT CORPORATION**

Business Status:  
**ACTIVE**

Principal Office Street Address:  
**900 DUPONT ST, BELLINGHAM, WA, 98225-3105, UNITED STATES**

Principal Office Mailing Address:

Expiration Date:  
**02/28/2025**

Jurisdiction:  
**UNITED STATES, WASHINGTON**

Formation/ Registration Date:  
**02/04/1991**

Period of Duration:  
**PERPETUAL**

Inactive Date:

Nature of Business:  
**REAL PROPERTY INVESTMENT, TIMBER AND LOGGING OPERATIONS**

REGISTERED AGENT INFORMATION

Registered Agent Name:  
**BRADLEY SWANSON**

Street Address:  
**900 DUPONT ST, BELLINGHAM, WA, 98225-3105, UNITED STATES**

Mailing Address:

GOVERNORS

| Title    | Governors Type | Entity Name | First Name | Last Name |
|----------|----------------|-------------|------------|-----------|
| GOVERNOR | INDIVIDUAL     |             | ROBERT     | NIELSEN   |
| GOVERNOR | INDIVIDUAL     |             | DAVID      | NIELSEN   |

## **EXHIBIT B**

## BUSINESS INFORMATION

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Business Name:

**WEST SIDE LOGGING, L.L.C.**

UBI Number:

**601 643 230**

Business Type:

**WA LIMITED LIABILITY COMPANY**

Business Status:

**ACTIVE**

Principal Office Street Address:

**100 PINE ST STE 301, BELLINGHAM, WA, 98225-5464, UNITED STATES**

Principal Office Mailing Address:

**PO BOX 2789, BELLINGHAM, WA, 98227-2789, UNITED STATES**

Expiration Date:

**07/31/2025**

Jurisdiction:

**UNITED STATES, WASHINGTON**

Formation/ Registration Date:

**07/17/1995**

Period of Duration:

**PERPETUAL**

Inactive Date:

Nature of Business:

**HOLDING COMPANY**

## REGISTERED AGENT INFORMATION

---

Registered Agent Name:

**TOM JESSUP**

Street Address:

**100 PINE ST STE 301, BELLINGHAM, WA, 98225-5399, UNITED STATES**

Mailing Address:

**PO BOX 2789, BELLINGHAM, WA, 98227-2789, UNITED STATES**

## GOVERNORS

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| Title    | Governors Type | Entity Name | First Name | Last Name |
|----------|----------------|-------------|------------|-----------|
| GOVERNOR | INDIVIDUAL     |             | DAVID      | NIELSEN   |
| GOVERNOR | INDIVIDUAL     |             | ROBERT     | NIELSEN   |





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Additional Maps

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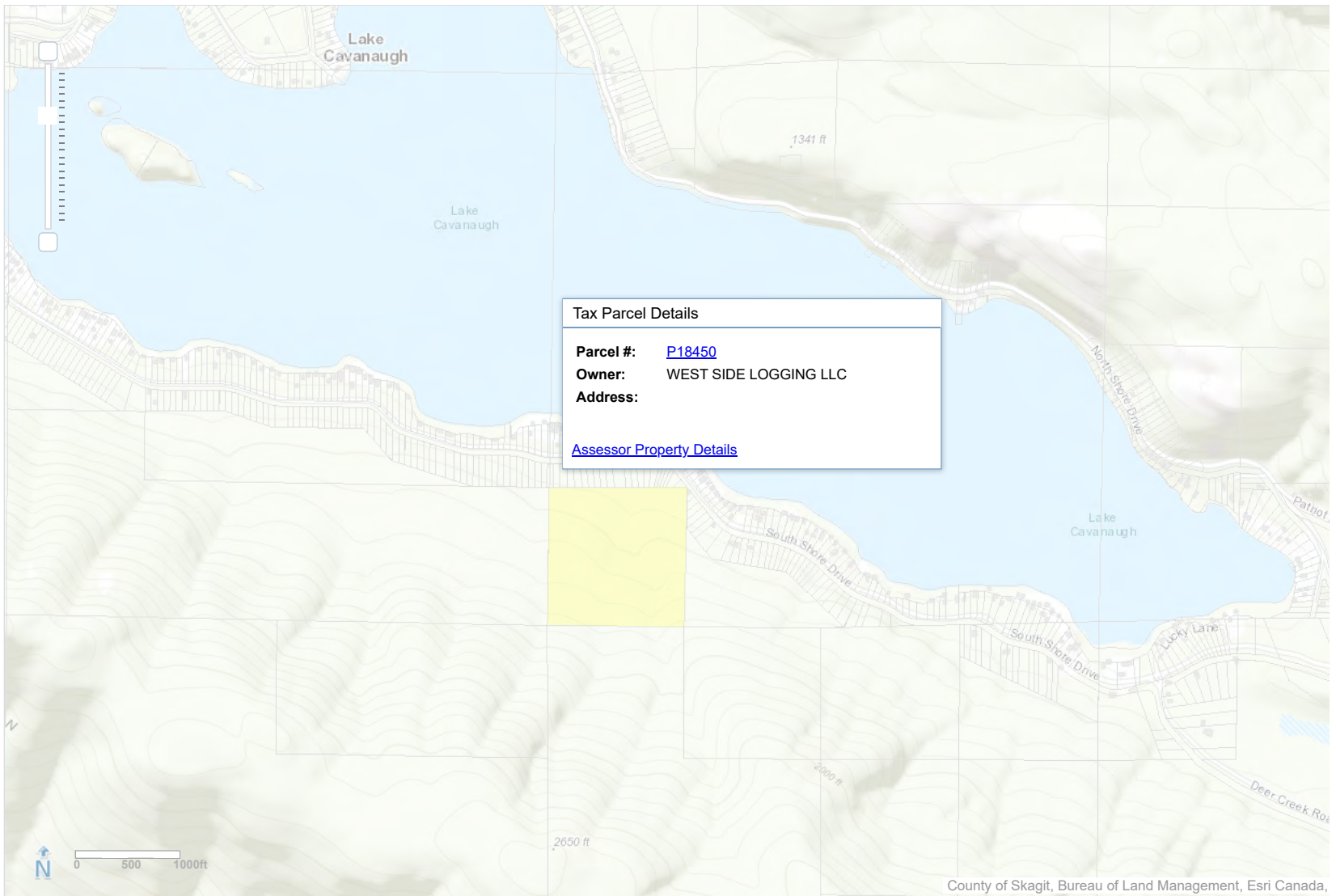
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- ☐ Address (House No. Street)
- ☐ Road Name

P18450

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Property Map



County of Skagit, Bureau of Land Management, Esri Canada,



# iMap

Additional Maps

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Layer List

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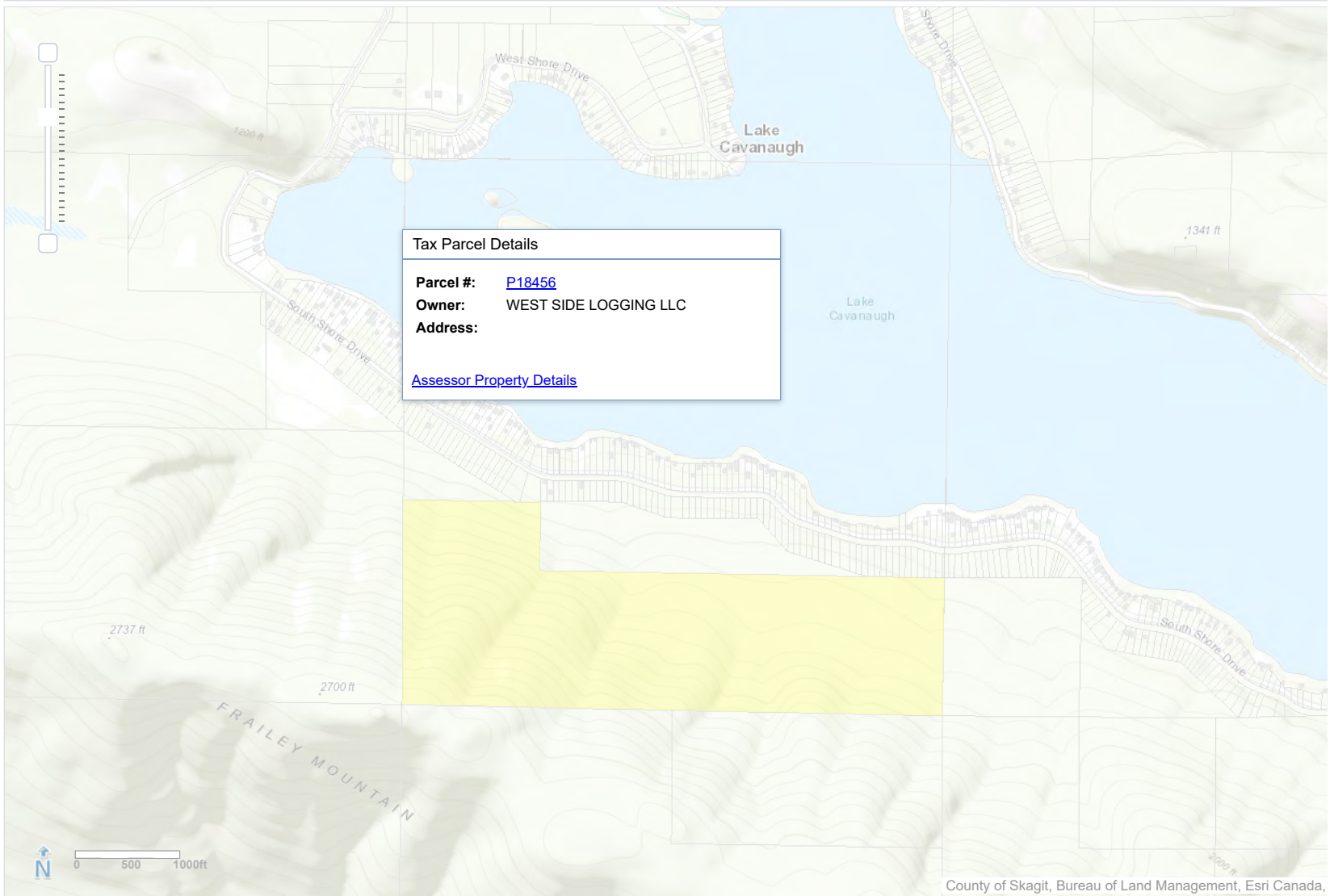
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- ☐ Road Name

P18456

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Map Description

Property Map



County of Skagit, Bureau of Land Management, Esri Canada,



# iMap

Additional Maps

Legend

Layer List

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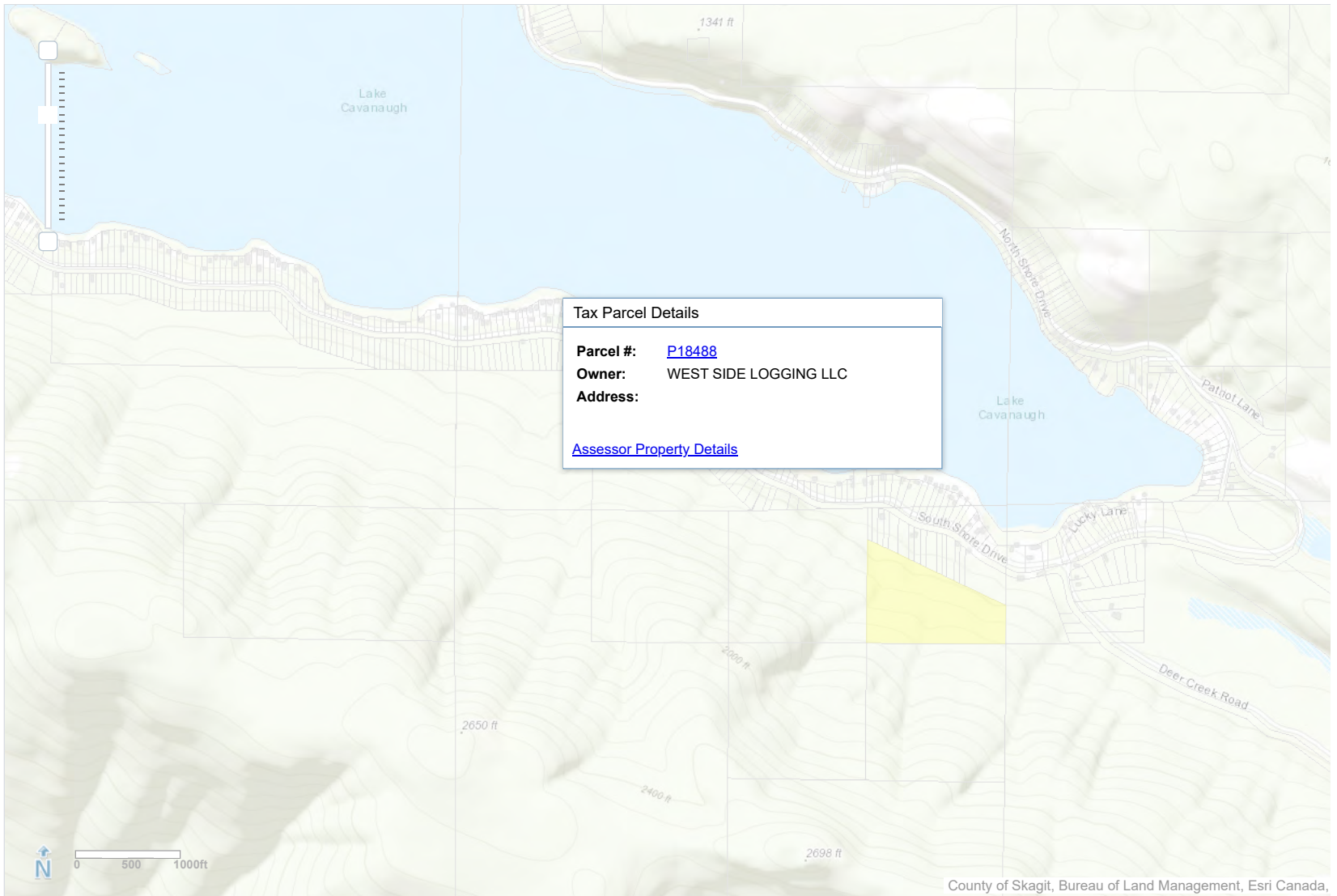
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- ☐ Address (House No. Street)
- ☐ Road Name

P18488

Clear Search Graphic(s)

Map Description

Property Map







# iMap

Additional Maps

Legend

Layer List

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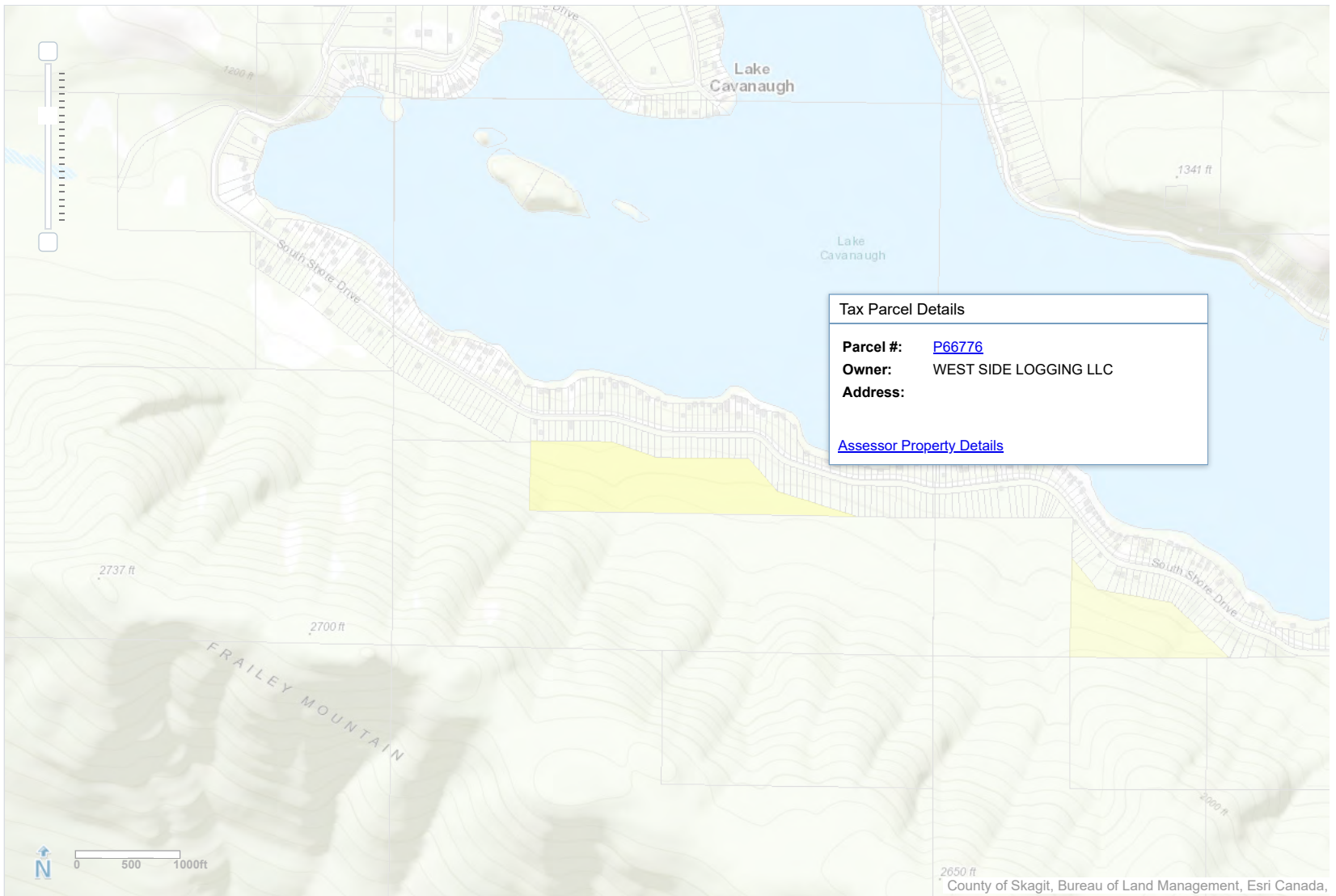
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- ☐ Owner Name (Last First)
- ☐ Address (House No. Street)
- ☐ Road Name

P66776

Clear Search Graphic(s)

Map Description

## Property Map





BRICKLIN & NEWMAN LLP  
lawyers working for the environment

Reply to: Seattle Office

June 13, 2024

VIA EMAIL TO: [sepacenter@dnr.wa.gov](mailto:sepacenter@dnr.wa.gov)

SEPA Center  
Washington Department of Natural Resources  
Environmental & Legal Affairs  
P.O. Box 47015  
Olympia, WA 98504-7015

**Re: Public Comments on SEPA DNS for FPA No. 2819391, File No. 24-053001**

To Whom it May Concern:

Our firm represents the Lake Cavanaugh Trust, a group of landowners along the shore of Lake Cavanaugh in Skagit County. Our client's members and their neighbors around the lake oppose the pending forest practice application submitted by Timberline Logging, Inc., for road building and logging on the slopes of Frailey Mountain, FPA No. 2819391. For the reasons described in our comment letter of May 30, 2024 regarding FPA No. 2819391 (which is attached hereto as Attachment A and incorporated by reference), DNR should deny this forest practices application.

As explained below, the agency's May 30, 2024 threshold determination of nonsignificance under SEPA for FPA No. 2819391, File No. 24-053001, was issued in error. The agency lacked sufficient information from the applicant and other sources to support the determination of nonsignificance. Further, based upon the information that the agency did have, the agency should have concluded that the proposed road building and logging project may have probable, significant adverse environmental impacts. Because the proposed project may have probable, significant adverse environmental impacts, the agency should have issued a threshold determination of significance.

## I. LEGAL REQUIREMENTS UNDER SEPA

### A. SEPA is a Full Disclosure Law.

SEPA is the legislative pronouncement of Washington's policy regarding the environmental impacts of government decisions. *See, e.g., Stempel v. Dept. of Water Resources*, 82 Wn.2d 109, 118 (1973) (describing purposes of SEPA); *ASARCO, Inc. v. Air Quality Coal.*, 92 Wn.2d 685, 707 (1979) (same). In essence, SEPA is an environmental full-disclosure law. *Norway Hill Pres. & Prot. Ass'n v. King County Council*, 87 Wn.2d 267, 272 (1976). It requires public agencies (including cities) to assess potential impacts of their decisions up front. If those impacts might be

significant, the agency must prepare a thorough environmental study, known as an Environmental Impact Statement (“EIS”). The EIS must disclose and analyze the proposal’s significant impacts and address alternative designs and mitigation measures that can reduce or eliminate those impacts. *See generally* RCW 43.21C.030; WAC 197-11-400 to -440 (discussing contents of EIS). By requiring government actors to confront and explain the environmental impacts of their decisions, and to consider alternatives, SEPA aims to ensure that the future of our shared environment is shaped by “deliberation, not default.” *Stempel, supra*, 82 Wn.2d at 118.

### **B. The Threshold Determination is a Critical Step in the SEPA Disclosure Process.**

“SEPA seeks to ensure that environmental impacts are considered and that decisions to proceed, even those completed with knowledge of likely adverse environmental impacts, are rational and well-documented.” *Columbia Riverkeeper v. Port of Vancouver USA*, 188 Wn.2d 80, 92 (2017) (internal quotation and citation omitted).

To accomplish the goal of fully informed and transparent decision making, SEPA requires every government agency contemplating a decision that might affect the environment to issue a “threshold determination,” the purpose of which is to determine whether an EIS is needed. If the agency determines that there “will be no probable significant adverse environmental impacts from a proposal,” then the agency issues a Determination of Nonsignificance (“DNS”), avoiding the requirement for full environmental study and an EIS. WAC 197-11-340(1). The DNS may also take the form of a “Mitigated” Determination of Nonsignificance (“MDNS”), imposing conditions to reduce the proposal’s impacts to a non-significant level. WAC 197-11-350.

In contrast, if the proposal “may have a probable significant adverse environmental impact” even after the imposition of mitigating conditions, then the agency must issue a Determination of Significance (“DS”) and an EIS must be prepared—meaning, the agency must fully document and assess the adverse impacts likely to be caused and consider alternatives to avoid or mitigate those impacts. WAC 197-11-360(1); WAC 197-11-330(4). In that case, the agency must also respond to public comments, making it accountable to the public.

The threshold determination is likely the most important single step in the SEPA process. *Norway Hill, supra*, 87 Wn.2d at 273. If a negative threshold determination is issued in error, the purposes of SEPA are thwarted by wrongfully avoiding the EIS requirement.

### **C. The Threshold Decision Must be Based on Adequate Information.**

In reviewing the validity of a threshold determination, SEPA requires a searching review: the agency “must demonstrate that it actually considered relevant environmental factors” before issuing a DNS and the record must demonstrate that the [agency] “adequately considered the environmental factors in a manner sufficient” to comply with SEPA. *Boehm v. City of Vancouver*, 111 Wn. App. 711 (2002) (internal citations and footnotes omitted). Further, the threshold determination “must be based on information sufficient to evaluate the proposal’s environmental



impact.” *Id.* See also WAC 197-11-335 (threshold determination must be based on “information reasonably sufficient to evaluate the environmental impact of a proposal”).

Ultimately, the threshold determination “must indicate that the agency has taken a searching, realistic look at the potential hazards and, with reasoned thought and analysis, candidly and methodically addressed those concerns.” *Conservation Nw. v. Okanogan Cty.*, 194 Wn. App. 1034, 2016 WL 3453666 at \*31 (2016). When “information on significant adverse impacts essential to a reasoned choice among alternatives is not known, and the costs of obtaining it are not exorbitant, agencies should obtain and include the information in their environmental documents.” WAC 197-11-080(1). If the costs of obtaining such information is exorbitant, or the means of obtaining it are not known, the agency must prepare a worst-case analysis. WAC 197-11-080.

It is “clear that the legislature intended that environmental values be given full consideration in government decision making, and it implemented this policy through the procedural provisions of SEPA[.]” *Norway Hill, supra*, 87 Wn.2d at 277. An “agency action that does not comply with SEPA is unlawful.” *Conservation Nw., supra*, 2016 WL 3453666 at \*34.

## **II. THE AGENCY LACKED SUFFICIENT INFORMATION TO ASSESS THE ENVIRONMENTAL IMPACTS AND ISSUE THE THRESHOLD DETERMINATION OF NONSIGNIFICANCE.**

### **A. The Agency Lacked Sufficient Information about Project Revisions.**

The applicant submitted a revised FPA on May 29, 2024. DNR’s Forest Practices Application Review System (FPARS) states the “notification date” for FPA 2819391 as 06/03/24 and the FPA shows revisions dated May 29, 2024.<sup>1</sup> The SEPA DNS was signed on May 29, 2024. The revised application was not accompanied by a revised environmental checklist.

Among other things, the revised May 29, 2024 FPA revisions added 15,000 board feet (15 mbf) to the volume proposed to be harvested. That increases the total proposed harvest from 30 mbf to 45 mbf—a significant increase. The additional harvest area in the revised FPA would be a 100% harvest (an increase over the 90% harvest in the original FPA) and according to the applicant would be located on significantly steeper slopes (70% slopes in contrast to the originally proposed 60% slopes). Moreover, because the revised additional harvest areas coincide with the area of the proposed road bed, which would cross several streams, the newly proposed harvest would occur directly adjacent to streams.

There is no indication that the agency reviewed the revised FPA 2819391 prior to issuing the DNS the same day DNR received the revised application. Indeed, the agency’s reviewer, Braelyn Hamilton, inserted a comment in red text on the first page of the environmental checklist that states: “I have reviewed this SEPA checklist and have included comments in red. 5/22/2024. BH.” May 22 was, of course, well prior to the May 29 FPA revisions. In addition, the agency comment

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<sup>1</sup> <https://fortress.wa.gov/dnr/protection/fparssearch/FPARResult.aspx?fpa=2819391> (last visited June 13, 2024).

on SEPA Checklist Question 4.b states: “FPA 2819391 indicates removal of 30 mbf of timber 5/22/2024 BH.” This also shows that the agency did not consider the revised FPA when assessing the project’s probable environmental impacts and issuing the DNS. The revised FPA admits that 45 mbf, not 30 mbf, will be harvested as part of the proposed project. The agency did not consider that in issuing the DNS.

DNR did not request or require a revised checklist to address the new proposal. There is no indication that any of these increased probable, significant environmental impacts were considered when the agency issued the DNS the same day it received the new proposal. DNR could not have considered (or adequately considered) the probable, significant adverse environmental impacts of the May 29, 2024 revised FPA when it issued the DNS that same day.

**B. The Agency Lacked Sufficient Information about the Applicant’s Forestland Owner Status.**

The FPA claims that Timberline Logging is a small forestland owner as defined in RCW 76.09.450 (FPA PDF 3/50) and that Timberline Logging owns less than 500 acres of timber lands (FPA PDF 4/50, response to Question 11.i regarding the trigger for Appendix J. Marbled Murrelet Form). Both statements are incorrect, because Timberline Logging is co-owned by David and Robert Nielsen, who co-own Nielsen Brothers, Inc. The two companies use the same mailing address in Bellingham: 900 Dupont Street, Bellingham, WA, 98225. The contact email for the “Timberline Logging Inc.” landowner is: SamP@nielsenbrothers.net (note Nielson Brothers email address). Page 1 (PDF 2/50) of FPA No. 2819391 confirms that the timber owner of this FPA is really Nielsen Brothers, Inc. Note also that the applicant’s SEPA checklist is signed by the same person that signed the FPA—Samuel Petska—and on that SEPA checklist he states his position and organization as “Forester/Nielsen Brothers Inc.” SEPA Checklist at PDF 15. Mr. Petska failed to include his email address on the SEPA checklist (SamP@nielsenbrothers.net), even though the checklist form requires that information.

In light of the intertwined nature of the businesses, Timberline Logging’s timber harvest and land ownership must be aggregated with Nielsen Brothers and any other companies controlled by the Nielsen Brothers (including but not limited to West Side Logging). Without a showing by Nielsen Brothers that it (together with its corporate alter egos) meets the definition of “small forestland owner” in RCW 76.09.450, Timberline Logging cannot qualify for the more lenient rules applicable to small landowners.

DNR should deny the FPA unless Timberline Logging discloses its true nature as a large forestland owner, not a small forest landowner. Such a disclosure likely would require Timberline Logging to revise various portions of this FPA.

Timberline Logging/Nielsen Brothers appear to acknowledge that it is appropriate to consider all logging operations by both Timberline and Nielsen because this application includes a Marbled Murrelet Form. The form is required only if the FPA is within 50 miles of saltwater and the

company own more than 500 acres of forestland in Washington State.<sup>2</sup> Submission of the form is an implicit acknowledgment that both of those criteria are met.

### **C. The Agency Lacked Sufficient Information about Cumulative Impacts.**

The proposed new road (“Road A Extension”) would connect South Shore Drive to the applicant’s existing Road B. Road B provides access to vast timberlands on Frailey Mountain owned by Nielsen Brothers, Inc., either directly or through the corporate alter-egos Timberline Logging and West Side Logging.

But Road B cannot currently be accessed from South Shore Drive. This issue was litigated at length previously, resulting in a 2023 decision by the Court of Appeals. The court concluded that the portion of Road B traversing private land subject to subdivision restrictive covenants could not be used for commercial logging purposes. *Lake Tr. v. Skagit Cnty.*, 25 Wn. App. 2d 1042, *review denied sub nom. The Lake Tr. v. Skagit Cnty.*, 534 P.3d 796 (Wash. 2023) (unreported case attached hereto as Attachment B for convenience). As a result of that 2023 Court of Appeals decision, the applicant lost access to Road B and the timberlands accessible from Road B. The applicant’s FPA 2819391, which would provide a new route to access Road B and the timberlands accessible via Road B, followed shortly thereafter. It seems clear that FPA 2819391 was filed because the applicant needed to replace its lost access to Road B.

This FPA would replace the lost access from South Shore Drive to the timberlands accessible from Road B by constructing an extension from Road A to Road B. As such, the proposed Road A Extension is shown connecting to Road B and thus provide access to vast timberlands on Frailey Mountain owned by Nielsen Brothers, Inc., and corporate alter-egos Timberline Logging and West Side Logging. If it were not intended to provide that access and thus open up those additional timberlands for logging, there would be no need for the Road A Extension to continue past the triangular area of the currently proposed timber harvest (timber harvest “Unit 1” in the revised FPA). Road A Extension could have stopped at timber harvest “Unit 1,” but it is instead proposed to continue well past Unit 1, at great cost because of numerous stream crossings, to connect with existing Road B.

Neilson Bothers Inc. owns additional parcels of forest land on Frailey Mountain that, following the court decision discussed above, can only be accessed by building the Road A extension. FPA 2819391 is clearly intended to open up a large amount of land to logging activities, beyond the acreage currently described in the SEPA Checklist and revised FPA. The cumulative environmental impacts of those additional logging activities must be addressed by the agency when it considers the probable, significant adverse environmental impacts of the currently proposed project.

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<sup>2</sup> The applicant used an outdated form. The current instructions for the Appendix J Marbled Murrelet Form state: “This form is only necessary if you are harvesting timber, salvaging timber, or constructing forest roads within 50 miles of saltwater (marine waters).” [https://www.dnr.wa.gov/publications/fp\\_form\\_murrelet\\_instructions.pdf](https://www.dnr.wa.gov/publications/fp_form_murrelet_instructions.pdf) (last visited May 30, 2024).



Because the applicant provided no information to the agency regarding the use of the Road A Extension to access additional timberlands on Frailey Mountain, the agency lacked sufficient information to assess the cumulative impacts of the proposed project and the DNS was issued in error.

#### **D. The Agency Lacked Sufficient Information about Steep or Hazardous Slopes.**

In response to SEPA Checklist Question 1.a, the applicant merely used a highlighter to highlight the words “hilly, steep slopes, mountainous.” No text was provided to give a general description of the site. The checklist requires substantially more detailed information, so that the agency can assess the project’s probable, significant adverse impacts on the earth element. The checklist instructions state: “Steep or hazardous slopes. Describe hazardous slopes, including slope percentage and vertical height. Identify any large, deep-seated slumps, unstable areas, and any mass wasting features.” None of that information was provided by the applicant in response to Checklist Question 1.a. Without that detailed information, the agency lacked sufficient information to assess the project’s probable, significant adverse environmental impacts on the earth element. As a result, the DNS was issued in error.

Moreover, the applicant’s answer under Checklist Question 1.b (“What is the steepest slope on the site (approximate percent slope)?”) is inaccurate and incomplete. The applicant inserted “80%.” As discussed above, this checklist was prepared and submitted before the project’s FPA was revised. Under the revised FPA, the areas of timber harvest include the area of the roadbed, which dives into very steep ravines at the several stream fords. The slopes in the areas of the stream crossings exceed 100%. This was not disclosed by the applicant or considered by the agency.

As further described in our comment letter of May 30, 2024 regarding FPA No. 2819391 (which is attached hereto and incorporated by reference), FPA No. 2819391 proposes a road extension across alluvial fans and the associated streams and proposes a timber harvest on an alluvial fan. Moreover, the agency lacked sufficient information regarding the quantity and source of fill material for the proposed new road. The applicant did not disclose the amount of fill material, the type of fill material, or the source of the fill material except to state: “The fill source will be hard rock from existing forestry rock pits.” Checklist Question B.1.e. No information was provided about where these rock pits are located, whether the source of the fill presents likely impacts from invasive plants like English ivy, how and by what route the material would be trucked in, or whether the material would need to be crushed (and, if so, where and with what noise and dust impacts).

The agency lacked sufficient information to assess the impacts of road building and logging on an alluvial fan.

#### **E. The Agency Lacked Sufficient Information about Impacts to Surface Water.**

The applicant admits that “fuel, oils or other heavy machinery waste materials may inadvertently reach surface waters because of heavy equipment use or failures.” Checklist Question 3.a.6. But the applicant fails to disclose the impacts of herbicide spraying following logging activity. Nor does the applicant disclose that fuel, oil, other waste materials, or herbicides that are discharged into streams at any of the seven typed stream crossings will end up in Lake Cavanaugh—the sole source of drinking water for dozens of residences. The proposed logging and road building would occur on very steep slopes and any pollutants discharged into any of the several stream crossings would reach Lake Cavanaugh very rapidly. Without that disclosure, the agency lacked sufficient information to issue the DNS.

#### **F. The Agency Lacked Sufficient Information about Impacts to Waste Runoff and Stormwater.**

As discussed above, the applicant proposes logging and roadbuilding on very steep slopes, on and across steep gradient streams that flow down the side of Frailey Mountain, past residential homes, and into Lake Cavanaugh. The applicant admits that petrochemicals and waste materials may reach surface waters. But the applicant does not disclose the speed, concentrations and total loading of waste and sediment-laden stormwater runoff that could reach surface waters that provide the sole source of drinking water for adjacent residences, or how denuding the steep hillside is likely to increase the volume and velocity of stormwater runoff. *See* the photo in Section III.B, below, showing increased runoff about to enter the lake (in the background), laden with sediment, from last year’s logging that was performed in the immediate area of this proposal.

#### **G. The Agency Lacked Sufficient Information about Impacts to Vegetation.**

As discussed above in Section II.A, the agency did not consider the increase in proposed harvest from 30 mbf in the originally-submitted FPA to 45 mbf in the revised FPA. When it issued the DNS, the agency lacked sufficient information regarding that substantial increase in harvest, which is also is a significant impact to vegetation.

The agency also lacked information about replanting. The applicant states in response to Checklist Question 4.d: “Conifer will be replanted after timber harvest.” The applicant does not provide the species of conifer that will be used for replanting. Without that disclosure, the agency lacked sufficient information to issue the DNS.

#### **H. The Agency Lacked Sufficient Information about Impacts to Animals.**

Nearby residents have observed many more species of animals and birds on and near the project site than were identified by the applicant, including but not limited to: wood ducks, loons, finches, fox, mountain lions, eagles, herons, osprey, and hummingbirds. The agency lacked sufficient information about impacts to animals to issue the DNS.

**I. The Agency Lacked Sufficient Information about Noise Impacts.**

The applicant states in response to Checklist Question B.7.b.2: “Short term noise will be created from timber harvesting and road building equipment.” No information is provided regarding the hours during which noise would come from the site or the decibel levels of that noise as experienced at adjacent property lines or the existing noise levels in this rural environment. But in response to Checklist Question B.14.e, the applicant states that heavy truck traffic will occur starting at 5am for the life of the project. The noise from heavy trucks on steep grades in the early morning hours is likely to have significant adverse noise impacts. The agency lacked sufficient information about noise impacts to issue the DNS.

**J. The Agency Lacked Sufficient Information about Impacts to Adjacent Residential Land Uses.**

The applicant states in response to Checklist Question 8.a: “The proposed project should have no affect t the site [sic] or adjacent sites.” The proposed project is likely to greatly increase the levels of traffic, noise, dust, and visual aesthetics impacts during and after construction. The applicant failed to provide information necessary to evaluate these impacts. Without that disclosure, the agency lacked sufficient information to issue the DNS.

**K. The Agency Lacked Sufficient Information about Impacts to Aesthetics.**

The applicant states in response to Checklist Question 10.b: “Proposal is visible from the lake Cavanaugh area.” The applicant fails to describe the severity and extent of the those impacts. The number of homes and the nature of the view impacts was not provided. Without that disclosure, the agency lacked sufficient information to issue the DNS.

**L. The Agency Lacked Sufficient Information about Impacts to Recreation.**

South Shore Drive is frequently used by residents and visitors for walking, running, skating, and biking. This road has no sidewalks and little or no shoulders. The addition of heavy trucks used for transporting logs and fill to this narrow road is likely to have significant adverse impacts on these recreational uses and is likely to create a safety hazard to recreational users of the road. In addition, runoff from the proposed activity is likely to transport large woody debris to Lake Cavanaugh, creating a safety hazard to recreational boaters from shallow submerged or barely visible floating woody debris. The agency lacked sufficient information about impacts to recreation to issue the DNS.

**M. The Agency Lacked Sufficient Information about Impacts to Transportation.**

As described above, South Shore Drive lacks sidewalks and shoulders and is frequently used by local residents and visitors. The applicant’s response to Checklist Question B.14.e states that trips per day will be: “Approximately 10-15 trips per day while the logging/road building work is active. Most traffic would occur between 5am and 4pm at the site.” This response does not seem accurate;



more trucks than that are likely required for the transportation of fill and the removal of 45 mbf of timber (note that this checklist was prepared when the applicant was proposing 30 mbf of timber harvest and has not been updated to reflect the increase to 45 mbf). No public street or vicinity map showing access to the site was provided, so the agency lacks information on the route(s) that heavy trucks would take to and from the project site. Nor is the location of the lumber mill to which the logs will be transported provided. Without that route information and accurate information regarding the volume of heavy truck traffic, traffic impacts cannot be adequately assessed by the agency.

### **III. BASED ON THE INFORMATION THAT WAS PROVIDED TO THE AGENCY, A THRESHOLD DETERMINATION OF SIGNIFICANCE WAS REQUIRED.**

#### **A. The Project May Have Probable Significant Adverse Impacts on Slope Stability.**

As further described in the May 27, 2024 comment letter of Dan McShane, L.E.G., M.Sc. (submitted together with our comment letter of May 30, 2024 regarding FPA No. 2819391), FPA No. 2819391 proposes a road extension across alluvial fans and the associated streams and proposes a timber harvest on an alluvial fan.

Timber harvest is not permitted on alluvial fans associated with Type Np (no fish, perennial flow) streams. WAC 222-30-021(2)(b)(vi) (“No timber harvest is permitted within an alluvial fan”). Unlike buffer requirements, which are adjustable depending on local circumstances, the prohibition against harvest on an active alluvial fan is absolute (subject only to the stream-crossing exception, but no stream is crossed in AF-2 and the proposed timber harvest goes well beyond any road building activity).

The geotechnical report attached to FPA No. 2819391 (Icicle Creek Engineers, Nov. 1, 2023,<sup>3</sup> hereinafter “ICE Geotech Report”) identifies three alluvial fan areas: AF-1, AF-2 and AF-3. The applicant admits that AF-1 and AF-3 are active alluvial fans. But the applicant asserts that AF-2 is a “relict” alluvial fan and thus deems it “OK to harvest” as part of the “Proposed Harvest Unit.” ICE Geotech Report at Figure 12 (“ALLUVIAL FAN MAP”), PDF 48/50. The “Proposed Harvest Unit is elsewhere identified as “Unit 1.” FPA 2819391 at PDF 11, 14. This Unit 1 is proposed to be clearcut. ICE Geotech Report at 3, PDF 24/50 (“TLI is proposing clearcut harvest of . . . primarily mature conifer trees”).

Harvesting trees on an active alluvial fan can contribute to the destabilization of the fan, as the Board Manual notes at M7-8: “Alluvial fans may build up over thousands of years and be covered by trees. The roots of these trees can serve to stabilize fan channels.” Yet nothing in FPA No. 2819391 proposes a replacement for the lost ecological function of removing the mature trees in

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<sup>3</sup> Icicle Creek Engineers, Inc. Report of Geotechnical Services Evaluation of Potentially Unstable Slopes and Landforms and Alluvial Fans Proposed Road A Extension and Harvest Unit SW¼ Section 27, Township 33 North, Range 6 East Lake Cavanaugh Area, Skagit County, Washington November 1, 2023, ICE File No. 1319-005.

the roadbed, which cuts across three alluvial fans. FPA No. 2819391 specifies that potentially unstable slopes are present both “in” and “around” the proposed roadbuilding and logging. FPA No. 2819391 at PDF 1/50. The FPA also specifies that the soils in the area of the proposed roadbuilding and logging are both “Highly Erodible” and “Highly Unstable.” *Id.*

Mr. McShane agrees with ICE that AF-1 and AF-3 are active alluvial fans. But he and Lake Cavanaugh Trust disagree with ICE regarding AF-2. AF-2 is not a relict alluvial fan. Instead, “AF-2 is essentially part of the same alluvial fan as AF-3.” McShane Comment, May 27, 2024, at 2. Mr. McShane provides three reasons demonstrating that ICE’s determination that AF-2 is a relict alluvial fan is incorrect.

First, bare earth LiDAR imagery “shows what appear to be three swales or old channels on the fan area surface. These swales are not described in the report and suggest that stream channels occupied this surface in the past.” McShane Comment, May 27, 2024, at 2 (and see LiDAR image on same page). “The lidar also indicates features that appear to be overflow berms – a typical feature of debris flow deposition on alluvial fans.” *Id.*

Second, ICE describes Stream #2 as incised 10 to 15 feet into the fan surface at the apex of AF-2. ICE Geotech Report at 9, PDF 30/50. ICE opines that “AF-2 was formed when Stream 2 was at a higher base level, and therefore under geologic conditions which are no longer present and are no longer dynamic[.]” *Id.* But the “approach of using base elevation or incision into the fan surface is inconsistent with the Forest Board Manual for alluvial fan assessments.” McShane Comment, May 27, 2024, at 3. “The degree of channel incision at the fan head is not a reliable indicator of the lack of channel shifting potential, as infrequent but large flood events or debris flows can rapidly fill the channel.” (Forest Board Manual, page M2-37). Infrequent but large flood events or debris flows are likely in Stream #2, as explained by Mr. Shane in his third reason why ICE’s determination that AF-2 is a relict alluvial fan is incorrect.

Third, evidence from nearby similarly-sized and similar gradient stream watersheds indicates that infrequent large debris flows should be expected on Stream #2:

- a. “A large debris flow took place on the stream two streams to the west of Stream #2 in 2016. That stream was similarly incised into the upper fan and debris completely filled the channel and was deposited on the fan surface just past the top edge of the channel beginning at the apex of the alluvial fan.” McShane Comment, May 27, 2024, at 3. “The presence of mature trees on the fan prevented debris flow material from leaving the stream route and thus prevented an avulsion onto the upper fan surface. However, debris did escape the stream route as soon as it entered the clear cut harvest on the lower part of the fan.” *Id.* As Mr. McShane points out, this 2016 debris flow event “supports the Board Manuals statement that ‘channel incision at the fan head is not a reliable indicator of the lack of channel shifting potential’ as this stream nearly immediately incised back down to bedrock on the upper fan.” *Id.*

- b. “A similar event took place on another stream of similar size further to the west in approximately 2002. That stream also filled its incised channel, but escaped the channel onto the fan surface as soon as the debris flow reached a clear cut on the fan surface.” *Id.*
- c. “A debris flow took place to the east as well in approximately 2016. That debris flow stopped on the upper part of the fan, but does indicate that debris flows are an ongoing active geology process on the streams that extend to the ridge of mountain slope above.” *Id.*

“The three streams described above have watersheds of a similar size and gradient to that of Stream 2 and demonstrate that the geologic processes that lead to debris flows filling incised channels and fan processes at these alluvial fans is still active and dynamic under current geology and climate conditions.” *Id.*

Timber harvesting on alluvial fans is prohibited for a good reason—they are unstable and prone to landslides and debris flows originating above. Because the applicant proposes to harvest timber on an alluvial fan, the project may have probable significant adverse impacts on slope stability.

#### **B. The Project May Have Probable Significant Adverse Impacts on Surface Waters.**

In its SEPA Checklist, the applicant admits that “fuel, oils or other heavy machinery waste materials may inadvertently reach surface waters because of heavy equipment use or failures.” SEPA Checklist Question B.3.a.6 (PDF 6). More generally and not limited to inadvertent failures, the applicant admits that “sediment from road building and logging could enter surface waters.” SEPA Checklist Question B.3.c.2 (PDF 7). That is an understatement. The photograph below shows increased runoff about to enter the lake (in the background), laden with sediment, from last year’s logging that was performed in the immediate area of this proposal. Those residential lots were directly and severely impacted from the increased runoff flooded that flooded those lots and South Shore Drive:





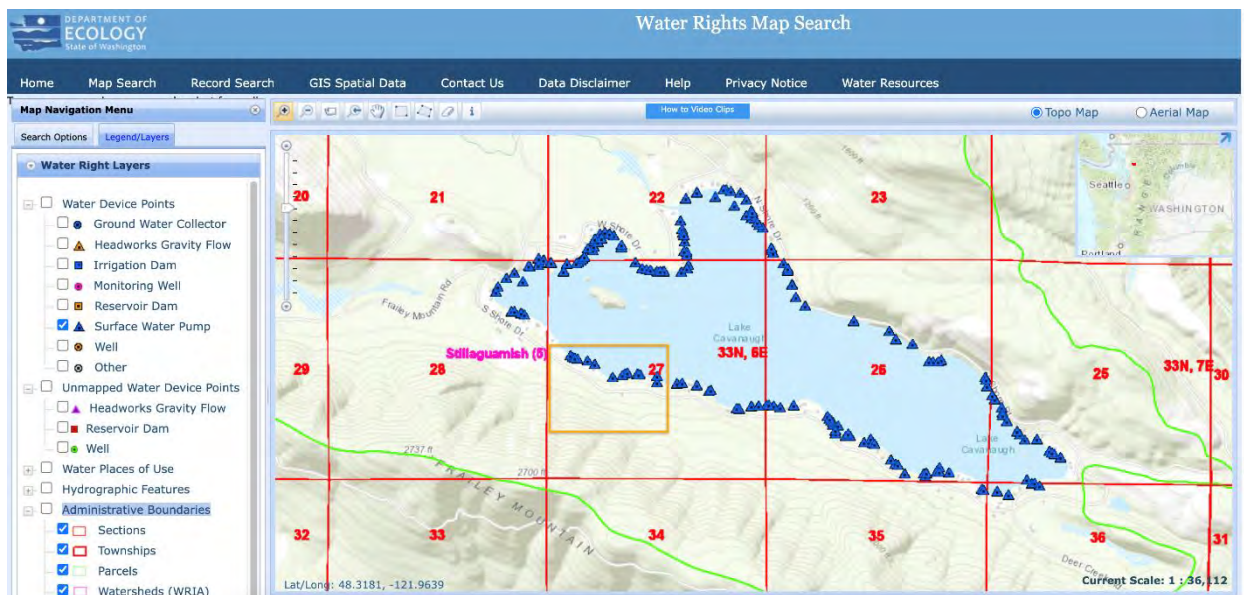
The DNS was issued in error because the project may have probable significant adverse impacts to surface waters.

### C. The Project May Have Significant Adverse Impacts on Fish.

The increase in sediment laden runoff from the proposed project described above is likely to have a significant adverse impact on fish. The applicant admits that the streams in the project area are fish-bearing. The applicant proposes to cross those streams with a combination of multiple fords, culverts, and a bridge. FPA 2819391 (May 29, 2024 revision) at PDF 5/50. The applicant admits that its proposed project may result in discharges of fuels, oils, waste materials, and sediment to these streams. The applicant states that the fish-bearing sections of the streams are downstream of the proposed logging and road building, but ignores that any pollutants discharged to these steep gradient streams would be rapidly transported into the fish-bearing sections and into Lake Cavanaugh. These discharges of pollutants may have significant adverse impacts to fish.

### D. The Project May Have Significant Adverse Impacts on Domestic Drinking Water Supplies.

Lake Cavanaugh supplies drinking water via surface water withdrawals for dozens of residences. There are dozens and dozens of lake residents who are not able to drill wells due to the rock formations beneath their homes and rely on lake water as their sole source of water. Many others around the lake also rely on the lake water for the acts of daily living. The figure below includes only surface water pumped withdrawals around the lake (excluding wells). The area of the proposed land disturbing activity is highlighted with an orange box:



Given the indicated water run-off noted in the applicant's response to Checklist Question B.3.a, there is a tremendous potential for harmful impact to those residents in the vicinity of the proposed logging sites. Gasoline, herbicides, and other harmful liquids used on site have a high likelihood to enter the lake. For instance, the mention of water run-off being directed to "suitable road drainage systems" is not possible as described in the submitted Environmental Checklist.

All natural waters (streams, rainfall, snowfall) draining Frailey Mountain run into drainage ditches running East-West along Southshore Drive. All of these drainage ditches ultimately pass under South Shore Drive through large metal/concrete drainage pipes. These drain directly into the lake.

The SEPA checklist indicates, the fish in the lake will be impacted by any contaminated water entering the lake. But those same impacts will be visited upon the families who rely on lake water as a sole water source. Heavy metals, detergents, fuel, motor oil, herbicides, and other contaminants can be extremely dangerous even if ingested in small amounts. Exposure to these substances over time only exacerbates the issue for the lake residents.

The DNS was issued in error because the project may have significant adverse impacts to nearby drinking water supplies.

#### **E. The Project May Have Significant Adverse Impacts on Aesthetics.**

The project would involve heavy trucks climbing and descending steep grades and accelerating onto South Shore Drive, starting as early as 5am, for the life of the project. That noise is likely to have significant adverse impacts on nearby residents, destroying the peaceful rural environment, awakening sleeping souls, and potentially causing health impacts.

The project clearcutting and roadbuilding would be highly visible from Lake Cavanaugh. The visible denuding and scarring of scenic Frailey Mountain, which is prominent in the view enjoyed from the residences surrounding Lake Cavanaugh, would cause significant adverse visual aesthetic impacts to the residents of and visitors to Lake Cavanaugh.

#### **F. The Project May Have Significant Adverse Impacts on Transportation.**

The addition of new heavy truck traffic to South Shore Drive is likely to have a significant adverse impact on transportation. These heavy trucks would be moving at slow speeds when they enter onto or exit from South Shore Drive. The use of heavy trucks on South Shore Drive would degrade the road surface at an accelerated rate. While no route map or traffic study was provided by the applicant, it is likely that the heavy truck traffic would impact levels of service at intersections along the haul route.

#### **G. The Project May Have Significant Adverse Impacts on Recreation.**

The proposed project is likely to have a significant adverse impact on recreational users of South Shore Drive (which lacks sidewalks and shoulders and is frequently used for walking, running,

skating, and biking). The proposed project is also likely to have significant adverse impact on recreational users of Lake Cavanaugh, by adding large woody debris that would float just under the surface of the lake or be barely visible on the surface, causing a safety hazard to boaters, water skiers, and wakeboarders.

#### **H. The Project May Have Significant Adverse Impacts on Waste Runoff and Stormwater.**

The ICE Geotech Report states that Stream #2 crossing is located where the creek is incised into a 10- to 15-foot deep valley. ICE Geotech Report at 8, PDF 29/50. ICE opines that “Stream #2 will occasionally convey naturally-occurring debris flows sourced in its upper watershed[.]” *Id.* at 9, PDF 30/50. ICE states that the “naturally-occurring debris flows conveyed by Stream #2 also have the potential to overtop the channel, avulse into a new channel, and possibly affect South Shore Drive and residential structures downstream of Stream Crossing #2, so we expect that the naturally-occurring risk to public safety will be **moderate to high.**” *Id.* at 10, PDF 31/50 (bold emphasis in original).

Mr. McShane and Lake Cavanaugh Trust agree that the proposed bridge over Stream #2 has sufficient clearance to “allow clear water floods to pass under the bridge.” McShane Comment, May 27, 2024, at 4. But “debris flow peak discharges typically greatly exceed clear water floods. Debris flood and debris flows have peak discharge rates that can be considerably greater than 100-year flood return periods.” *Id.* “Debris flow peak discharges up to 50 times the peak discharge of a 200-year return period clear water flood have been reported by Jakob and Jordan (2001).” *Id.*

“[C]reeks subject to debris flows and debris floods may flood more frequently and at much greater intensity than the predicted clear water flood return periods based on standard run off analysis.” *Id.* “Large logs will likely be incorporated within the debris flows” at the proposed Stream #2 bridge crossing. *Id.* Mr. McShane has personally observed this “on most of the debris flows on the streams coming off the upper ridge of Frailey Mountain[.]” *Id.* Mr. McShane provides a photo as an example:





Large logs from debris flow in stream two watersheds to the west, a similar sizes and gradient stream to Stream #2. Note large logs deposited as much as 20 feet above bottom of stream channel.

*Id.* at 5. “Large debris flows with large logs will very likely become jammed at a bridge crossing at [the proposed bridge over Stream #2]. This will alter the flow path of the debris flows out of the channel increasing the risk to down slope properties that are located away from the stream path and also potentially causing a larger debris dam failure downstream of the bridge location.” *Id.* at 4. In sum, as stated by Mr. McShane:

Removal of trees on the alluvial fan will increase the risk of debris flows traveling further down the alluvial fan and increase the risk of debris flows with large logs impacting properties and public resources on the lower reaches of the alluvial fan. The removal of trees also will increase the risk of a channel avulsion impacting properties and public resources lower on the fan surface. Placing a permanent bridge across an area where debris flows are expected to flow increases the risk of channel blockage during a large debris flow event resulting in an increase to the risk [of] down fan properties and public resources.

*Id.* at 6.

#### IV. CONCLUSION

For the foregoing reasons, DNR should withdraw the SEPA DNS and issue a DS for this project.

Very truly yours,

BRICKLIN & NEWMAN, LLP



Zachary Griefen  
[griefen@bnd-law.com](mailto:griefen@bnd-law.com)

# **ATTACHMENT A**



Reply to: Seattle Office

May 30, 2024

VIA EMAIL TO: [northwest.region@dnr.wa.gov](mailto:northwest.region@dnr.wa.gov)  
[NW\\_FP@dnr.wa.gov](mailto:NW_FP@dnr.wa.gov)

Jay Guthrie, Regional Manager  
Teresa Guard, Forest Practices Permit Specialist  
Northwest Region  
919 N. Township St.  
Sedro Wooley, WA 98284-9384

**Re: Public Comments on FPA No. 2819391**

Dear Mr. Guthrie, Ms. Guard, and DNR:

Our firm represents the Lake Cavanaugh Trust, a group of landowners along the shore of Lake Cavanaugh in Skagit County. Our client's members and their neighbors around the lake oppose the pending forest practice application submitted by Timberline Logging, Inc., for road building and logging on the slopes of Frailey Mountain, FPA No. 2819391. For the reasons described here, DNR should deny approval of FPA No. 2819391.

As an initial matter, the applicant submitted a revised FPA on May 29, 2024. The comment period on FPA No. 2819391 ends on May 30, 2024. As of May 30, 2024, DNR's Forest Practices Application Review System (FPARS) states the "notification date" for FPA 2819391 as 5/29/24.<sup>1</sup> The public comment period should run from the current notification date of this FPA. In light of the new notification date and yesterday's revisions to FPA 2819391 (on the literal eve of the comment period deadline), we request that the comment period on FPA 2819391 be restarted, so that our comment letter, our consultant's comment letter, and the comments of nearby residents can address the revised FPA.

It is unfair to allow the applicant to revise the application on the next-to-last day of the comment period without also extending the comment period. For example, our consultant, Dan McShane, provided us with his comment letter several days ago (submitted herewith) and is in the field today, so he cannot revise his comments to address the revised application. Any references in Mr. McShane's comment to page numbers in the FPA refer to the pagination of the FPA prior to yesterday's revisions.

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<sup>1</sup> <https://fortress.wa.gov/dnr/protection/fparssearch/FPARResult.aspx?fpa=2819391> (last visited May 30, 2024).



## **1. Timberline Logging, Inc. Is Not a Small Forest Landowner**

The FPA claims that Timberline Logging is a small forestland owner as defined in RCW 76.09.450 (FPA PDF 3/50) and that Timberline Logging owns less than 500 acres of timber lands (FPA PDF 4/50, response to Question 11.i regarding the trigger for Appendix J. Marbled Murrelet Form). Both statements are incorrect, because Timberline Logging is co-owned by David and Robert Nielsen, who also co-own Nielsen Brothers, Inc. The two companies use the same mailing address in Bellingham: 900 Dupont Street, Bellingham, WA, 98225. The contact email for landowner is: SamP@nielsenbrothers.net (note Nielsen Brothers email address). Page 1 (PDF 2/50) of FPA No. 2819391 confirms that the timber owner of this FPA is Nielsen Brothers, Inc. Note also that the applicant's SEPA checklist is signed by the same person that signed the FPA— Samuel Petska—and on that SEPA checklist he states his position and organization as “Forester/Nielsen Brothers Inc.” SEPA Checklist at PDF 15.

In light of the intertwined nature of the businesses, Timberline Logging's timber harvest and landownership must be aggregated with Nielsen Brothers and any other companies controlled by the Nielsen Brothers (including but not limited to West Side Logging). Without a showing by Nielsen Brothers that it (together with its corporate alter egos) meets the definition of “small forestland owner” in RCW 76.09.450, Timberline Logging cannot qualify for the more lenient rules applicable to small landowners.

DNR should deny the FPA unless Timberline Logging discloses its true nature as a large forestland owner, not a small forest landowner. Such a disclosure likely would require Timberline Logging to revise various portions of this FPA.

Timberline Logging/Nielsen Brothers appear to acknowledge that it is appropriate to consider all logging operations by both Timberline and Nielsen because this application includes a Marbled Murrelet Form. That form was submitted because this FPA is within 50 miles of saltwater and Timberline Logging/Nielsen Brothers own more than 500 acres of forestland in Washington state.<sup>2</sup>

## **2. No Road Maintenance and Abandonment Plan (RMAP)**

FPA No. 2819391, page 4 (PDF 5) shows no abandonment date for “Road A Extension.” Large forest landowners are required to submit a full RMAP. WAC 222-24-051. As described above, Timberline Logging/Nielsen Brothers is a large forestland owner, not a small forestland owner. The absence of a full RMAP is grounds to deny this FPA. The “Small Forest Landowner Checklist Road Maintenance and Abandonment Plan” that is included in the FPA starting at PDF 18/50 is insufficient.

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<sup>2</sup> We note that the current instructions for the Appendix J Marbled Murrelet Form state: “This form is only necessary if you are harvesting timber, salvaging timber, or constructing forest roads within 50 miles of saltwater (marine waters).” [https://www.dnr.wa.gov/publications/fp\\_form\\_murrelet\\_instructions.pdf](https://www.dnr.wa.gov/publications/fp_form_murrelet_instructions.pdf) (last visited May 30, 2024).

### **3. FPA No. 2819391 Proposes Forest Practices on an Alluvial Fan.**

As further described in the May 27, 2024 comment letter of Dan McShane, L.E.G., M.Sc. (submitted together with this comment letter under the same cover email), FPA No. 2819391 proposes a road extension across alluvial fans and the associated streams and proposes a timber harvest on an alluvial fan.

Timber harvest is not permitted on alluvial fans associated with Type Np (no fish, perennial flow) streams. WAC 222-30-021(2)(b)(vi) (“No timber harvest is permitted within an alluvial fan”). Unlike buffer requirements, which are adjustable depending on local circumstances, the prohibition against harvest on an active alluvial fan is absolute (subject only to the stream-crossing exception, but no stream is crossed in AF-2 and the proposed timber harvest goes well beyond any road building activity). While modifications to buffer requirements might be minor (as in *Quinault Nation*), harvest on an alluvial fan is more than minor and forbidden.

The geotechnical report attached to FPA No. 2819391 (Icicle Creek Engineers, Nov. 1, 2023,<sup>3</sup> hereinafter “ICE Geotech Report”) identifies three alluvial fan areas: AF-1, AF-2 and AF-3. The applicant admits that AF-1 and AF-3 are active alluvial fans. But the applicant asserts that AF-2 is a “relict” alluvial fan and thus deems it “OK to harvest” as part of the “Proposed Harvest Unit.” ICE Geotech Report at Figure 12 (“ALLUVIAL FAN MAP”), PDF 48/50. The “Proposed Harvest Unit is elsewhere identified as “Unit 1.” FPA 2819391 at PDF 11, 14. This Unit 1 is proposed to be clearcut. ICE Geotech Report at 3, PDF 24/50 (“TLI is proposing clearcut harvest of . . . primarily mature conifer trees”).

Harvesting trees on an active alluvial fan can contribute to the destabilization of the fan, as the Board Manual notes at M7-8: “Alluvial fans may build up over thousands of years and be covered by trees. The roots of these trees can serve to stabilize fan channels.” Yet nothing in FPA No. 2819391 proposes a replacement for the lost ecological function of removing the mature trees in the roadbed, which cuts across three alluvial fans. FPA No. 2819391 specifies that potentially unstable slopes are present both “in” and “around” the proposed roadbuilding and logging. FPA No. 2819391 at PDF 1/50. The FPA also specifies that the soils in the area of the proposed roadbuilding and logging are both “Highly Erodible” and “Highly Unstable.” *Id.*

Mr. McShane agrees with ICE that AF-1 and AF-3 are active alluvial fans. But he and Lake Cavanaugh Trust disagree with ICE regarding AF-2. AF-2 is not a relict alluvial fan. Instead, “AF-2 is essentially part of the same alluvial fan as AF-3.” McShane Comment, May 27, 2024, at 2. Mr. McShane provides three reasons why ICE’s determination that AF-2 is a relict alluvial fan is incorrect.

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<sup>3</sup> Icicle Creek Engineers, Inc. Report of Geotechnical Services Evaluation of Potentially Unstable Slopes and Landforms and Alluvial Fans Proposed Road A Extension and Harvest Unit SW¼ Section 27, Township 33 North, Range 6 East Lake Cavanaugh Area, Skagit County, Washington November 1, 2023, ICE File No. 1319-005.

First, bare earth LiDAR imagery “shows what appear to be three swales or old channels on the fan area surface. These swales are not described in the report and suggest that stream channels occupied this surface in the past.” McShane Comment, May 27, 2024, at 2 (and see LiDAR image on same page). “The lidar also indicates features that appear to be overflow berms – a typical feature of debris flow deposition on alluvial fans.” *Id.*

Second, ICE describes Stream #2 as incised 10 to 15 feet into the fan surface at the apex of AF-2. ICE Geotech Report at 9, PDF 30/50. ICE opines that “AF-2 was formed when Stream 2 was at a higher base level, and therefore under geologic conditions which are no longer present and are no longer dynamic[.]” *Id.* But the “approach of using base elevation or incision into the fan surface is inconsistent with the Forest Board Manual for alluvial fan assessments.” McShane Comment, May 27, 2024, at 3. “The degree of channel incision at the fan head is not a reliable indicator of the lack of channel shifting potential, as infrequent but large flood events or debris flows can rapidly fill the channel.” (Forest Board Manual, page M2-37). Infrequent but large flood events or debris flows are likely in Stream #2, as explained by Mr. Shane in his third reason why ICE’s determination that AF-2 is a relict alluvial fan is incorrect.

Third, evidence from nearby similarly-sized and similar gradient stream watersheds indicates that infrequent large debris flows should be expected on Stream #2:

- a. “A large debris flow took place on the stream two streams to the west of Stream #2 in 2016. That stream was similarly incised into the upper fan and debris completely filled the channel and was deposited on the fan surface just past the top edge of the channel beginning at the apex of the alluvial fan.” McShane Comment, May 27, 2024, at 3. “The presence of mature trees on the fan prevented debris flow material from leaving the stream route and thus prevented an avulsion onto the upper fan surface. However, debris did escape the stream route as soon as it entered the clear cut harvest on the lower part of the fan.” *Id.* As Mr. McShane points out, this 2016 debris flow event “supports the Board Manuals statement that ‘channel incision at the fan head is not a reliable indicator of the lack of channel shifting potential’ as this stream nearly immediately incised back down to bedrock on the upper fan.” *Id.*
- b. “A similar event took place on another stream of similar size further to the west in approximately 2002. That stream also filled its incised channel, but escaped the channel onto the fan surface as soon as the debris flow reached a clear cut on the fan surface.” *Id.*
- c. “A debris flow took place to the east as well in approximately 2016. That debris flow stopped on the upper part of the fan, but does indicate that debris flows are an ongoing active geology process on the streams that extend to the ridge of mountain slope above.” *Id.*



“The three streams described above have watersheds of a similar size and gradient to that of Stream 2 and demonstrate that the geologic processes that lead to debris flows filling incised channels and fan processes at these alluvial fans is still active and dynamic under current geology and climate conditions.” *Id.*

**4. The Construction of a Bridge Across Stream #2 Will Increase the Risk of a Stream Channel Avulsion.**

The ICE Geotech Report states that Stream #2 crossing is located where the creek is incised into a 10- to 15-foot deep valley. ICE Geotech Report at 8, PDF 29/50. ICE opines that “Stream #2 will occasionally convey naturally-occurring debris flows sourced in its upper watershed[.]” *Id.* at 9, PDF 30/50. ICE states that the “naturally-occurring debris flows conveyed by Stream #2 also have the potential to overtop the channel, avulse into a new channel, and possibly affect South Shore Drive and residential structures downstream of Stream Crossing #2, so we expect that the naturally-occurring risk to public safety will be **moderate to high.**” *Id.* at 10, PDF 31/50 (bold emphasis in original).

Mr. McShane and Lake Cavanaugh Trust agree that the proposed bridge over Stream #2 has sufficient clearance to “allow clear water floods to pass under the bridge.” McShane Comment, May 27, 2024, at 4. But “debris flow peak discharges typically greatly exceed clear water floods. Debris flood and debris flows have peak discharge rates that can be considerably greater than 100-year flood return periods.” *Id.* “Debris flow peak discharges up to 50 times the peak discharge of a 200-year return period clear water flood have been reported by Jakob and Jordan (2001).” *Id.*

“[C]reeks subject to debris flows and debris floods may flood more frequently and at much greater intensity than the predicted clear water flood return periods based on standard run off analysis.” *Id.* “Large logs will likely be incorporated within the debris flows” at the proposed Stream #2 bridge crossing. *Id.* Mr. McShane has personally observed this “on most of the debris flows on the streams coming off the upper ridge of Frailey Mountain[.]” *Id.* Mr. McShane provides a photo as an example:



Large logs from debris flow in stream two watersheds to the west, a similar sizes and gradient stream to Stream #2. Note large logs deposited as much as 20 feet above bottom of stream channel.

*Id.* at 5. “Large debris flows with large logs will very likely become jammed at a bridge crossing at [the proposed bridge over Stream #2]. This will alter the flow path of the debris flows out of the channel increasing the risk to down slope properties that are located away from the stream path and also potentially causing a larger debris dam failure downstream of the bridge location.” *Id.* at 4. In sum, as stated by Mr. McShane:

Removal of trees on the alluvial fan will increase the risk of debris flows traveling further down the alluvial fan and increase the risk of debris flows with large logs impacting properties and public resources on the lower reaches of the alluvial fan. The removal of trees also will increase the risk of a channel avulsion impacting properties and public resources lower on the fan surface. Placing a permanent bridge across an area where debris flows are expected to flow increases the risk of channel blockage during a large debris flow event resulting in an increase to the risk [of] down fan properties and public resources.

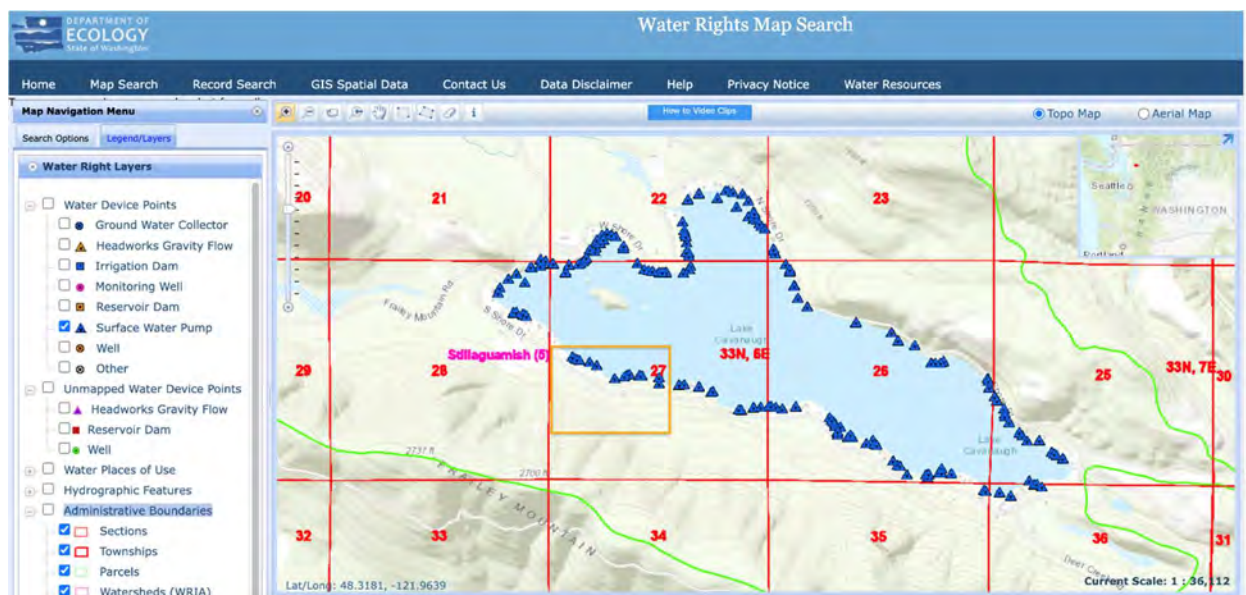
*Id.* at 6.

## 5. The Applicant's Marbled Murrelet Form is Inadequate.

The Marbled Murrelet Form is inadequate, because it asserts that there are no marbled murrelet nesting platforms within 300 feet while admitting that no protocol survey was done. The applicant admits in its SEPA Checklist: "This proposal is affected by marbled murrelet timing restrictions." SEPA Checklist, Question B.5.b (PDF 8). This FPA should not be approved without a protocol survey approved by WDFW.

## 6. The Project Would Adversely Impact Domestic Water Supplies.

All of the project streams drain to Lake Cavanaugh, which supplies drinking water via surface water withdrawals for dozens of residences. The figure below includes only surface water pump devices around the lake (excluding wells). The area of the proposed land disturbing activity is highlighted with an orange box:



In its SEPA Checklist, the applicant admits that "fuel, oils or other heavy machinery waste materials may inadvertently reach surface waters because of heavy equipment use or failures." SEPA Checklist Question B.3.a.6 (PDF 6). Moreover, the applicant admits that "sediment from road building and logging could enter surface waters." SEPA Checklist Question B.3.c.2 (PDF 7). That is an understatement. The photograph below shows increased runoff about to enter the lake (in the background), laden with sediment, from last year's logging that was performed in the immediate area of this proposal, where residential lots were impacted and increased runoff flooded South Shore Drive:





The FPA should be denied because of the significant risk that it poses to nearby drinking water supplies.

## **7. Additional Concerns**

- In Appendix D of the FPA form, the applicant should have also checked “Other” under Question 2.a and accurately described the alluvial fans. The same comment applies to Appendix D, Question 3.a.
- The harvest area appears to extend onto a parcel not owned by Timberline Logging. If the scale on ICE Geotech Report Figure 6 (PDF 42/50) is accurate, then it appears that the harvest area (and perhaps part of the proposed road) is on two parcels with the southern tip of the triangle on Parcel No. 18465. Parcel No. 18465 is owned by West Side Logging LLC, which is yet another alter ego of Nielsen Brothers, Inc.
- The applicant should have reviewed this forest practices activity area to determine whether it may involve historic sites and/or Native American cultural resources, under FPA Question 8 (PDF 3).
- Under FPA Question 11.1 (PDF 4), the applicant should have checked the “Yes” box, because Timberline Logging is an alter ego of Nielsen Brothers, Inc., which owns more than 500 acres of forestland in Washington.

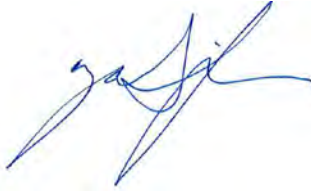
- Under FPA Question 20, the applicant failed to specify any particular conifer species for replanting, even though the question directs the applicant to specify the tree species.
- The ICE Geotech Report at Section 4.0 (PDF 24/50) states: “Based on our review of TLI's preliminary Activity Map (September 20, 2023; shown on Figure 2) and discussions with Mr. Petska, we understand that the three streams crossed by the Road A Extension alignment are likely to be Type Np (no fish, perennial flow) at the crossing locations, and Type F (fish use) downstream of the crossing locations.” Several reports from local residents indicate fish may be present in these streams. This should be further evaluated to ensure this application is completed correctly and proposed mitigations will be sufficient to protect fish.

## **8. Conclusion**

For the foregoing reasons, DNR should deny approval of FPA No. 2819391.

Very truly yours,

BRICKLIN & NEWMAN, LLP



Zachary Griefen  
[griefen@bnd-law.com](mailto:griefen@bnd-law.com)



PO Box 2546, Bellingham, Washington 98227

May 27, 2024

Re: **Comments on Forest Practice Application 2819391**  
Lake Cavanaugh, Skagit County, Washington

WAC 222-30-021(2)(b)(vi) states “No timber harvest is permitted within an alluvial fan.”

Forest Practice Application 2819391 proposes a road extension across alluvial fans and the associated streams and proposes a timber harvest on an alluvial fan.

The geotechnical report (Icicle Creek Engineers, 2023) identifies three alluvial fan areas: AF-1, AF-2 and AF-3. The report indicates that AF-1 and AF-3 are active alluvial fan areas. I concur with that assessment based on my on the ground observations of both AF-1 and AF-3 and my interpretation of the geology of the area and lidar bare earth imagery of the fans.

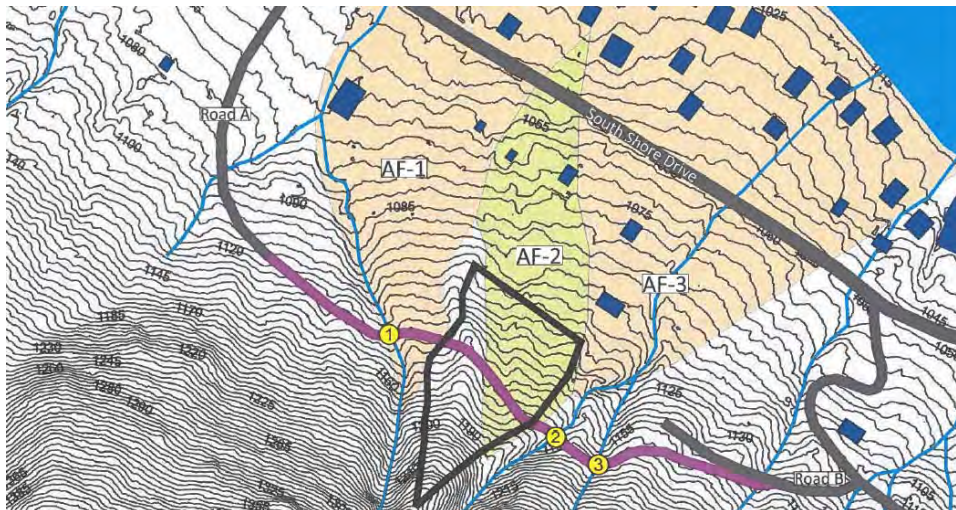


Figure 12 from Icicle report



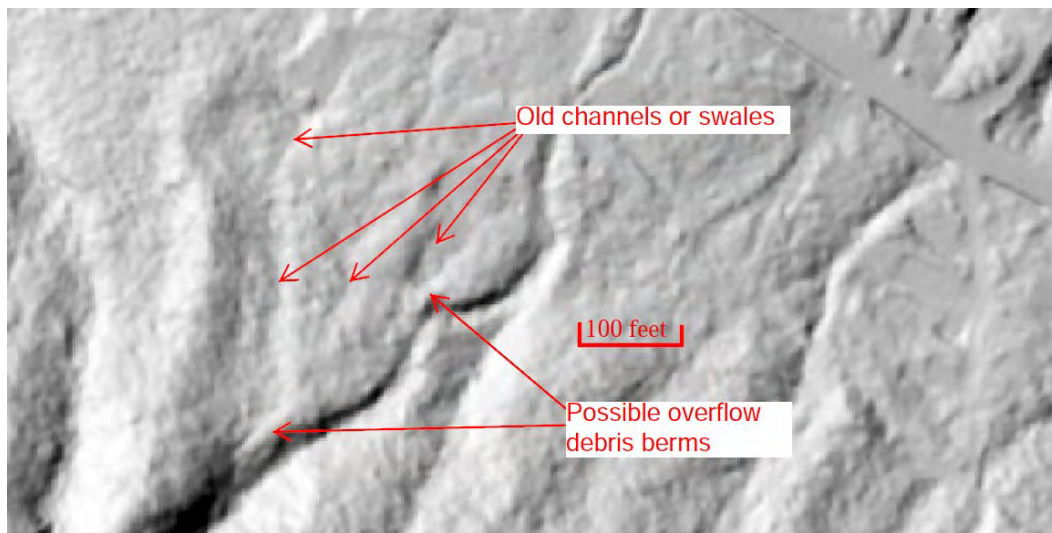
AF-2 is essentially part of the same alluvial fan as AF-3. Icicle has interpreted AF-2 as a relict alluvial fan on page 9 of their report:

**AF-2 (Relict)** – AF-2 is characterized by broadly divergent, smooth topography; the feature no longer contains a stream channel, though Stream #2 borders the upper (southeast) edge of AF-2 for about 100 feet before the stream diverts east. At the apex of AF-2, Stream #2 is incised into the adjacent topography about 10 to 15 feet and is lined with bedrock. AF-2 is vegetated with mature conifer trees and occasional deciduous trees, and light to medium dense brush.

We did not observe evidence of recent or historic channel avulsion, overtopping or accumulation on this surface. We did not observe evidence of streambank erosion or high water (such as scouring or sediment/woody debris deposition) at the apex, which could indicate a history of high flow events or debris flows with potential to inundate AF-3. In our opinion, AF-2 was formed when Stream #2 was at a higher base elevation, and therefore under geologic conditions which are not currently present and are no longer dynamic; based on our evaluation, AF-2 should be considered **Relict**, and is not considered an Alluvial Fan from a regulatory perspective (WAC 222-16-010("Sensitive Sites")(5)).

The following comments are provided regarding the interpretation of the alluvial fan being considered relict.

1. Lidar bare earth imagery shows that the surface of AF-2 shows what appear to be three swales or old channels on the fan area surface. These swales are not described in the report and suggest that stream channels occupied this surface in the past. The lidar also indicates features that appear to be overflow berms – a typical feature of debris flow deposition on alluvial fans.



Lidar bare earth imagery of AF-2 and Stream 2

2. Using base elevation of the stream channel on an alluvial fan is not consistent with the Forest Board Manual.

Icicle Creek describes Stream #2 as incised 10 to 15 feet into the fan surface at the apex of AF-2. Icicle Creek opines that “AF-2 was formed when Stream 2 was at a higher base level, and therefore under geologic conditions which are no longer present and are no longer dynamic”.

The approach of using base elevation or incision into the fan surface is inconsistent with the Forest Board Manual for alluvial fan assessments. The Manual states that “The degree of channel incision at the fan head is not a reliable indicator of the lack of channel shifting potential, as infrequent but large flood events or debris flows can rapidly fill the channel.” (page M2-37 of Manual).

3. Empirical evidence at nearby similar sized and similar gradient stream watersheds indicate that infrequent large debris flows should be expected on Stream #2.

A large debris flow took place on the stream two streams to the west of Stream #2 in 2016. That stream was similarly incised into the upper fan and debris completely filled the channel and was deposited on the fan surface just past the top edge of the channel beginning at the apex of the alluvial fan. Debris was deposited all along the edge of the fan surface above the stream channel. The presence of mature trees on the upper fan prevented debris flow material from leaving the stream route and thus prevented an avulsion onto the upper fan surface. However, debris did escape the stream route as soon as it entered the clear cut harvest on the lower part of the fan. The event supports the Board Manuals statement that “channel incision at the fan head is not a reliable indicator of the lack of channel shifting potential” as this stream nearly immediately incised back down to bedrock on the upper fan.

A similar event took place on another stream of similar size further to the west in approximately 2002. That stream also filled its incised channel, but escaped the channel onto the fan surface as soon as the debris flow reached a clear cut on the fan surface.

A debris flow took place to the east as well in approximately 2016. That debris flow stopped on the upper part of the fan, but does indicate that debris flows are an ongoing active geology process on the streams that extend to the ridge of mountain slope above.

The three streams described above have watersheds of a similar size and gradient to that of Stream 2 and demonstrate that the geologic processes that lead to debris flows filling incised channels and fan processes at these alluvial fans is still active and dynamic under current geology and climate conditions.

4. The construction of a bridge across Stream #2 will increase the risk of a stream channel avulsion.

The Icicle Creek report states that Stream #2 crossing is located where the creek is incised into a 10- to 15-foot deep valley (page 8). Icicle Creek opines “that Stream #2 will occasionally convey naturally-occurring debris flows sourced in its upper watershed” (page 9).

On page 10 Icicle Creek states that “the bridge will have 15-feet of clearance between the bottom of the bridge and the 100-year high-water mark.” On this basis they expect the crossing should allow natural conveyance of water, sediment and debris during high flow and/or debris flow events”.

I agree that the clearance will readily allow clear water floods to pass under the bridge; however, debris flow peak discharges typically greatly exceed clear water floods. Debris flood and debris flows have peak discharge rates that can be considerably greater than 100-year flood return periods. Debris flow peak discharges up to 50 times the peak discharge of a 200-year return period clear water flood have been reported by Jakob and Jordan (2001).

While heavy rainfall events often trigger landslides in drainage basins leading to debris flows and floods, the debris flows and floods that exceed 100-year return period clear water flood events can occur more frequently than the calculated clear water flood return period. That is, creeks subject to debris flows and debris floods may flood more frequently and at much greater intensity than the predicted clear water flood return periods that are based on standard run off analysis. The return frequency and size of peak discharges associated with debris flows and debris floods is dependent upon stream morphology and stream basin geomorphic processes. Hence, it is essential to have a good understanding of the geomorphic processes and stream morphology to assess the scale of and the frequency of debris events.

As noted above, empirical evidence from nearby streams with similar watershed area and gradients that extend to the summit ridge of Frailey Mountain have had infrequent but very large debris flows. Similar infrequent large debris flows should be expected at this site.

Large logs will likely be incorporated within the debris flows. Such has been the case on most of the debris flows on the streams coming off the upper ridge of Frailey Mountain (personal observations at six similar streams on the north side of Frailey Mountain and pictured below).

Large debris flows with large logs will very likely become jammed at a bridge crossing at this location. This will alter the flow path of the debris flows out of the channel increasing the risk to down slope properties that are located away from the stream path and also potentially causing a larger debris dam failure downstream of the bridge location.





Large logs from debris flow in stream two watersheds to the west, a similar sizes and gradient stream to Stream #2. Note large logs deposited as much as 20 feet above bottom of stream channel.

## Closure

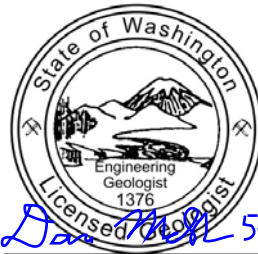
Removal of trees on the alluvial fan will increase the risk of debris flows traveling further down the alluvial fan and increase the risk of debris flows with large logs impacting properties and public resources on the lower reaches of the alluvial fan. The removal of trees also will increase the risk of a channel avulsion impacting properties and public resources lower on the fan surface. Placing a permanent bridge across an area where debris flows are expected to flow increases the risk of channel blockage during a large debris flow event resulting in an increase to the risk down fan properties and public resources.

Thank you for considerations of these comments.

Sincerely yours,  
**Stratum Group**



Dan McShane, L.E.G., M.Sc.  
Licensed Engineering Geologist



DANIEL McSHANE

# **ATTACHMENT B**



25 Wash.App.2d 1042

NOTE: UNPUBLISHED OPINION, SEE WA R GEN GR 14.1

Court of Appeals of Washington, Division 1.

The LAKE TRUST, a revocable trust governed by the laws of Washington, Appellant,

v.

SKAGIT COUNTY, a Washington municipal corporation including its Planning & Development Services, Defendant,

Richmond JPJ Enterprises Inc., a Washington corporation, and Nielsen Brothers, Inc., a Washington corporation, Respondents.

No. 83761-3-I

|

Filed February 13, 2023

Appeal from Skagit Superior Court, Docket No: 19-2-01188-5, Honorable Laura M. Riquelme, Judge

#### Attorneys and Law Firms

John T. Cooke, Houlihan Law, 100 N 35th St, Seattle, WA, 98103-8606, for Appellant.

Peter Robert Dworkin, Belcher Swanson Law Firm, P.L.L.C., 900 Dupont St, Bellingham, WA, 98225-3105, for Respondents.

#### UNPUBLISHED OPINION

Maxa, J.<sup>1</sup>

\*1 The Lake Trust appeals the trial court's rulings after a bench trial that (1) a subdivision plat's restrictive covenant that prohibited the use of lots for commercial business purposes did not apply to real estate holding company Richmond JPJ Enterprises, Inc.'s (JPJ) and logging company Nielsen Brothers, Inc.'s (NBI) use of a lot in the subdivision for their commercial logging operations, and (2) the

restrictive covenant had been abandoned. The trial court stated that the term "commercial business" normally would apply to a logging operation. But the court concluded that the historical context of the area when the subdivision was platted in the 1940s, specifically the fact that timber was actively being harvested and transported through the subdivision, showed that the covenant was not intended to apply to logging operations. The trial court also held that the abandonment defense applied because after the subdivision was platted, the area continued to be used for logging activities.

We reverse the trial court's decision and remand for the trial court to enter judgment in favor of the Lake Trust.

#### FACTS<sup>2</sup>

##### *Parties and Relevant Properties*

The Lake Trust owns two lots in division 3 of the Lake Cavanaugh Subdivision in Skagit County (Lake Trust property). Both of the lots are located on South Shore Drive. One of the lots abuts the shore of Lake Cavanaugh and is improved with a single family residence. The other lot is upland across South Shore Drive and is vacant. Robert McCullough is trustee of the Lake Trust. McCullough and his wife acquired the Lake Trust property in September 2004 and later transferred ownership to the Trust.

JPJ, West Side Logging, LLC and Timberline Logging, Inc. are real estate holding companies either affiliated with, run by, or owned by brothers Robert Nielsen and David Nielsen. NBI is a logging and contracting company that also is either affiliated with or owned by the Nielsen brothers. NBI contracts with JPJ, West Side and Timberline to harvest timber from their properties.

In 2018, JPJ acquired a lot in division 3 of the Lake Cavanaugh Subdivision ("JPJ property"). The lot is located on South Shore Drive approximately 2,500 feet away from the JPJ Property. JPJ purchased the lot for the sole purpose of using it for an access road for NBI's logging operations on the timberlands.

Timberline and West Side own four parcels of land totaling approximately 276 acres abutting the Lake Cavanaugh Subdivision (“Timber property”). The zoning of the Timber property allows timber cultivation and harvest of forest products.

#### *Historical Background*

In the early 1940s, the English Lumber Company owned much of the land surrounding Lake Cavanaugh, including what is now the Timber property, the Lake Trust property, and the JPJ property. English Lumber harvested timber on the properties using a series of roads and rail lines to move equipment and to remove and transport timber.

**\*2** In January 1945, English Lumber sold most of its timberlands around Lake Cavanaugh (“timberlands”) to Puget Sound Pulp and Timber Company, including most of the Timber property. English Lumber retained the property it owned abutting Lake Cavanaugh (“Lake Cavanaugh lands”).

In September 1945, English Lumber sold the Lake Cavanaugh lands to Leslie Eastman. The deed to Eastman stated that the deed was subject to an easement created under an agreement dated as of January 1, 1945 (1945 agreement) between the seller, English Lumber, and the purchaser, Puget Sound Pulp.<sup>3</sup> Under the 1945 Agreement, Puget Sound Pulp was permitted reasonable rights of way over the Lake Cavanaugh lands for the purpose of logging its timber. These rights of way and Puget Sound Pulp's rights expired 10 years from the date of the agreement. The deed to Eastman also was subject to easements granted to the State Division of Forestry to construct and maintain roads for forest protection purposes and other agreements.

Between 1946 and 1948, Eastman, Eastman's estate, and other successors-in-interest (primarily Richard Shorett, trustee) subdivided the Lake Cavanaugh lands into the Lake Cavanaugh Subdivision. Lake Cavanaugh division 3 was recorded in July of 1948 and created approximately 244 lots.

The plat maps for divisions 2 and 3 of the Lake Cavanaugh Subdivision dedicated rights of ways for public travel including what would later become South Shore Drive. The plat map for division 3 also dedicated a right of way between lots 20 and 21 of Block 2. The face of the plat division 3

includes the following “Restriction”: “No lots shall be used for commercial business or manufacturing purposes.” Clerk's Papers (CP) at 449. The face of the plat also contains a “Title Certificate,” which identifies easements that encumber the lots in division 3 granted to the State Division of Forestry and Puget Sound Pulp. CP at 449.

#### *Use of JPJ Property*

Tract A of division 3, together with tracts A, B, and C of division 2 and other property conveyed by English Lumber to Puget Sound Pulp in 1945, make up the whole of the Timber property. Westside and Timberline acquired the Timber property from Weyerhaeuser Company in 1918.

In July 2019, West Side, Timberline, and JPJ (as landowner) and NBI (as timber owner and operator) submitted a Forest Practice Application (FPA) to the Department of Natural Resources (DNR) for the harvest of timber on approximately 25 acres of the Timber property. The FPA proposed using the JPJ property for access to the Timber property. DNR approved the FPA in August 2019.<sup>4</sup> Under the FPA, logging operations could take place only from May 15 through September 30.

The FPA proposed three separate harvest areas: units 1, 2 and 3. Units 1, 2 and 3 are separated by streams and/or gullies. The FPA proposed two separate road systems to access the harvest areas from South Shore Drive because unit 1 cannot connect to units 2 and 3 without construction of a large and expensive bridge. Road A accesses unit 1 from South Shore Drive through the right of way between lots 20 and 21 as designated in the plat for division 3. Road B provides access to units 2 and 3 from South Shore Drive by connecting with Road C. Road B connects South Shore Drive to the Timber property by going through the JPJ Property.

**\*3** After DNR approved the FPA, JPJ submitted a County Road Access Application to construct access from the JPJ property to South Shore Drive for Road B. The application identified the access as commercial. The County approved the application and required JPJ to construct the access to Commercial Class Road Approach standards.

The JPJ property was used for the transit of vehicles (including but not limited to logging trucks, bulldozers and

logging equipment) to and from the Timber property to South Shore Drive. JPJ and NBI have used and continue to use the JPJ property to remove timber from Units 2 and 3. The removal of timber included the transport of logging equipment and road building machinery and equipment as well as the employees needed to remove approximately 900,000 board feet of timber from units 2 and 3 and to transport the timber to various mills in the region. Log trucks went through the JPJ property to haul timber out of the Timber property.

#### *Lawsuit and Trial*

In October 2019, the Lake Trust filed a lawsuit against JPJ and NBI that included a claim for breach of the commercial business restrictive covenant and requested declaratory judgment and injunctive relief. The Lake Trust alleged that JPJ's and NBI's use of the JPJ property for commercial access associated with commercial logging violated the restrictive covenant. In their answer, JPJ and NBI asserted affirmative defenses of abandonment of the covenant, equitable cancellation or modification of the covenant, and waiver. They also asserted counterclaims for a private way of necessity and implied easement.

The trial court presided over a two-day bench trial. The court entered a Memorandum and Order Following Trial. In addition to adopting the parties' stipulated facts, the court issued detailed findings of fact and conclusions of law.

#### *Findings of Fact*

The trial court found that the January 1, 1945 agreement allowed for Puget Sound Pulp to have an easement for purposes of transporting timber across the Lake Cavanaugh lands. And after the timberlands were conveyed to Puget Sound Pulp, Puget Sound Pulp used the timberlands to harvest timber. In the late 1940s and early 1950s, Puget Sound Pulp removed the railroads and converted those grades to trucking roads.

The trial court further found as follows:

Because Leslie Eastman was aware of the January 1, 1945 Agreement, [Puget Sound Pulp's] logging operations in the timberlands,

and [Puget Sound Pulp's] continued rights of way over what was to become Subdivision 3 when he created the subdivision. *It was his intention to exclude logging transit to and from the timberlands from the term "commercial business."*

CP at 544 (emphasis added).

Regarding Road B, the trial court found that Road B connects the Timber property to South Shore Drive via the JPJ property. The court found that Road B was in existence, either as a road or a railroad grade, before English Lumber's sales to Puget Sound Pulp and Eastman. The road was in use after conveyance of the timberlands to Puget Sound Pulp and into the 1950's, but there is no evidence that Road B remained in use on or after January 1, 1955.

Regarding the JPJ property, the trial court found that JPJ purchased the property solely to use it as an access road for NBI's logging on the timberlands. The court found, "JB [sic] and NBI's interests on the property are purely related to the commercial business of logging." CP at 543. JPJ/NBI's anticipated use of the JPJ property was to have logging and dump trucks pass through the lot for at least eight weeks each year over the course of three or four years. The logging trucks would be expected to cross the property up to 24 times a day while going to and from the timberlands. It takes a couple of minutes for trucks to cross the JPJ property. The timber harvest on the timberlands is expected to produce a gross amount of \$4 million of timber.

\*4 The trial court found that the restrictions for division 3 include a prohibition on use "for commercial business or manufacturing purposes." CP at 545. The court specifically found that "JB [sic] and NBI's intended use of the JB [sic] Property is for commercial business." CP at 545.

Regarding JPJ/NBI's abandonment defense, the trial court discussed the uses of four properties in division 3 of the Lake Cavanaugh subdivision. In 2004, James and Amy Wepler were granted a permit for the purposes of harvesting merchantable timber, along with road construction, on their lot. The logging was not for purposes of clearing the lot for construction of a residence. The Wepler property was logged at some point between 2004 and 2008.



The Linert property also is in division 3, and the property's primary use is as a single family residence. The property owner, Brett Linert, has lived there for 25 years. Linert operates a handyman business in which he goes to other properties to do work on them. Linert has a small pickup truck for the business that he parks on his property. The Secretary of State's address for the business is Linert's property.

Another property within division 3 had a connection with Happy Valley Trucking, Inc. That property address was registered with the Secretary of State as the principal mailing address for the business and its registered agent. The lot also contained an occupied residence. The lot had several commercial vehicles parked on it, primarily dump trucks and a trailer, and piles of rocks that likely were gravel until the property changed hands shortly before trial. Happy Valley Trucking was actively running its operations from that address. Trucks for Happy Valley Trucking had been observed entering and exiting that property over the last several years.

At least one home within division 3 was rented as a VRBO vacation property. Nothing about the outward appearance of that building would suggest that it was anything other than a residence.

#### *Conclusions of Law*

The trial court denied the Lake Trust's breach of covenant claim and dismissed that claim. The court provided the following analysis:

Here, [Puget Sound Pulp] was actively logging the timberlands at the time that phrase was added to the plat restrictions. The January 1, 1945 Agreement and evidence of multiple old railroad grades and truck roads leading into South Shore Drive indicate that the Lake Cavanaugh Lands and specifically Subdivision 3 would be used for access to the timberlands at least through 1954 and potentially longer depending on the use of the right of way or the easement contemplated in the January 1, 1945 Agreement.

While the intention in subdividing the property was to create a more residential area around Lake Cavanaugh,

Leslie Eastman clearly contemplated that logging operations would be a component of the area. Under the January 1, 1945 Agreement, logging operations were required to transit through Subdivision 3 for several more years after the subdivision was platted in 1948. *The term "commercial business" would normally apply to a logging operation, but it does not given the historical context of the area surrounding Lake Cavanaugh.* The intended use for Subdivision 3 at the time of its creation was for it to be a residential area around the lake that allowed access to the timberlands, where [Puget Sound Pulp] was actively harvesting timber and entitled to liberal rights of way through Subdivision 3 through the end of 1954.

\*5 CP at 548 (emphasis added).

The trial court also ruled that JPJ/NBI's abandonment affirmative defense applied.<sup>5</sup> The court stated,

Here, there is substantial evidence that the timberlands continued to be logged after Subdivision 3 was platted and that areas such as Road B within the subdivision continued to be used into the 1950s for purposes of accessing the timberlands for logging. Even if the restrictive covenant was intended to exclude that type of use, it was immediately abandoned by then-owners of lots in Subdivision 3 who permitted such use.

CP at 549. The court did not mention the four uses of other lots discussed in the findings of fact.

Finally, the trial court denied JPJ/NBI's implied easement counterclaim. The court stated, "Given the express language of the January 1, 1945 Agreement, the court concludes that Road B was a temporary right of way and that an implied easement does not exist for this potential access road to the timberlands." CP at 550.

Lake Trust appeals the trial court's Memorandum and Order Following Trial.

#### ANALYSIS

#### A. Failure To Properly Assign Error

Initially, JPJ/NBI argue that all of the trial court's findings of fact are verities on appeal because Lake Trust did not specifically challenge any numbered findings of fact in its notice of appeal or assignments of error. In reply, Lake Trust argues that it sufficiently identified the issues for appeal. And in its reply brief, the Lake Trust also formally assigns error to the trial court's finding of fact 10 and the court's conclusion of law stating that the Lake Trust's predecessors in interest abandoned the restrictive covenants in the 1950s.

RAP 10.3(g) states, “A separate assignment of error for each finding of fact a party contends was improperly made must be included with reference to the finding by number. The appellate court will only review a claimed error which is included in an assignment of error or clearly disclosed in the associated issue pertaining thereto.” The Lake Trust assigned error generally to the trial court's Memorandum and Order Following Trial and did not specifically reference finding of fact 10 or any other finding. Unchallenged findings of fact are verities on appeal. Real Carriage Door Co. ex rel. Rees v. Rees, 17 Wn. App. 2d 449, 457, 486 P.3d 955, review denied, 198 Wn.2d 1025 (2021).

Based on RAP 10.3(g), we typically do not review a claimed error not included in an assignment of error. See Phillips v. Greco, 7 Wn. App. 2d 1, 9, 433 P.3d 509 (2018). Nevertheless, in the exercise of discretion we can address findings of fact not included in specific assignments of error where the nature of the challenge is apparent from the content of the opening brief.  Harris v. Urell, 133 Wn. App. 130, 137–38, 135 P.3d 530 (2006).

Here, the Lake Trust did not comply with the requirements of RAP 10.3(g). However, the Lake Trust's brief clearly indicated that it was challenging finding of fact 10, that Eastman's intention was “to exclude logging transit to and from the timberlands from the term ‘commercial business.’” CP at 544. And the Lake Trust's brief clearly challenged the trial court's conclusion that abandonment had occurred. The issues raised and grounds for appeal were clear enough that JPJ/NBI were able to discern them and address Lake Trust's arguments. Accordingly, we exercise our discretion and consider the Lake Trust's challenge to finding of fact 10 and the trial court's finding of abandonment.

#### B. Standard of Review

\*6 We review a trial court's decision after a bench trial to determine whether the findings of fact are supported by substantial evidence and whether the conclusions of law are supported by the findings of fact. Real Carriage Door, 17 Wn. App. 2d at 457. Substantial evidence is the amount of evidence sufficient to convince a rational, fair-minded person that a premise is true. *Id.* All evidence and reasonable inferences are viewed in the light most favorable to the prevailing party. *Id.* As noted above, findings of fact that are unchallenged are treated as verities on appeal. *Id.*

The trial court's application of facts to law and the conclusions of law are reviewed de novo. *Id.*

#### C. Interpretation of Restrictive Covenant

The Lake Trust argues that the trial court erred in determining that JPJ/NBI's commercial logging activities did not violate the restrictive covenant prohibiting the use of lots in the Lake Cavanaugh subdivision for commercial business purposes. The Lake Trust claims that the trial court improperly used extrinsic evidence to interpret the term “commercial business” to exclude logging operations. JPJ/NBI argues that the trial court properly applied the context rule in interpreting the restrictive covenant to exclude logging operations. We agree with the Lake Trust.

##### 1. Legal Principles

Restrictive covenants are enforceable promises regarding the use of land.  Viking Props., Inc. v. Holm, 155 Wn.2d 112, 119, 118 P.3d 322 (2005), abrogated on other grounds by  Yim v. City of Seattle, 194 Wn.2d 682, 702, 704, 451 P.3d 694 (2019). The purpose of restrictive covenants is “to make residential subdivisions more attractive for residential purposes.”  Hollis v. Garwall, Inc., 137 Wn.2d 683, 699, 974 P.2d 836 (1999). Covenants are enforceable by injunctive relief if a plaintiff shows (1) a clear legal or equitable right, and (2) a well-grounded fear of immediate invasion of that right. *Id.*

The interpretation of a restrictive covenant is a question of law, and we apply the rules of contract interpretation in determining the meaning of a covenant.  Wilkinson v.

*Chiwawa Communities Ass'n*, 180 Wn.2d 241, 249, 327 P.3d 614 (2014). The primary objective in contract interpretation is determining the drafter's intent. *Id.* at 250. Although interpretation of a covenant is a question of law, the drafter's intent is a question of fact. *Id.* But questions of fact may be determined as a matter of law if reasonable minds could reach but one conclusion. *Id.*

“In determining the drafter's intent, we give covenant language its ‘ordinary and common use’ and will not construe a term in such a way ‘so as to defeat its plain and obvious meaning.’ ” *Id.* (quoting *Mains Farm Homeowners Ass'n v. Worthington*, 121 Wn.2d 810, 816, 854 P.2d 1072 (1993)). When examining the covenant language, we must “consider the instrument in its entirety.” *Wilkinson*, 180 Wn.2d at 250.

In general, Washington courts follow the “objective manifestation theory” of contract interpretation, under which the focus is on the reasonable meaning of the contract language to determine the parties’ intent. *Hearst Commc'ns, Inc. v. Seattle Times Co.*, 154 Wn.2d 493, 503, 115 P.3d 262 (2005). But to assist in determining the meaning of contract language, including restrictive covenants, courts also apply the *Berg*<sup>6</sup> “context rule.” *Hollis*, 137 Wn.2d at 693, 696. This rule “enables trial courts to look to the surrounding circumstances of the original parties to determine the meaning of specific words and terms used in the covenants.” *Id.* at 696. The context rule allows consideration of extrinsic evidence, but certain extrinsic evidence is not admissible: (1) “[e]vidence of a party's unilateral or subjective intent as to the meaning of a contract word or term,” (2) “[e]vidence that would show an intention independent of the instrument,” or (3) “[e]vidence that would vary, contradict or modify the written word.” *Id.* at 695.

\*7 The court in *Wilkinson* emphasized the limited use of extrinsic evidence. *Id.* 180 Wn.2d at 251-52. The court stated that extrinsic evidence can be used only “ ‘to illuminate what was written, not what was intended to be written.’ ” *Id.* at 251 (quoting *Hollis*, 137 Wn.2d at 697). Further, courts “do not consider extrinsic ‘[e]vidence that would vary, contradict or modify the written word’ or ‘show an intention

independent of the instrument.’ ” *Wilkinson*, 180 Wn.2d at 251 (quoting *Hollis*, 137 Wn.2d at 695).

## 2. Trial Court Findings and Conclusions

The trial court made unchallenged findings of fact that “JPJ purchased the JPJ property solely for purposes of using it as an access road for NBI's logging on the timberlands” and “JBJ [sic] and NBI's interests on the property are purely related to the *commercial business* of logging.” CP at 543 (emphasis added). In addition, the trial court made an unchallenged finding of fact that “JBJ [sic] and NBI's intended use of the JPJ Property is for *commercial business*.” CP at 545 (emphasis added). And the court noted in its conclusions of law that “[t]he term ‘commercial business’ would normally apply to a logging operation.” CP at 548.

Nevertheless, the trial court relied on extrinsic evidence to make a finding of fact that “[i]t was [Eastman's] intention to exclude logging transit to and from the timberlands from the term “ ‘commercial business’ ”, and to conclude that the term “ ‘commercial business’ “does not apply to logging operations “given the historical context of the area surrounding Lake Cavanaugh.” CP at 548. The court focused on the fact that when the restrictive covenant was included in the plat for division 3 in 1948, Puget Sound Pulp was actively harvesting timber in the timberlands and had a right of way to use division 3 for access to the timberlands until at least the end of 1954. As a result, the court found that Eastman “clearly contemplated that logging operations would be a component of the area.” CP at 548.

The dispositive issue here is whether the trial court properly relied on extrinsic evidence to determine the meaning of “commercial business” in the restrictive covenant.

## 3. Analysis

There is little question that the ordinary, common, plain, and obvious meaning of the term “commercial business” includes JPJ/NBI's logging activities. The trial court expressly found that JPJ and NBI used the JPJ property for “commercial business,” and concluded that a logging operation “normally” would constitute a commercial business. CP at 548. JPJ/NBI suggest that the term “commercial business” is



ambiguous, but the trial court's unchallenged findings refute that suggestion. The trial court confirmed that a logging operation is a commercial business.

As a result, the trial court necessarily was not using extrinsic evidence “to determine the meaning of specific words and terms used in the covenant[ ],”  *Hollis*, 137 Wn.2d at 696, or to “ ‘to illuminate what was written.’ ”  *Wilkinson*, 180 Wn.2d at 251 (quoting  *Hollis*, 137 Wn.2d at 697). The trial court already had determined the meaning of the term “commercial business.” Instead, the trial court used extrinsic evidence to conclude that even though a logging operation was a commercial business, Eastman intended to exclude logging operations from the scope of the restrictive covenant. But the covenant contained no such exclusion, and instead stated without qualification that use for commercial business purposes was prohibited.

\*8 The Supreme Court in *Wilkinson* was clear: courts “do not consider extrinsic ‘[e]vidence that would vary, contradict or modify the written word’ or ‘show an intention independent of the instrument.’ ”  180 Wn.2d at 251 (quoting  *Hollis*, 137 Wn.2d at 695). But that is exactly what the trial court did here. The court essentially rewrote the covenant to state that use of lots for commercial business purposes was prohibited except for commercial logging operations.

JPJ/NBI argue that the restrictive covenant must be considered in its entirety, and they focus on the title certificate on the face of the plat. JPJ/NBI emphasize that the title certificate expressly references Puget Sound Pulp's timber access easement over division 3. They claim that the title certificate and the restrictive covenant are contradictory, requiring extrinsic evidence to resolve the contradiction.

However, the trial court did not make any findings of fact or conclusions of law regarding the title certificate. The court apparently did not find any tension between the title certificate and the restrictive covenant. Further, the title certificate does not contradict the restrictive covenant. The title certificate notes that Puget Sound Pulp had an access *easement* across division 3. The restrictive covenant states that no *lots* shall be used for commercial business purposes. Although the trial court found that Puget Sound Pulp used Road B on the JPJ property into the 1950s, there is no indication in the record that Puget Sound Pulp owned any

lots in division 3 when the subdivision was platted as opposed to exercising its easement right to access timber.

We conclude that the trial court erred in using extrinsic evidence to vary the plain language of the restrictive covenant. Accordingly, we hold that the trial court erred in ruling that the restrictive covenant did not apply to JPJ/NBI's logging operations.

#### 4. “Use” of Property

In the alternative, JPJ/NBI argue the trial court's order should be affirmed based on the theory that temporarily transporting logs over the JPJ property does not constitute a “use” for commercial business purposes. We disagree.

JPJ/NBI focus on the fact that their activity is temporary, not permanent. But the trial court found that JPJ/NBI's intended “use” of the land was for commercial business. And the covenant's prohibition on the use of the land for commercial business does not include any temporal qualification. Instead, the covenant imposes a blanket prohibition on the use of the land within the plat for commercial business. Under *Wilkinson*, a temporal exception or qualification cannot be grafted onto the plain language of the covenant. We reject JPJ/NBI's argument.

#### D. Affirmative Defenses

JPJ/NBI argue that we should affirm the trial court's decision based on three affirmative defenses: abandonment, cancellation/modification, and waiver.<sup>2</sup> We disagree.

##### 1. Abandonment of Covenant

\*9 The Lake Trust argues that the trial court erred in concluding that the restrictive covenant was abandoned in the 1950s. JPJ/NBI argue that the trial court's abandonment ruling should be affirmed. We agree with the Lake Trust.

##### a. Legal Principles

Abandonment is an equitable defense that will preclude enforcement of a covenant. *Mountain Park Homeowners*

*Ass'n v. Tydings*, 125 Wn.2d 337, 341, 883 P.2d 1383 (1994). “The defense of abandonment requires evidence that prior covenant violations by other residents have so eroded the general plan as to make enforcement useless and inequitable.” *Id.* at 342. Equity will not enforce a covenant if it “has been *habitually and substantially violated* so as to create an impression that it has been abandoned.” *Id.* (emphasis added) (quoting  *White v. Wilhelm*, 34 Wn. App. 763, 769, 665 P.2d 407 (1983)).

However, a few violations of covenants do not constitute abandonment. *Peckham v. Milroy*, 104 Wn. App. 887, 890, 17 P.3d 1256 (2001). “Violations must be material to the overall purpose of the covenant, and minor violations are insufficient to find abandonment.” *Mountain Park Homeowners*, 125 Wn.2d at 342.

Whether a violated covenant has been abandoned generally is a question of fact.  *Green v. Normandy Park Riviera Section Cmty. Club*, 137 Wn. App. 665, 697, 151 P.3d 1038 (2007). However, we can decide questions of fact as a matter of law if reasonable minds could not differ. See *Meyers v. Ferndale School Dist.*, 197 Wn.2d 281, 289, 481 P.3d 1084 (2021).

#### b. Trial Court Ruling

The trial court concluded that the Lake Trust's “predecessors in interest abandoned the restrictive covenants in the 1950s when Subdivision 3 experienced significant logging activity.” CP at 549. The court found that “there is substantial evidence that the timberlands continued to be logged after Subdivision 3 was platted and that areas such as Road B within the subdivision continued to be used into the 1950s for purposes of accessing the timberlands for logging.” CP at 549. The court reasoned that even if the restrictive covenant was intended to exclude that type of use, “it was immediately abandoned by then-owners of lots in Subdivision 3 who permitted such use.” CP at 549.

#### c. Analysis – 1950s Logging

It is undisputed that Puget Sound Pulp continued to use the Lake Cavanaugh subdivision property, including Road B on

what is now the JPJ property, for its logging activities after the restrictive covenant was imposed in the division 3 plat. But there is no indication in the record that these activities violated the covenant.

Puget Sound Pulp had the contractual right to a right of way on the Lake Cavanaugh lands under the 1945 Agreement with English Lumber, which allowed the right of way for 10 years. Therefore, evidence of logging in and around division 3 is consistent with Puget Sound Pulp's preexisting rights. And division 3 owners could not enforce the covenant because of these contractual rights. Not coincidentally, the trial court found no evidence that Road B was used on or after January 1, 1955 – when the January 1945 agreement expired.

In addition, the trial court did not find and there is no evidence in the record that Puget Sound Pulp violated the restrictive covenant. Covenants run with the land, and burdens the owner of property subject to the covenant with a duty to comply with the restriction. *Kiona Park Estates v. Dehls*, 18 Wn. App. 2d 328, 336, 491 P.3d 247 (2021). Therefore, the covenant here necessarily applied only to owners of lots in division 3. But there is no evidence that Puget Sound Pulp or any other logging company owned a lot within division 3 during the 1950s.<sup>8</sup> As a result, they were not subject to the covenant and could not have violated it.

<sup>\*10</sup> There is no evidence that the restrictive covenant was “‘habitually and substantially violated’ ” in the 1950s. *Mountain Park*, 125 Wn.2d at 342 (quoting  *White*, 34 Wn. App. at 769). Therefore, we conclude that the trial court erred in concluding that the restrictive covenant had been abandoned because of logging activity in the 1950s. We hold that as a matter of law, no such abandonment occurred.

#### d. Analysis – Four Alleged Violations

The trial court did not find abandonment based on the four more recent alleged violations of the restrictive covenant by the Weppers, Linert, Happy Valley Trucking, and the VRBO property. Nevertheless, JPJ/NBI argue that these violations are sufficient to affirm the trial court's finding of abandonment. We disagree.

Even if we find that substantial evidence supports those alleged violations, we conclude they are insufficient to support JPJ/NBI's defense of abandonment. The four alleged violations involve four separate properties in a 244 lot subdivision. There is no indication that these were habitual and substantial violations. And we cannot reasonably conclude that these alleged violations "so eroded the general plan as to make enforcement useless and inequitable." Mountain Park, 125 Wn.2d at 342.

We hold as a matter of law that the four alleged violations of the restrictive covenant cannot support the trial court's ruling that the defense of abandonment applied.

## 2. Cancellation/Modification of Covenant

JPJ/NBI argues that we should affirm the trial court's decision by applying the equitable doctrine of cancellation/modification to the restrictive covenant. We disagree.

Changed neighborhood conditions is an equitable defense to the enforcement of a restrictive covenant. Mountain Park, 125 Wn.2d at 341-42. A material change in the character of the neighborhood can modify or eliminate a restrictive covenant. Peckham, 104 Wn. App. at 893. Whether the neighborhood's character has changed is a question of fact. *Id.*

JPJ/NBI argue that the history of the Lake Cavanaugh area demonstrates that logging and forestry have constantly been around Lake Cavanaugh and division 3 from before its creation to the present. But no material change has occurred in the Lake Cavanaugh lands neighborhood. The character of the neighborhood has remained the same for decades. Therefore, we reject this argument as a matter of law.

## 3. Waiver of Covenant

JPJ/NBI argues that we should affirm the trial court's decision by concluding that the restrictive covenant has been waived. We disagree.

JPJ/NBI argue that the equitable doctrine of waiver is applicable because the Lake Trust took no action against past

violations over the past 18 years of ownership. But waiver is not listed among the eight equitable defenses identified by the Supreme Court in *Mountain Park* that are available to preclude enforcement of a restrictive covenant. *See* 125 Wn.2d at 341-42. And JPJ/NBI provide no authority suggesting that waiver is a defense applicable to the enforcement of restrictive covenants. Therefore, we reject this argument as a matter of law.

## CONCLUSION

We reverse the trial court's decision and remand for the trial court to enter judgment in favor of the Lake Trust.

WE CONCUR:

Diaz, J.

Mann, J.

## All Citations

Not Reported in Pac. Rptr., 25 Wash.App.2d 1042, 2023 WL 1960890



### Footnotes

- <sup>1</sup> The Honorable Bradley Maxa is a judge on the Court of Appeals, Division Two, sitting in Division One pursuant to RCW 2.06.040 by order of the Associate Chief Justice.
- <sup>2</sup> The parties stipulated to many of the relevant facts, and the stipulation was adopted by the trial court in its findings of fact. Other facts come from unchallenged findings of fact.
- <sup>3</sup> The original 1945 agreement was not independently recorded and the parties to this lawsuit have been unable to find a copy of the original agreement.
- <sup>4</sup> The Lake Cavanaugh Trust appealed the FPA. Robert McCullough is a board member of the Lake Cavanaugh Trust.
- <sup>5</sup> The trial court declined to address the additional affirmative defenses of equitable cancellation and waiver.
- <sup>6</sup>  Berg v. Hudesman, 115 Wn.2d 657, 801 P.2d 222 (1990).
- <sup>7</sup> The trial court ruled that abandonment had occurred, but declined to rule on cancellation/modification, and waiver. But we can affirm a trial court's decision based on any grounds supported by the record. Hoover v. Warner, 189 Wn. App. 509, 526, 358 P.3d 1174 (2015).
- <sup>8</sup> Puget Sound Pulp purchased two “tracts” in division 3, but those tracts were not lots.



PO Box 2546, Bellingham, Washington 98227

May 27, 2024

Re: **Comments on Forest Practice Application 2819391**  
Lake Cavanaugh, Skagit County, Washington

WAC 222-30-021(2)(b)(vi) states “No timber harvest is permitted within an alluvial fan.”

Forest Practice Application 2819391 proposes a road extension across alluvial fans and the associated streams and proposes a timber harvest on an alluvial fan.

The geotechnical report (Icicle Creek Engineers, 2023) identifies three alluvial fan areas: AF-1, AF-2 and AF-3. The report indicates that AF-1 and AF-3 are active alluvial fan areas. I concur with that assessment based on my on the ground observations of both AF-1 and AF-3 and my interpretation of the geology of the area and lidar bare earth imagery of the fans.

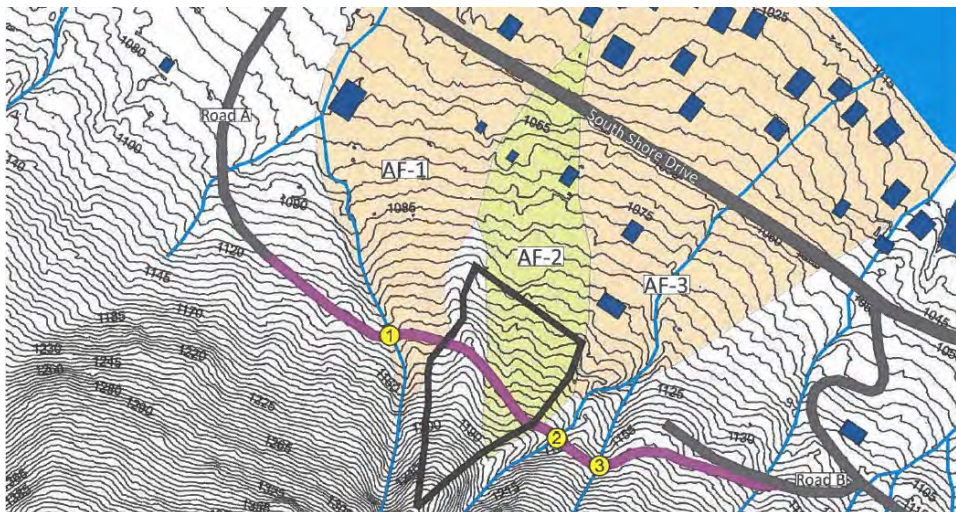


Figure 12 from Icicle report

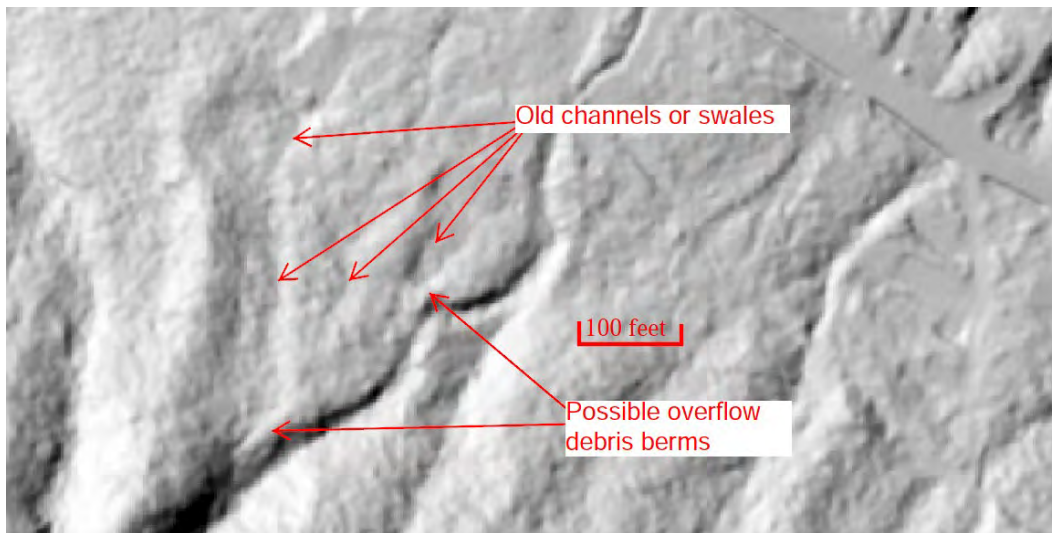
AF-2 is essentially part of the same alluvial fan as AF-3. Icicle has interpreted AF-2 as a relict alluvial fan on page 9 of their report.

**AF-2 (Relict)** – AF-2 is characterized by broadly divergent, smooth topography; the feature no longer contains a stream channel, though Stream #2 borders the upper (southeast) edge of AF-2 for about 100 feet before the stream diverts east. At the apex of AF-2, Stream #2 is incised into the adjacent topography about 10 to 15 feet and is lined with bedrock. AF-2 is vegetated with mature conifer trees and occasional deciduous trees, and light to medium dense brush.

We did not observe evidence of recent or historic channel avulsion, overtopping or accumulation on this surface. We did not observe evidence of streambank erosion or high water (such as scouring or sediment/woody debris deposition) at the apex, which could indicate a history of high flow events or debris flows with potential to inundate AF-3. In our opinion, AF-2 was formed when Stream #2 was at a higher base elevation, and therefore under geologic conditions which are not currently present and are no longer dynamic; based on our evaluation, AF-2 should be considered **Relict**, and is not considered an Alluvial Fan from a regulatory perspective (WAC 222-16-010("Sensitive Sites")(5)).

The following comments are provided regarding the interpretation of the alluvial fan being considered relict.

1. Lidar bare earth imagery shows that the surface of AF-2 shows what appear to be three swales or old channels on the fan area surface. These swales are not described in the report and suggest that stream channels occupied this surface in the past. The lidar also indicates features that appear to be overflow berms – a typical feature of debris flow deposition on alluvial fans.



Lidar bare earth imagery of AF-2 and Stream 2



2. Using base elevation of the stream channel on an alluvial fan is not consistent with the Forest Board Manual.

Icicle Creek describes Stream #2 as incised 10 to 15 feet into the fan surface at the apex of AF-2. Icicle Creek opines that “AF-2 was formed when Stream 2 was at a higher base level, and therefore under geologic conditions which are no longer present and are no longer dynamic”.

The approach of using base elevation or incision into the fan surface is inconsistent with the Forest Board Manual for alluvial fan assessments. The Manual states that “The degree of channel incision at the fan head is not a reliable indicator of the lack of channel shifting potential, as infrequent but large flood events or debris flows can rapidly fill the channel.” (page M2-37 of Manual).

3. Empirical evidence at nearby similar sized and similar gradient stream watersheds indicate that infrequent large debris flows should be expected on Stream #2.

A large debris flow took place on the stream two streams to the west of Stream #2 in 2016. That stream was similarly incised into the upper fan and debris completely filled the channel and was deposited on the fan surface just past the top edge of the channel. Debris was deposited all along the edge of the fan surface above the stream channel. The presence of mature trees on the fan prevented debris flow material from leaving the stream route and thus prevented an avulsion onto the upper fan surface. However, debris did escape the stream route as soon as it entered the clear cut harvest on the lower part of the fan. The event supports the Board Manuals statement that “channel incision at the fan head is not a reliable indicator of the lack of channel shifting potential” as this stream nearly immediately incised back down to bedrock on the upper fan.

A similar event took place on another stream of similar size further to the west in approximately 2002. That stream also filled its incised channel, but escaped the channel onto the fan surface as soon as the debris flow reached a clear cut on the fan surface.

A debris flow took place to the east as well in approximately 2016. That debris flow stopped on the upper part of the fan, but does indicate that debris flows are an ongoing active geology process on the streams that extend to the ridge of mountain slope above.

The three streams described above have watersheds of a similar size and gradient to that of Stream 2 and demonstrate that the geologic processes that lead to debris flows filling incised channels and fan processes at these alluvial fans is still active and dynamic under current geology and climate conditions.

4. The construction of a bridge across Stream #2 will increase the risk of a stream channel avulsion.

The Icicle Creek report states that Stream #2 crossing is located where the creek is incised into a

10- to 15-foot deep valley (page 8). Icicle Creek opines “that Stream #2 will occasionally convey naturally-occurring debris flows sourced in its upper watershed” (page 9).

On page 10 Icicle Creek states that “the bridge will have 15-feet of clearance between the bottom of the bridge and the 100-year high-water mark.” On this basis they expect the crossing should allow natural conveyance of water, sediment and debris during high flow and/or debris flow events”.

I agree that the clearance will readily allow clear water floods to pass under the bridge; however, debris flow peak discharges typically greatly exceed clear water floods. Debris flood and debris flows have peak discharge rates that can be considerably greater than 100-year flood return periods. Debris flow peak discharges up to 50 times the peak discharge of a 200-year return period clear water flood have been reported by Jakob and Jordan (2001).

While heavy rainfall events often trigger landslides in drainage basins leading to debris flows and floods, the debris flows and floods that exceed 100-year return period clear water flood events can occur more frequently than the calculated clear water flood return period. That is, creeks subject to debris flows and debris floods may flood more frequently and at much greater intensity than the predicted clear water flood return periods based on standard run off analysis. The return frequency and size of peak discharges associated with debris flows and debris floods is dependent upon stream morphology and stream basin geomorphic processes. Hence, it is essential to have a good understanding of the geomorphic processes and stream morphology to assess the scale of and the frequency of debris events.

As noted above, empirical evidence from nearby streams with similar watershed area and gradients that extend to the summit ridge of Frailey Mountain have had infrequent but very large debris flows. Similar infrequent large debris flows should be expected at this site.

Large logs will likely be incorporated within the debris flows. Such has been the case on most of the debris flows on the streams coming off the upper ridge of Frailey Mountain (personal observations at six similar streams on the north side of Frailey Mountain and pictured below).

Large debris flows with large logs will very likely become jammed at a bridge crossing at this location. This will alter the flow path of the debris flows out of the channel increasing the risk to down slope properties that are located away from the stream path and also potentially causing a larger debris dam failure downstream of the bridge location.



Large logs from debris flow in stream two watersheds to the west, a similar sizes and gradient stream to Stream #2. Note large logs deposited as much as 20 feet above bottom of stream channel.



## Closure

Removal of trees on the alluvial fan will increase the risk of debris flows traveling further down the alluvial fan and increase the risk of channel avulsion impacting properties and public resources on the lower reaches of the alluvial fan. Placing a permanent bridge across an area where debris flows are expected to flow increases the risk of channel blockage during a large debris flow event resulting in an increase to the risk down fan properties.

Thank you for considerations of these comments.

Sincerely yours,  
**Stratum Group**



Dan McShane, L.E.G., M.Sc.  
Licensed Engineering Geologist



DANIEL McSHANE