

14 DAY OPPORTUNITY TO COMMENT

Application for National Scenic Area Post Emergency Response Site Review

This notice serves as an invitation to comment on the application cited and described below.

Case File: T2-2018-9983

Location: ROW Adjacent to Ainsworth State Park interchange south of I-84 in between the eastbound off ramp - Township 1 North, Range 6 East, W.M. (right-of-way), fencing along Tanner Creek– Township 2N, Range 7E, W.M (right-of-way) and fencing along Toothrock Tunnel – Township 2N, Range 7E, and W.M. (right-of-way), and fencing along the Historic Columbia River Highway east and west of Multnomah Falls Viaducts north of Township 1N Range 6E Section 07- Tax Lot 100.

Applicant: Terra Lingley, AICP, Columbia River Scenic Area Coordinator, ODOT

Zoning: Gorge Special Forest Management Area (GSF-40) and in Gorge General Forest Management Area (GGF-80)

Landscape Setting: River Bottomlands

Proposal: The applicant has submitted a National Scenic Area Post-Emergency Response application to authorize the emergency storage and shredding of tree materials removed as well as the installation of fencing for rockfall hazards in various locations in response to the Eagle Creek Fire.

(See Attached Narrative and Maps (Exhibit 1 pgs 1-6, Exhibit A.1 – Ainsworth Emergency Permit Proposal Map, Exhibit B-1 Tanner Creek Fencing Area, Exhibit C-1 Toothrock East Fencing, Exhibit C-2 Toothrock West Fencing, Exhibit D-1 Multnomah Falls Rockfall Fencing – West and D-2 Multnomah Falls Rockfall Fencing - East, and Exhibit E- pgs 1-4 zoning maps)

Applicable Approval Criteria: Multnomah County Code (MCC): MCC 38.7090 Responses to an Emergency Disaster Event

Copies of the referenced Multnomah County Code sections can be obtained by contacting our office or on our website at www.multco.us/landuse/zoning-codes under the link *Chapter 38 - Columbia River Gorge National Scenic Area*.

Comment Period: Written comments regarding this application will be accepted if received at the address above by **4:00 p.m., Wednesday, November 28, 2018**. Comments should be directed toward approval criteria applicable to the request. Application materials and other evidence relied upon are

available for inspection at the Land Use Planning office (*Tuesday-Friday 8am-4pm*) at no cost. Copies of these materials may be purchased for 30-cents per page. For further information regarding this application, contact Katie Skakel, Staff Planner at 503-988-0213 or katie.skakel@multco.us.

Decision Making Process: The Planning Director will render a decision on this application after the comment period expires. Notice of the Director's decision will be mailed to the applicant, parties to the case, any other persons who submitted written comments during the comment period. The Planning Director's decision can be appealed. An explanation of the requirements for filing an appeal will be included in the notice of decision.

Important Note: Failure to raise an issue before the close of the public record in sufficient detail to afford the County and all parties an opportunity to respond may preclude appeal on that issue to the Land Use Board of Appeals.

Notice to Mortgagee, Lien Holder, Vendor, or Seller:

ORS Chapter 215 requires that if you receive this notice it must be promptly forwarded to the purchaser.

Applicant:

Terra Lingley, AICP, Columbia River Scenic Area Coordinator, ODOT.

Address:

123 NW Flanders St

Portland, OR 97209

Location of Emergency Disaster response:

Multnomah Falls: ODOT easement on UPRR Railroad Right-of-Way north of taxlot 1N6E07 – 00100 R946070050 R323233

Ainsworth: ROW Adjacent to 3 1N 6E, TL 200 (Ainsworth State Park), the areas between the interchange ramps on I-84 exit 35, Ainsworth State Park.

Tanner Creek: ROW between 2N7E28 – 00900 R957280010 R323640 and 2N7E28 – 00600 R957280130 R323651

Toothrock Viaduct: Easement on 2N7E22 – 01000 R957220100 R323635 – Historic Columbia River Highway State Trail around Toothrock Tunnel

Description of the emergency/disaster response, including any structures erected, excavation or other grading activities, or vegetation removal:

Multnomah Falls:

ODOT closed the Historic Columbia River Highway between Bridal Veil and Ainsworth State Park (MP 14.9-21.6) due to emergency conditions including wildfire, hazard trees and rockfall since the start of the Eagle Creek Fire on September 2nd, 2017. ODOT considers a closed roadway an emergency condition. ODOT is addressing rockfall hazards by designing and installing a 10 foot high fence 15 feet from the edge of the Historic Highway above both Multnomah Falls Viaducts, at mileposts 17.62 and 18.12. This action will include minor tree removal, placing fence footings and posts, and hanging visually subordinate mesh to catch rocks sliding or falling down the hillsides and bluffs above the Multnomah Falls Viaducts. The Geotechnical Design Narrative in **Appendix A** includes more information on the rock fall fencing, including plan sheets for the rockfall fence design.



Ainsworth:

ODOT, in conjunction with the US Forest Service (USFS) and the Oregon Parks and Recreation Department (OPRD) has been using the flat area within the Ainsworth State Park Interchange south of I-84 in between the eastbound off ramp to store and shred tree materials removed as a response to the Eagle Creek Fire. The emergency is ongoing as USFS and ODOT still have facilities closed, which constitutes a reduction in both of our agencies' essential public services.

As part of this action, trees that ODOT, OPRD and USFS have identified as hazard trees and flagged for removal have been transported to this site and cut and/or shredded as appropriate. Once USFS has identified locations for the trees and shredded materials, they will be transported out of the interchange area and to an appropriate site, either outside of the NSA, or placed per plan within USFS owned land. ODOT has erected no structures, done no excavation or vegetation removal. ODOT and its contractor have conducted minimal grading and graveling per best management practices to minimize sedimentation and erosion control. **See Appendix B – I-84 Ainsworth Interchange ECR.**

Tanner Creek:

The segment of the Historic Highway State Trail that is adjacent to Tanner Creek underneath I-84 had previously washed out and is creating a safety hazard between the State Trail and the creek. ODOT identified the need for a physical barrier between the state trail and the steep slope heading down to the creek. ODOT will add a 100 foot section of new brown wooden post and brown mesh fencing, consistent with the *Historic Columbia River Highway State Trail Guidelines (2011)* for trail user safety at this location. This location is referred to as "Tanner Creek" in the code compliance table below. **See Appendix C – Tanner Creek Fencing map.**

Toothrock Viaduct:

Sections of trees on the trail approach to the west side of Toothrock viaduct burned and were removed as hazards between the Historic Highway State Trail and I-84. These trees were providing physical separation between the trail and I-84. Since they are no longer in place, ODOT needs to provide a physical separation for trail users from a steep slope, and ultimately I-84 at approximately MP 27.6 and 27.8. ODOT will add two sections of new brown wooden post and brown mesh fencing, consistent with the *Historic Columbia River Highway State Trail Guidelines (2011)* for trail user safety at this location. At milepost 27.6 ODOT will add 450 feet of new fencing, and at milepost 27.8, ODOT will add 145 feet of new fencing.

On the east side of the Toothrock Viaduct trail approach, existing white two-rail guardrail and adjacent trees burned and had to be removed. ODOT will replace the burned guardrail and construct a 350 foot guardrail extension to the east for trail user safety at this location.

Geotechnical Design Narrative

HCRH Rockfall Mitigation Project
Historic Columbia River Highway, #100
MP 17.62 – 17.74 West Viaduct
MP 18.12 – 18.29 East Viaduct
Multnomah County

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Introduction

The Region 1 Geo-Environmental Unit (R1 GE) has completed engineering geology and geotechnical studies for the HCRH Rockfall Mitigation Project. The project will mitigate rockfall hazards, resulting from the September 2017 Eagle Creek Fire, along two sections of the highway at mile points (MP) 17.62 and 18.12. The project vicinity map is shown on Figure 1. The project will include minor tree removal, traffic control, and construction of two flexible rockfall barriers on the talus slopes above the roadway (Figure 2 – Site Plan).

Site Geology

The site is located in the Columbia River Gorge, adjacent to Multnomah Falls. The site geology consists of basalt talus and thin colluvial soils overlying basalt bedrock. The rock units exposed in the natural and cut slopes are several flows of the Columbia River Basalt Group.

Pre-Fire Conditions

Prior to the Eagle Creek Fire, the rock and talus slopes were forested and the ground surface was covered by moss and other low-growing vegetation. A wildfire in 1992 burned ground cover above the highway which resulted in increased rockfall post-fire. Severe weather in 1995-96 further increased rockfall frequency. In 1996, ODOT Maintenance constructed a rockfall fence with draped mesh at MP 17.52 and a draped mesh at MP 17.81 (see attached 5-7-07 R1 GE memo).

Existing Conditions

The Eagle Creek Fire destroyed virtually all of the ground cover vegetation and a number of the trees. Photo 1 shows the talus slope above the west viaduct prior to hazard tree removal. Rocks up to two feet in diameter are continuously entering the roadway. Some of the rockfall is originating within the talus and some is originating from the rock outcrops above the talus slope.

Photo 2 shows the talus slope above the east viaduct after hazard tree removal. As with the west viaduct, rocks up to two feet in diameter are continuously entering the roadway. The rock outcrops are located farther upslope from the roadway than at the west viaduct. It appears that more of the rockfall is originating within the talus and less is originating from the rock outcrops above the talus slope, but extremely hazardous site conditions prevent a ground reconnaissance of the upslope area.



Photo 1. West Viaduct - looking east along viaduct structure towards Multnomah Falls.



Photo 2. East Viaduct - looking east along viaduct structure.

Rockfall Mitigation Analysis and Recommendations

At the request of R1 GE, the ODOT Region 1 Survey Unit performed static scanning upslope of the roadway along the proposed fence alignments. This data was then combined with existing survey data previously collected by David Evans and Associates (DEA) along the viaducts. Cross sections were then developed by R1 Survey on 10 foot spacing and reviewed by R1 GE prior to the rockfall analysis.

Rockfall mitigation analysis was completed using the computer program RocFall 6.0 by RocScience. Two critical cross sections were analyzed along each viaduct however only one section from the east viaduct is included in this narrative due to the consistency of the slope geometry in this section.

A rigid body analysis using a Monte-Carlo sampling method was selected. Based on the maximum size and angularity of rocks observed on the roadway we selected "polygon rocks" from the program with an average rock mass of 1,440 pounds and a rock density of 180 pounds per cubic foot. The selected "polygon rocks" represent square, pentagonal, and rectangular shapes.

A back analysis was first performed to calibrate the model to existing conditions. Rockfall initiation locations along the west viaduct were chosen at the location of the natural rock outcrops above the west viaduct and upper portion of the surveyed talus slope along the east viaduct (Figures 3a-3b and 4a-4b).

Model analysis indicates that rockfall trajectories range from sliding to bouncing with a combination of both movement mechanisms observed in some rockfall runs. Rockfall impact heights at barrier are generally up to 8 feet but we observed launching events with fence impacts between 9 and 10 feet along the west viaduct. Total kinetic energy (ft-lb) was generally less than 35,000 ft-lb (Figures 3c-3e and 4c-4e), however higher energies are expected with larger rocks. One model rock from the west viaduct exceeded the fence height and was 19 feet above ground surface at the fence location (Figures 5a-5b).

We determined that the best approach to control rockfall on the viaducts are 10 foot high flexible rockfall barriers (fences) placed on the slopes, 15 feet upslope from the roadway. The setback from the roadway is a compromise between the flexure space required by the barrier and proximity to the roadway necessary for maintenance of the system. For both locations we recommend the GBE-500 A-R rockfall protection system manufactured by GEOBRUGG. The above ground fence components will be powder coated black, the color determined by the United States Forest Service (USFS) Landscape Architect.

Limitations

The analyses and recommendations presented in this report are based on the data obtained from field observations and other relevant sources. Any interpretation or evaluation of this report by individuals outside of the Department is done so at the sole risk of that individual.

The nature and extent of any variations in subsurface materials or conditions may not become evident until construction. If subsurface conditions different from the conditions stated in this report are identified

or encountered during construction, promptly advise us so we may observe these conditions and revise our design recommendations if necessary.

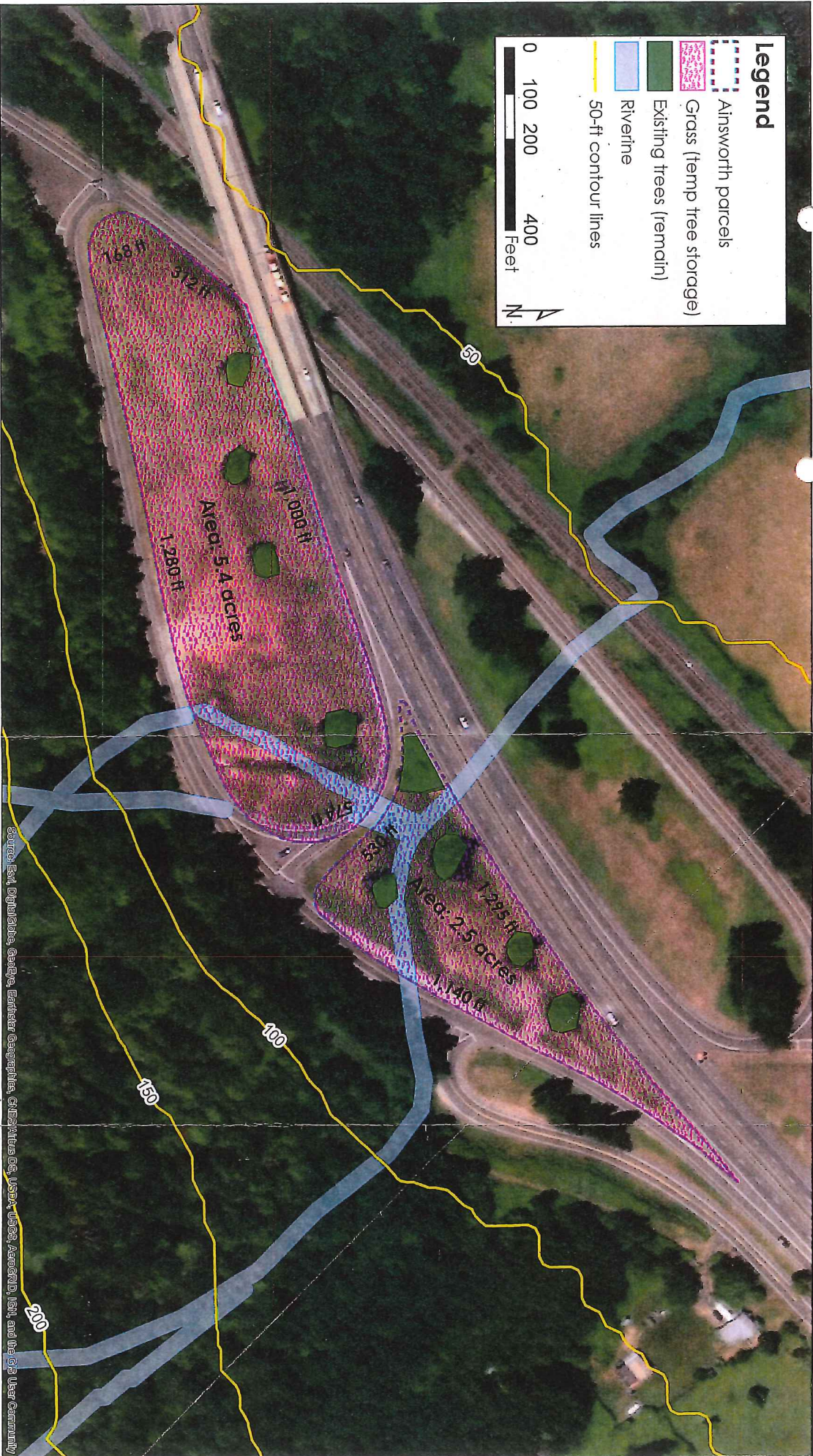
<p>Prepared by: Stephen Hay, CEG Interim Region 1 Geo-Environmental Manager</p>	
<div data-bbox="354 564 730 997"></div> <p>Expires: December 1, 2018</p>	
<p>Reviewed by: Tom Braibish, PE, GE</p>	

Legend

- Ainsworth parcels
- Grass (temp tree storage)
- Existing trees (remain)
- Riverine
- 50-ft contour lines

0 100 200 400 Feet

N



Source: Esri, DeLorme, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Ainsworth Emergency Permit Proposal Map

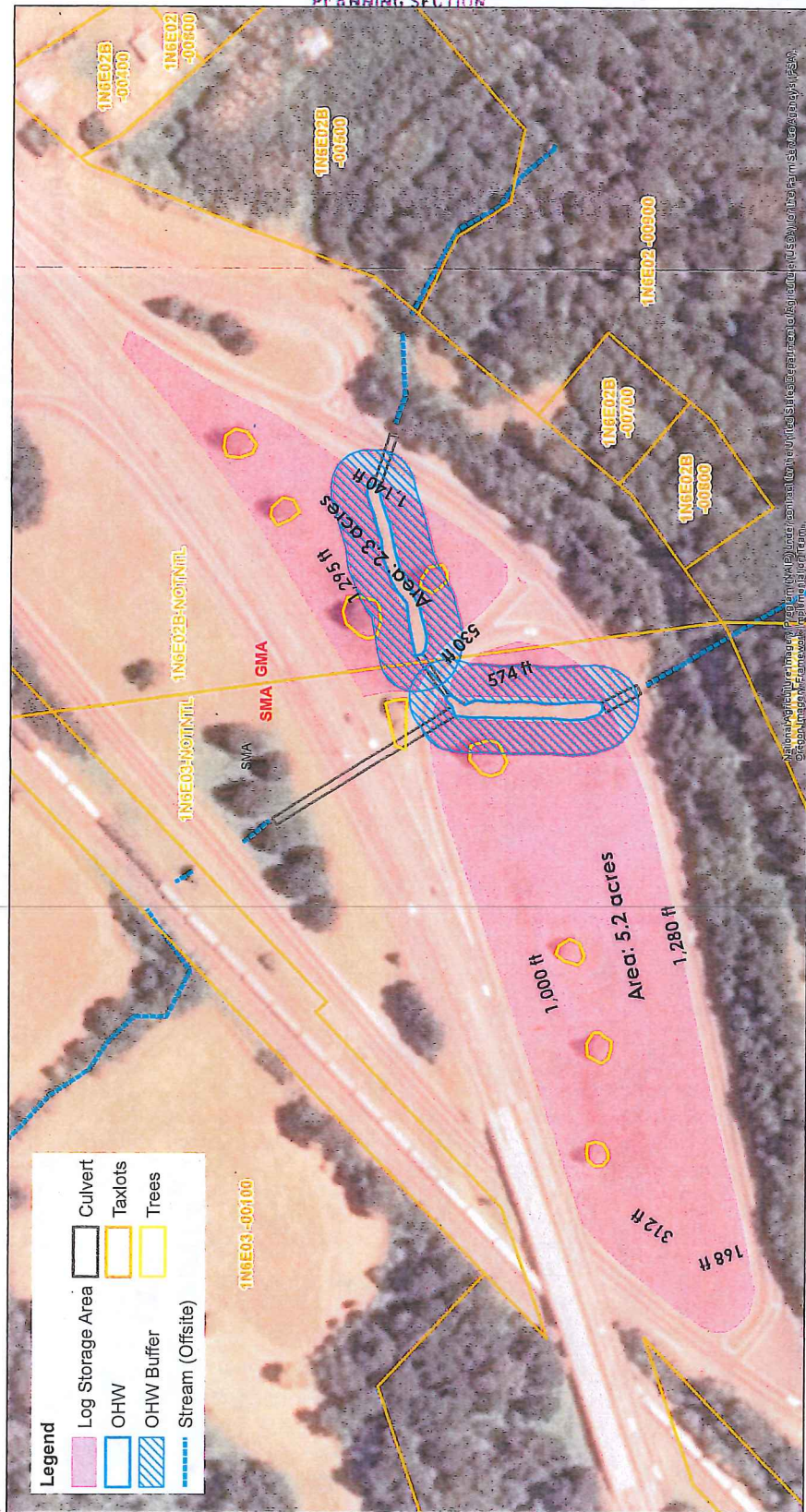
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EXHIBIT

A2



Note:
Log Storage area is a maintained grass lawn. After log storage, bare soils will be reseeded with a CRG Commission approved seed mix. No grading is proposed. No other sensitive plants or wildlife, wetlands or priority habitats were found on site.



OREGON DEPARTMENT OF TRANSPORTATION
I-84 Ainsworth Interchange ECR
Appendix B
Project Site





OREGON DEPARTMENT OF TRANSPORTATION
Eagle Creek Fire Response
Tanner Creek Fencing Area
Project Site

Legend

- Railroads
- Stream
- New Fence
- Stream Buffer (200 ft)
- Taxlots

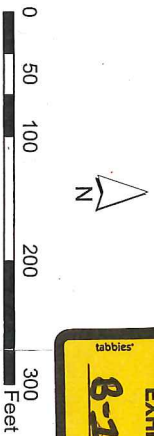
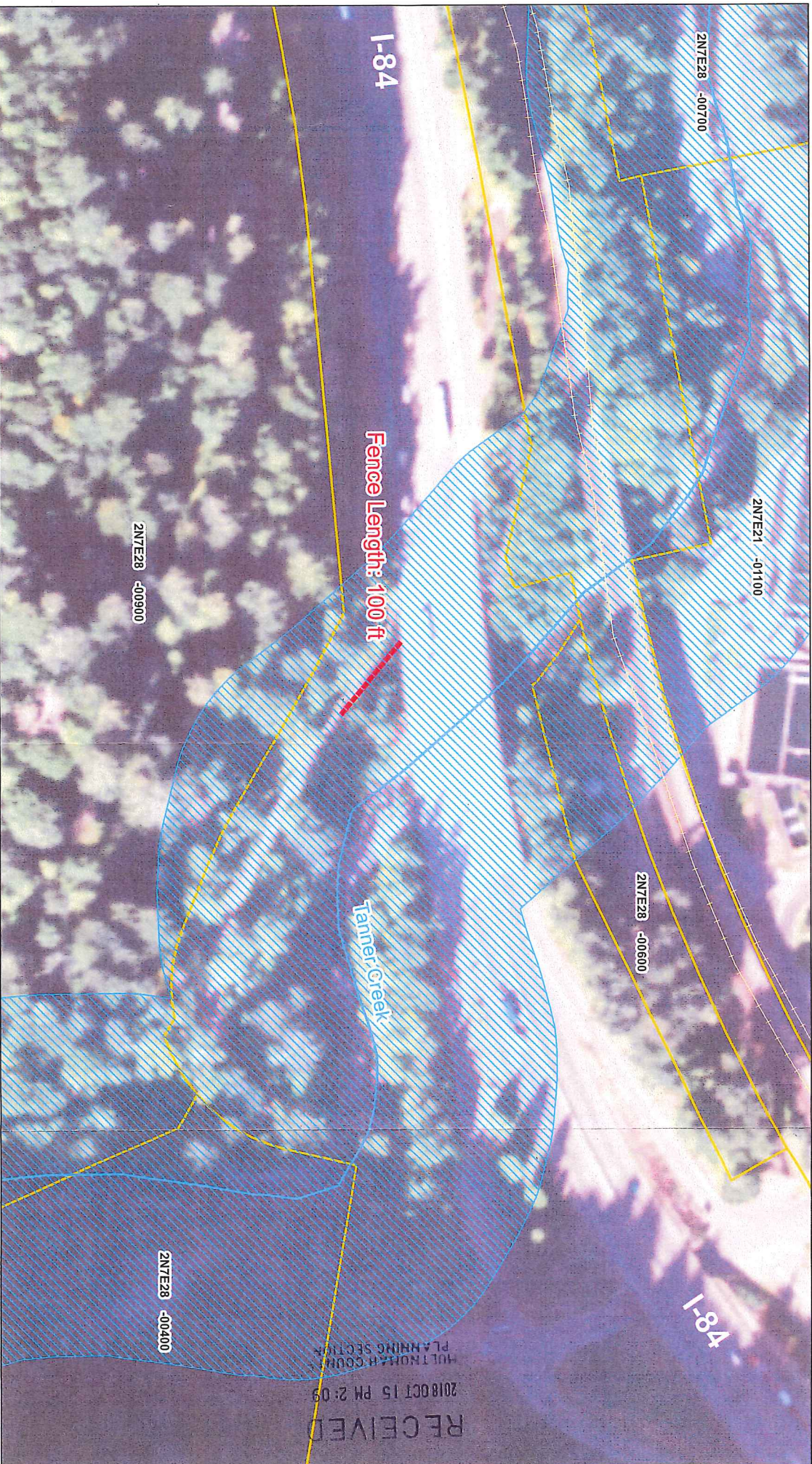
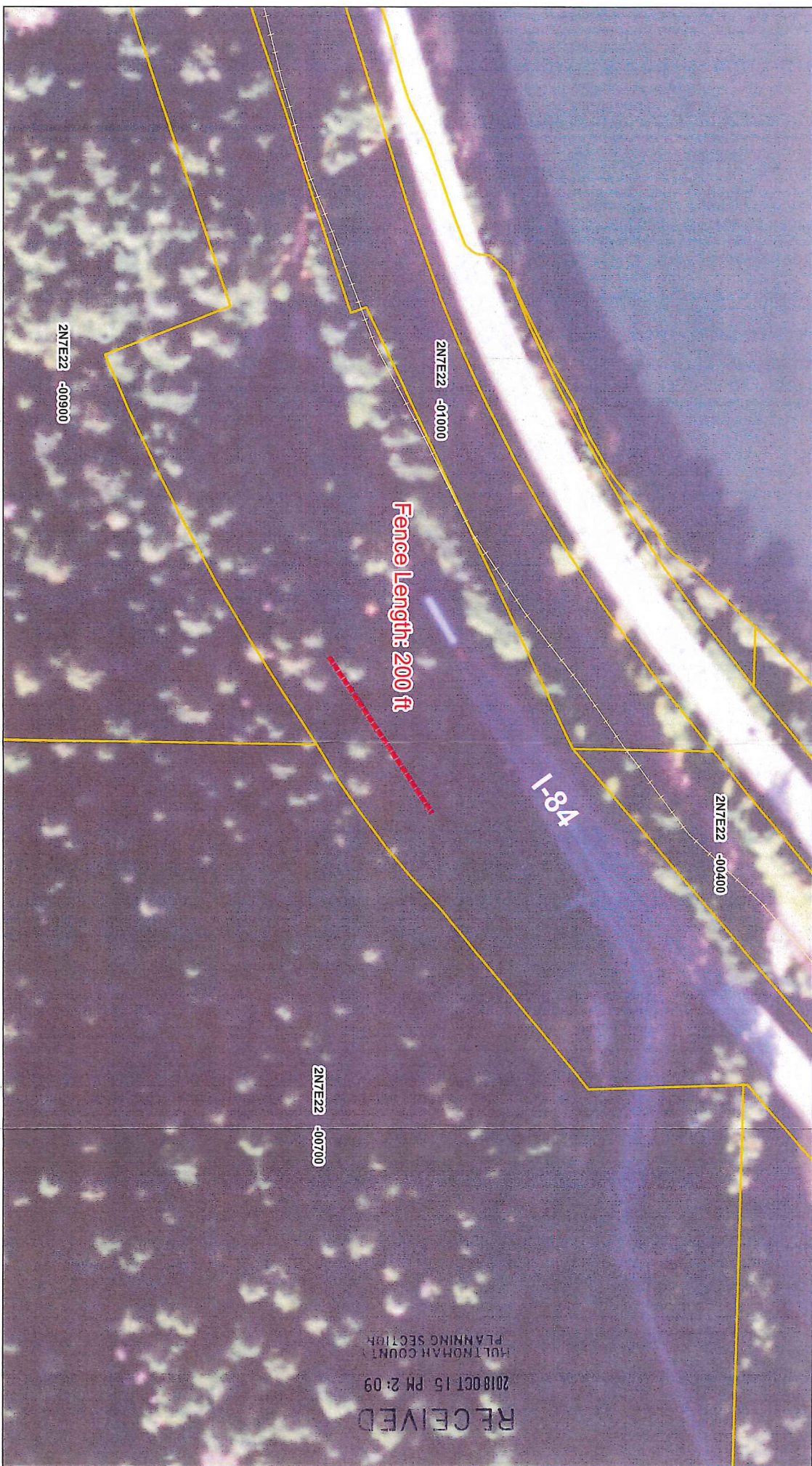


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Legend

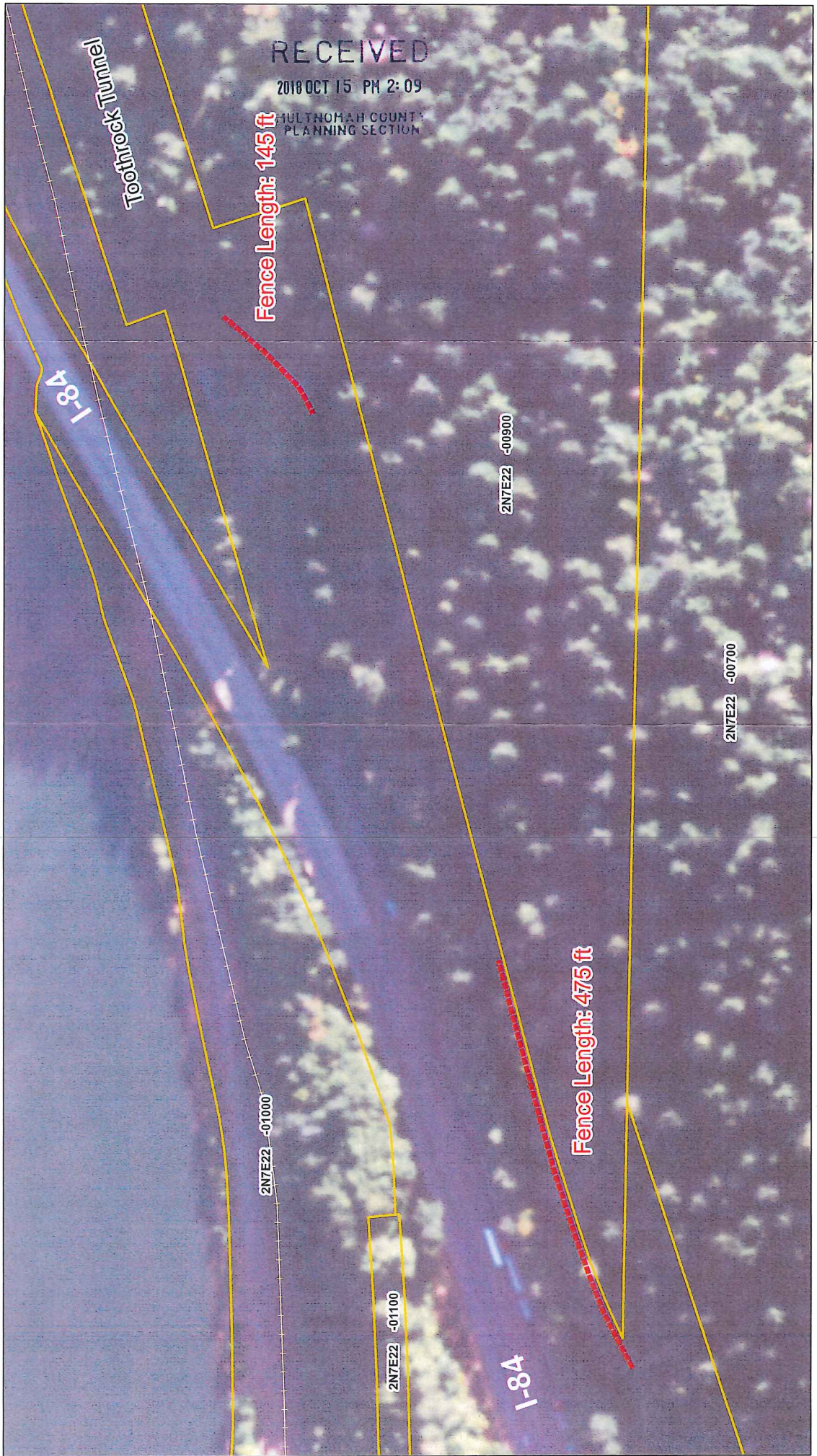
- Railroads
- Taxlots
- New Fence



EXHIBIT
C-1



OREGON DEPARTMENT OF TRANSPORTATION
Eagle Creek Fire Response
Toothrock East Fencing Area
Project Site



OREGON DEPARTMENT OF TRANSPORTATION
Eagle Creek Fire Response
Toothrock West Fencing Area
Project Site

Legend

- Railroads
- New Fence



EXHIBIT
C-2

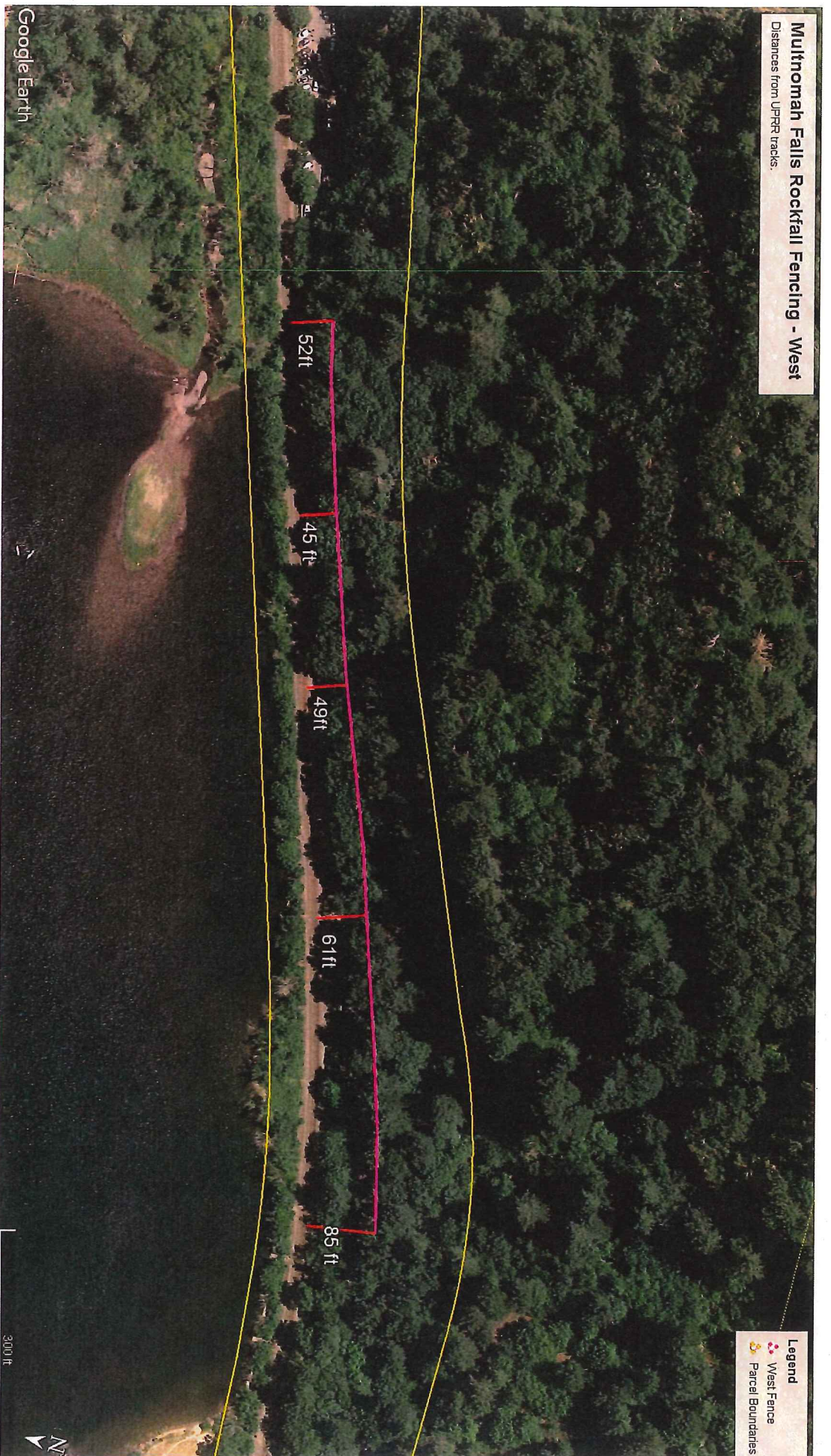
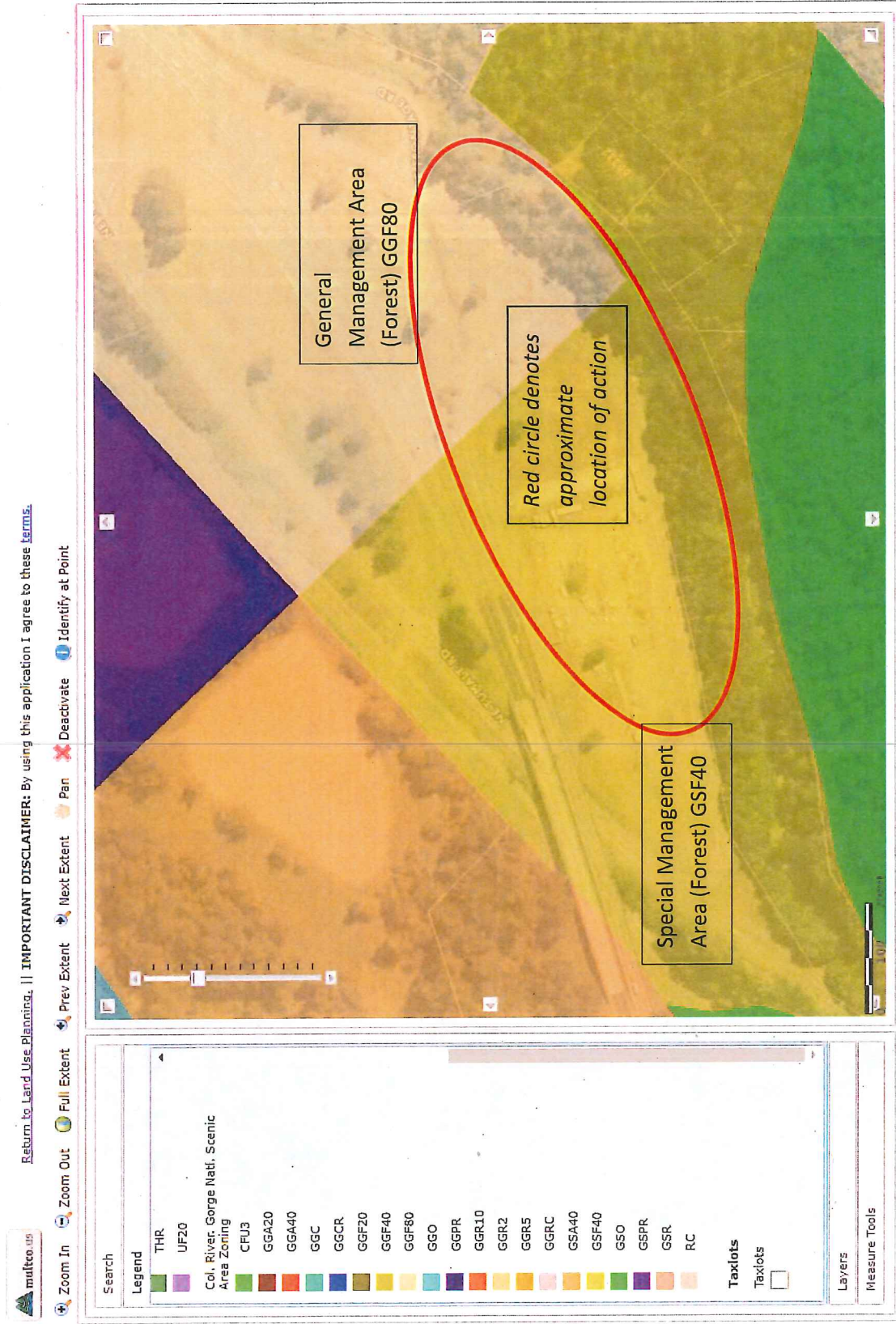




Figure 2 Ainsworth Interchange Zoning



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 Zoom In
 Zoom Out
 Full Extent
 Prev Extent
 Next Extent
 Pan
 Deactivate
 Identify at Point

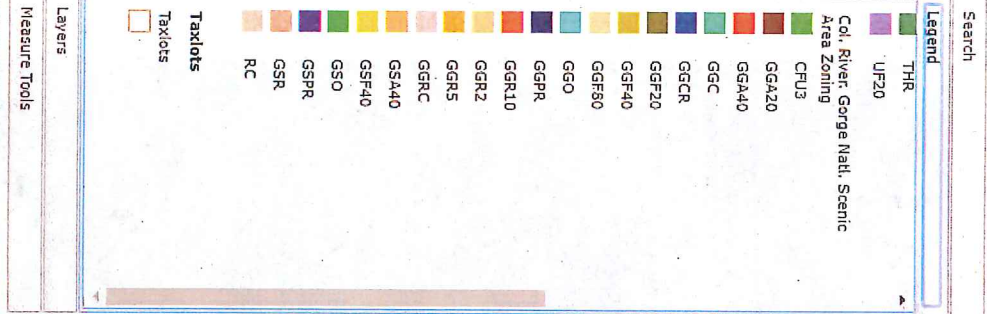


Figure 4 Toothrock Viaduct Zoning

