



WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

Pacific Cascade Region

INVITATION TO BID

Contract Number #1460

Contract Digest: Young Stand Data Collection - Age 7 (Free-to-Grow)
(Data collection using fixed area plots of tree species, diameters, heights and damage codes for stands)

Notice To Bidders
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NOTICE TO BIDDERS

You are invited to bid on this contract and are advised to examine the survey units prior to bidding.

Sealed bids will be accepted at the Department's Pacific Cascade Region Office until **2:30 P.M., November 6, 2013** at which time and place all bids will be opened and read aloud. Individuals who wish to request special accommodations for the bid opening (e.g., sign language, interpreters, Braille, etc.) should contact the Department ten (10) Working days prior to the scheduled bid opening.

The sealed bid envelope should be prepared in the following manner:

Addressed to: Eric Wisch, Pacific Cascade Region Manager
Attn: Jared Larwick – PCT Coordinator
Washington State Department of Natural Resources
P.O. Box 280
601 Bond Road
Castle Rock, WA 98611

Upper left corner: Bidder's Address

Lower left corner: Young Stand Data Collection – “Sealed Bid”
Invitation to Bid/Contract Number: 1460

Note the following specifications of this contract:

- Up to two (2) Data Recorders and two (2) GPS units will be issued to the contractor for sole use on this contract. Use requires signing damage and replacement agreement.
- Preview Maps detailing access roads & units, temporary Discover Pass, and a PCP1-1 key may be picked up at the Pacific Cascade Region Office in Castle Rock.

Questions pertaining to this Invitation to Bid can be answered by contacting Jared Larwick at (Cell) 360.635.1338 or (Office) 360.575.5091. Oral explanations, interpretation, or instructions given before the award will not be binding.

The Department reserves the right to amend this Invitation to Bid/Contract by giving written notification to all known bidders at least seven (7) days prior to bid opening.

Payments on this Invitation to Bid can only be paid out to contractors who are registered with The Office of Financial Management (OFM) <http://www.ofm.wa.gov/isd/vendors.asp>. Please follow the link for instructions on how to register.

Address

Statewide Payee Desk

P.O. Box 43113, Olympia, WA 98504-3113, Phone: 360-664-7779

SPECIAL NOTICES

Term of contract: **November 12, 2013 – April 25, 2014**

Work will be allowed all weekdays, weekends, and holidays through term of contract.

Work shall begin on the start date identified above unless an alternate plan is approved by the Compliance Forester.

Please note **any** walk-ins and closed/abandoned roads as identified on Unit and Vicinity Maps. Closed roads are based on the best available information, but potential contractors should verify access before bidding.

Gate Access: All gates associated with Contract **1460** will use locks that require a PCP1-1 key, except units that require contact of compliance forester prior to access. This key is available from the Pacific Cascade Region office in Castle Rock.

Provide proof of 2013 Farm Labor Contractor's License or letter of exemption from the Department of Labor & Industries before work begins.

PLEASE NOTE INSURANCE REQUIREMENTS (SEE CLAUSE 2-04)

A **\$1,000** BID DEPOSIT IS REQUIRED WITH THIS BID OPENING (SEE CLAUSE 1-09).

A PREWORK CONFERENCE IS REQUIRED ONCE AN AWARD HAS BEEN MADE (SEE CLAUSE 2-11).

Hospitals: It is the contractor's responsibility to identify appropriate hospitals for any emergency care required. The following is a courtesy list and should be verified by any potential contractor.

Pacific Cascade Region Hospital List						
HOSPITAL NAME	ADDRESS	CITY	ZIP	PHONE	LATITUDE	LONGITUDE
Morton General Hospital	521 Adams St	Morton	98356	360-496-5112	46.556	-122.28
Ocean Beach Hospital	First & Fir	Ilwaco	98624	360-642-3181	46.311	-124.043
Willapa Harbor Hospital	800 Alder St	South Bend	98586	360-875-5526	46.664	-123.812
PeaceHealth Saint John Medical Center	1615 Delaware	Longview	98632	360-414-2000	46.131	-122.942
PeaceHealth Saint John Medical Center	600 Broadway	Longview	98632	360-414-2223	46.136	-122.924
Southwest Washington Medical Center	400 NE Mother Joseph Place	Vancouver	98668	360-256-2000	45.625	-122.581
Mark Reed Memorial Hospital	322 Birch St S	McCleary	98557	360-495-3244	47.056	-123.261
Providence Centralia Hospital	914 South Scheuber Road	Centralia	98531	360-736-2803	46.712	-122.988
Capital Medical Center	3900 Capital Mall Dr SW	Olympia	98502	360-754-5858	47.043	-122.952
Southwest Washington Medical Center	3400 Main St	Vancouver	98663	360-256-2000	45.645	-122.669
Providence Saint Peter Hospital	413 Lilly Rd NE	Olympia	98506	360-491-9480	47.053	-122.848
Legacy Salmon Creek	2211 NE 139th St	Vancouver	98686	360-487-1000	45.722	-122.65

DEFINITIONS

- A. 'Compliance Forester' means the Department staff who perform the compliance inspections, approves Work, recommends payment to the Contract Manager, manages the Work Schedule, and assists with seedling distribution.
- B. 'Contract' means this Invitation to Bid/Contract, the Pre-Work Conference packet and all required documents provided by the contractor.
- C. 'Contract Manager' means the Department staff that processes this Contract, makes payments, provides and facilitates dispute resolution, provides technical advice to the Compliance Forester, and is the first point of contact for questions relating to this Contract or interpretation of Work. The Contract Manager may perform the duties of the Compliance Forester.
- D. 'Contractor' means the bidder who was awarded this Contract.
- E. 'Department' means the Department of Natural Resources of the State of Washington, acting through an authorized employee.
- F. 'Designated Contract Representative(s): Those individuals designated by the Contractor on the Pre Work form during the Pre Work Conference (2-11, 2-12)
- G. 'D.B.H.' - Diameter at breast height, a point on the tree stem 4.5 feet above ground level.
- H. 'Force Majeure' means those acts that are unforeseeable and beyond the control of either party to the Contract. Acts of Force Majeure include, but are not limited to: acts of God, the public enemy, fire, or other casualty. Force Majeure may result in an equitable adjustment in the time period to complete the Contract.
- I. 'Pre-Work Conference' is the meeting between the department and the contractor after award of the contract is made but prior to commencement of work. Items agreed upon in this meeting are signed off by both the department and the contractor and become part of the contract.
- J. 'Region Manager' means the designated Department staff responsible for managing the affairs of the Department in designated large geographic areas. The Region Manager may perform the duties of the Contract Manager.
- K. 'Slash' - shall mean all organic debris in the work area either pre-existing or created by the pre-commercial thinning operation generally consisting of dead and down trees.
- L. 'Unit' is the individual geographical area that the Work is to be done on. Each unit is specifically identified by number on the Bid Form (Section IV), the Unit Description, and corresponding Unit Map (Section III).
- M. 'Unit Bid Price' is the rate per plot written in the Unit Bid Price column of the bid form (Section IV Bid Form).
- N. 'Work Schedule' means the approved timeline for how the requirements of this contract will be fulfilled by the contractor. The work schedule is agreed upon during the Pre-Work Conference by both the department and the contractor.
- O. 'Work' means the services the Contractor is required to satisfactorily complete this Contract found in Section II Specifications for the Activity and Section III Unit Description
- P. 'EDR' means Electronic Data Collector the contractor will be required to collect data on and download data from. Section II Specifications will detail which model of data collector will be provided to the contractor for use on the contract.
- Q. 'GPS' means the handheld device that will be provided for use by the contractor to locate the plot center for each plot within the 'Units'.
- R. 'Unit Map' means the paper map provided which illustrates the plot center locations and numbers for each 'Unit'. Unit maps are included within Section III Unit Description.

SECTION I: INSTRUCTIONS TO BIDDERS AND CONTRACT AWARD

1-01 Unit Inspection & Bid Preparation

Bidders are expected to examine this entire Invitation to Bid/Contract and are urged to inspect the Unit(s) prior to submission of their bid. Bidder acknowledges through submission of their bid that it has ascertained the nature and location of the Work and investigated and satisfied itself as to the general and local conditions which can affect the Work or its cost, including but not limited to:

- A. Conditions bearing upon transportation, disposal, handling, and storage of materials;
- B. The availability of labor, water, electric power, and road;
- C. Uncertainties of weather, river stages, tides, or similar physical conditions at the Unit;
- D. The confirmation and conditions of the ground;
- E. Seasonal conditions that may affect the timing and use of materials needed for the Work; and
- F. The character of equipment and facilities needed to complete the Work.

Bids should include all costs, any failure of the bidder to examine the Invitation to Bid/Contract or the Unit(s) prior to submission of the bid will not relieve the bidder from responsibility for properly estimating the cost of satisfactorily completing this contract.

1-03 Bid Submission is Offer to Contract

Your bid in response to this Invitation to Bid/Contract is an offer to contract with the Department. All offers shall remain firm for a period of 90 calendar days after the bid opening. If there is a problem and the lowest responsible bidder is unable to accept this contract the next lowest responsible bidder will be contacted for possible award. An Invitation to Bid becomes a contract when officially awarded by the Department with the return of a countersigned SECTION V - Offer and Contract Award.

1-05 Bid Contents

The bid shall include the Bid Form (Section IV), the Offer and Contract Award Form (Section V) properly completed and signed, the bid deposit specified in Clause 1-09, Contractor's Declaration of Industrial Insurance Status, and a photocopy of bidder's Washington State Farm Labor Contractors License.

1-07 Withdrawal of Bid

A bid may be withdrawn in person by a bidder's authorized representative before the opening of the bids. Bidder's representative(s) will be required to show ID and sign on the bid summary sheet before it will be released.

1-08 Rejection of Bids

To be considered, bids should conform to the above requirements, except that the Department may waive informalities and minor irregularities in bids received. The Department reserves the right to reject any or all bids received.

1-09 Bid Deposit

A bid deposit of ONE THOUSAND DOLLARS (\$1,000) is required. This deposit assures the Department that the bidder will accept award of any items on which the bidder is the lowest responsible bidder. In the event the bidder rejects award of **contract number 1460**, the bidder will forfeit the bid deposit. The bid deposit must be in the form of certified check made payable to the Washington State Department of Natural Resources and include a reference to the bid/**contract number 1460**. The bid deposit must be delivered to the Department's Region Office with the delivery of the bid (Clause 1-05). The bid deposit of a bidder awarded the contract will be released when the performance/damage deposit has been approved, or the bid deposit may be converted to apply to part or all of the required performance/damage deposits after contract award. Once all the bids are evaluated and the contract has been awarded, bid deposits will be returned to all unsuccessful bidders.

1-10 Performance and Damage Deposit

The bidder awarded the Contract (Contractor) agrees to furnish a performance and damage deposit of ten percent (10%) of the Contractor's total award established in the award letter. The deposit shall be in the form of certified check or cashiers check made payable to "Washington State Department of Natural Resources", irrevocable letter of credit, or a savings account assignment. This deposit guarantees performance of this Contract and payment of damages caused by operations during the performance of this Contract or resulting from Contractor's noncompliance with any contract provisions or the law. In the event the Department needs to utilize the deposit for purposes such as repair or replacement of contractor damage to the EDR or GPS or to complete unfinished work under the original contract, the Contractor shall replace the portion(s) by the due date indicated on the written notification from DNR before work proceeds.

1-11 Lowest Responsible Bidder

Award of this Contract shall be to the lowest responsible bidder as determined by the Department. In determining the lowest responsible bidder, in addition to price, the following may be considered: (a) the ability, capacity, and skill of the bidder to perform the contract; (b) the character, integrity, reputation, judgment, experience, and efficiency of the bidder; (c) whether the bidder can perform the contract within the time specified; (d) the quality of performance of previous contracts and/or through reference checks; and (e) the previous and existing compliance by the bidder with laws relating to the contract or services. The Department's determination that a bidder is not qualified shall result in rejection of the bid submitted.

1-12 Award Letter

The Department will make every effort to mail an award letter with instructions and a copy of the executed contract to the successful bidder within ten (10) business days of bid opening.

1-13 Conditions on Award

Within ten (10) business days after the bidder receives their award letter, the Department must receive the signed contract, the performance and damage deposit, and insurance certificate at the Department's Region Office (Page 2 Notice to Bidders). The Department may extend upon written request to the Contract Manager, the time allowed for receipt of the above items. If the bidder fails to submit the above items within the time specified, the Department may consider the contract award rejected and may terminate award of the contract.

1-14 Contract Modification or Cancellation

The Region Manager reserves the right to modify or cancel this Contract in part or whole without cause. The Contractor shall be paid only for Work performed satisfactorily prior to cancellation of the Contract.

SECTION II-A: GENERAL PROVISIONS

2-01 Compliance with all Laws

The Contractor shall comply with all laws and regulations of the United States, State of Washington, and counties where the Work is located. The Contractor will make any payments, contributions, remittances, and reports or statements required under those laws.

2-02 Licenses and Permits

The Contractor shall, without additional expense to the Department, obtain all required licenses and permits necessary for executing the Contract.

2-03 Indemnification and Hold Harmless

To the fullest extent permitted by law, Contractor shall indemnify, defend, and save harmless the State, agencies of the State, and all officers and employees of the State, from and against any and all claims for injuries or death, including claims by Contractor's employees, or for damages arising out of, resulting from, or incident to Contractor's performance or failure to perform the Contract. Contractor's obligation to indemnify, defend and save harmless shall not be eliminated or reduced by any alleged concurrent negligence of the State or its agencies, employees, and officers. Contractor waives its immunity under Title 51 RCW to the extent required to indemnify, defend, and save harmless the State and its agencies, officers, or employees.

2-04 Insurance

Before commencing Work, the Contractor shall obtain and keep during the term of this Contract the following liability insurance policies, insuring Contractor against liability arising out of its operations, including use of vehicles. Failure to buy and maintain the required insurance may result in termination of the Contract. The limits of insurance, which may be increased by the Department as deemed necessary, shall not be less than as follows:

- A. **Commercial General Liability (CGL) insurance**, with a limit of not less than \$1,000,000 per each occurrence. If such CGL insurance contains aggregate limits, the general aggregate limits shall be at least twice the "each occurrence" limit, and the products-completed operations aggregate limit shall be at least twice the "each occurrence" limit.
- B. **Employer's liability ("Stop Gap") insurance**, and if necessary, commercial umbrella liability insurance with limits not less than \$1,000,000 each accident for bodily injury by accident or \$1,000,000 each employee for bodily injury by disease.
- C. **Business Auto Policy (BAP) insurance**, and if necessary, commercial umbrella liability insurance with a limit of not less than \$1,000,000 per accident, with such insurance covering liability arising out of "Any Auto."

All insurance must be purchased on an occurrence basis and should be issued by companies admitted to do business within the State of Washington and have a rating of A- or better in the most recently published edition of Best's Reports. Any exception shall be reviewed and approved in advance by the Risk Manager for the Department. If an insurer is not admitted, all insurance policies and procedures for issuing the insurance policies must comply with Chapters 48.15 RCW and 284-15 WAC.

The "State of Washington, Department of Natural Resources, its elected and appointed officials, agents and employees" shall be named as an additional insured on all general liability, excess, and umbrella insurance policies.

Before using any rights granted herein, Contractor shall furnish the Department with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements specified above. Certificate(s) must reference the Contract number **Contract Number 1460** in the time required by Clause 1-13.

The Contractor shall provide the Department written notice before cancellation or non-renewal of any insurance referred to herein, as prescribed in statute (RCW Title 48).

All insurance provided in compliance with this Contract shall be primary as to any other insurance or self-insurance programs afforded to or maintained by State. Contractor waives all rights against State for recovery of damages to the extent these damages are covered by general liability or umbrella insurance maintained pursuant to this Contract.

By requiring insurance herein, State does not represent that coverage and limits will be adequate to protect Contractor, and such coverage and limits shall not limit Contractor's liability under the indemnities in this Contract.

2-05 Safety Compliance

Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work.

- A. During the Contract performance, Contractor shall protect the lives and health of employees performing the Work and other persons who may be affected by the Work and prevent damage to property at the Unit and adjacent property. Contractor shall comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction for the safety of persons or property; shall protect from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.
- B. In an emergency affecting the safety or life of employees or adjoining property, Contractor is permitted to act to prevent threatened loss or injury. Within 24 hours of any emergency, Contractor shall notify the Compliance Forester. If directed by the Compliance Forester, within five (5) business days of any emergency, Contractor shall prepare an incident report and submit it to the Department's Region manager within five (5) business days following an emergency if directed to do so by the Compliance Forester.

2-06 Venue

Disputes arising under this Contract shall be brought in the State of Washington and the venue shall be Thurston County.

2-07 Dispute Resolution

Before initiating any litigation over the terms of this Contract, the Contractor commits to the following process:

- A. Any concerns or disputes which the Contractor has relating to this Contract shall first be brought to the attention of the Compliance Forester.
- B. If the Compliance Forester is unable to resolve the dispute to the Contractor's satisfaction, the Contractor will notify the Contract Manager in writing, with specificity, of his dispute. The Contract Manager will provide a written response within ten (10) business days.
- C. If the Contractor is not satisfied with the Contract Manager's response, he will notify the Region Manager in writing of his dispute. The Region Manager will review and set a meeting with the Contractor within fifteen (15) business days, unless the Contractor agrees to a longer period. After the meeting, the Region Manager will provide a written response.

2-08 Subcontracting

The Contractor shall not enter into any subcontract or assignment of this Contract.

2-09 Nondiscrimination

During the performance of this Contract, the Contractor shall comply with all federal and State nondiscrimination laws, regulations, and policies.

2-10 Contractor's noncompliance

In the event of or refusal to comply with any nondiscrimination law, regulation, or policy this Contract may be rescinded, canceled, or terminated in whole or in part, and the Contractor may be declared ineligible for further contracts with the Department. The Contractor shall be given a reasonable time to cure this noncompliance.

2-11 Pre-Work Conference

The Contractor shall attend a Pre-Work Conference before beginning Work. The Compliance Forester will notify the Contractor of the time and place of the Pre-Work Conference.

2-12 Purpose of the Pre-Work Conference

The purpose of the Pre-Work Conference is to document the following on the Pre-Work Conference form:

- A. All required documentation as outlined in sections I and II of the contract have been received from the Contractor, such as insurance forms, prior to beginning Work on this Contract.
 - **Certificate of Insurance (Clause 2-04)**
 - **Declaration of Industrial Insurance Status (Clause 1-05)**
 - **Farm Labor Contractors License or Letter of Exemption**
 - **Performance Security**

- B. The Pre-work Form which includes
 - a. The Work plan of operations including the order and time frame in which Work will occur on individual units or groups of units within this Contract.
 - b. Name(s) and contact information for the Contractor and Designated Contract Representative(s), including all personnel authorized to sign unit completion forms and payment invoices.
 - c. Clarification of any unique requirements or conditions of the Work within this Contract prior to commencing Work.
 - d. Names(s) and contact information for the Contract Manager and Compliance Forester(s).
 - e. Time interval(s) at which units will be processed for payment.
 - f. Property transfer and damage form(s) to document the temporary transfer of the Electronic Data Recorder(s) (EDR), handheld GPS(s) from DNR to the contractor for use on the project.
 - g. Key checkout form for all gate keys issued to contractor.
 - h. Pre-signed A-19 form to release the L&I retainage at the termination of the contract.
 - i. L&I Report by Landowner form

2-13 Work Delay

Contractor shall promptly notify the Compliance Forester of any actual or anticipated event which is delaying or could delay the Work, including the expected duration of the delay, the anticipated effect of the delay on the schedule, and the action being or to be taken to correct the delay. The notification does not relieve Contractor of the obligation to complete the Work within the time required by this Contract.

2-14 Non-conformances with Work Schedule

If Contractor is not in conformance with the Work schedule for reasons other than acts of Force Majeure, Contractor shall bring its activities into conformance with the schedule or request the Compliance Forester to revise the Work schedule. The Compliance Forester may require a meeting to determine if a revision is necessary. In the event the Contractor stops Work or if the initial start-up is delayed for a period of one (1) week or more, a new Pre-Work Conference may be held.

2-14.1 Twenty Percent Rule

DNR uses what is referred to as the “Twenty Percent Rule” to determine if a project is no longer viable. The “twenty Percent Rule” states:

If the Contractor’s rate of progress towards completion of the contract item is such that the difference between the percentage of the total number of work days remaining in the contract period and the percentage of the total number of uncompleted plots remaining in the contract becomes greater than twenty percent (20%) the project is in jeopardy of being no longer viable, in which case the contractor will subject to clause 2-16.

EXAMPLE OF 20% RULE for Contract #1460:

The contract term is approximately 165 work days for approximately 1,603 plots. Progress of the contractor after the first thirty-three (33) days of operation should be at least 321 plots. If this is not accomplished, contractor must revise the work plan to show they can successfully complete the remaining work before the contract expires or be subject to clause 2-16.

2-16 Breach of Contract

Nonperformance, unsatisfactory performance, or willful violation of Contract requirements by the Contractor shall constitute breach of contract and the Department may collect liquidated damages, terminate the contract with forfeiture of the performance and damage deposit, or declare breach of contract and make a claim for actual damages suffered by the Department. Any delay or failure of performance by the Department or Contractor, other than the payment of money, shall not constitute a breach if the cause was Force Majeure.

2-17 Washington State Forest Fire Protection Requirements

The Contractor and employees shall be familiar with the Washington State Forest Fire Protection Requirements and adhere to them. These requirements are found in: [Revised Code of Washington Chapter 76.04](#)

2-18 Fire Inspection

The Department may inspect the Units for adherence to regulations and presence of fire tools. Any inspection by the Department shall not limit Contractor’s liability for failure to adhere to applicable regulations.

2-19 Spark Arresters

All spark emitting engines will be equipped with approved spark arresters. Spark arrestors are approved by contractors demonstration to the Compliance Forester as to functionality and serviceability onsite, prior to use of the device. The lists adopted by the agency are from the National Wildfire Coordinating Group (NWCG). [NWCG approved spark arresstor lists.](#)

2-20 Open Fires

The Contractor shall not build any open fires on the contract area without first obtaining written permission from the Compliance Forester.

2-21 Prohibition from Removal of Merchantable Products

Contractor is prohibited from removing merchantable or potentially merchantable products from the Units. A separate agreement with the Department is required for removal of Christmas trees, boughs, brush pickings, decorative shrubs or trees, firewood, poles, posts and other merchantable or potentially merchantable material.

2-22 Garbage

Contractor shall dispose of garbage brought onto State lands in garbage disposal areas meeting all State, county, and local requirements. Garbage includes equipment maintenance, abandoned equipment, containers, and other expended materials.

2-23 Camping

Contractor is prohibited from using or authorizing its employees to use non-designated State lands, landings, or roads for camping.

Section II-B: Specifications for the Activity

2-24 Precedence between Sections

Section II-B covers the general standards that apply over the whole contract. If a change is required on a site by site basis those differences will be outlined on the Unit Description Form (Section III-A). The site specific details found on the Unit Description Form should take precedence over these general guidelines when they exist.

2-25 Workers, Supervision and Equipment

The Contractor shall provide:

- A. All Workers to complete the work within the contract term.
- B. To provide trained employees or the training necessary to enable employees to accurately identify native forest trees and damage agents, accurately measure tree heights, diameters and tree damage codes. Experience with map interpretation and GPS navigation will be required. A minimum three (3) months of young stand data collection experience will meet this requirement. Documentation of a worker's experience shall be provided to the Department upon request.
- C. To bear all costs of operation not specifically furnished by the Department under Clause Section 2-55.
- D. To furnish all required safety equipment, fire equipment, and a vehicle to transport workers. The Contractor shall supply vehicles capable of traveling backcountry roads (4-wheel drive vehicles may be needed for some areas). Where roads are closed by weather, washout, operations or other restrictions, workers shall be required to walk in unless other means of transportation are approved by the Compliance Forester.
- E. To provide waterproof markers to mark on flagging to identify plot centers and reference points.
- F. To provide all plot data files and GPS track logs electronically to DNR compliance forester weekly throughout the contract term. Download locations and times will be documented in the pre-work form at the pre-work conference and will be somewhat flexible to minimize contractor travel times to submit data within this time frame.
- G. Periodic supervision of workers to insure completion of work to contract standards.

2-25.1 Plot Locations

- A. Plot location will be identified on the unit map and provided electronically in the GPS files to provide navigation to each plot.
- B. Number of plots was calculated by dividing unit acres by the acres per plot. Number of plots on the unit description will be the maximum number per unit that will be measured. Plot locations occurring within leave tree clumps, outside of unit boundaries as shown on aerial photo, will reduce number of plots per unit requiring tree measurements. Edge plots where plot center is within unit will require tree measurement using the walk through solution attached in the field manual. Plot locations shall not be changed by the contractor unless pre-approved in writing by the compliance forester.
- C. Contractor shall use the GPS until the GPS shows within 50 feet of plot location. Once within this distance contractor shall take a compass bearing and pace to actual plot location.

2-26 Plot Marking Requirements

- A. Contractor shall mark each plot with one high flag and one plot center flag. High flag shall be pink and blue flagging. Tie flagging a minimum five feet off the ground. One length of pink and one length of blue shall be double knotted together on live woody vegetation. Plot center shall be marked within six inches of ground level using woody vegetation or a stick that will not move due to a weather event such as wind or snow. This shall be marked using pink flagging.

2-34 Special Requirements

Unit Description Table will also show special requirements on certain units. If special requirements noted on the Unit Description Table conflict with requirements herein, the special requirement will prevail.

2-47 Contractor shall furnish:

- A. All safety equipment and transportation.
- B. Worker strength to complete the contract within the contract term.
- C. All costs of operation and maintenance not specifically furnished by the Department under 2-55 below shall be borne by the Contractor.
- D. To provide all plot data files electronically to DNR compliance forester within one week of completion. Download locations and times will be documented in the pre-work form at the pre-work conference and will be somewhat flexible to minimize contractor travel times to submit data within this time frame.
- E. Periodic supervision of workers to insure completion of work to contract standards.

2-55 Department shall furnish:

- A. A Department Representative to acquaint the Contractor with each unit to be worked and to conduct periodic field inspections on a minimum of 10% of completed plots prior to payment on any individual unit.
- B. Unit maps with aerial photo and plot locations.
- C. To provide colored ribbon at a rate of one (1) roll per five (5) plots to mark plot centers and road transects. Color ratio will be six (6) rolls pink to four (4) rolls blue.
- D. Up to two (2) Allegro CX Electronic data collectors and two (2) Garmin 60 series handheld GPS units for use by the contractor solely for the purpose of work on this contract. Use requires signing damage and replacement agreement.

2-61 Determination of Payment

Compliance and payment for work performed will be based on the following:

- A. The plots illustrated on the Unit Maps in Section III, provide the basis for determining work to be completed. Failure to complete plots within 1 chain (66 feet) of the plot center established by the Department renders work unsatisfactorily completed. The Contractor is to utilize the Garmin GPS with plot locations pre-loaded by the contract manager to navigate to all plot centers. No consideration or payment will be given for work that extends beyond unit boundaries by error. Work procedures shall follow the procedures in SECTION III titled FIELD MANUAL.

- B. Determination of work satisfactorily completed is described in the FIELD MANUAL.
- C. A minimum of 10% of plots completed by the contractor will be evaluated by the Compliance Forester to determine payment on each completed unit.

2-71 Unsatisfactory Work Compliance

- A. The Compliance Forester will inspect the contract work to determine if plot location and data collection accuracy is satisfactory before payment occurs for each work unit.
- B. The Contractor will be notified of any unsatisfactory unit(s) or parts thereof, within 2 weeks of data download to the compliance forester.
- C. If found unsatisfactory, Contractor will be subject to clause 2-16 and any re-work by the contractor will be at his or her own cost and may be deducted from the contractor's performance security for purposes of paying another contractor to complete the work if a Breach of Contract occurs.
- D. At the department's option, the Contractor shall rework a unit on which the Contractor's work performance is not rated satisfactory, and further, it shall be the Department's option to require the rework be completed prior to starting new work. Rework areas will be reexamined for contract compliance, and the resulting performance rating will supersede the previous performance rating for the plot data in question.
- E. Plot data must be submitted electronically from the handheld data collectors to Compliance Forester or Contract Manager within seven (7) days of completing a unit or work will be unsatisfactory.

2-72 Plot Data Scoring

- A. Each data field not filled in correctly will equal one error point.
- B. Any plot with more than two (2) error points is unacceptable. Any unit inspected cannot accumulate more than two (2) failed plots. Any unit that fails inspection will be returned to the contractor. At the option of the Department the Contractor may be required to resurvey the unit by establishing new survey lines and plots.
- C. A point shall be deducted for each of the following errors on the unit file:
 - 1. Missing or incorrect plot number, or incorrect species.
 - 2. The number of total trees per plot is more than one (1) different than the actual number of total trees per plot that are present on a plot when the total number of trees on a plot is less than or equal to fifteen (15).
 - 3. The number of total trees per plot is ten (10) percent different than the number of total trees per plot that are present on a plot when the total number of total trees per species on the plot is greater than fifteen (15).
 - 4. The estimated diameter is not within (10) percent of the actual measured value for trees >4.5 feet tall.
 - 5. The total estimated height measurement is not within fifteen (15) percent of the actual measured total height.
 - 6. When damage type is incorrect for more than one tree per plot.
 - 7. If more than 10 percent of plots in unit fail compliance, resurvey of the unit will be required. If resurvey is not conducted on all unsatisfactory plots, then no payment shall be made for that unit.

Example: If the total points accumulated are two or greater, then the plot will fail compliance. The plot(s) that

failed compliance will not receive payment. If resurvey is not conducted on all unsatisfactory plots, then no payment shall be made for that unit.

2-76 Payment shall be made as follows:

Payment may be made by the month, unit or by one total payment. Details of payment schedule will be determined in the pre-work conference (Clause 2-71). The Department will attempt to comply with the desires and needs of the Contractor but assumes no legal duty or obligations to adhere to the schedule of payments so arranged.

- A. Contractor or contract representative (Clause 2-28) and the Compliance Forester shall sign the Unit Completion Form at time of data download. Final payment will not be made to the Contractor unless the plot data downloaded is deemed satisfactory by the Compliance Forester field audit, and "final" payment is designated thereon.
- B. Ten percent (10%) of all payments due Contractors who employ workers shall be retained by DNR as security for L&I industrial insurance premiums owed for their workers. Upon determination that the Contractor has met all financial obligations for industrial insurance premiums related to the Item(s) of this Contract, the 10% retainage will be returned to the Contractor. DNR will return this retainage approximately 45 days following close of the quarter in which the work was completed. However, if the Contractor notifies DNR in writing that they have paid all L&I premiums associated with the Item(s) of this Contract, DNR will, upon determination that the Contractor has met all financial obligations for industrial insurance premiums related to the Item(s) of this Contract, work diligently to return the retainage as soon as practical.

Section III A - Contract 1460 Unit Description

	District	Unit Name	FMU ID	# Plots	Plot Size	Unit Acres	Acres per plot	Year Planted	Elevation	Gate	Key	Notes
1	Black Hills	VIRGINIA SLIM U3	25903	20	100th ac- 11.8' radius	37	2.0	2007	200-700	Yes	PCP1-1	
2	Black Hills	VANILLA BEAN U6	43429	14	100th ac- 11.8' radius	25	2.0	2007	800-1100	Yes	PCP1-1	
3	Black Hills	THUNDER HEAD U2	36496	17	100th ac- 11.8' radius	36	2.0	2007	700-1000	Yes	PCP1-1	
4	Black Hills	SWAN U3	47869	20	100th ac- 11.8' radius	39	2.0	2007	1400-1500	Yes	PCP1-1	
5	Black Hills	SNOW STORM U2	41365	7	100th ac- 11.8' radius	7	1.0	2007	1000-1200	No		
6	Black Hills	SNOW STORM U1	36479	17	100th ac- 11.8' radius	41	2.5	2007	1000-1300	No		
7	Black Hills	SHORT STAND 3	29329	7	100th ac- 11.8' radius	12	1.7	2007	700-800	No		
8	Black Hills	SHORT STAND 2	29328	7	100th ac- 11.8' radius	13	1.9	2007	700-800	No		
9	Black Hills	SHORT STAND 1	19471	20	100th ac- 11.8' radius	54	2.5	2007	700-900	No		
10	Black Hills	RED CROW U4	37761	18	100th ac- 11.8' radius	33	2.0	2007	300-600	No		
11	Black Hills	POLYESTER PLAID U3	44829	19	100th ac- 11.8' radius	47	2.5	2007	900-1100	No		
12	Black Hills	POLYESTER PLAID U2	42970	19	100th ac- 11.8' radius	36	2.0	2007	500-600	No		
13	Black Hills	PALL MALL U2	42703	16	100th ac- 11.8' radius	30	2.0	2007	300-800	Yes	PCP1-1	
14	Black Hills	MOON SHINE U1	36510	23	100th ac- 11.8' radius	61	2.5	2007	1000-1800	Yes	PCP1-1	
15	Black Hills	LUCKY STRIPES U4	25906	30	100th ac- 11.8' radius	75	2.5	2007	100-600	Yes	PCP1-1	
16	Black Hills	LUCKY STRIPES U3	25907	22	100th ac- 11.8' radius	52	2.5	2007	300-700	Yes	PCP1-1	
17	Black Hills	LUCKY STRIPES U2	36109	7	100th ac- 11.8' radius	11	1.6	2007	500-600	Yes	PCP1-1	
18	Black Hills	GOULASH U6	44372	15	100th ac- 11.8' radius	31	2.0	2007	700-1200	No		
19	Black Hills	GOULASH U5	46896	7	100th ac- 11.8' radius	11	1.6	2007	1000-1200	No		
20	Black Hills	GOULASH U3	46895	7	100th ac- 11.8' radius	12	1.7	2007	1000-1300	No		
21	Black Hills	GOULASH U2	19428	8	100th ac- 11.8' radius	16	2.0	2007	1000-1200	No		Walk-in
22	Black Hills	FOX 2	25914	28	100th ac- 11.8' radius	67	2.5	2007	200-700	Yes	PCP1-1	
23	Black Hills	DOUBLE TROUBLE U1	42619	27	100th ac- 11.8' radius	62	2.5	2007	400-700	No		
24	Black Hills	BRUSH HOOK U5	36509	26	100th ac- 11.8' radius	65	2.5	2007	700-1000	No		
25	Black Hills	BRUSH HOOK U3	42739	7	100th ac- 11.8' radius	8	1.1	2007	1000-1200	No		
26	Lewis	WILD BILL U-1	44712	18	100th ac- 11.8' radius	33	2.0	2007	500-700	Yes	PCP1-1	
27	Lewis	WILD BEAN U-2	48109	13	100th ac- 11.8' radius	25	2.0	2007	500-800	Yes	PCP1-1	
28	Lewis	WILD BEAN U-1	48110	22	100th ac- 11.8' radius	39	2.0	2007	400-700	Yes	PCP1-1	
29	Lewis	GET IT DONE	40612	33	100th ac- 11.8' radius	81	2.5	2007	600-800	No		
30	Lewis	CHIPSHOT	43599	30	100th ac- 11.8' radius	75	2.5	2007	700-1100	Yes	PCP1-1	
31	Lewis	BRIGHT IDEA HRDWD U1	28793	29	100th ac- 11.8' radius	74	2.5	2007	300-500	No		
32	Lewis	ASCEND BD U-2	45460	7	100th ac- 11.8' radius	2	.3	2007	1100-1200	Yes	PCP1-1	
33	Lewis	ASCEND BD U-1	45459	15	100th ac- 11.8' radius	29	2.0	2007	1000-1300	Yes	PCP1-1	Walk-in
34	St Helens	WANNIGAN U3	39781	17	100th ac- 11.8' radius	32	2.0	2007	600-800	Yes	PCP1-1	
35	St Helens	WANNIGAN U2	33020	10	100th ac- 11.8' radius	20	2.0	2007	600-800	Yes	PCP1-1	
36	St Helens	WANNIGAN U1	33019	17	100th ac- 11.8' radius	41	2.5	2007	700-800	Yes	PCP1-1	
37	St Helens	SMOOTH U2	29008	25	100th ac- 11.8' radius	61	2.5	2007	1400-1500	No		
38	St Helens	SMOOTH U1	29007	14	100th ac- 11.8' radius	26	2.0	2007	1300-1500	No		

Section III A - Contract 1460 Unit Description

	District	Unit Name	FMU ID	# Plots	Plot Size	Unit Acres	Acres per plot	Year Planted	Elevation	Gate	Key	Notes
39	St Helens	PATCHES U3	44630	16	100th ac- 11.8' radius	40	2.5	2007	1000-1100	Yes	PCP1-1	
40	St Helens	NORTH JOHNSON UNIT 2	44819	10	100th ac- 11.8' radius	21	2.0	2007	800-1000	Yes	Contact IMF Prior To Access	Walk-in
41	St Helens	NORTH JOHNSON UNIT 1	22672	10	100th ac- 11.8' radius	19	2.0	2007	700-900	Yes	Contact IMF Prior To Access	
42	St Helens	MILL CR #3	15288	27	100th ac- 11.8' radius	68	2.5	2007	700-1000	No		
43	St Helens	LONG JUMP U3	45472	15	100th ac- 11.8' radius	41	2.5	2007	1500-2200	No		
44	St Helens	LONG JUMP U1	45470	19	100th ac- 11.8' radius	40	2.0	2007	1200-1800	No		
45	St Helens	HONDO	24842	27	100th ac- 11.8' radius	66	2.5	2007	1700-2000	No		
46	St Helens	GONE WEST U3	22068	25	100th ac- 11.8' radius	58	2.5	2007	1300-1900	No		
47	St Helens	GONE WEST U2	44129	7	100th ac- 11.8' radius	13	1.9	2007	1400-1700	No		
48	St Helens	GONE WEST U1	41149	35	100th ac- 11.8' radius	80	2.5	2007	1200-1900	No		
49	St Helens	FOUR ACRE	67962	7	100th ac- 11.8' radius	2	.3	2007	1100-1200	Yes	PCP1-1	
50	St Helens	FIRST TIME U-2	41569	17	100th ac- 11.8' radius	44	2.5	2007	900-1400	Yes	PCP1-1	
51	St Helens	FIRST TIME U-1	19944	25	100th ac- 11.8' radius	64	2.5	2007	900-1200	Yes	PCP1-1	
52	St Helens	DERAILLEUR	61601	40	100th ac- 11.8' radius	98	2.5	2007	900-1100	No		
53	St Helens	C-DORY	29075	7	100th ac- 11.8' radius	14	2.0	2007	700-800	No		
54	St Helens	CAT EYE U4	46034	15	100th ac- 11.8' radius	32	2.0	2007	1100-1800	Yes	PCP1-1	
55	St Helens	CAT EYE U3	22074	7	100th ac- 11.8' radius	9	1.3	2007	1300-1700	Yes	PCP1-1	Walk-in
56	St Helens	CAT EYE U2	22073	7	100th ac- 11.8' radius	5	.7	2007	1300-1600	Yes	PCP1-1	Walk-in
57	St Helens	CAT EYE U1	22072	9	100th ac- 11.8' radius	20	2.0	2007	1200-1600	Yes	PCP1-1	Walk-in
58	St Helens	ADVERSE U1	27140	15	100th ac- 11.8' radius	32	2.0	2007	1400-1800	Yes	PCP1-1	
59	Yacolt	WATERSHIP DOWN U3	24368	7	100th ac- 11.8' radius	8	1.1	2007	1500-2100	No		Walk-in
60	Yacolt	WATERSHIP DOWN U2	39009	21	100th ac- 11.8' radius	51	2.5	2007	1700-2300	No		
61	Yacolt	TOLLGATE U3	44924	9	100th ac- 11.8' radius	4	.4	2007	600-700	Yes	PCP1-1	
62	Yacolt	TOLLGATE U2	24480	19	100th ac- 11.8' radius	38	2.0	2007	600-1100	Yes	PCP1-1	
63	Yacolt	TOLLGATE U1	44923	19	100th ac- 11.8' radius	41	2.0	2007	600-1100	Yes	PCP1-1	
64	Yacolt	SILVERADO U2	40770	27	100th ac- 11.8' radius	63	2.5	2007	1900-2600	Yes	PCP1-1	
65	Yacolt	SILVERADO U1	29169	40	100th ac- 11.8' radius	97	2.5	2007	1900-2900	Yes	PCP1-1	
66	Yacolt	ROCK SALT U2	39019	7	100th ac- 11.8' radius	5	.7	2007	1600-1700	No		Walk-in
67	Yacolt	ROCK SALT U1	24363	28	100th ac- 11.8' radius	64	2.5	2007	1600-1900	No		
68	Yacolt	PACK RAT U2	39699	28	100th ac- 11.8' radius	68	2.5	2007	1300-2200	Yes	PCP1-1	
69	Yacolt	PACK RAT U1	24370	21	100th ac- 11.8' radius	51	2.5	2007	1000-1600	Yes	PCP1-1	
70	Yacolt	HIGH CHAPARRAL U2	44580	13	100th ac- 11.8' radius	26	2.0	2007	1000-1500	Yes	PCP1-1	
71	Yacolt	CAVEMAN U5	45230	18	100th ac- 11.8' radius	36	2.0	2007	1500-1800	No		
72	Yacolt	CAVEMAN U4	45229	21	100th ac- 11.8' radius	56	2.5	2007	1600-1800	No		
73	Yacolt	CAVEMAN U3	43271	31	100th ac- 11.8' radius	81	2.5	2007	1300-1700	No		

Section III A - Contract 1460 Unit Description

	District	Unit Name	FMU ID	# Plots	Plot Size	Unit Acres	Acres per plot	Year Planted	Elevation	Gate	Key	Notes
74	Yacolt	CAVEMAN U2	43270	9	100th ac- 11.8' radius	8	.9	2007	1600-1700	No		
75	Yacolt	CAVEMAN U1	43269	37	100th ac- 11.8' radius	92	2.5	2007	1600-2100	Yes	PCP1-1	
76	Yacolt	CAMP ROBBER U4	43459	43	100th ac- 11.8' radius	105	2.5	2007	800-1500	Yes	PCP1-1	
77	Yacolt	CAMP ROBBER U3	43451	24	100th ac- 11.8' radius	56	2.5	2007	900-1100	Yes	PCP1-1	
78	Yacolt	CAMP ROBBER U2	43450	9	100th ac- 11.8' radius	11	1.1	2007	1400-1500	Yes	PCP1-1	Walk-in
79	Yacolt	CAMP ROBBER U1	43449	37	100th ac- 11.8' radius	88	2.5	2007	1200-1500	Yes	PCP1-1	
80	Yacolt	BIG BULL U2	36829	8	100th ac- 11.8' radius	11	1.4	2007	2400-2700	Yes	PCP1-1	Walk-in
81	Yacolt	BIG BULL U1	21256	34	100th ac- 11.8' radius	82	2.5	2007	2100-2800	Yes	PCP1-1	
82	Yacolt	AIRSTREAM U5	60211	11	100th ac- 11.8' radius	20	2.0	2007	1200-1700	Yes	PCP1-1	
83	Yacolt	AIRSTREAM U4	43352	18	100th ac- 11.8' radius	46	2.5	2007	1200-1700	Yes	PCP1-1	
84	Yacolt	ABBY ROAD U2	44878	33	100th ac- 11.8' radius	77	2.5	2007	1200-1500	No		
85	Yacolt	ABBY ROAD U1	44877	33	100th ac- 11.8' radius	74	2.5	2007	1100-1200	No		
Contract 1460 TOTALS			PLOTS:	1,603	ACRES:	3,544						
Contract Term: November 12, 2013 to April 25, 2014												
Requirements for all units:												

Plot Size = 1/100th Acre (11.8' radius) for all plots taken



YOUNG STAND DATA COLLECTION FIELD MANUAL

Purpose of the Field Pamphlet

This pamphlet outlines the procedures used to conduct Free-to-Grow data collection.

Sample Population

The sample population consists of live trees within the plot (and plot radius) shown on the Unit map with the following exceptions.

All plots on the Unit Map shall be recorded as taken-“Yes” = plot center is within the sample population or Taken-“No” = plot center and 2X the plot radius is outside the boundaries. Photo/ground interpretation shall prevail to make this determination where unit boundaries do not accurately delineate the stand type.

Taken- “No” plots will be deleted from the plot layer in GIS before archiving by DNR inventory staff. These areas will consist of leave tree clumps, rock pits, roads and other areas that occur within the unit boundaries with the following exception: Edge plots are defined as plots where the plot center occurs outside the target stand but within the plot radius of the stand edge. These plots will require using the “Walk Through Solution” in Figure 2.

Sample Purposes

1. Documentation of target stocking requirements.
2. Certification of stocking %, density (TPA), and species to validate regeneration targets and PCT thresholds for thinning.
3. Provide corporate quantitative data to support future decision-making by foresters and managers.

Sample design

Locating sample points in the field

Sample point locations are identified prior to field visitation using the Random Start Sample Point Locator (RSSPL) GIS application ([Figure 1](#)), and are “loaded” into a GPS unit. Using the GPS travel toward the sample point. Upon reaching the vicinity of the sample point (within 50 feet of the sample point on the GPS) use the GPS panning function to obtain a direction and distance to the sample point. Use a hand compass bearing and pacing to locate an unbiased sample point position at which the plot center flagging shall be tied.

Tree Size Definitions:

Regen = All trees < 4.5' height

Small Trees = All trees > 4.5' height and < 8" DBH

Large Trees = All trees > 8" DBH

Tree selection

All live trees within the plot radius shall be recorded as follows:

- 1. Regen will be counted by species (height = 0, diameter = 0 and damage code =00) combined to one line per species per plot.**
- 2. Small trees >4.5 feet in height within the plot radius require the following measurements:**
 - a. Species**
 - b. Count = 1 (1 line per tree on all trees >4.5 feet)**
 - c. Diameter at breast height (dbh) = estimate to nearest 1/10th inch +/- 10% of actual measurement**
 - d. Total height in feet +/- 15% of actual measurement**
 - e. Damage code = choose from the corresponding code on EDR**
 - f. Comments = "EP= Edge plot"; definition of unknown damage or species**

When more than ten regen trees less than 4.5 feet are encountered on a sample point the plot area may be split (at the discretion of the sampler) in half such that each half contains approximately an equal number of trees. Apply the coin toss function on the EDR to choose the right half area if heads is displayed, choose the left half if tails is displayed. If there are still more than ten trees, split the chosen half and again use the coin-toss methodology to determine the area to sample. When plots are split, tree counts (see below) need to be adjusted to reflect the reduced plot size.

Tree measurements

- 1. Count large and small trees with multiple stems (whether above or below breast-height) as a single tree with a [damage code](#) of 98. (example would be maple clumps or significantly damaged conifers that will not grow out of the multiple stem configuration)**
- 2. Regen trees less than or equal to 4.5 feet tall may be grouped together by species if desired. For each tree record the height; for a species group record the count of selected trees. Adjust tree counts to reflect edge trees and split plots.**
- 3. Small trees greater than 4.5 ft tall should be observed individually, but; grouping is permissible for identical trees (same dbh, height AND species). Record the count (usually one, except for grouped trees or as noted below for edge trees or trees on a "split plot"), the species, estimated DBH, estimated height, and dominate damage code.**
- 4. EDR will randomly select 1 or more trees per plot to be measured and not estimated. EDR will beep, prompting the user to enter measurements after entering an estimated DBH and height for a given tree. EDR will create a duplicate line below initial entry. User will be required to measure DBH and**

height for estimated tree. The comparison of estimated and measured values will be used to adjust bias during data analysis.

5. Large trees should be observed individually. Record the count (usually one, except as noted above for edge trees), the species, estimated DBH (nearest 1 inch), estimated height (nearest 10 feet), and dominate damage code. Large trees near the FMU edge are assessed using the edge tree walkthrough solution the same as small trees.
6. For all trees, DBH at 4.5 feet above ground-level on the uphill side of the tree should be estimated to the nearest 1/10th inch and measured to the nearest 1/10th inch. Similarly, tree height should be estimated from ground-level on the uphill side of the tree to the highest point on the tree (top of the leader unless damaged, then to the highest live point on the bole). Record to the nearest foot. **IF top is broken, measure to the highest point of the live tree bole and code as damage = 96 (broken/missing top).**
7. Any damage from the damage code list shall be recorded on the line corresponding to the damaged tree.
8. Edge tree walkthrough solution¹:
 - a. A potential edge tree is one near a stand boundary (near being within two times the distance of the fixed radius of the selection rule). Edge trees need to have their selection probabilities adjusted by increasing their tree count value.
 - b. To determine if a sample tree is an “edge” tree, measure the distance from the sample point to the tree. **If the distance from the tree to the stand boundary (projected along a line passing through the sample point and the tree) is greater than the distance from the sample point to the tree, double the tree count (Figure 2).**
 - c. The count for an edge tree on a plot that is split would be four; i.e., multiply the “split plot” count by two.
 - d. For edge trees less than or equal to 4.5 feet tall record “edge” trees separate from trees not near the edge (whether individually or grouped) and double the actual tree count.
 - e. When the stand boundary is not obvious the drip line of live trees in the adjacent stand may be used to establish the boundary. The stand boundary should be ascertained prior to performing the walkthrough solution.
9. When plots are split the tree count is duplicated for each split, i.e., if the plot is split once tree count is doubled, if the plot is split twice tree count is doubled again. For example, tree count on a plot split twice will be multiplied by four. If the tree is also an edge tree it is additionally multiplied by two.

¹ Ducey, Mark J. Jeffrey H. Gove, and Harry T. Valentine. 2004. A walkthrough solution to the boundary overlap problem. *Forest Science* 50(4): 427-435.

Figure 1. Sample point locations generated by the Random Start Sample Point Locator (RSSPL) GIS application. Some sample points may be located outside the sample area (on a permanent road, within a residual clump, etc.) but inside the FMU boundary.

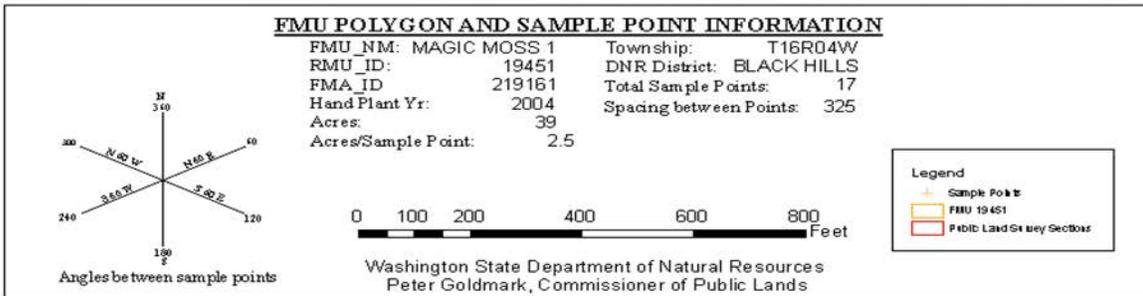
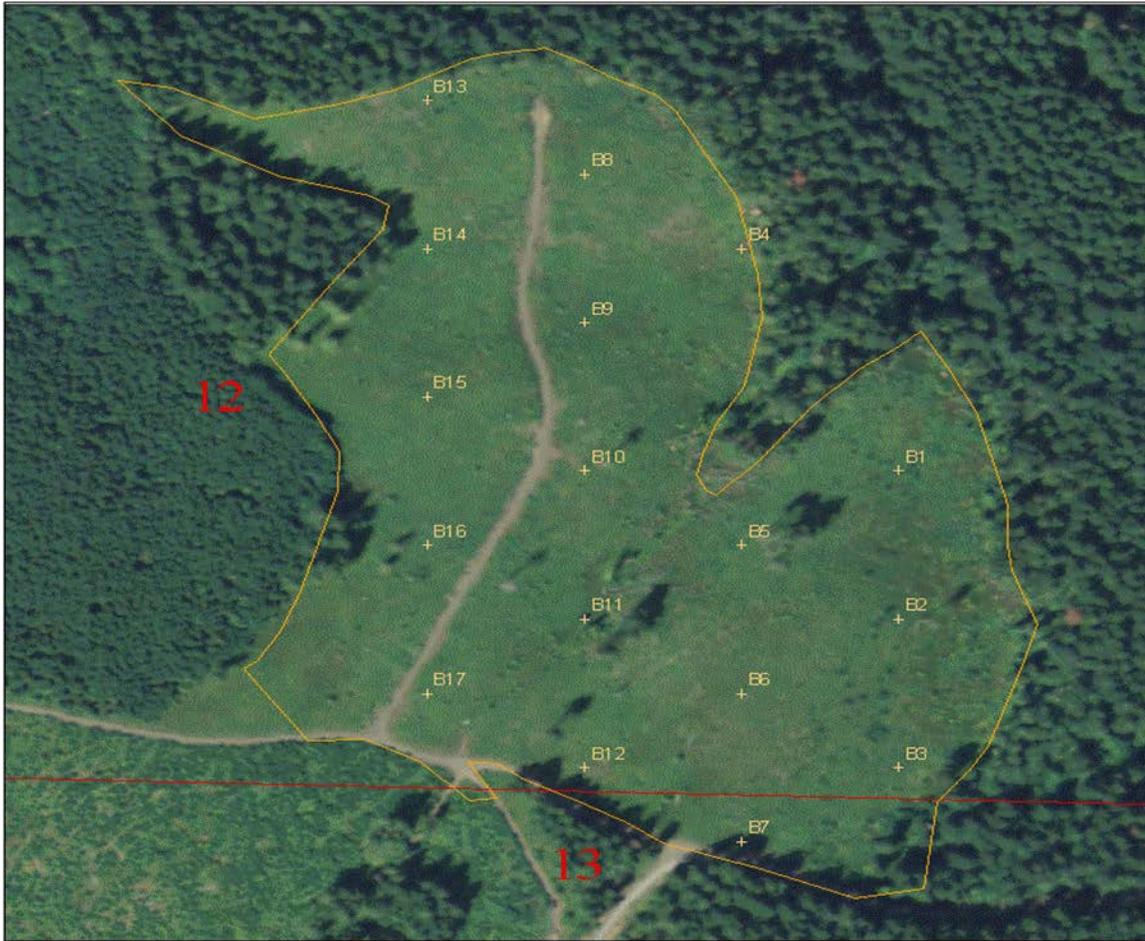
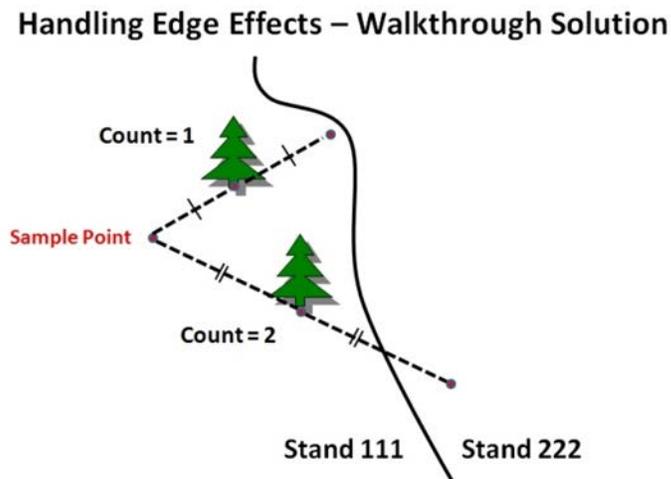


Figure 2. Schematic illustrating the walkthrough solution for determining edge tree selection-probability by projecting a distance (equal to the distance from sample point to tree) from the tree to the stand.



Equipment

The following equipment is recommended to perform field sampling:

- | | |
|-----------------------------------|--|
| 1. Electronic Data Recorder (EDR) | 5. Unit map (Figure 1) |
| 2. Personal computer or laptop | 6. *Caliper or diameter tape (1/10 in.) |
| 3. *Hand compass w/declination | 7. *Clinometer, Relaskop or height pole |
| 4. Garmin 60CSX OR 62 GPS | 8. *Loggers tape or rangefinder |

* = to be provided by contractor

Allegro Electronic Data Recorder

Basics for Data Plus CE Operation (EDR displays shown in *italics*)

1. Turn on EDR at the *on/off* button. (If at command prompt, type in "DPP" to load DataPlus.)
2. When **Collect Data** is highlighted press the Enter key.
 - a. When starting a new sample enter a valid FMU_ID as the New File Name.
 - b. When continuing an existing data set select **Old Data Set**, scroll down to highlight the FMU then press the enter key.
3. Press the **F5** key. This takes you to the **FMU Information Screen** see picture below. If a valid FMU ID has been entered as a file name, Fmuld, FmuNm and Fmald should automatically load. If an invalid Fmuld has been entered as a file name, then the user will be prompted to delete this dataset (F10) and start again. Once the

dataset has been initialized with Fmuld, FmuNm and Fmald, the user can continue entering Name, PlotSz and any stand damages that are observed. Once the information screen is completed, press **F5** and advance to the plot screen.

4. Enter the plot number (SptNo) and press the **F5** key to advance to the tree data screen.
5. Once all trees have been recorded press **F4** to return to the plot screen before traveling to the next plot number.

Data Recording Screens

FMU Information Screen:

Fmuld – enter FMU ID.

FmuNm - enter FMU Name

Fmald – enter FMA ID

Crew type - enter contract

Userld – enter your last name

PltSze – select desired fixed radius plot size from the contract unit description:

Nominal Plot Size*	Plot Radius ⁺	Nominal Plot Size*	Plot Radius ⁺
1/100 th acre	11.8 feet		

*Nominal plot size is not an exact expansion factor; actual expansion is based on plot radii.

⁺Radii are horizontal distance measured to the one-tenth foot.

PriDmg, SecDmg, TerDmg – enter any primary, secondary and tertiary stand damages observed ([see damage codes below](#)).

Plot Sample Screen

SptNo – enter sample point number as identified on FMU sample point map.

Taken – Default is **YES**, enter **NO** when sample point is not observed.

Tree Data Collection Screen

No – Tree number (autopopulates), usually starts at 1 for each sample point.

Cnt – Enter tree count, usually one, except for lumped trees less than or equal to 4.5 feet, split plots, and edge trees.

Spp – Enter tree species number or abbreviation or select from drop down list (F2).

Dbh – Enter diameter breast height (dbh) to the nearest 1/10th inch for trees <8 inches and to nearest inch on trees >8 inches dbh.

Hgt – Enter height to nearest foot. Trees >8 inches dbh shall be estimated to the nearest 10 feet in height.

Dmg – Enter single most dominant damage from drop-down list.

Notes – Enter comments up to 40 characters.

Damage Conditions

<u>Code</u>	<u>Condition</u>
00	No Damage Present
10	Defoliators
30	Mistletoe
55	Swiss needle cast
60	Root disease
72	Animal- ungulate (deer/elk)
74	Animal- porcupine
75	Animal- rodent
78	Animal- bear
79	Animal- human
80	Weather
90	Other- use notes to explain
96	Broken/missing top
98	Multiple boles or stems

EDR function key operations - “F” keys

F1 – Help Menu

F2 – *Pik* pick list

F4 – *Ext* exit, data error checks

F5 – *Adv*, advance to next screen

F7 – Next line on that screen

F8 – Prgm, Pick list of user programs, e.g., coin toss, number sample points, etc.

F9 – Insert new line

F10 – Delete line

Ctrl/Enter – copy column from line above

Del – deletes a numeric field

Space bar – deletes a character field

Escape key – run error checks and return to previous screen

Transferring Data from EDR to client computer

There may be some differences depending on the data recorder being used.

Using Allegro – DOS Version

On the client computer, open the Data Plus Host Communicator:
"Path:\DataPlus\DPP Host.exe".

On the EDR or Handheld Computer, attach COM Port cable to COM1 and to the com port on client computer.

Turn on EDR at the **on/off** button. (If at command prompt, type in "DPP" to load DataPlus.)

At the DataPlus main menu select:

1. Communications
2. Transmit Data
3. All Datasets or Select Dataset (and select appropriate file name)
4. Direct Connect

Data will then be transferred to client computer.

You may close the Host Communicator on the client computer and turn off the EDR.

Using Recon or Allegro – WINCE Version

Attach USB cable (Recon) or COM Port cable (Allegro) to EDR COM1 and to client computers USB or COM port.

EDR must be on but DPP need not to be activated.

MS ActiveSync and DataPlus Host CE should automatically load.

On the DataPlus Host CE, select receive data.

Select appropriate application name from popup window, e.g., PRE-PCT.

Select appropriate dataset (FMU ID will be the last six digits of file name, ex. AC123456.63A).

Select receive data.

Select Done.

You may close the MS ActiveSync, Data Plus Host CE on the client computer and turn off the EDR.

Unit Information Screen

Date	1/06/2012	FmuId	99999
FmuNm	TEST		
FmaId	11111	CrewType	DNR
Surveyor	RASOR	PltSz	100
PltRd	0.0	PriDmg	SecDmg
TerDmg			

Date
F1-? F2-Pik F4-Ext F5-Adv F8-P

Menu

Plot Screen

FmuId	99999
SptNo	Taken
1	Yes
2	Yes
3	Yes
4	Yes
0	Yes

Plot Number
F1-? F2-Pik F4-Ext F5-Adv F8-P

Menu

Tree Screen

FmuId	99999	SptNo	1		
No	Spp	Cnt	Dbh	Hgt	Dmg
1	DF	1	2.5	20	00
2	WH	1	3.0	23	74
3	RC	1	1.5	12	72
4	GF	4	1.0	10	00
5		1	0.0	0	00

Tree Species
F1-? F2-Pik F4-Ext F5-Adv F8-P

Menu

UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

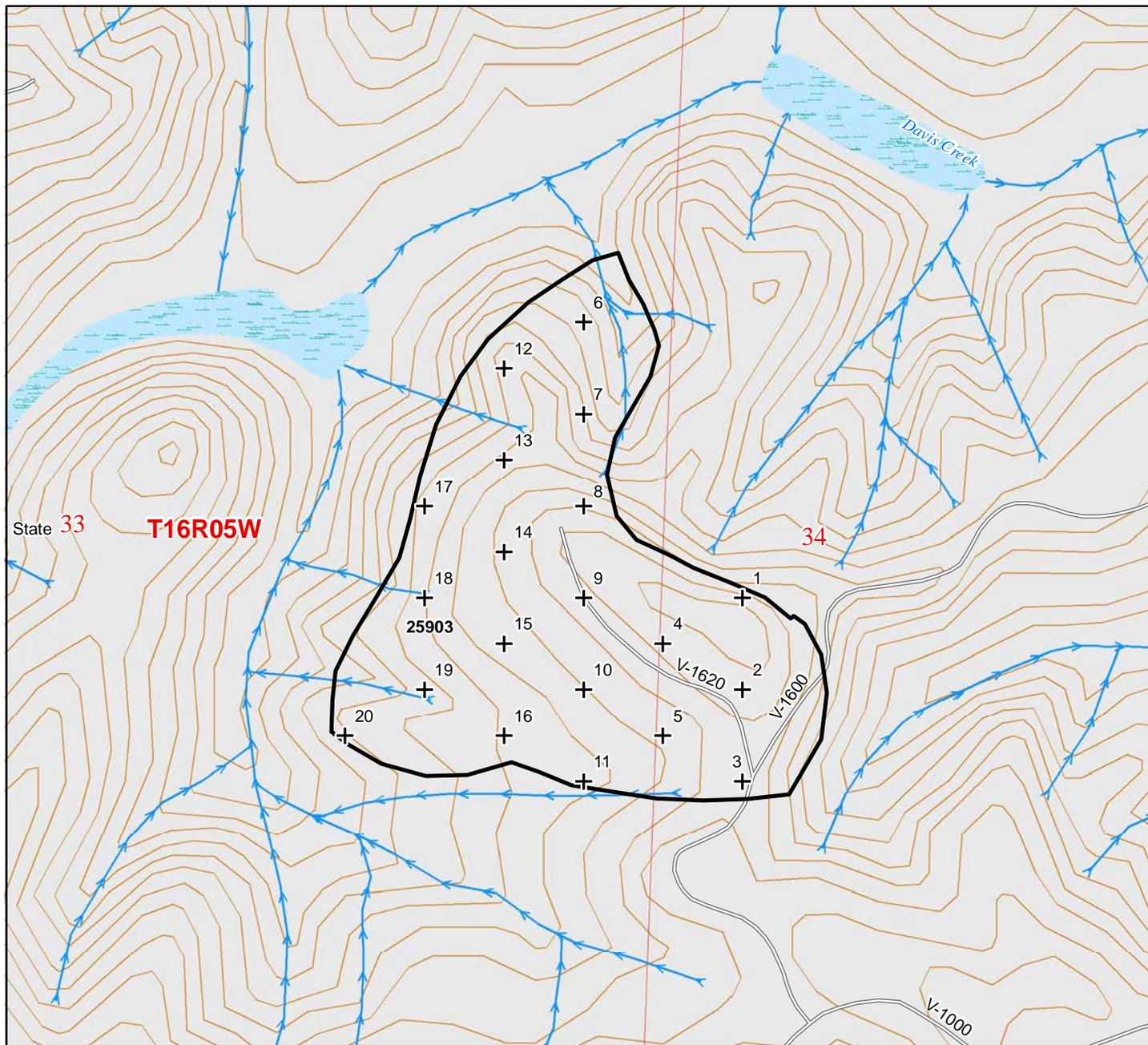
Work Unit: Black Hills

Treatment Acres: 37

Unit No. 1

Unit Name: VIRGINIA SLIM U3

FMU ID: 25903



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

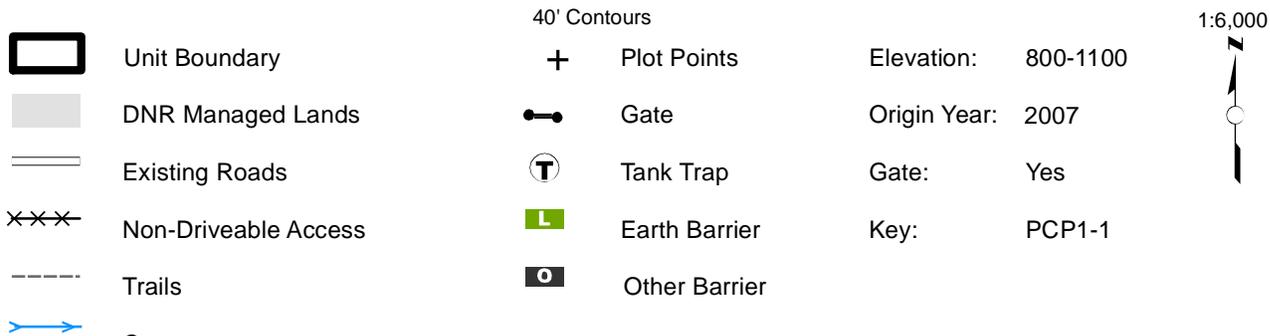
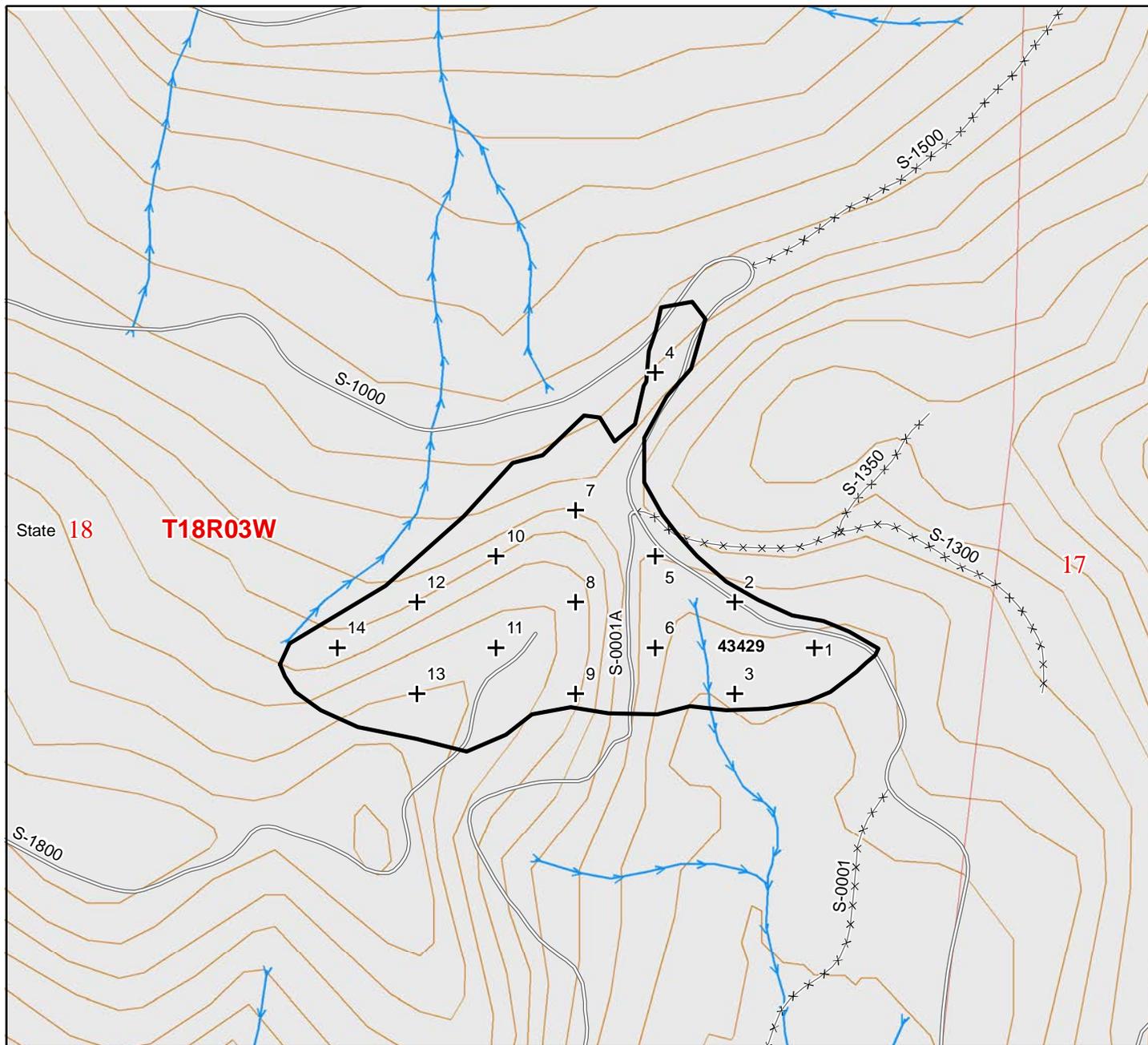
Work Unit: Black Hills

Treatment Acres: 25

Unit No. 2

Unit Name: VANILLA BEAN U6

FMU ID: 43429



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

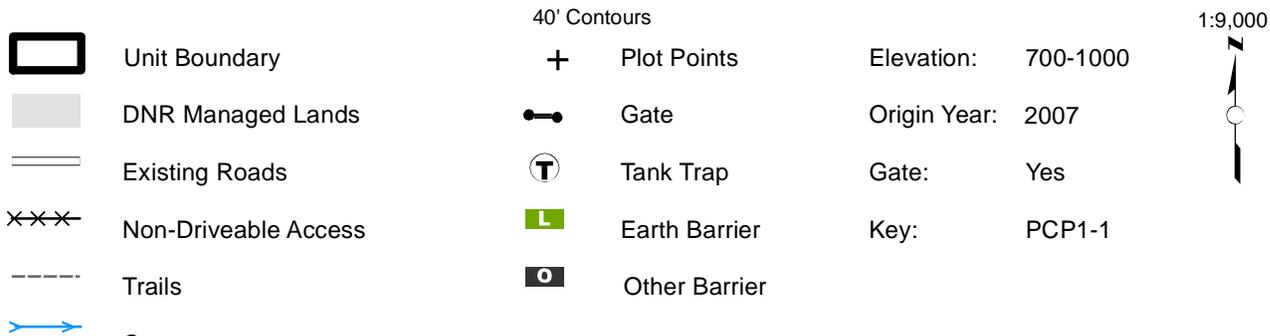
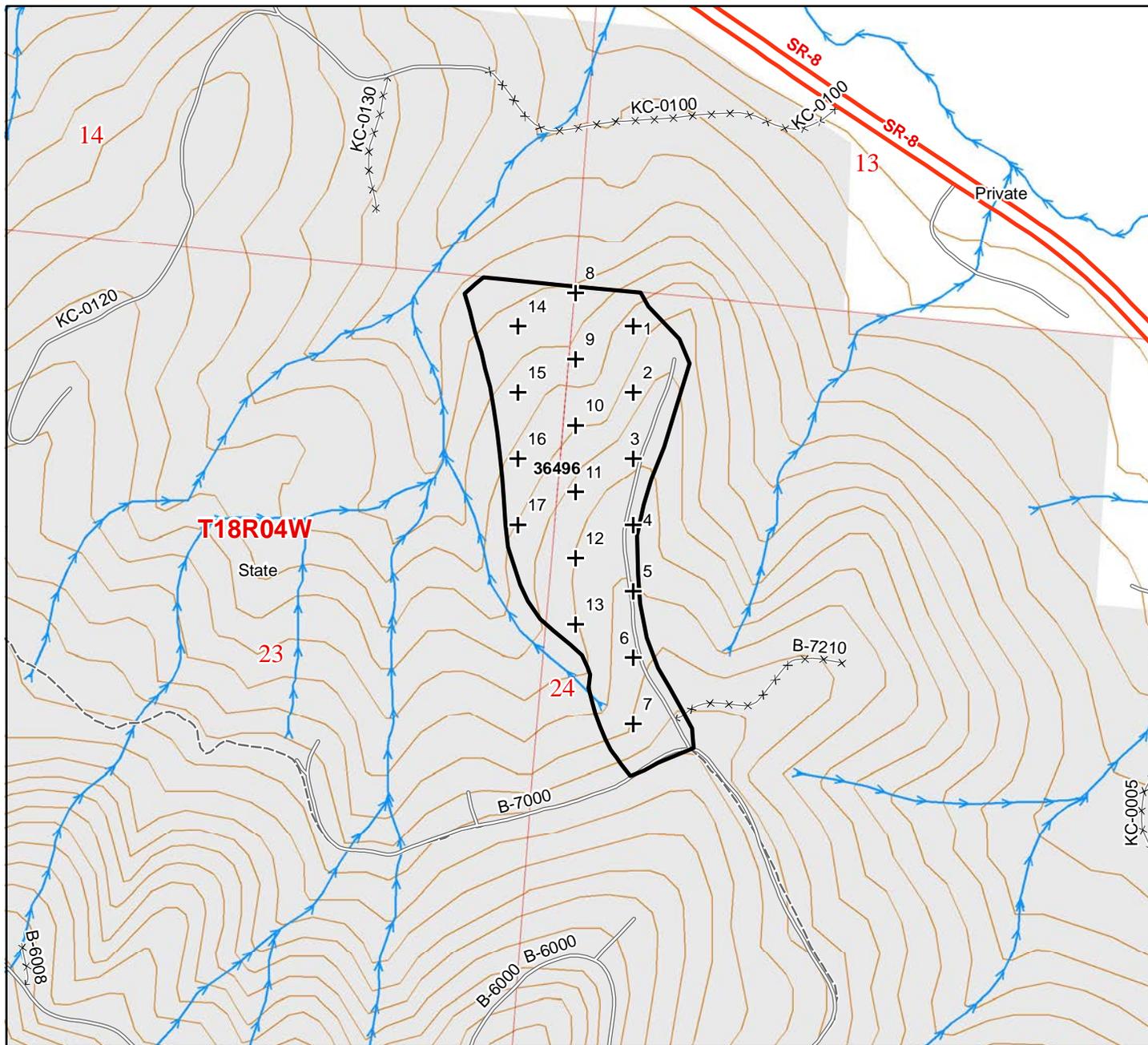
Work Unit: Black Hills

Treatment Acres: 36

Unit No. 3

Unit Name: THUNDER HEAD U2

FMU ID: 36496



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

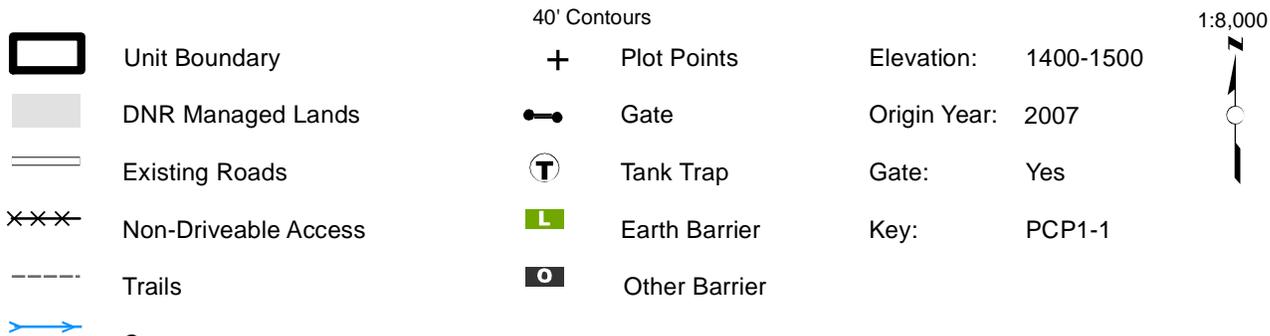
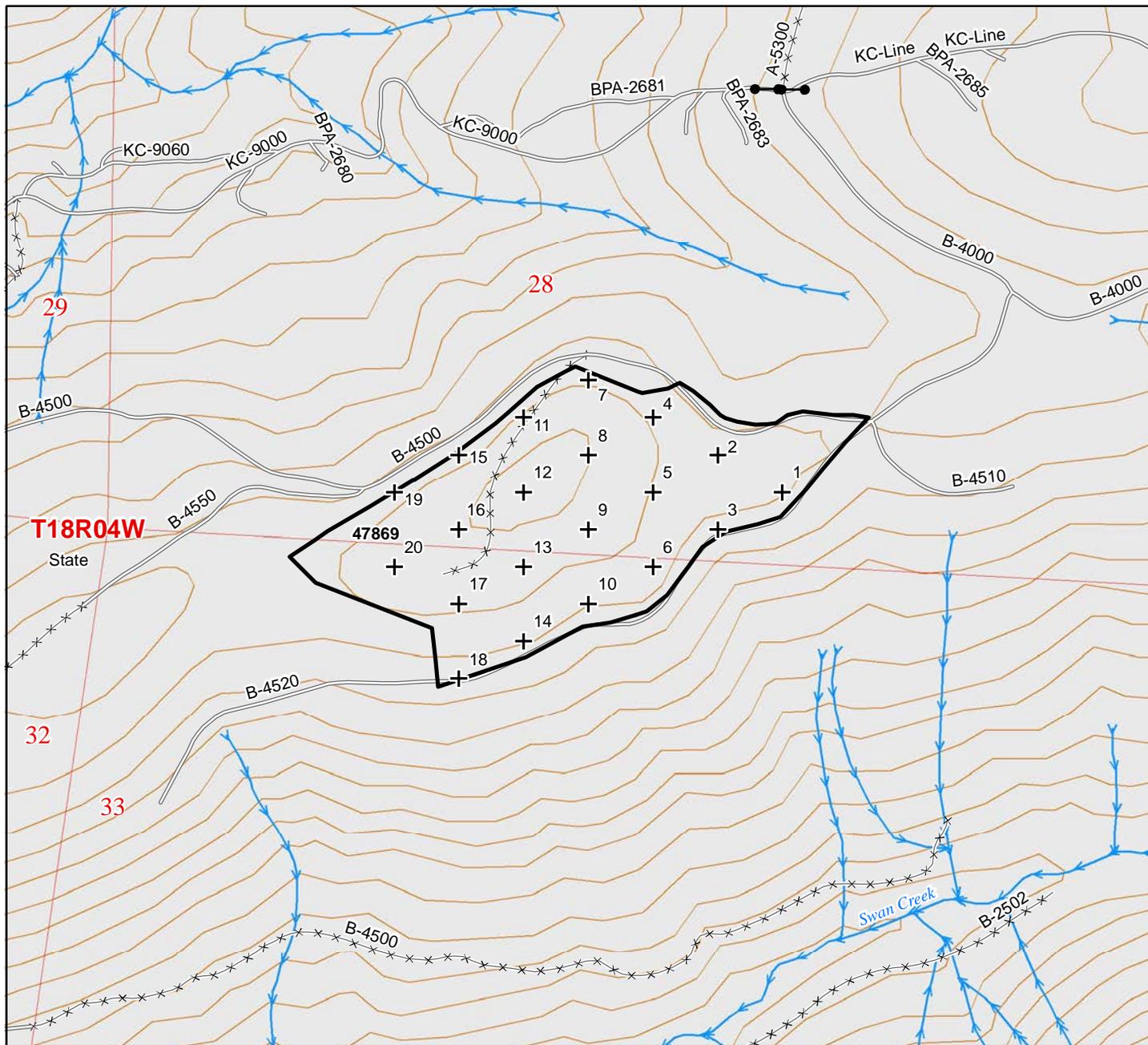
Work Unit: Black Hills

Treatment Acres: 39

Unit No. 4

Unit Name: SWAN U3

FMU ID: 47869



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

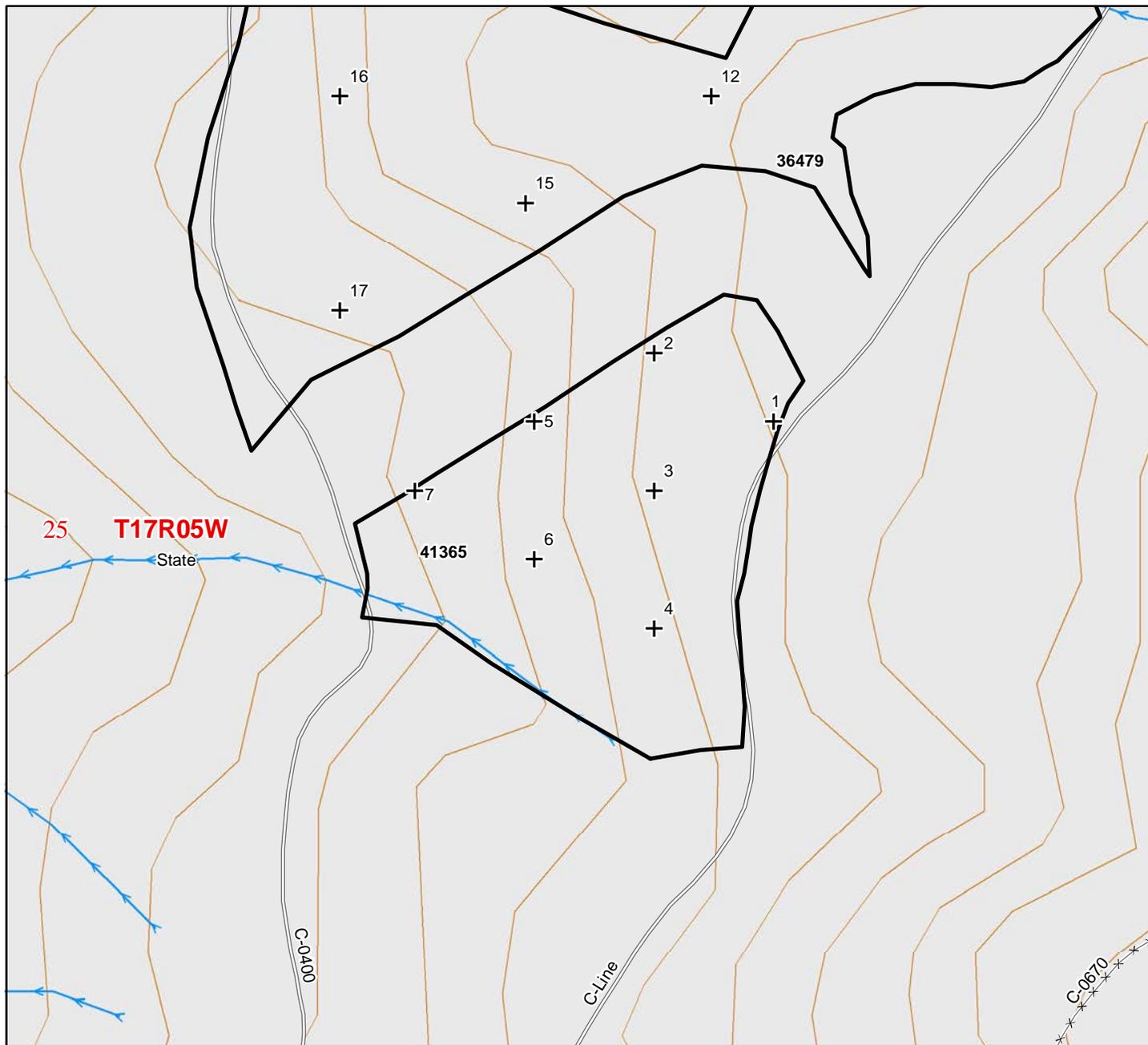
Work Unit: Black Hills

Treatment Acres: 7

Unit No. 5

Unit Name: SNOW STORM U2

FMU ID: 41365



- | | | | | | |
|--|----------------------|--|---------------|--------------|-----------|
| | Unit Boundary | | Plot Points | Elevation: | 1000-1200 |
| | DNR Managed Lands | | Gate | Origin Year: | 2007 |
| | Existing Roads | | Tank Trap | Gate: | No |
| | Non-Driveable Access | | Earth Barrier | Key: | |
| | Trails | | Other Barrier | | |
| | Streams | | | | |

UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

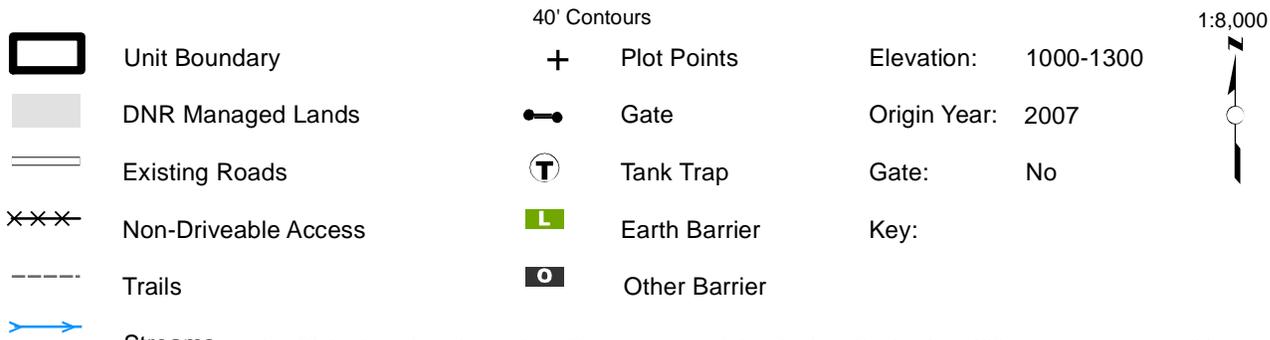
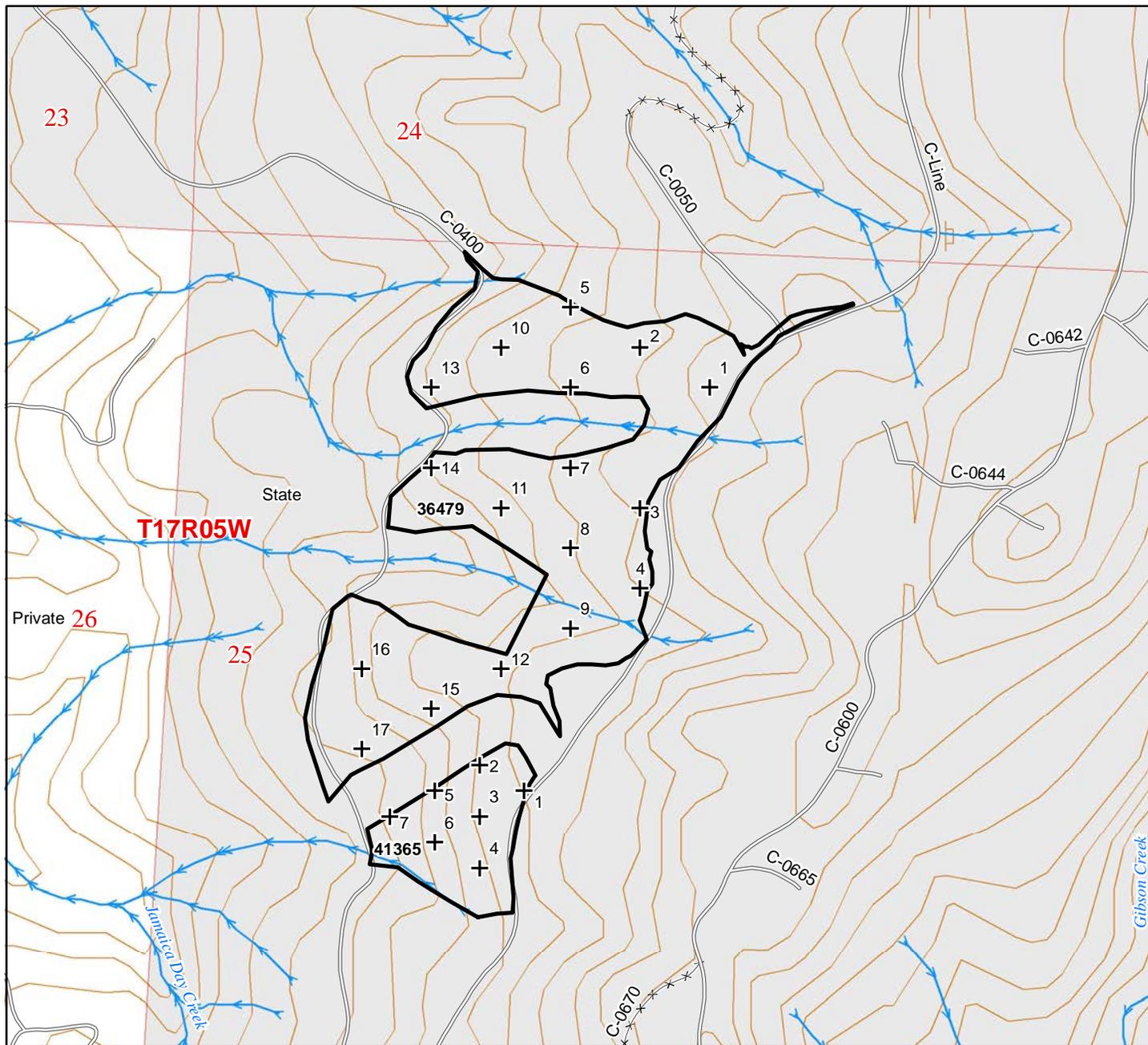
Work Unit: Black Hills

Treatment Acres: 41

Unit No. 6

Unit Name: SNOW STORM U1

FMU ID: 36479



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

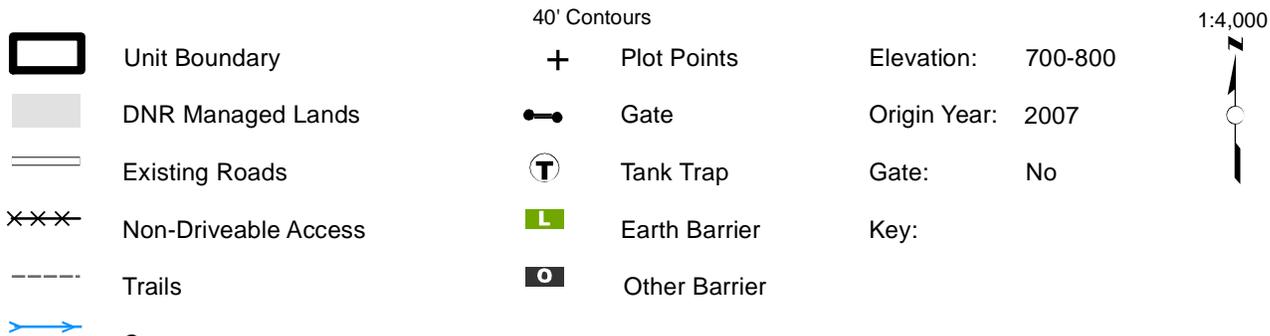
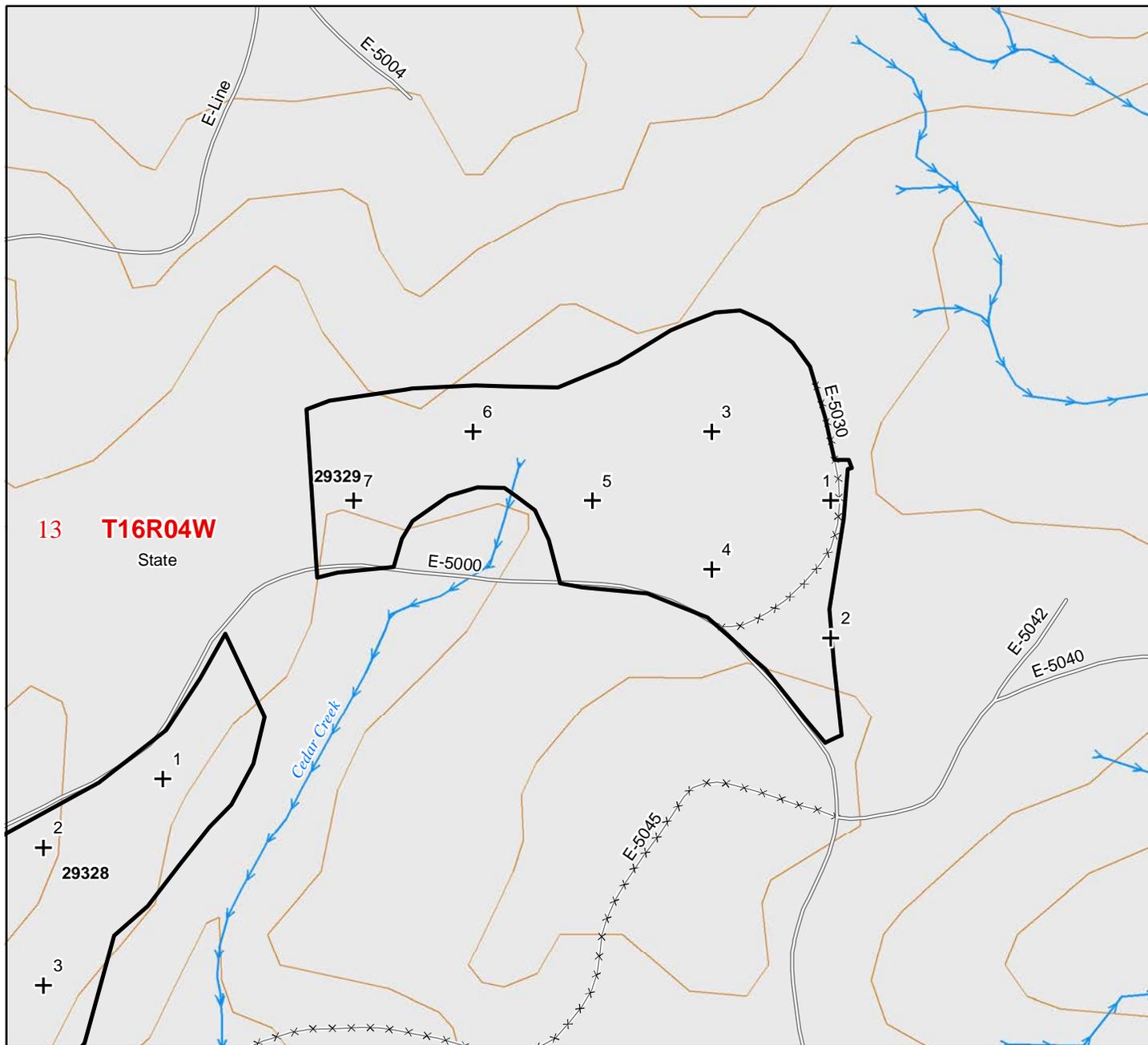
Work Unit: Black Hills

Treatment Acres: 12

Unit No. 7

Unit Name: SHORT STAND 3

FMU ID: 29329



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

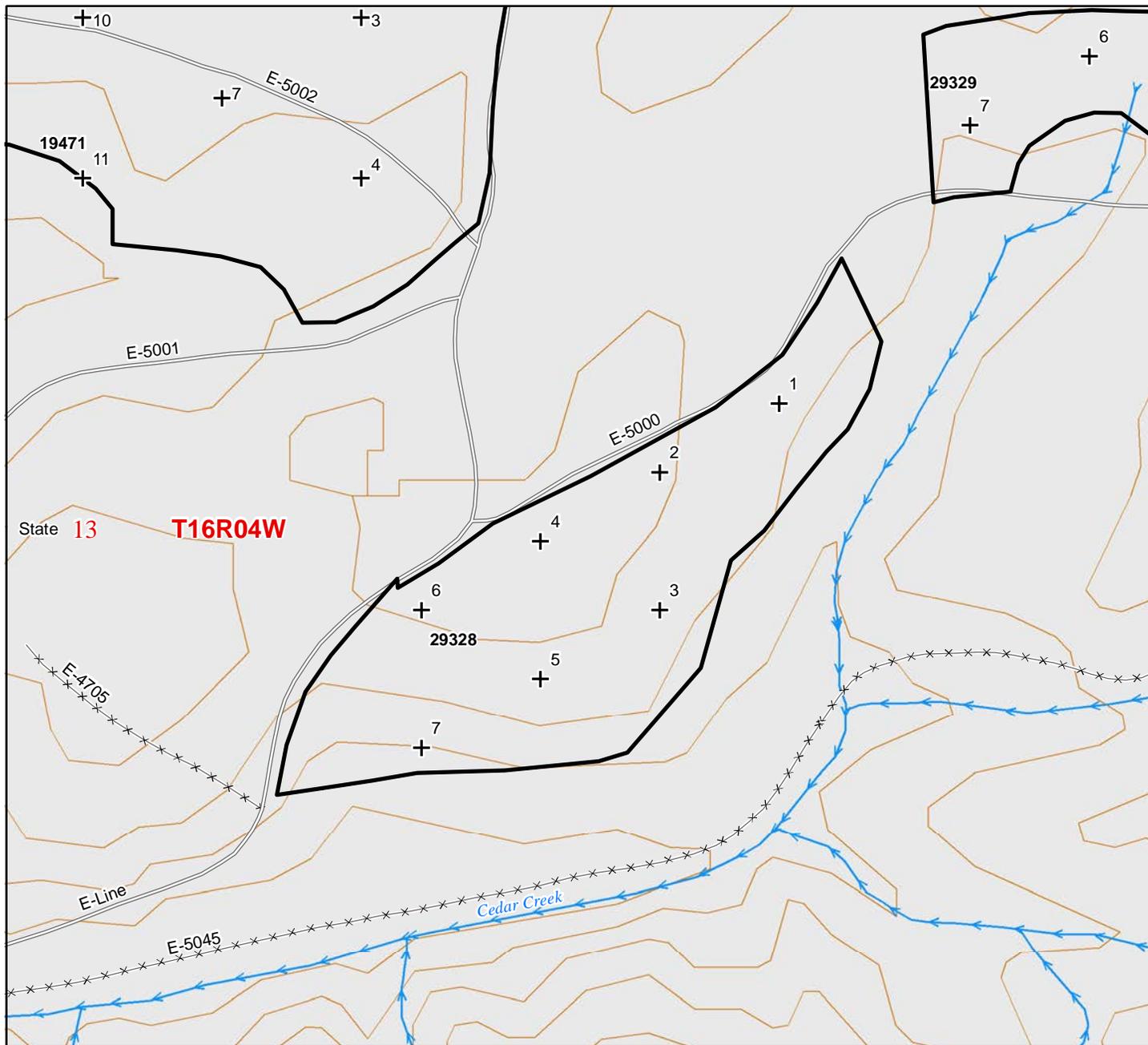
Work Unit: Black Hills

Treatment Acres: 13

Unit No. 8

Unit Name: SHORT STAND 2

FMU ID: 29328



- | | | | | | |
|--|----------------------|--|---------------|--------------------|---------|
| | Unit Boundary | | 40' Contours | | 1:4,000 |
| | DNR Managed Lands | | Plot Points | Elevation: 700-800 | |
| | Existing Roads | | Gate | Origin Year: 2007 | |
| | Non-Driveable Access | | Tank Trap | Gate: No | |
| | Trails | | Earth Barrier | Key: | |
| | Streams | | Other Barrier | | |

UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

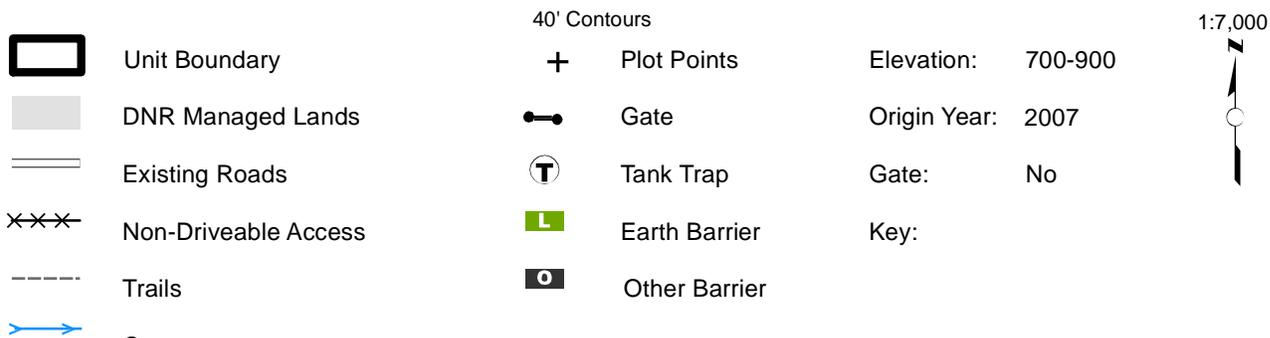
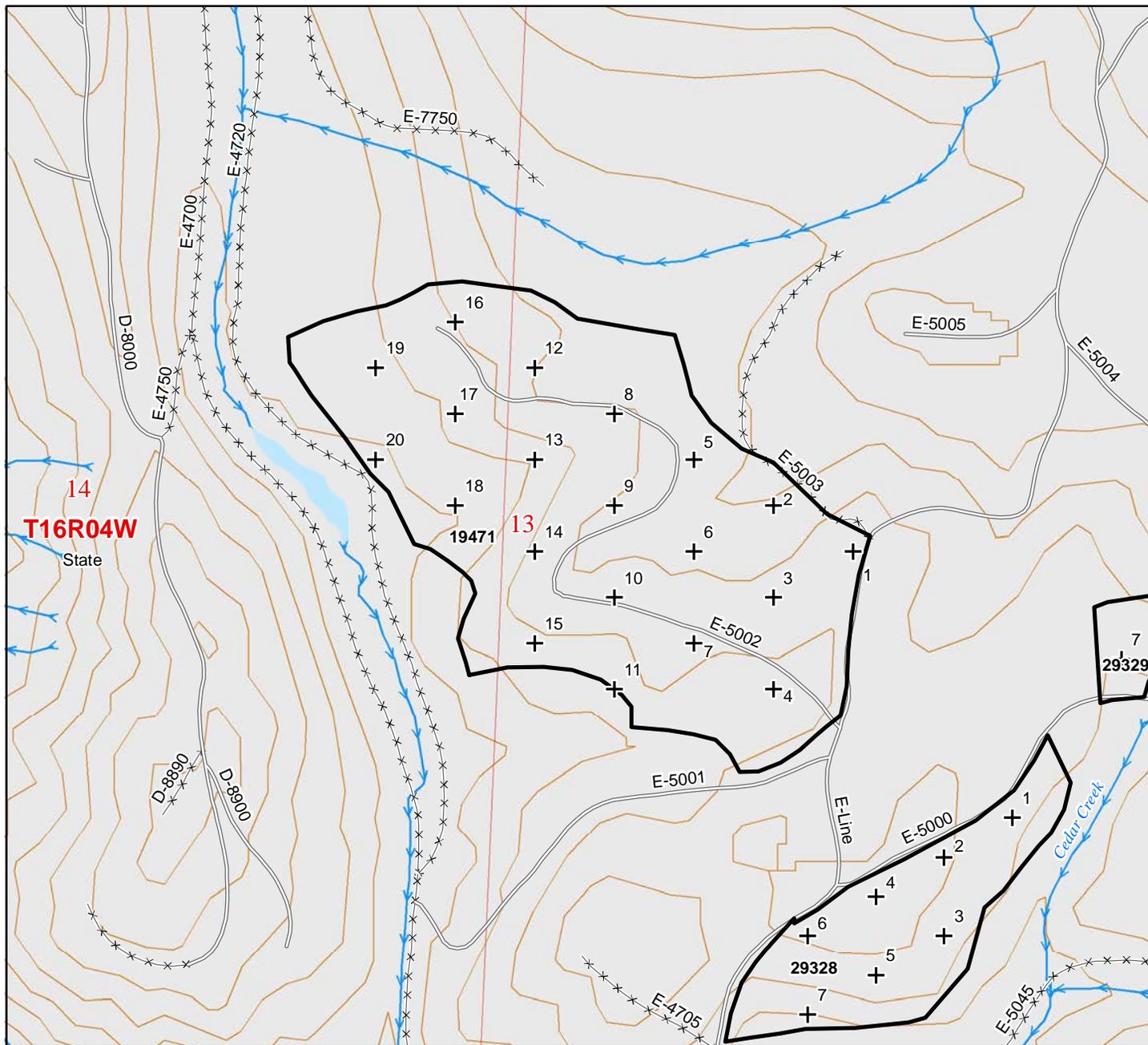
Work Unit: Black Hills

Treatment Acres: 54

Unit No. 9

Unit Name: SHORT STAND 1

FMU ID: 19471



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

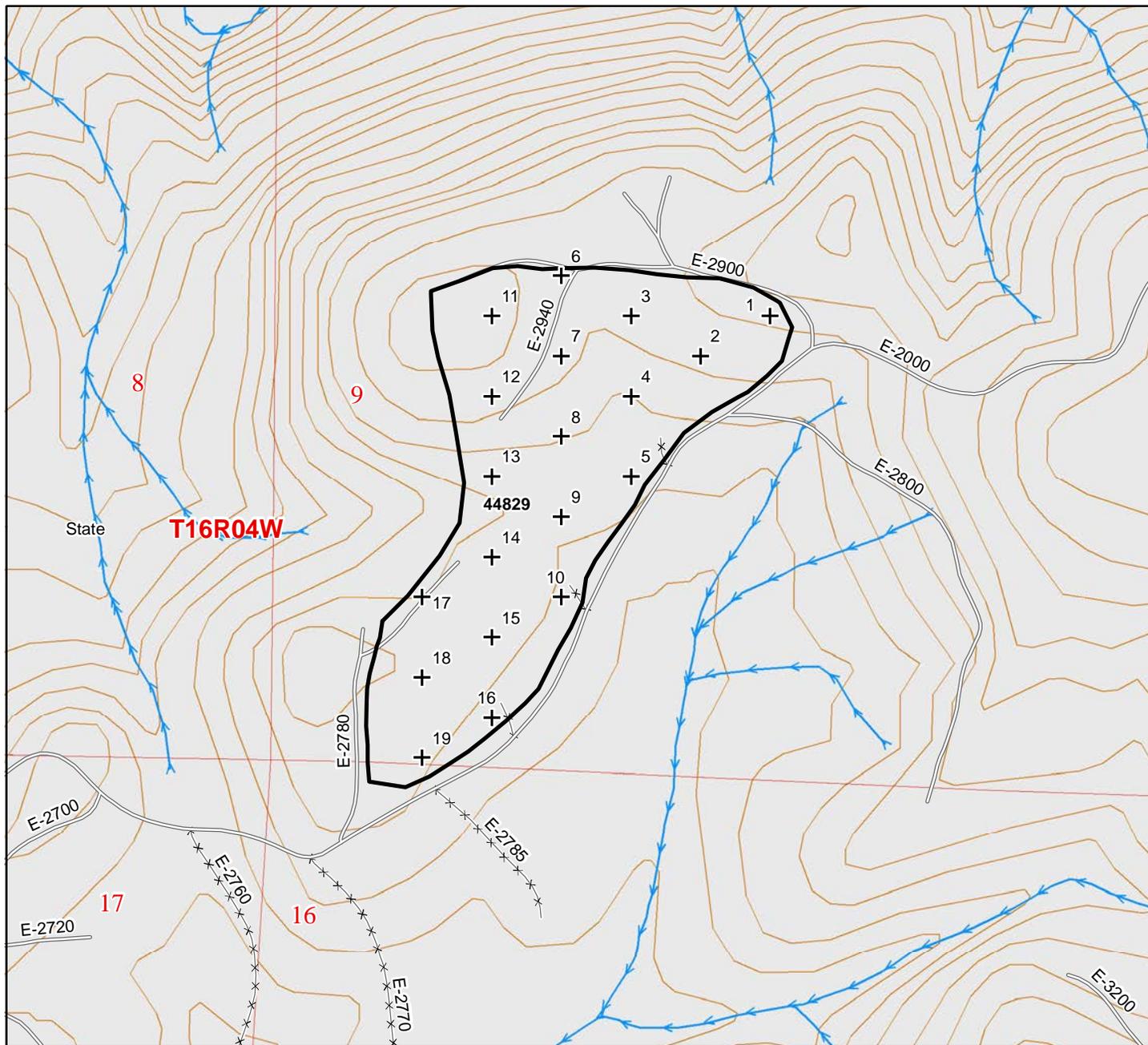
Work Unit: Black Hills

Treatment Acres: 47

Unit No. 11

Unit Name: POLYESTER PLAID U3

FMU ID: 44829



Unit Boundary



DNR Managed Lands



Existing Roads



Non-Driveable Access



Trails



Streams

40' Contours



Plot Points



Gate



Tank Trap



Earth Barrier



Other Barrier

Elevation: 900-1100

Origin Year: 2007

Gate: No

Key:

1:8,000



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

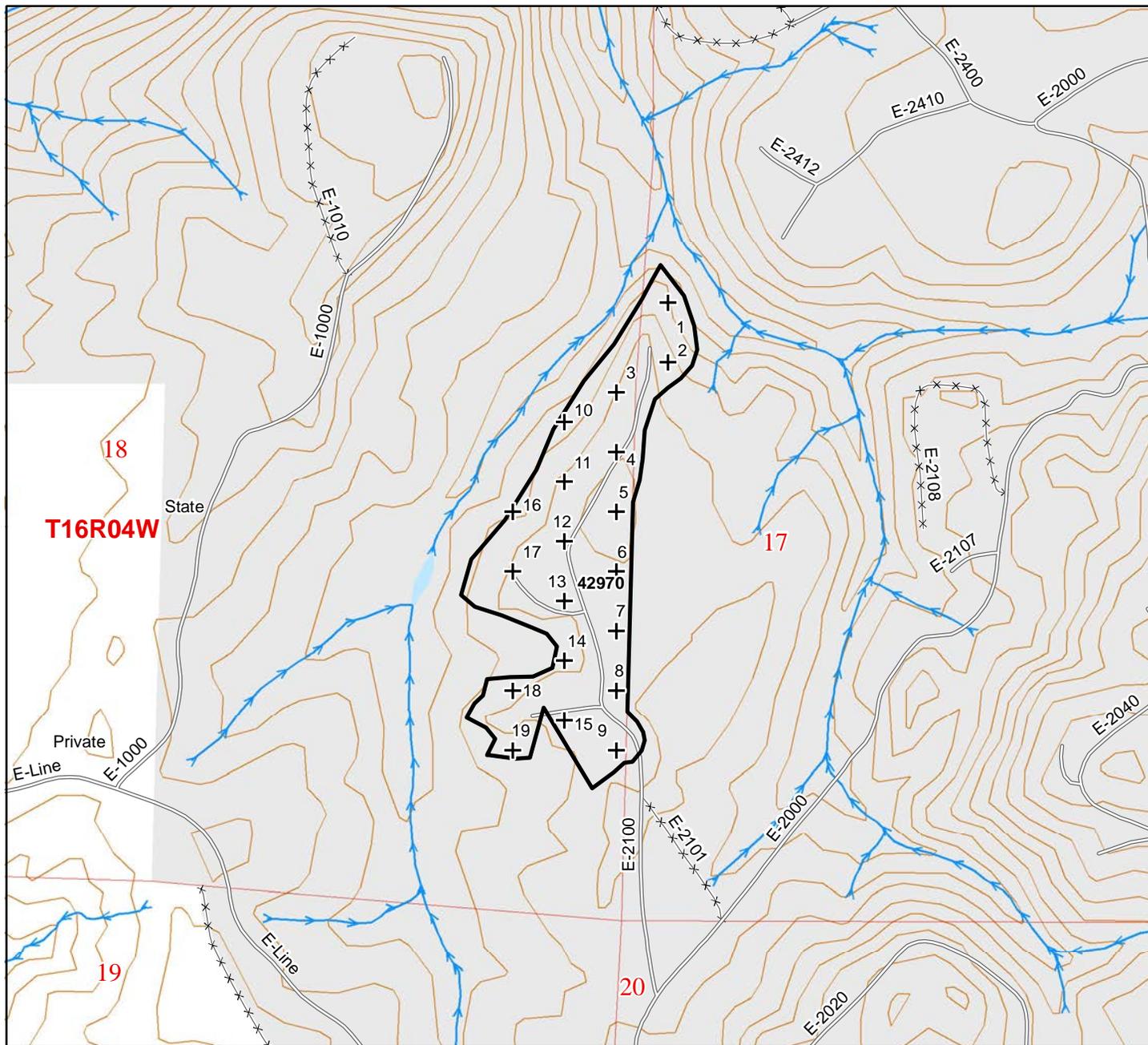
Work Unit: Black Hills

Treatment Acres: 36

Unit No. 12

Unit Name: POLYESTER PLAID U2

FMU ID: 42970



Unit Boundary



DNR Managed Lands



Existing Roads



Non-Driveable Access



Trails



Streams

40' Contours



Plot Points



Gate



Tank Trap



Earth Barrier



Other Barrier

Elevation: 500-600

Origin Year: 2007

Gate: No

Key:

1:10,000



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

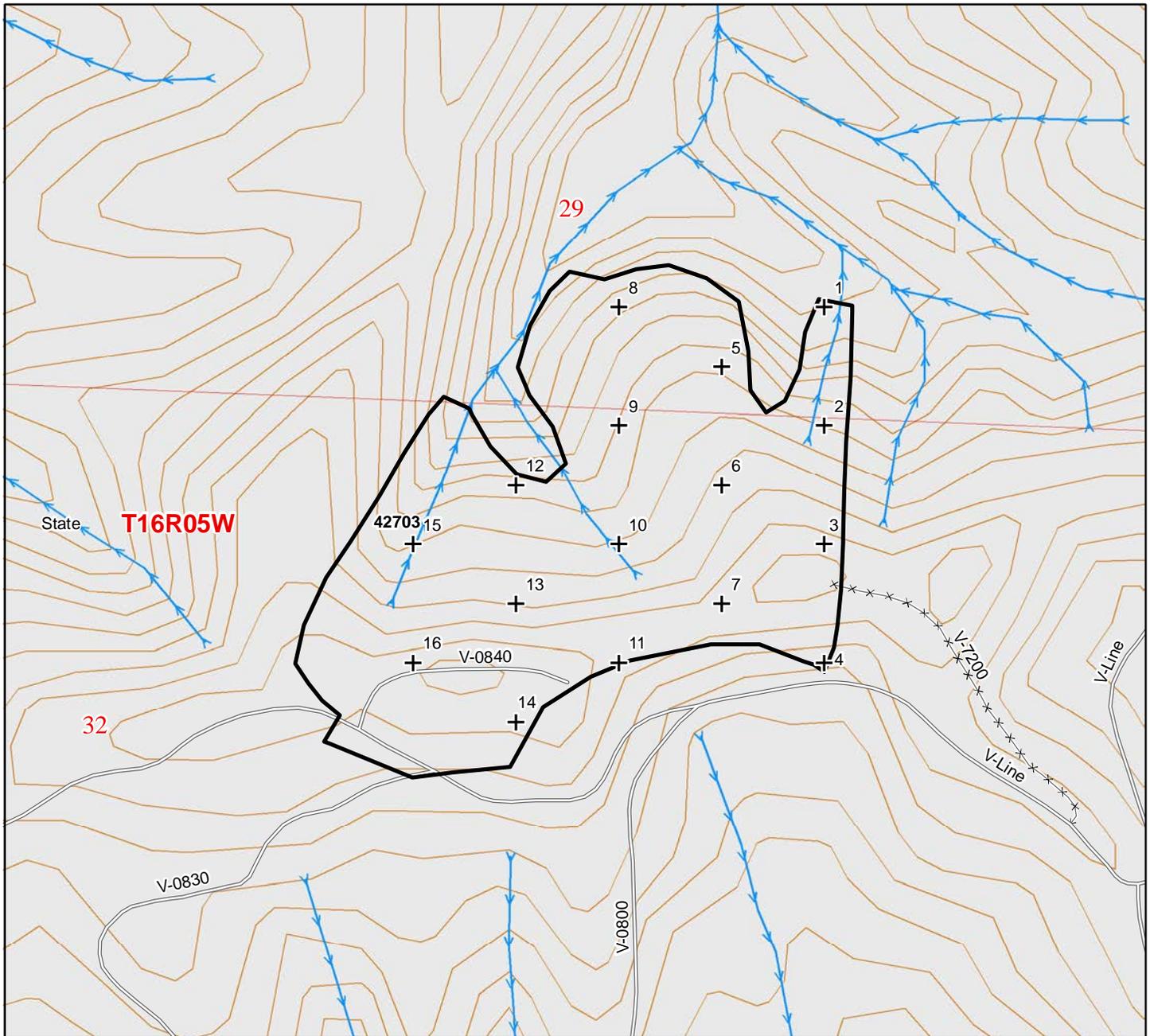
Work Unit: Black Hills

Treatment Acres: 30

Unit No. 13

Unit Name: PALL MALL U2

FMU ID: 42703



- | | | | | | |
|--|----------------------|--|---------------|--------------------|---------|
| | Unit Boundary | | 40' Contours | | 1:5,000 |
| | DNR Managed Lands | | Plot Points | Elevation: 300-800 | |
| | Existing Roads | | Gate | Origin Year: 2007 | |
| | Non-Driveable Access | | Tank Trap | Gate: Yes | |
| | Trails | | Earth Barrier | Key: PCP1-1 | |
| | Streams | | Other Barrier | | |

UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

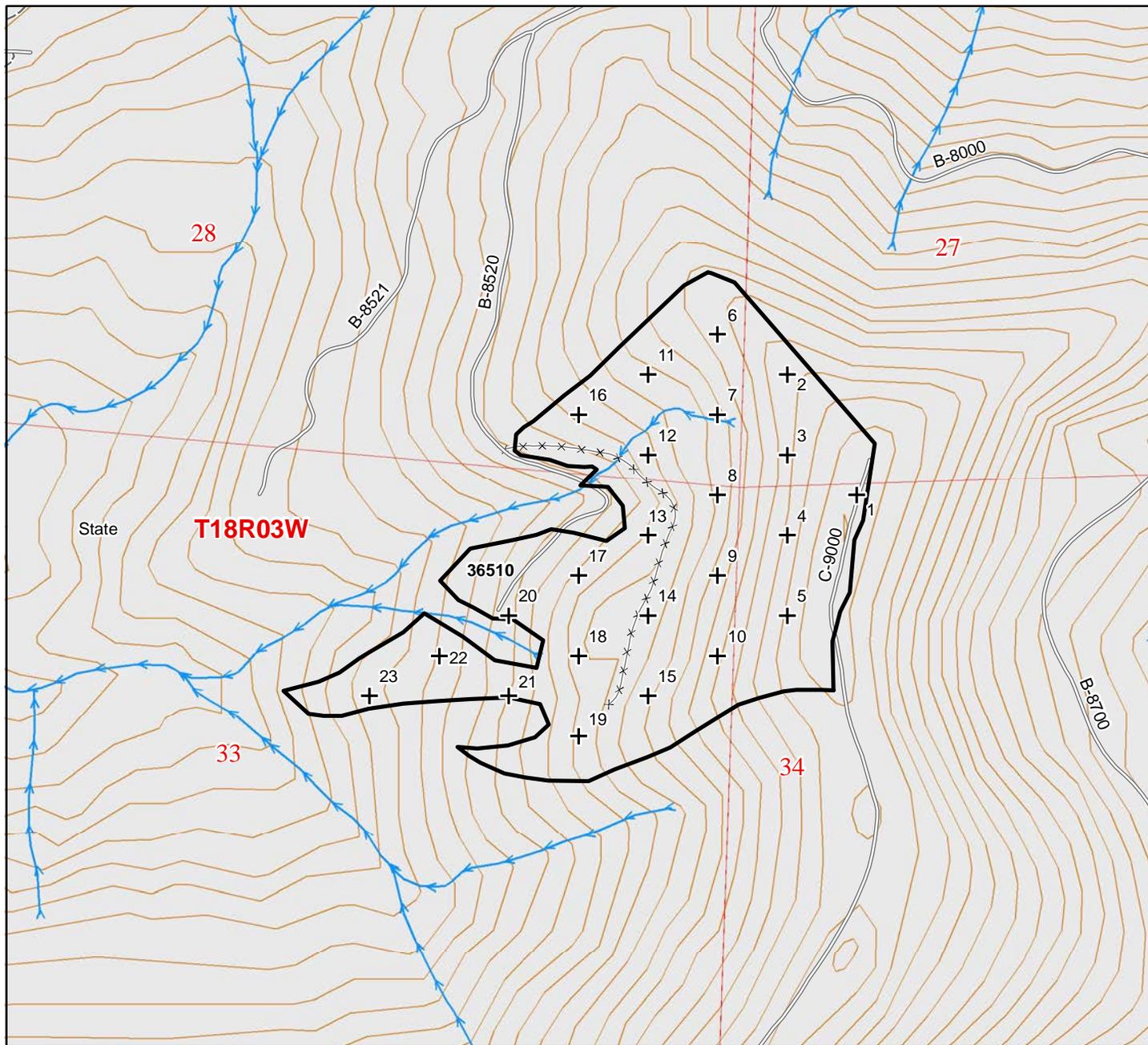
Work Unit: Black Hills

Treatment Acres: 61

Unit No. 14

Unit Name: MOON SHINE U1

FMU ID: 36510



- | | | | | | |
|--|----------------------|--|---------------|----------------------|---------|
| | Unit Boundary | | 40' Contours | | 1:8,000 |
| | DNR Managed Lands | | Plot Points | Elevation: 1000-1800 | |
| | Existing Roads | | Gate | Origin Year: 2007 | |
| | Non-Driveable Access | | Tank Trap | Gate: Yes | |
| | Trails | | Earth Barrier | Key: PCP1-1 | |
| | Streams | | Other Barrier | | |

UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

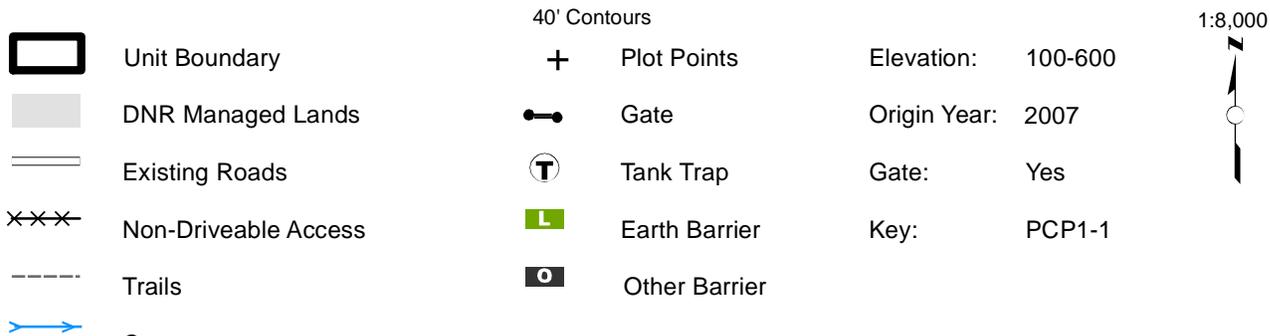
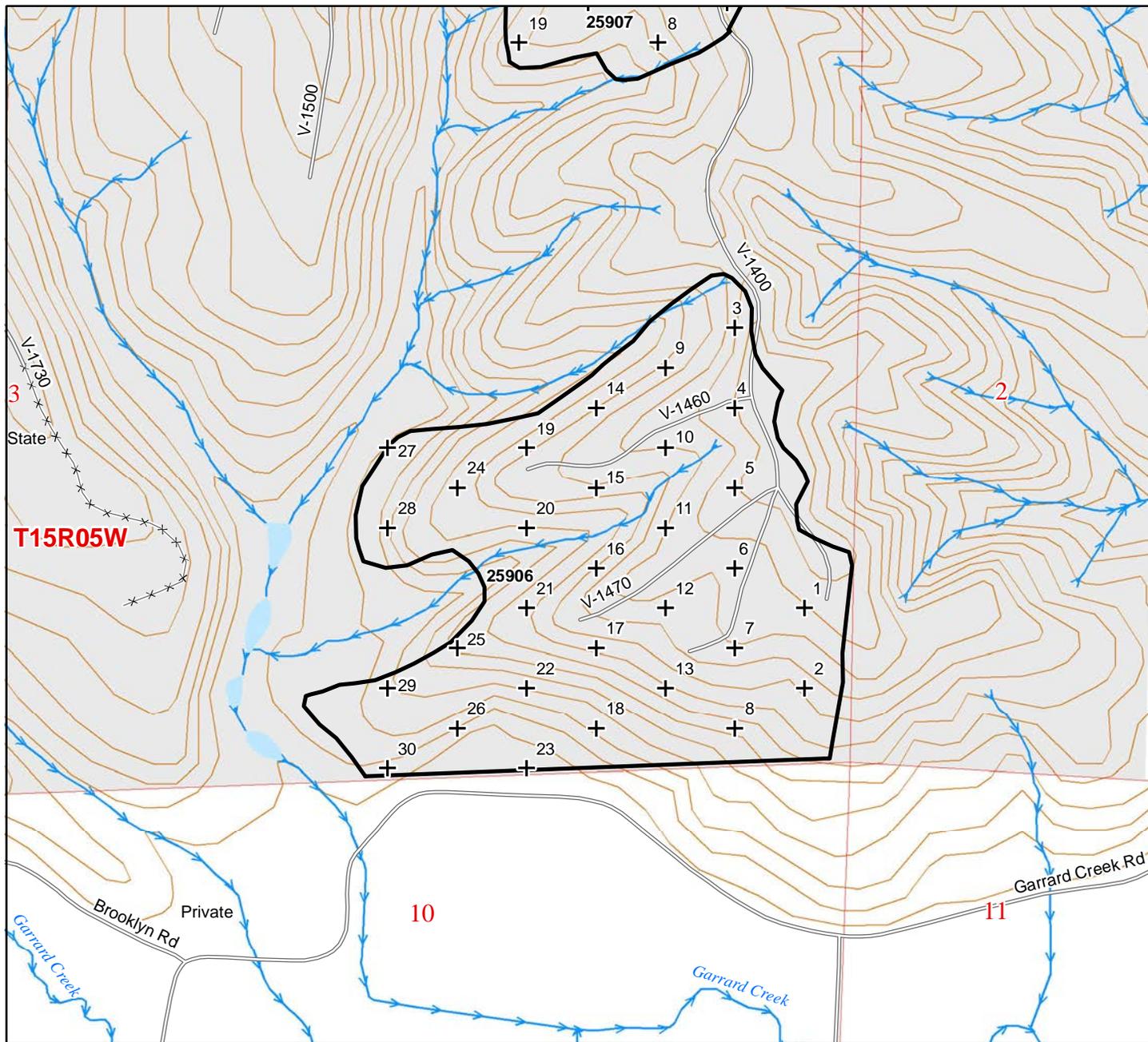
Work Unit: Black Hills

Treatment Acres: 75

Unit No. 15

Unit Name: LUCKY STRIPES U4

FMU ID: 25906



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

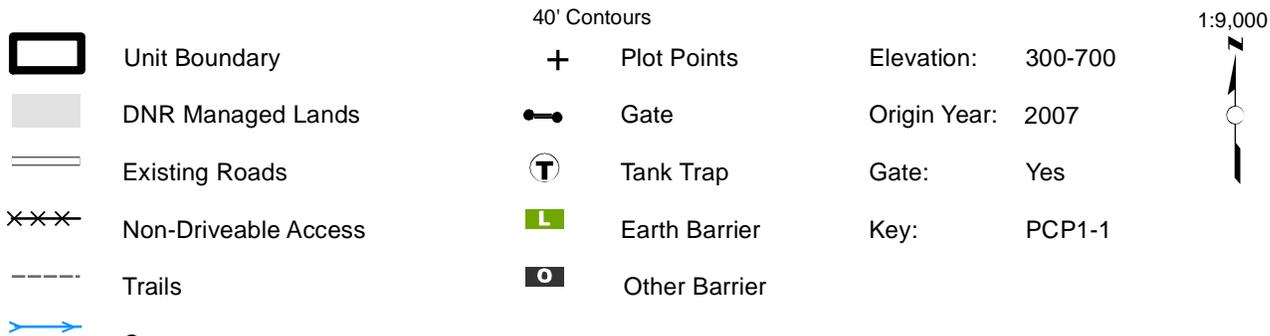
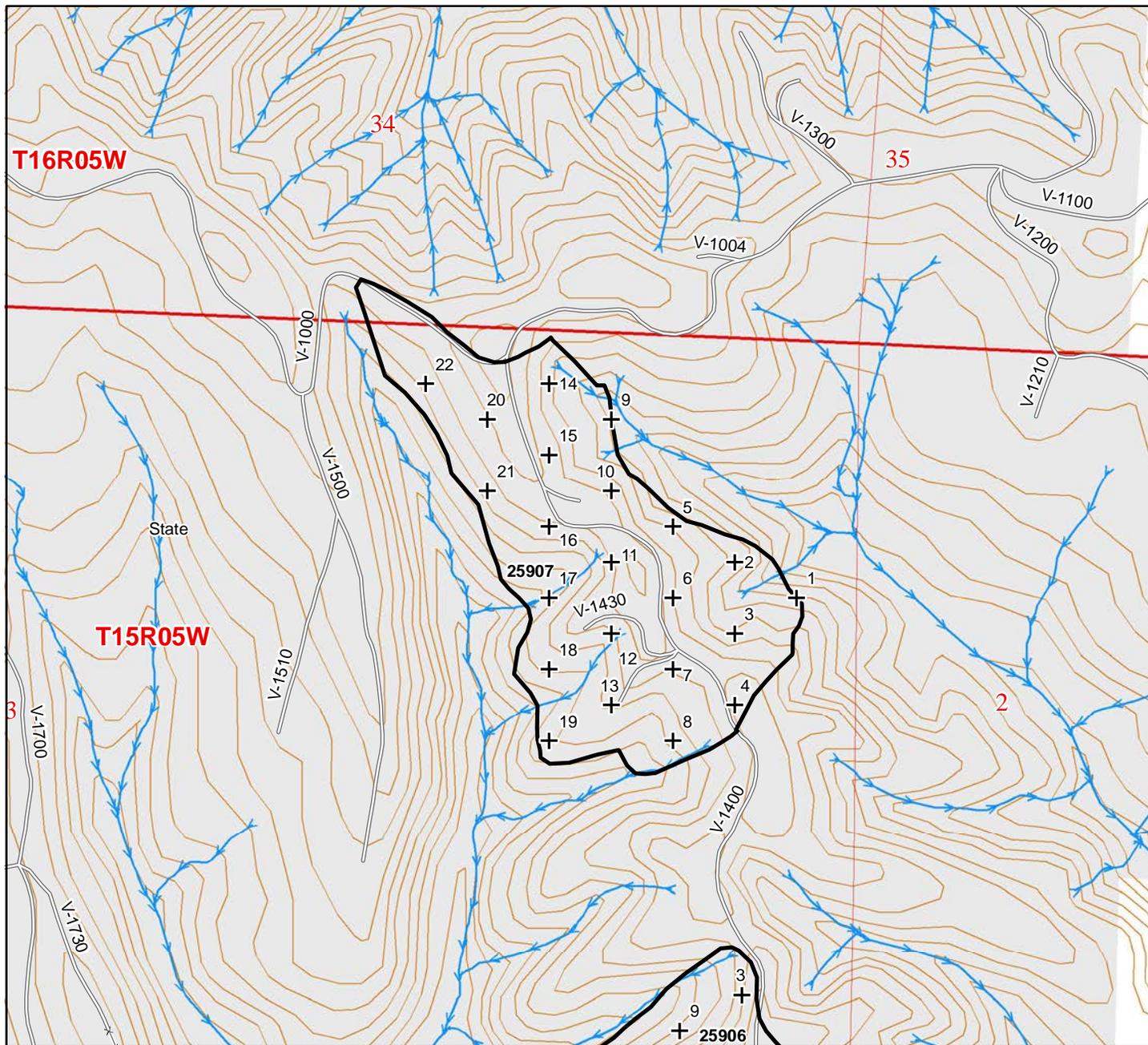
Work Unit: Black Hills

Treatment Acres: 52

Unit No. 16

Unit Name: LUCKY STRIPES U3

FMU ID: 25907



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

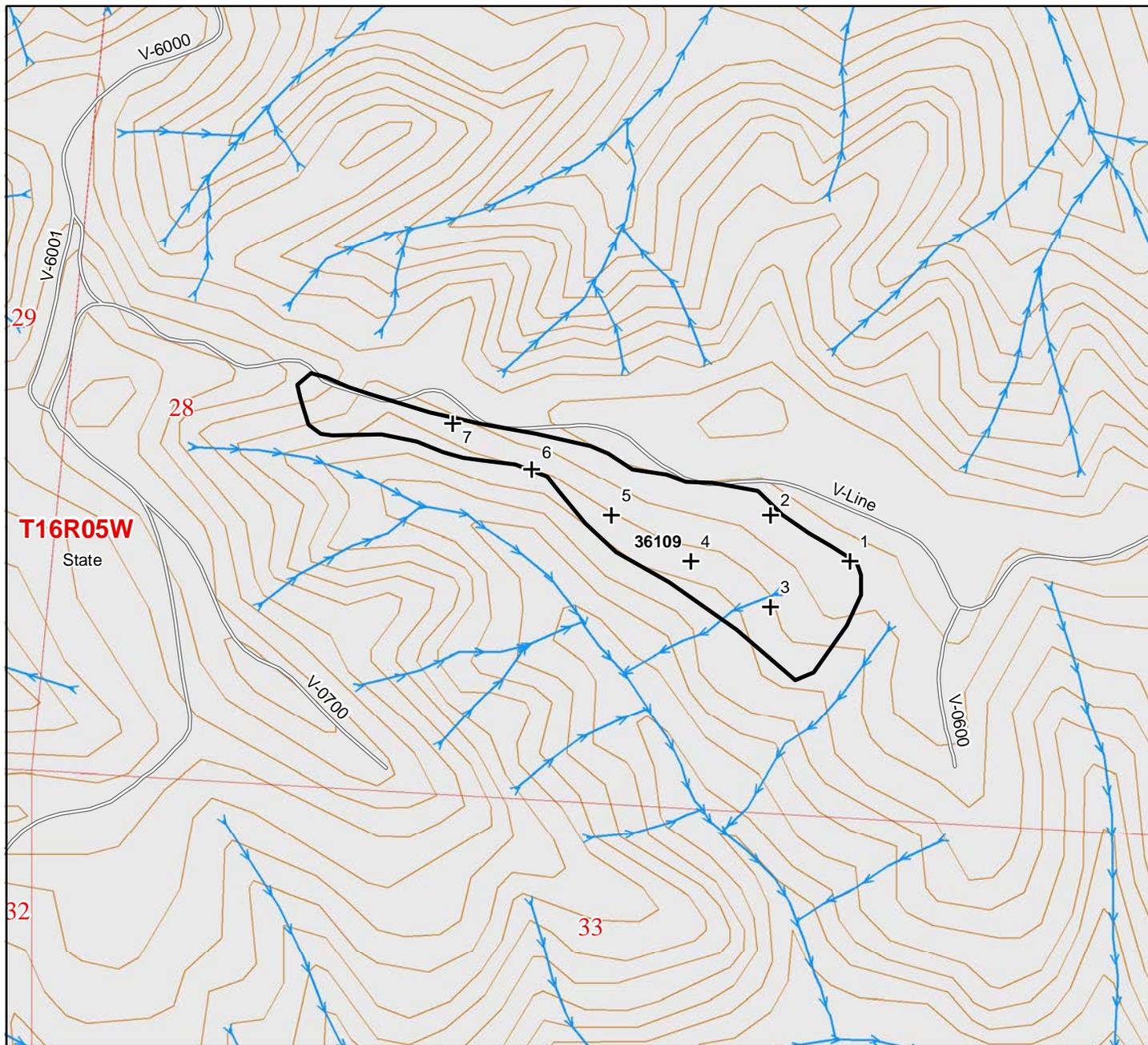
Work Unit: Black Hills

Treatment Acres: 11

Unit No. 17

Unit Name: LUCKY STRIPES U2

FMU ID: 36109



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

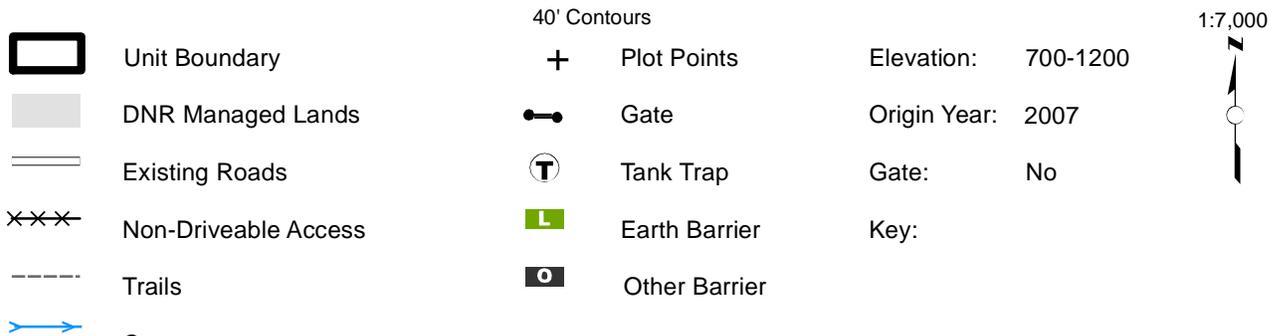
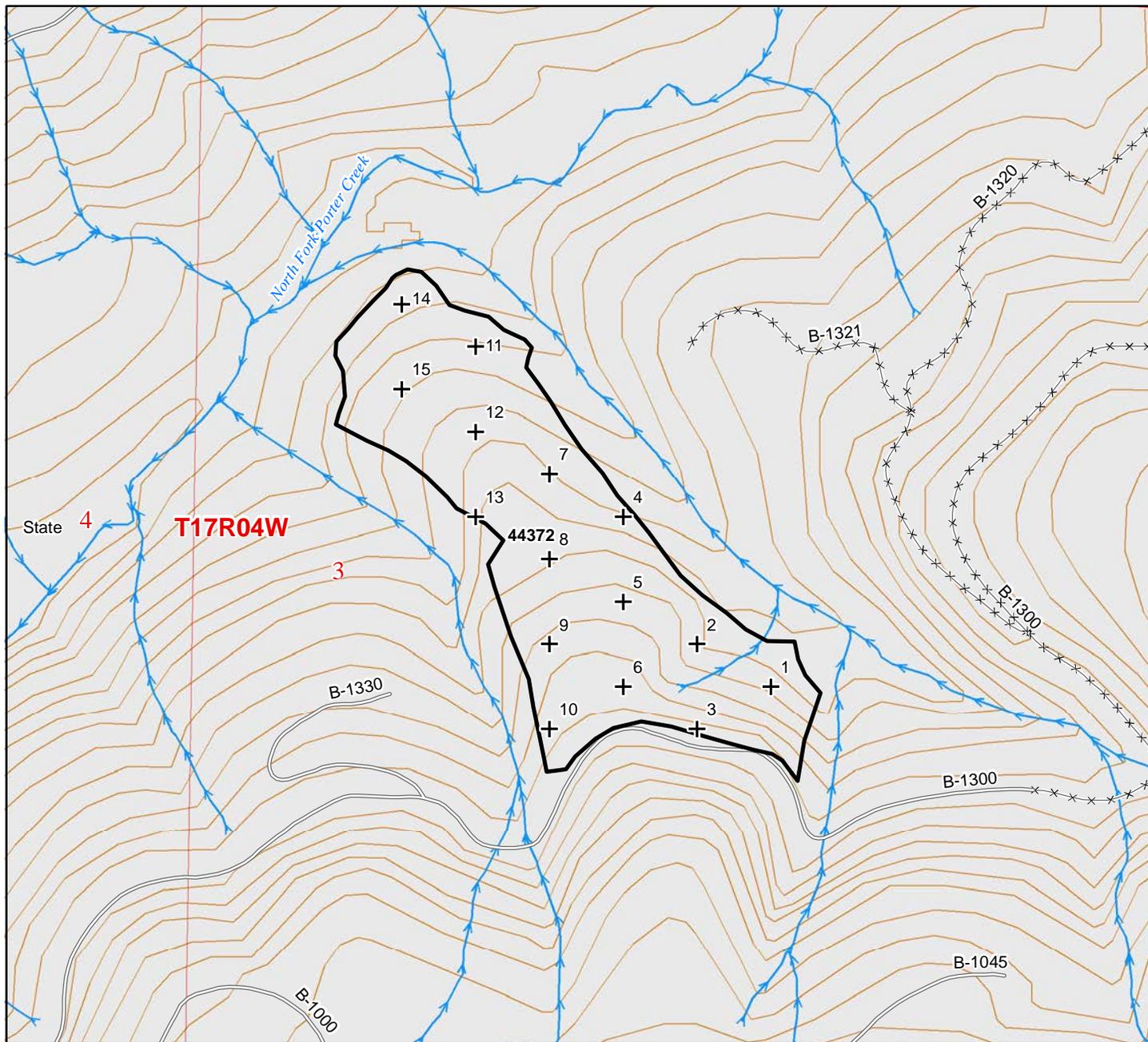
Work Unit: Black Hills

Treatment Acres: 31

Unit No. 18

Unit Name: GOULASH U6

FMU ID: 44372



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

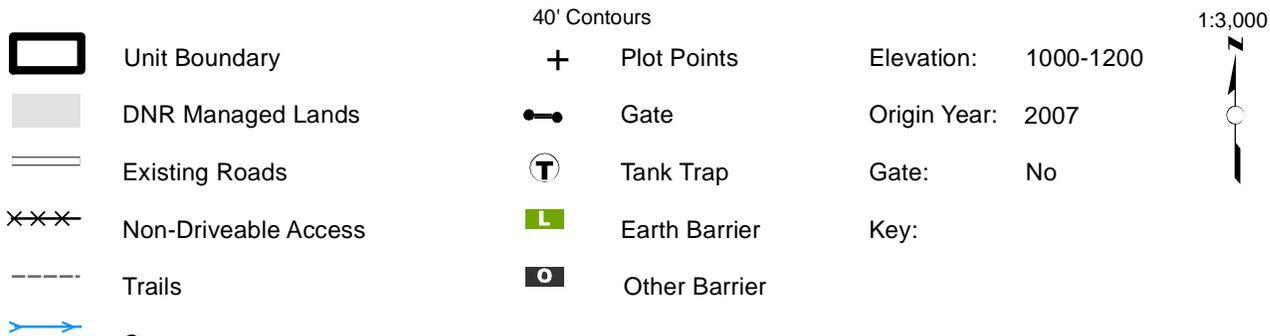
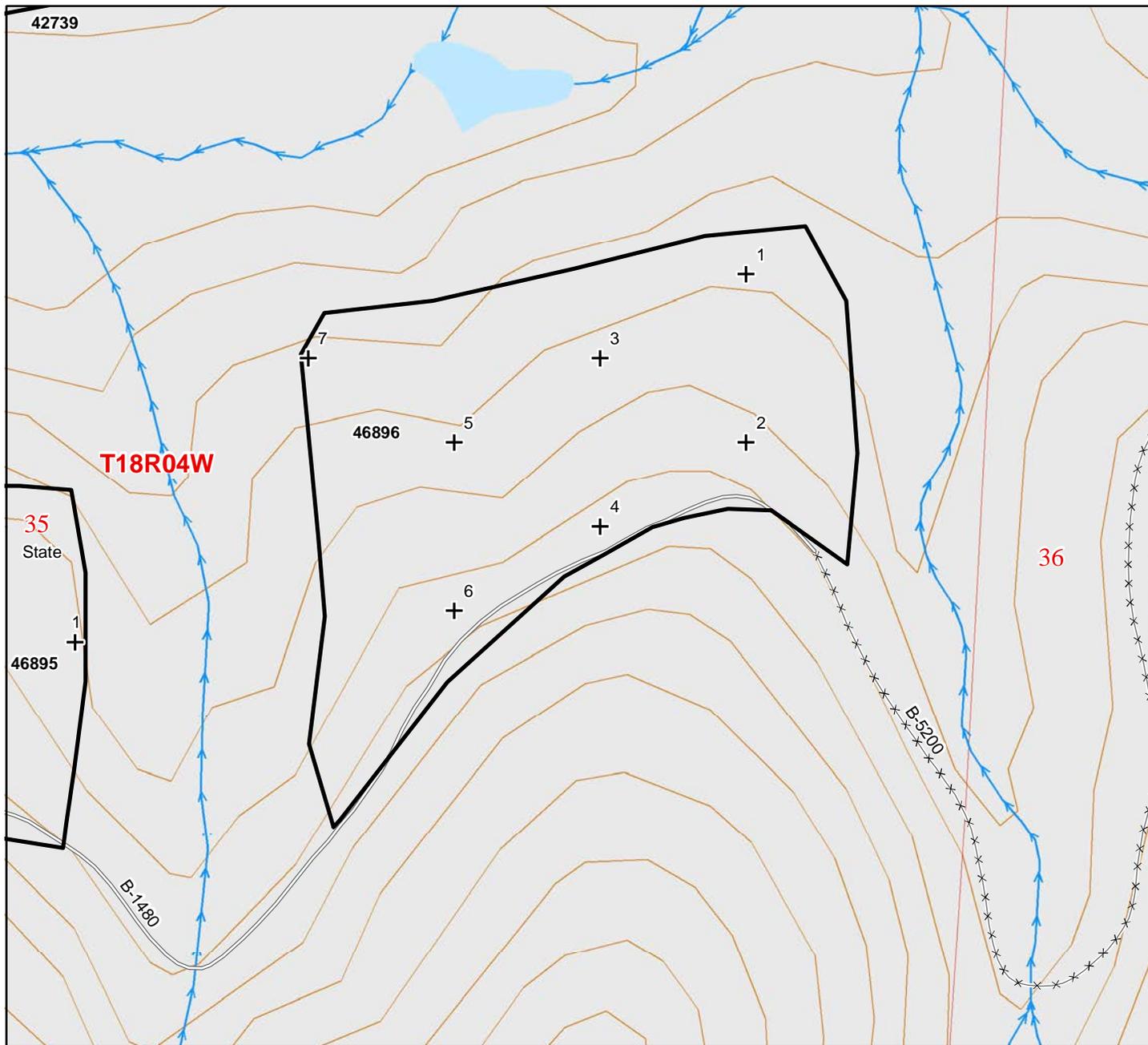
Work Unit: Black Hills

Treatment Acres: 11

Unit No. 19

Unit Name: GOULASH U5

FMU ID: 46896



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

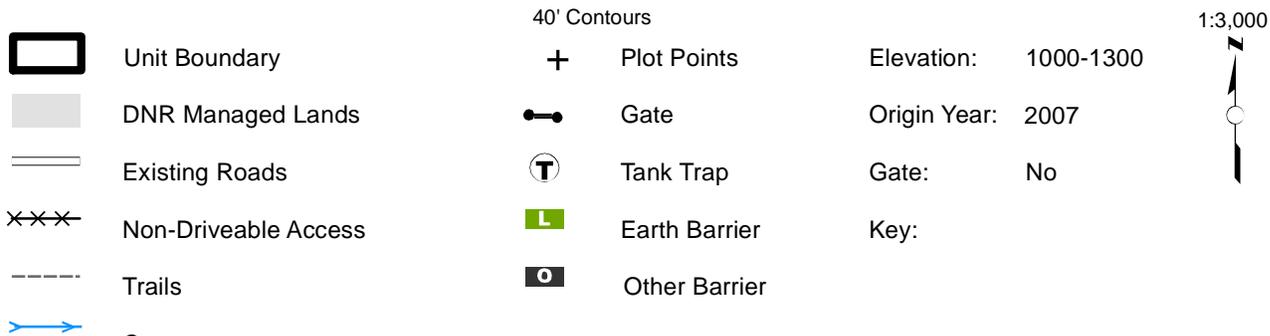
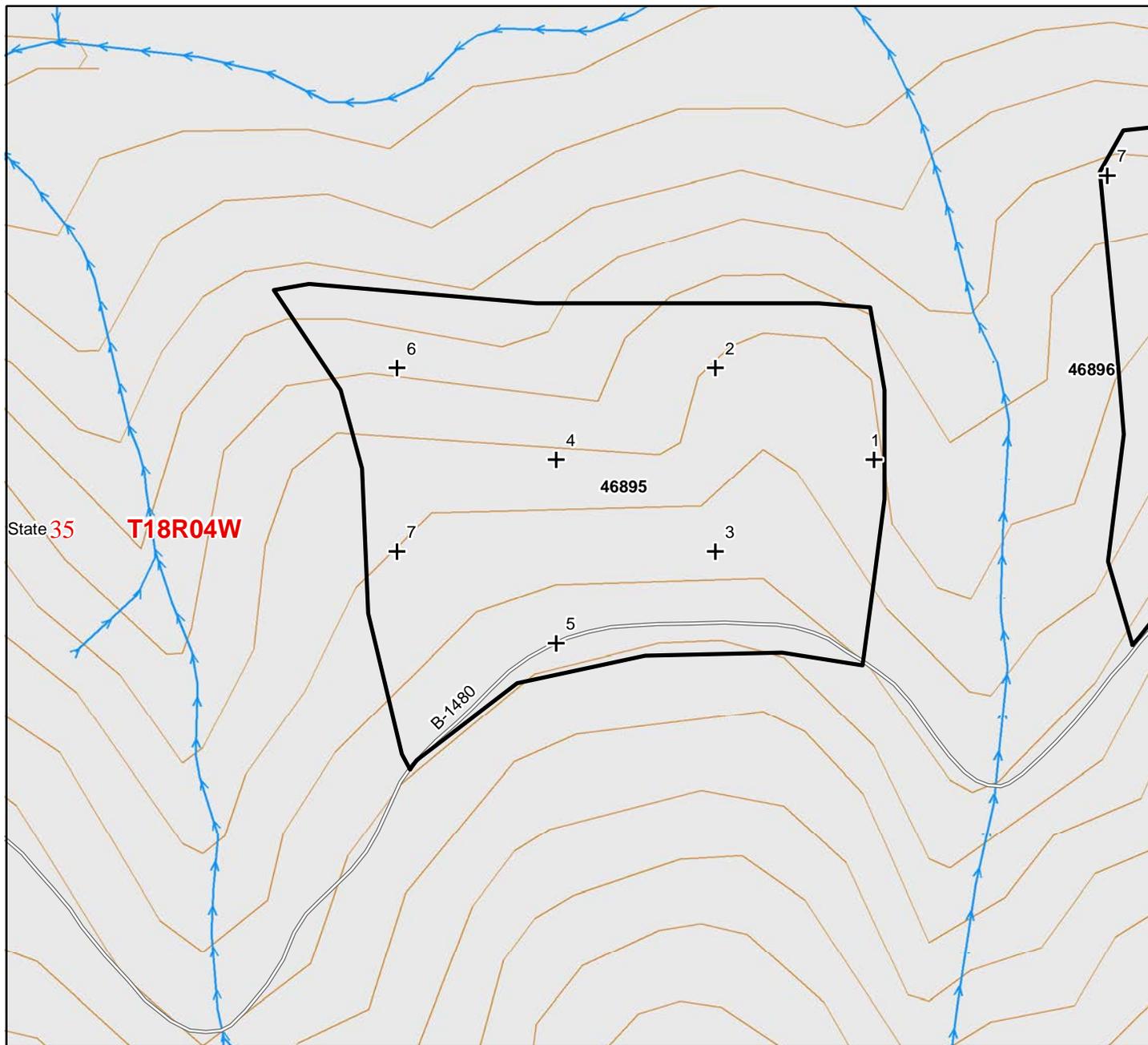
Work Unit: Black Hills

Treatment Acres: 12

Unit No. 20

Unit Name: GOULASH U3

FMU ID: 46895



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

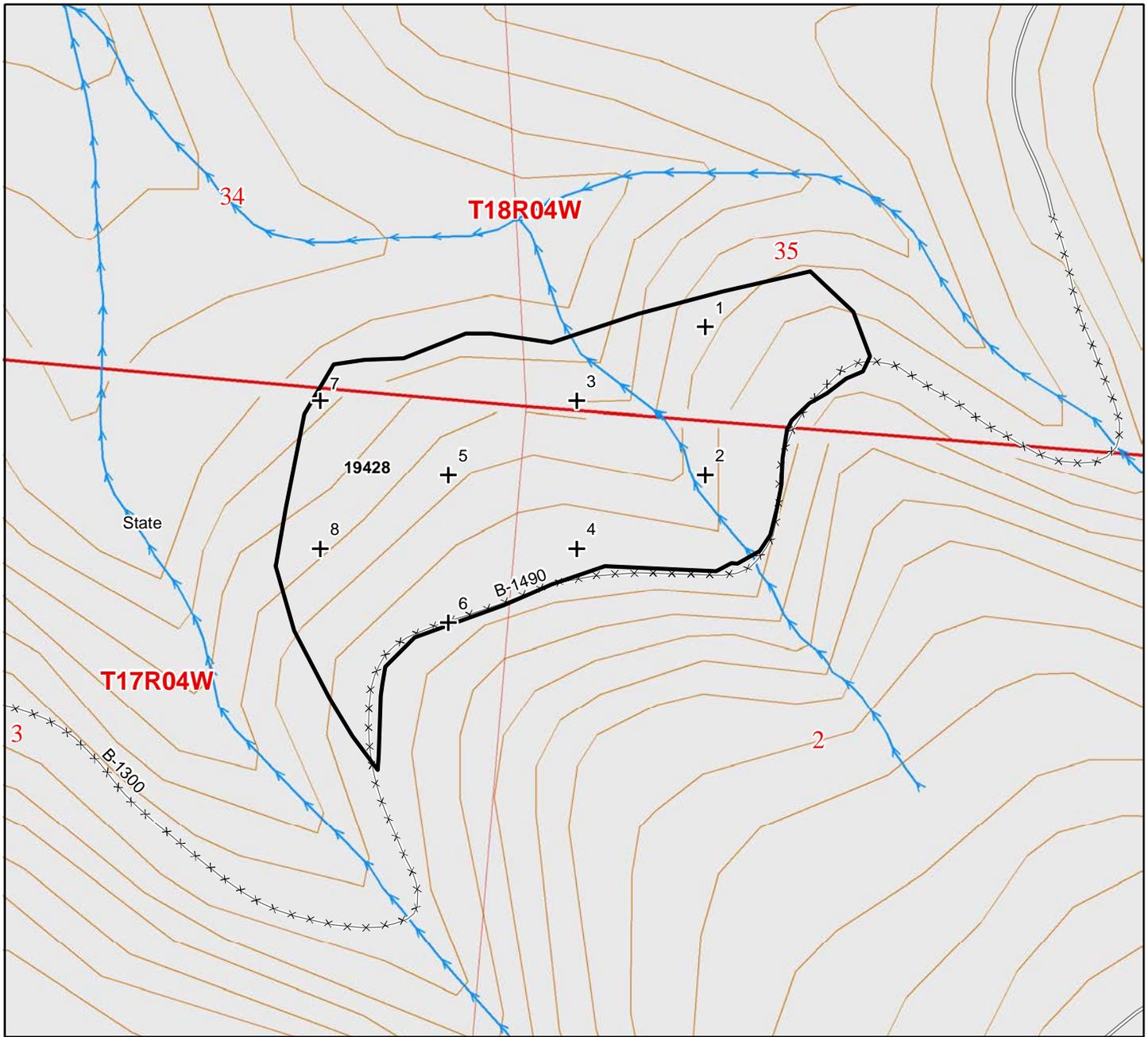
Work Unit: Black Hills

Treatment Acres: 16

Unit No. 21

Unit Name: GOULASH U2

FMU ID: 19428



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

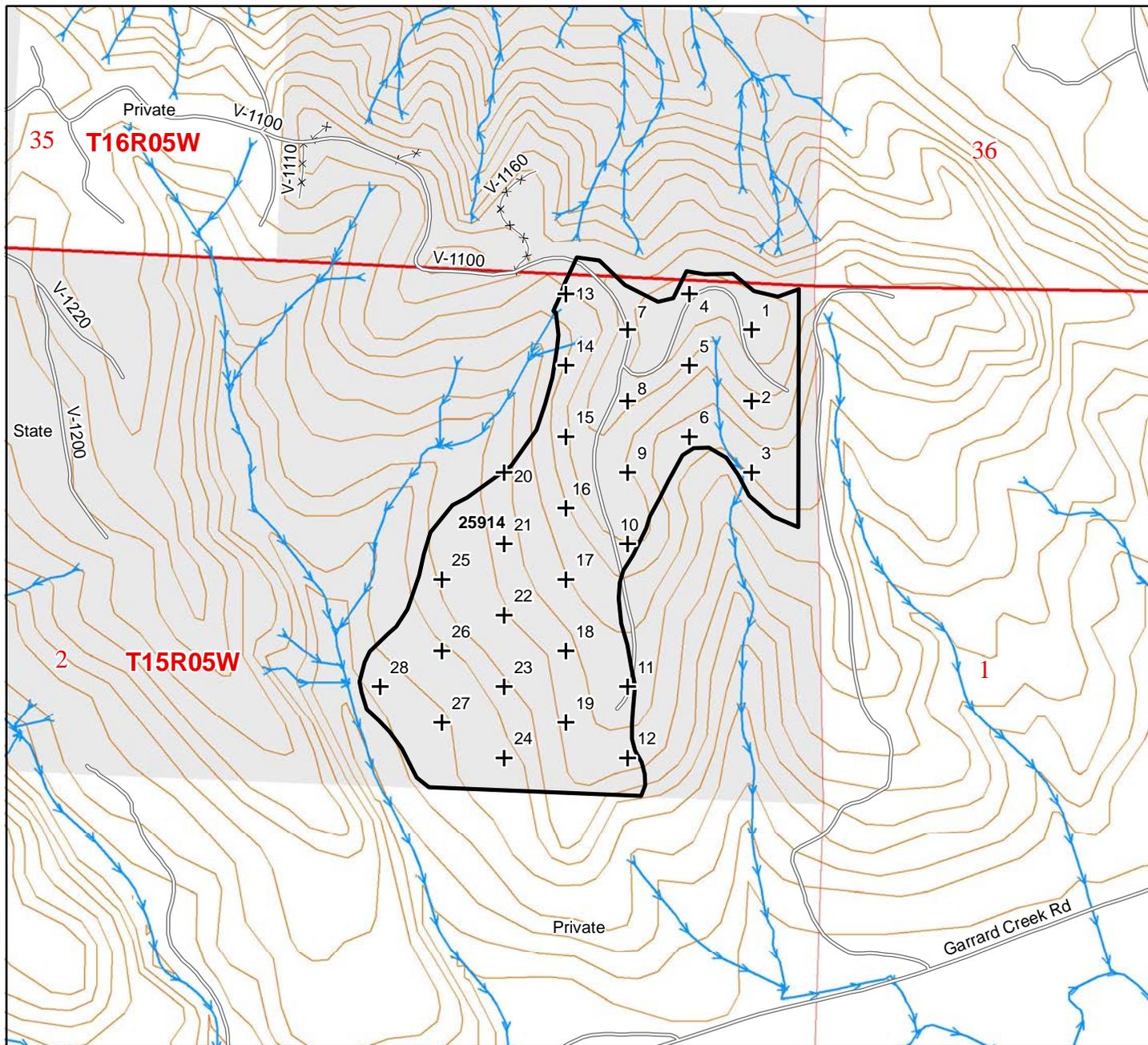
Work Unit: Black Hills

Treatment Acres: 67

Unit No. 22

Unit Name: FOX 2

FMU ID: 25914



Unit Boundary



DNR Managed Lands



Existing Roads



Non-Driveable Access



Trails



Streams

40' Contours



Plot Points



Gate



Tank Trap



Earth Barrier



Other Barrier

Elevation: 200-700

Origin Year: 2007

Gate: Yes

Key: PCP1-1

1:9,000



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

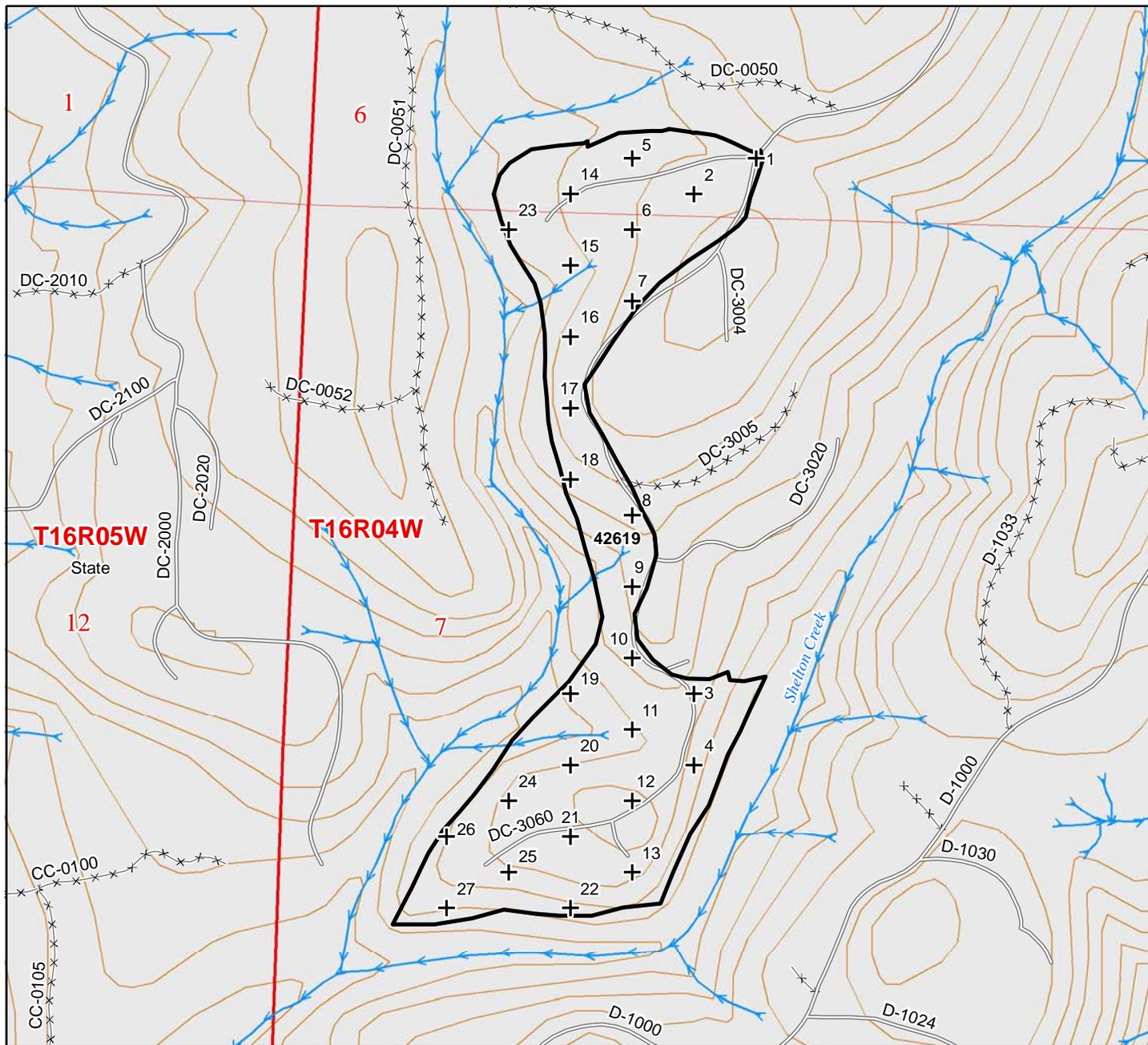
Work Unit: Black Hills

Treatment Acres: 62

Unit No. 23

Unit Name: DOUBLE TROUBLE U1

FMU ID: 42619



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

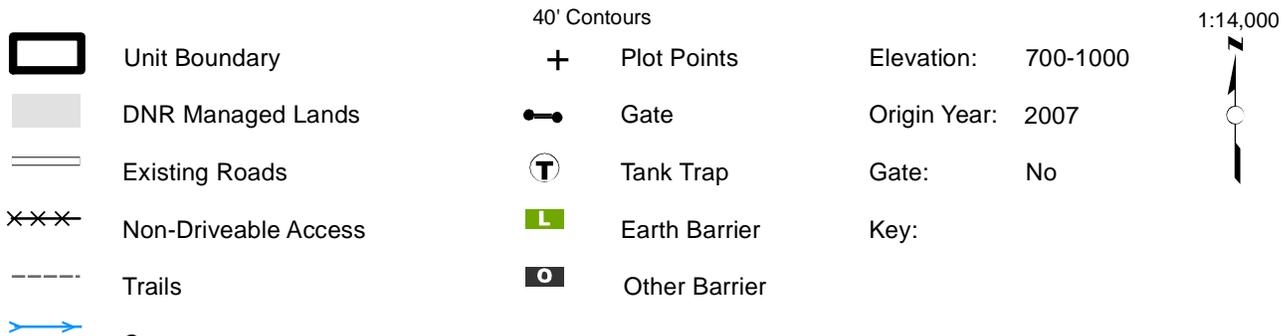
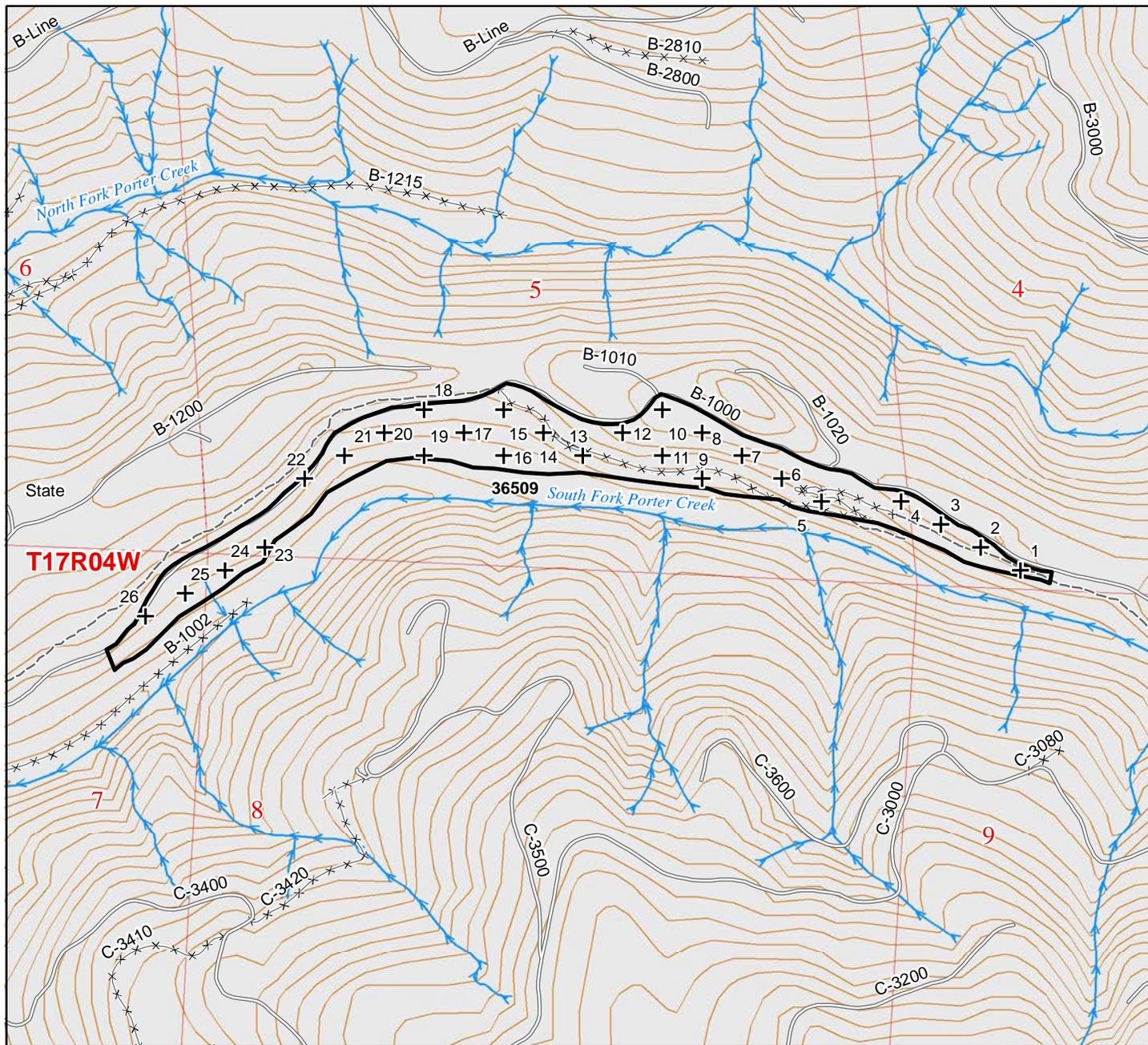
Work Unit: Black Hills

Treatment Acres: 65

Unit No. 24

Unit Name: BRUSH HOOK U5

FMU ID: 36509



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

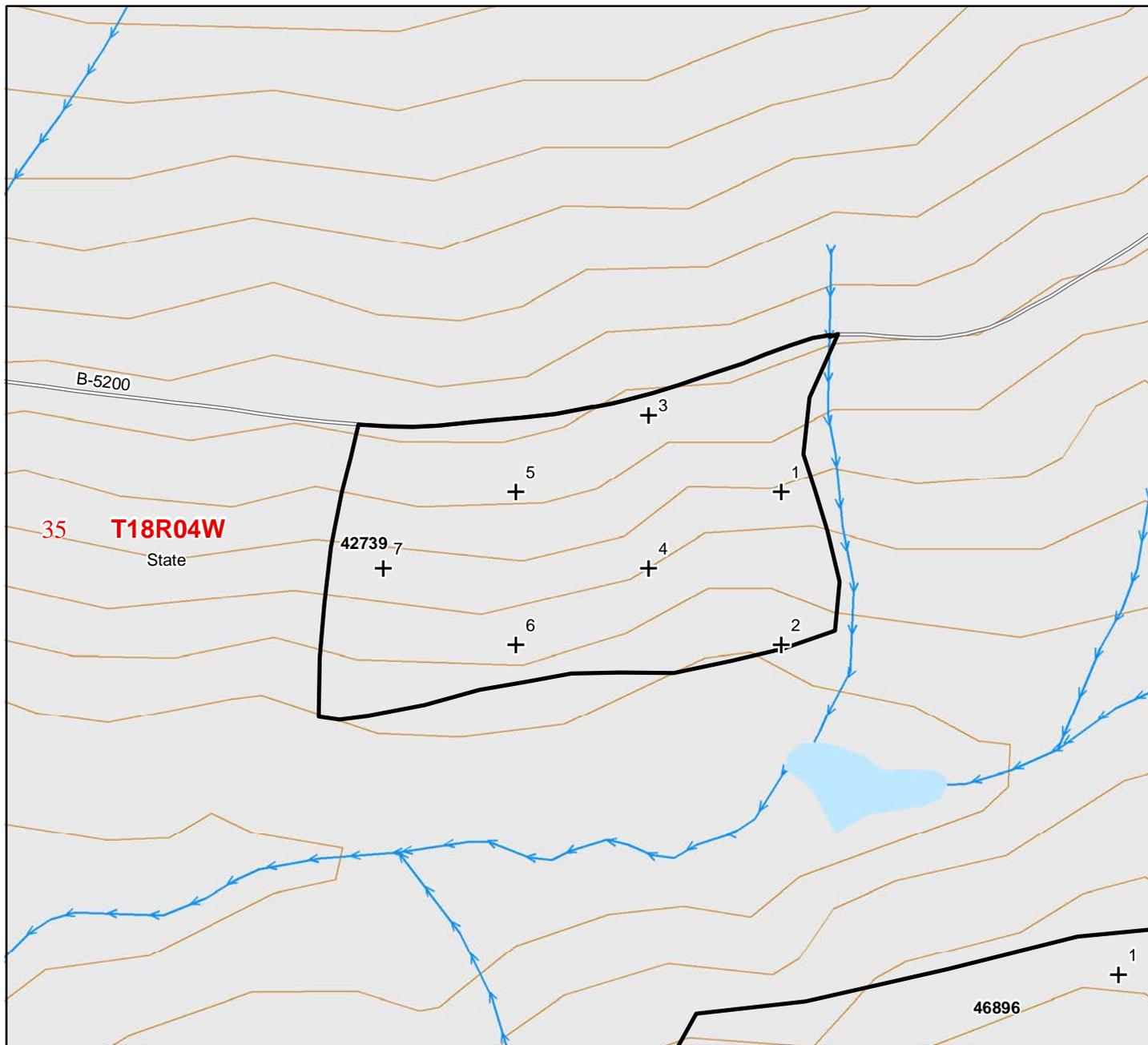
Work Unit: Black Hills

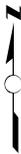
Treatment Acres: 8

Unit No. 25

Unit Name: BRUSH HOOK U3

FMU ID: 42739



- | | | | | | |
|---|----------------------|---|---------------|---|---------|
|  | Unit Boundary |  | 40' Contours |  | 1:3,000 |
|  | DNR Managed Lands |  | Plot Points | Elevation: 1000-1200 | |
|  | Existing Roads |  | Gate | Origin Year: 2007 | |
|  | Non-Driveable Access |  | Tank Trap | Gate: No | |
|  | Trails |  | Earth Barrier | Key: | |
|  | Streams |  | Other Barrier | | |

UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

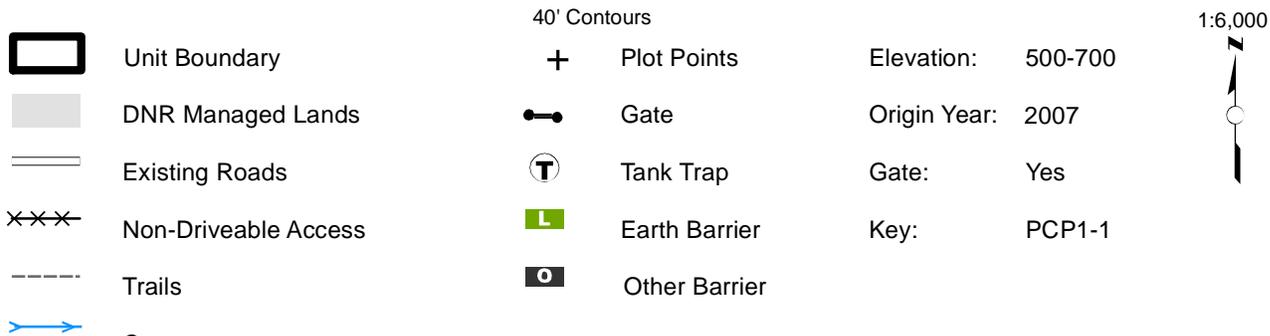
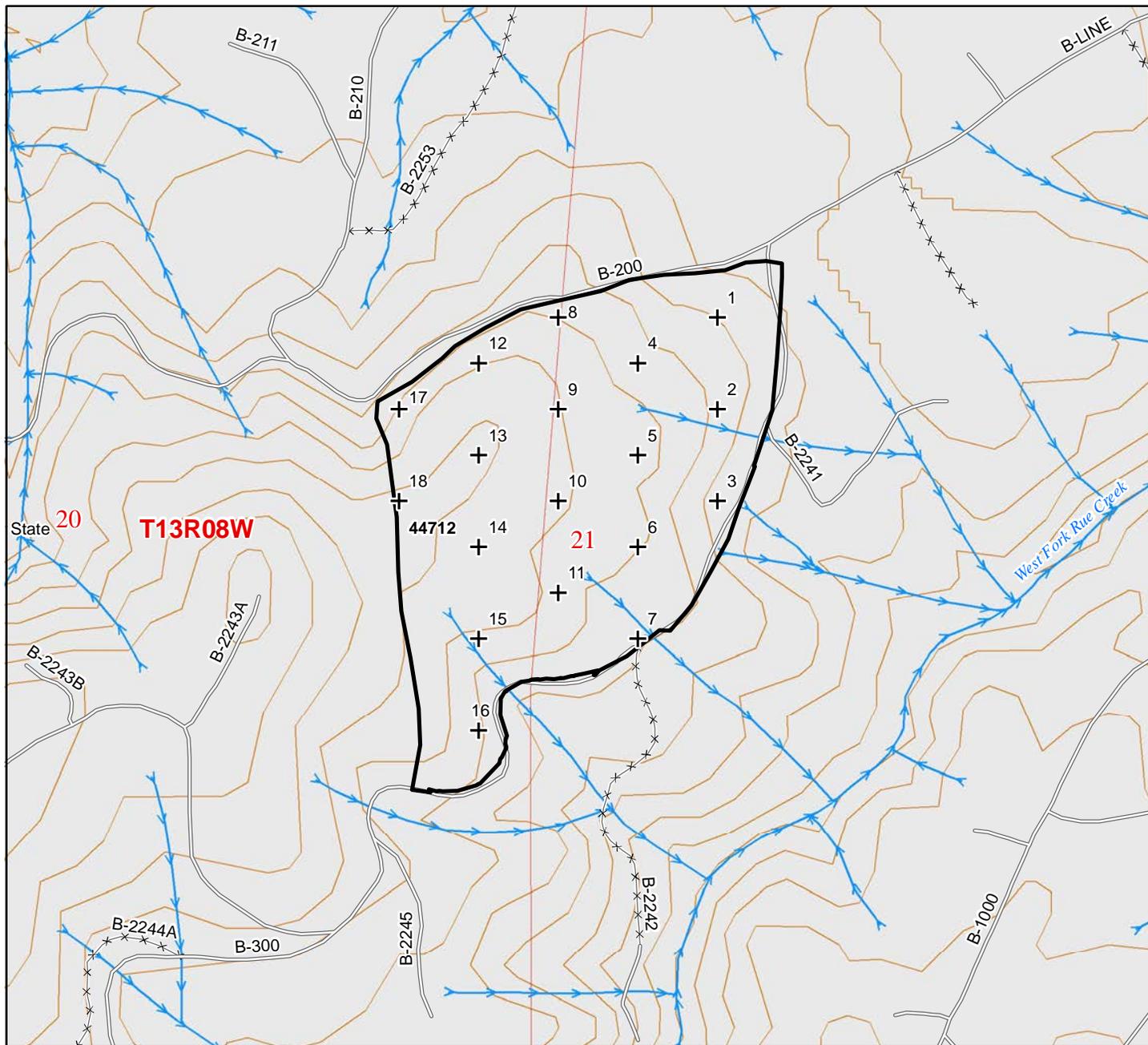
Work Unit: Lewis

Treatment Acres: 33

Unit No. 26

Unit Name: WILD BILL U-1

FMU ID: 44712



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

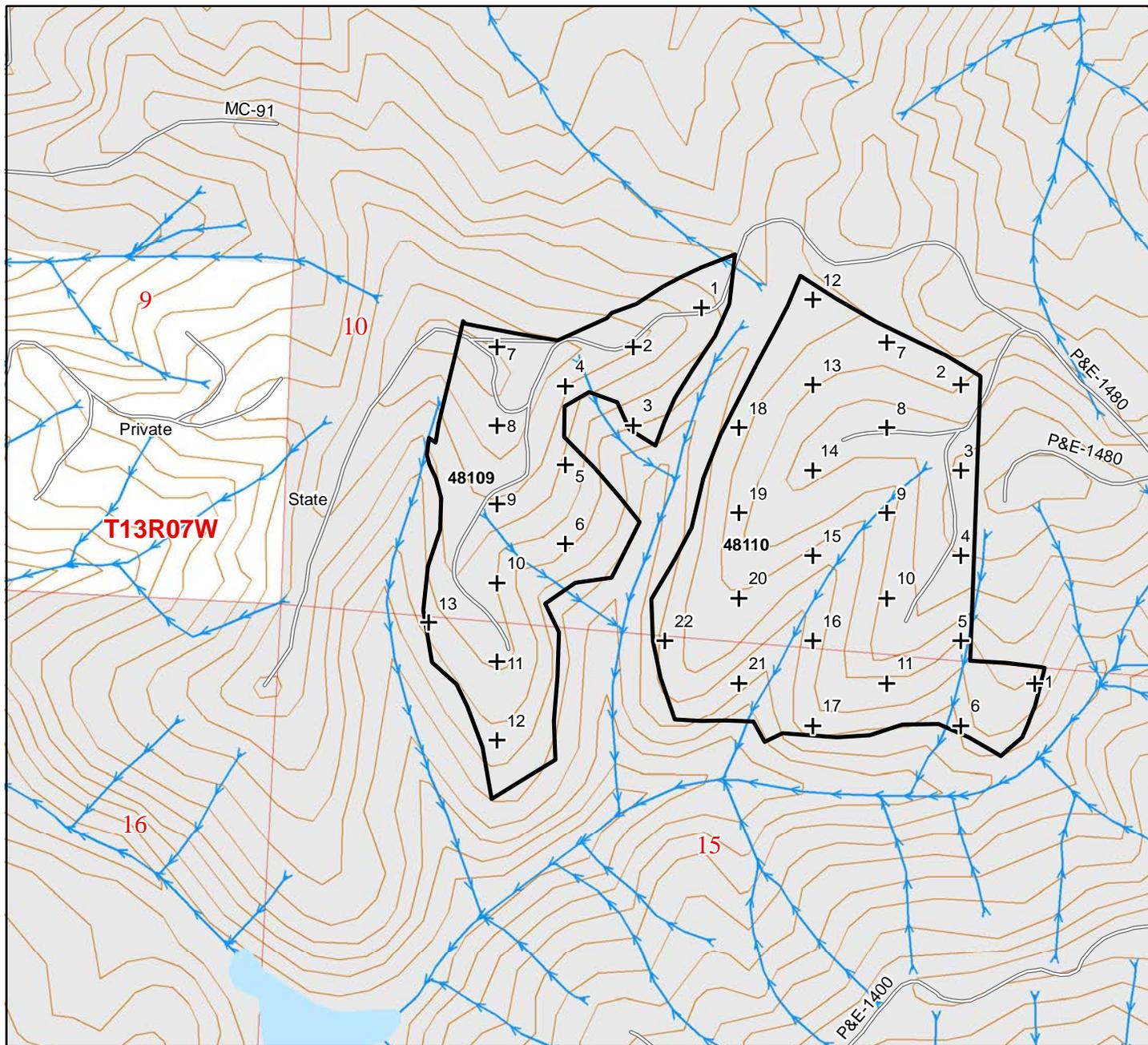
Work Unit: Lewis

Treatment Acres: 25

Unit No. 27

Unit Name: WILD BEAN U-2

FMU ID: 48109



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

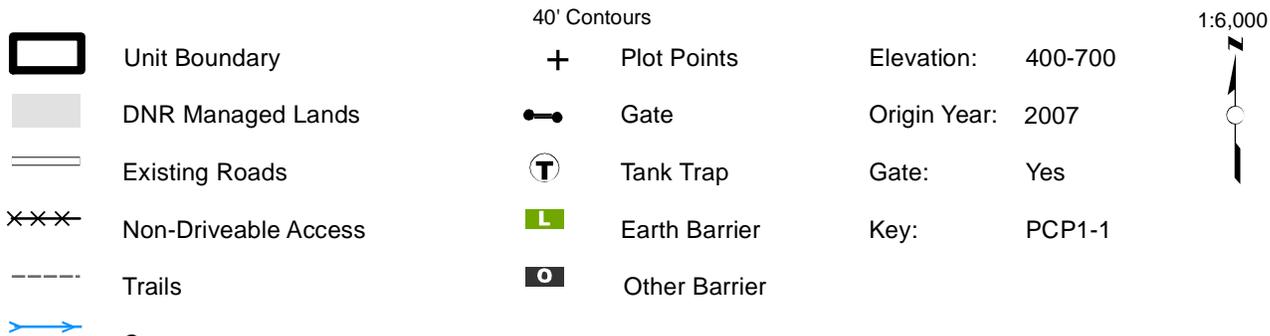
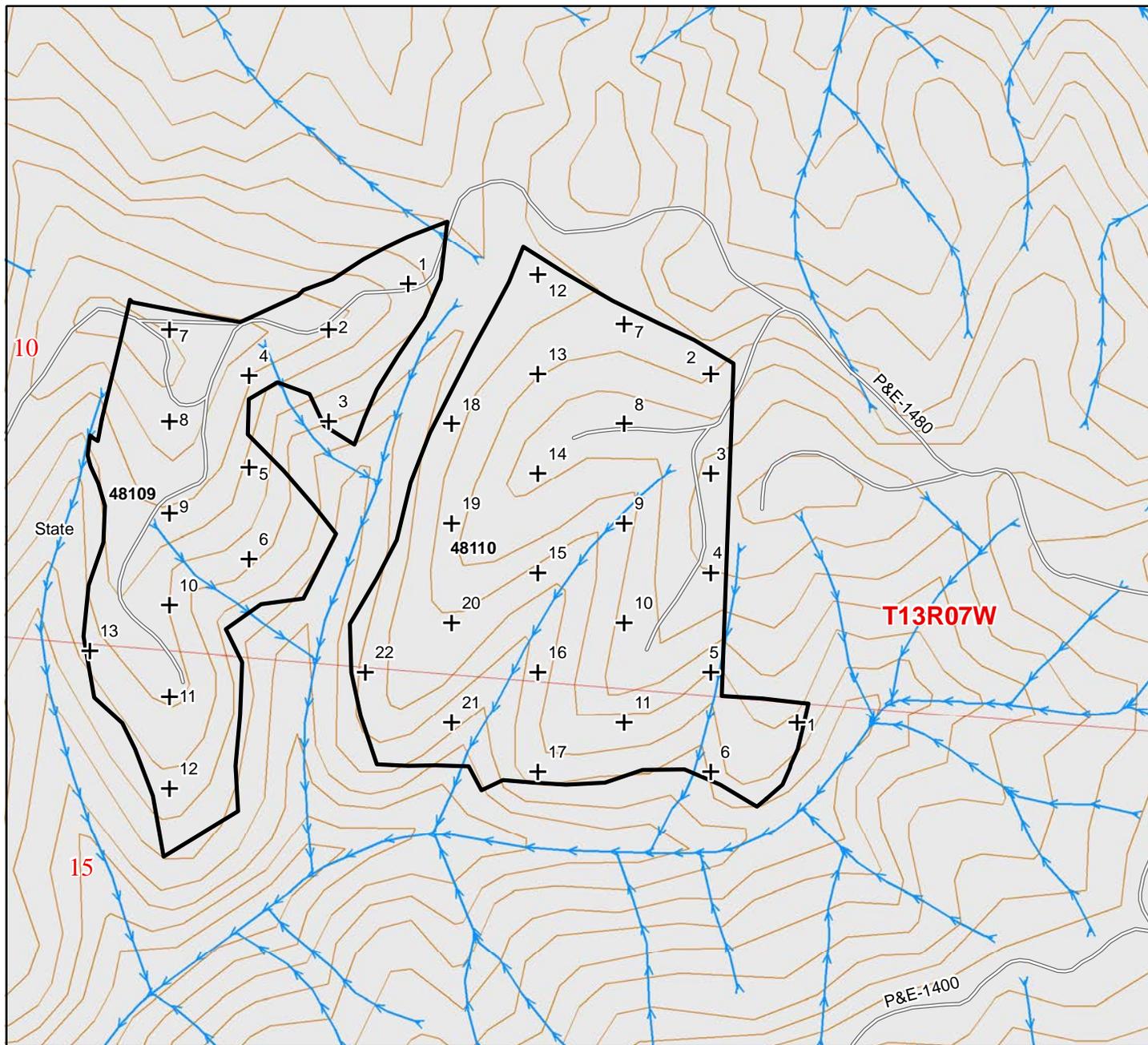
Work Unit: Lewis

Treatment Acres: 39

Unit No. 28

Unit Name: WILD BEAN U-1

FMU ID: 48110



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

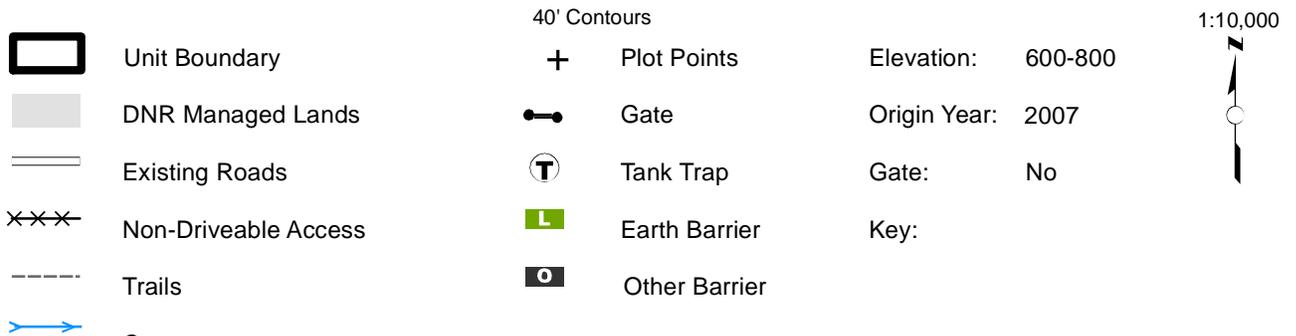
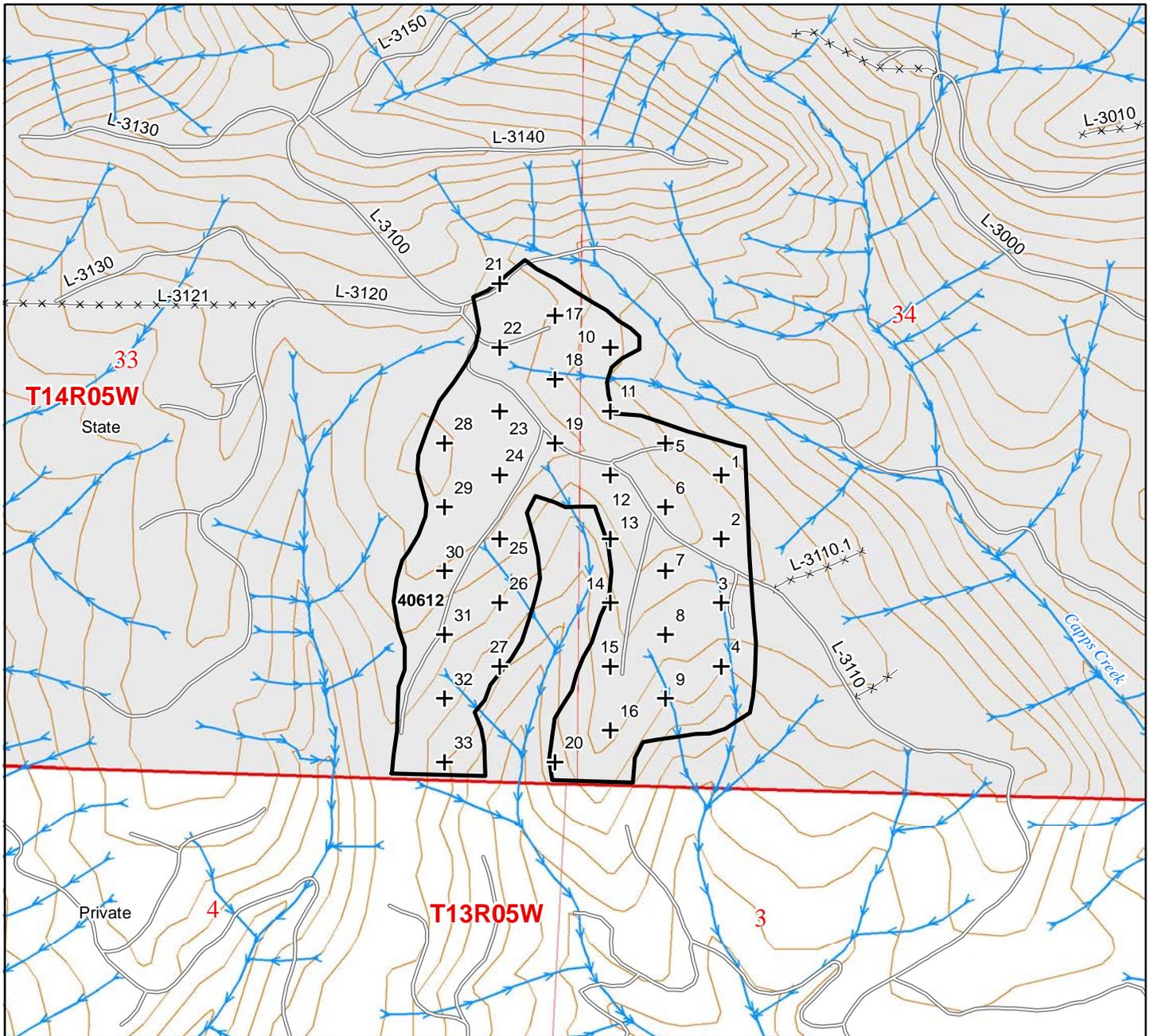
Work Unit: Lewis

Treatment Acres: 81

Unit No. 29

Unit Name: GET IT DONE

FMU ID: 40612



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

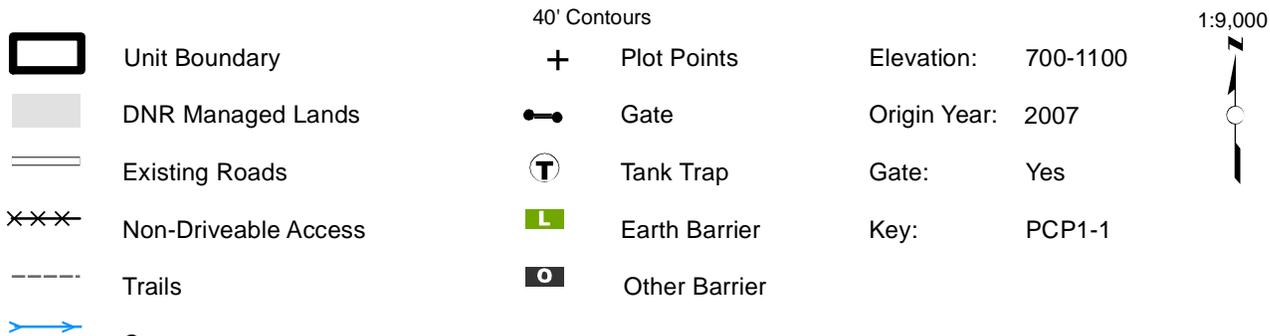
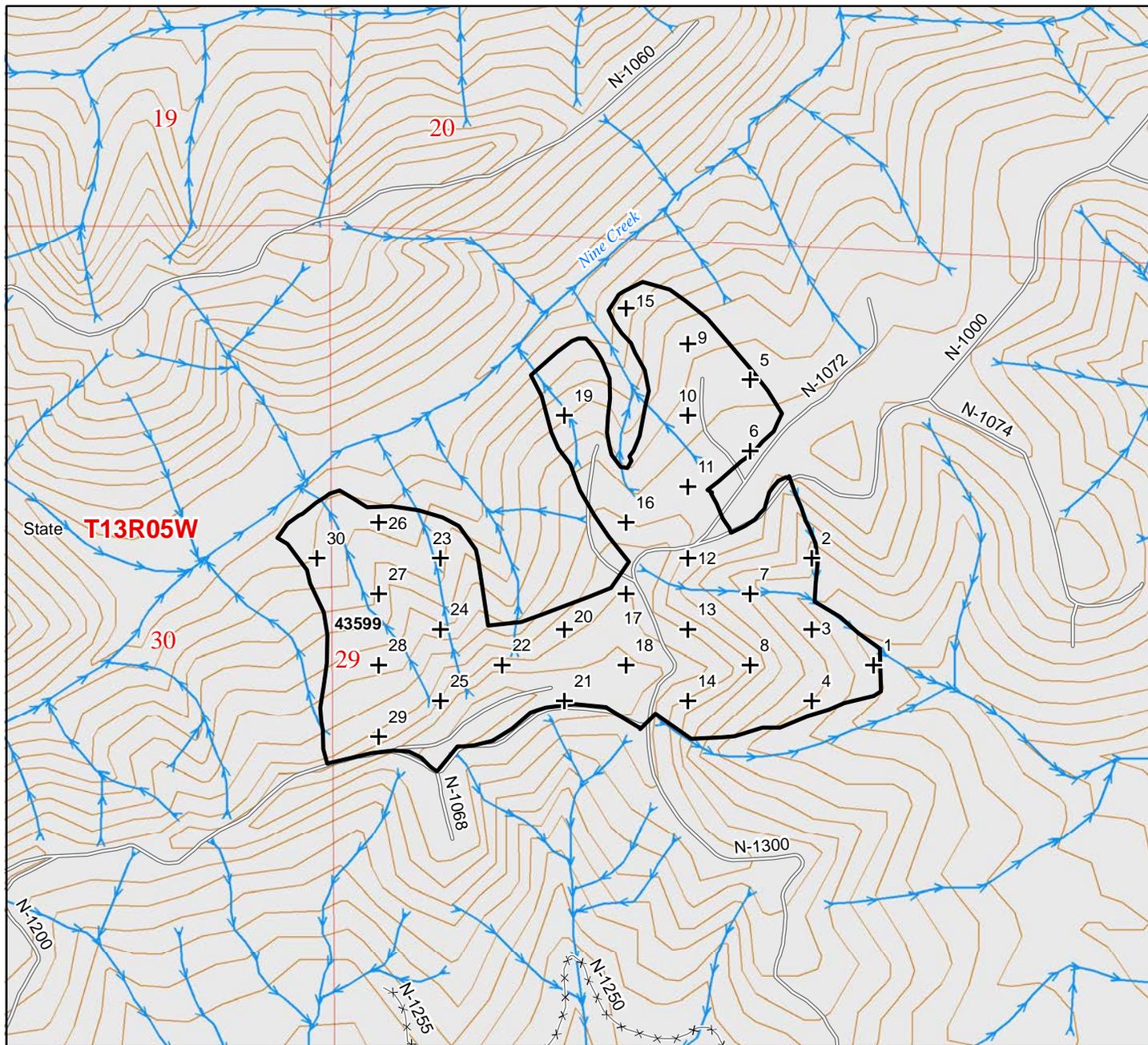
Work Unit: Lewis

Treatment Acres: 75

Unit No. 30

Unit Name: CHIPSHOT

FMU ID: 43599



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

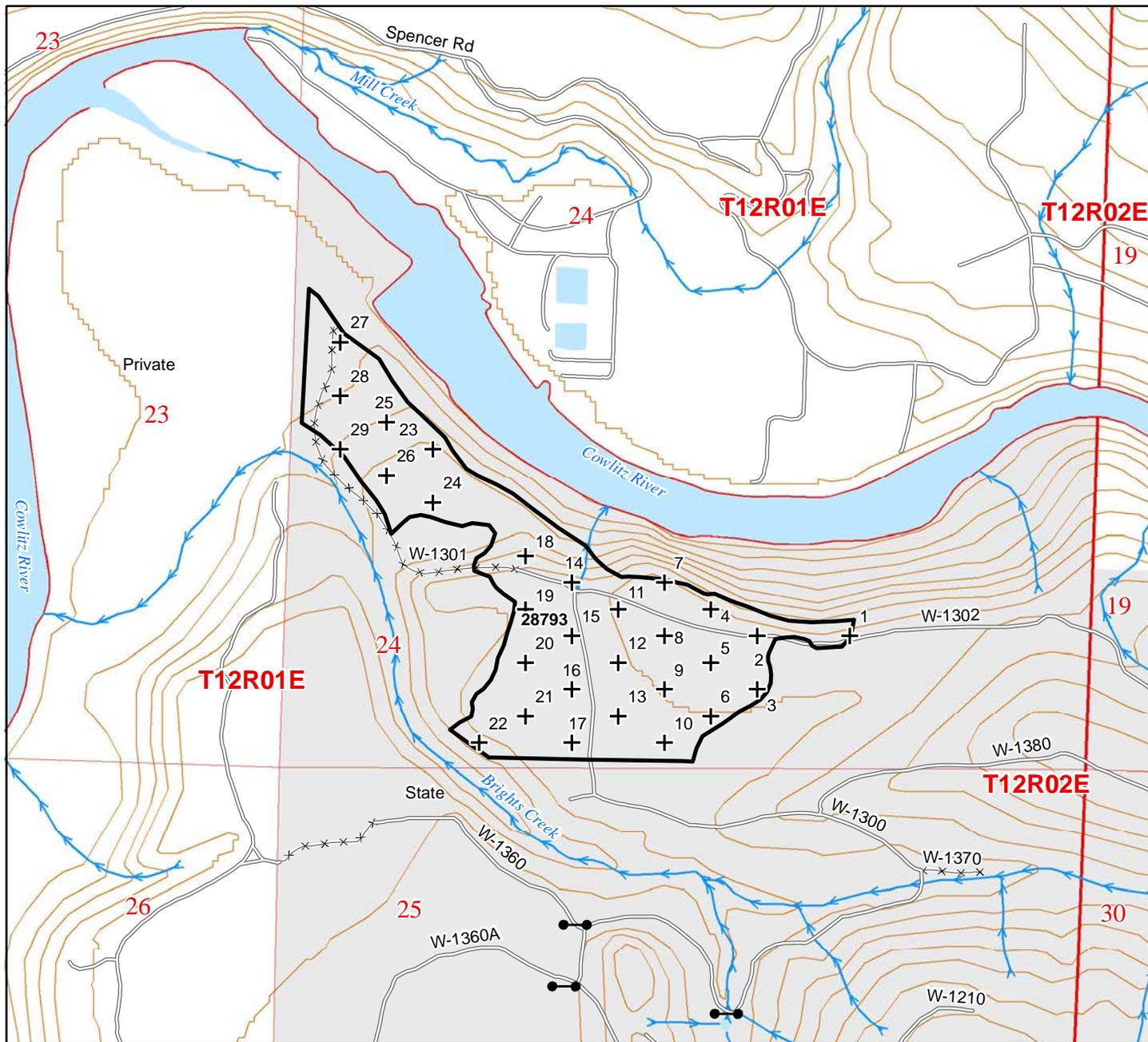
Work Unit: Lewis

Treatment Acres: 74

Unit No. 31

Unit Name: BRIGHT IDEA HRDWD U1

FMU ID: 28793



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

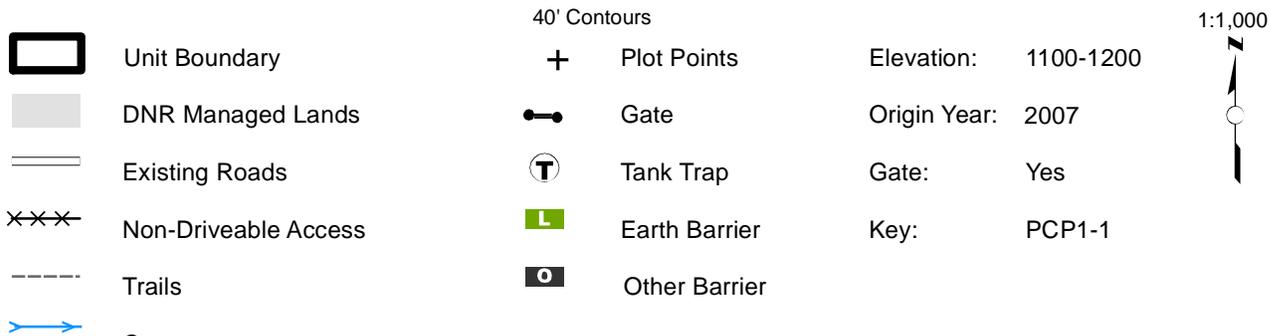
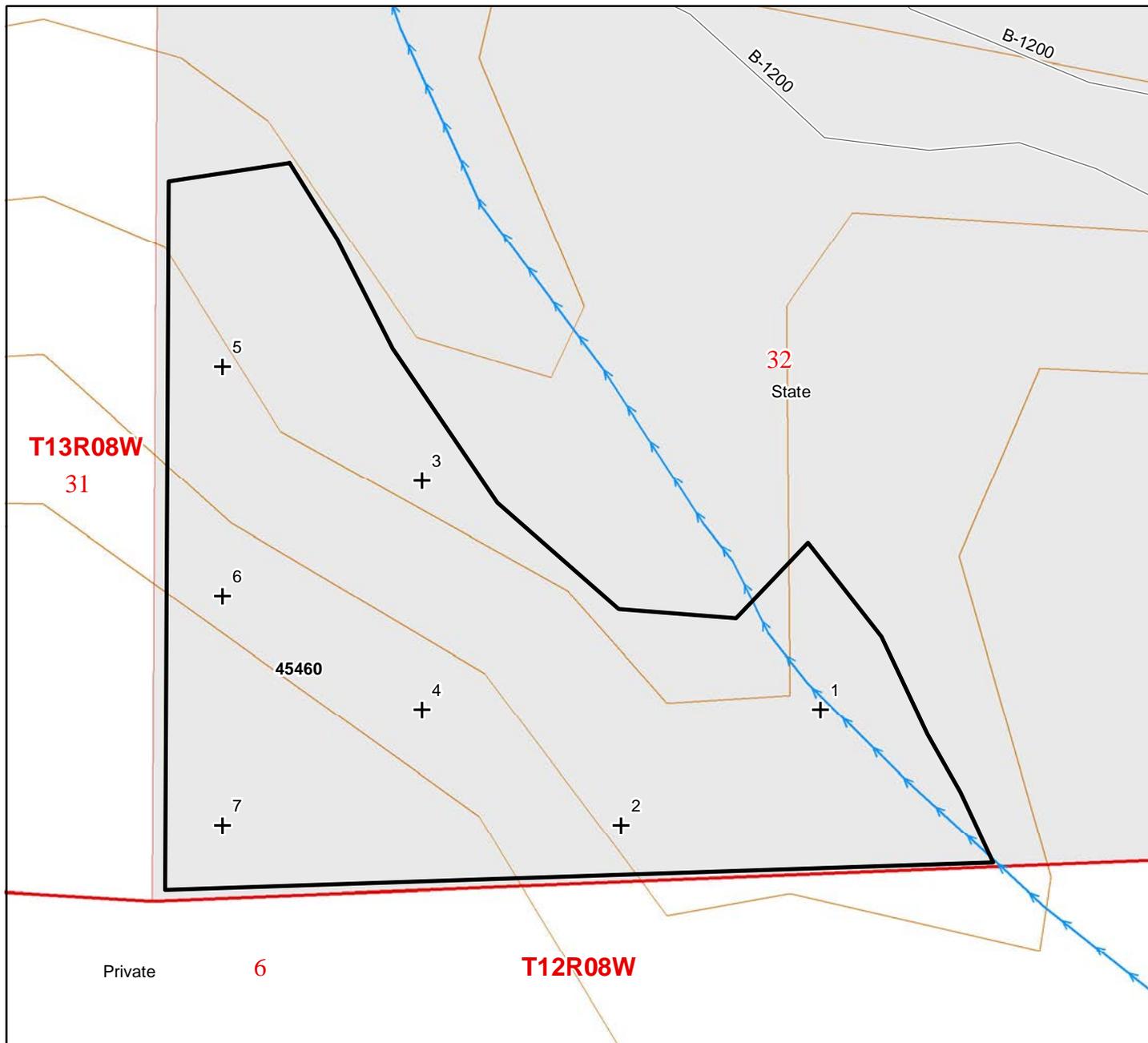
Work Unit: Lewis

Treatment Acres: 2

Unit No. 32

Unit Name: ASCEND BD U-2

FMU ID: 45460



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

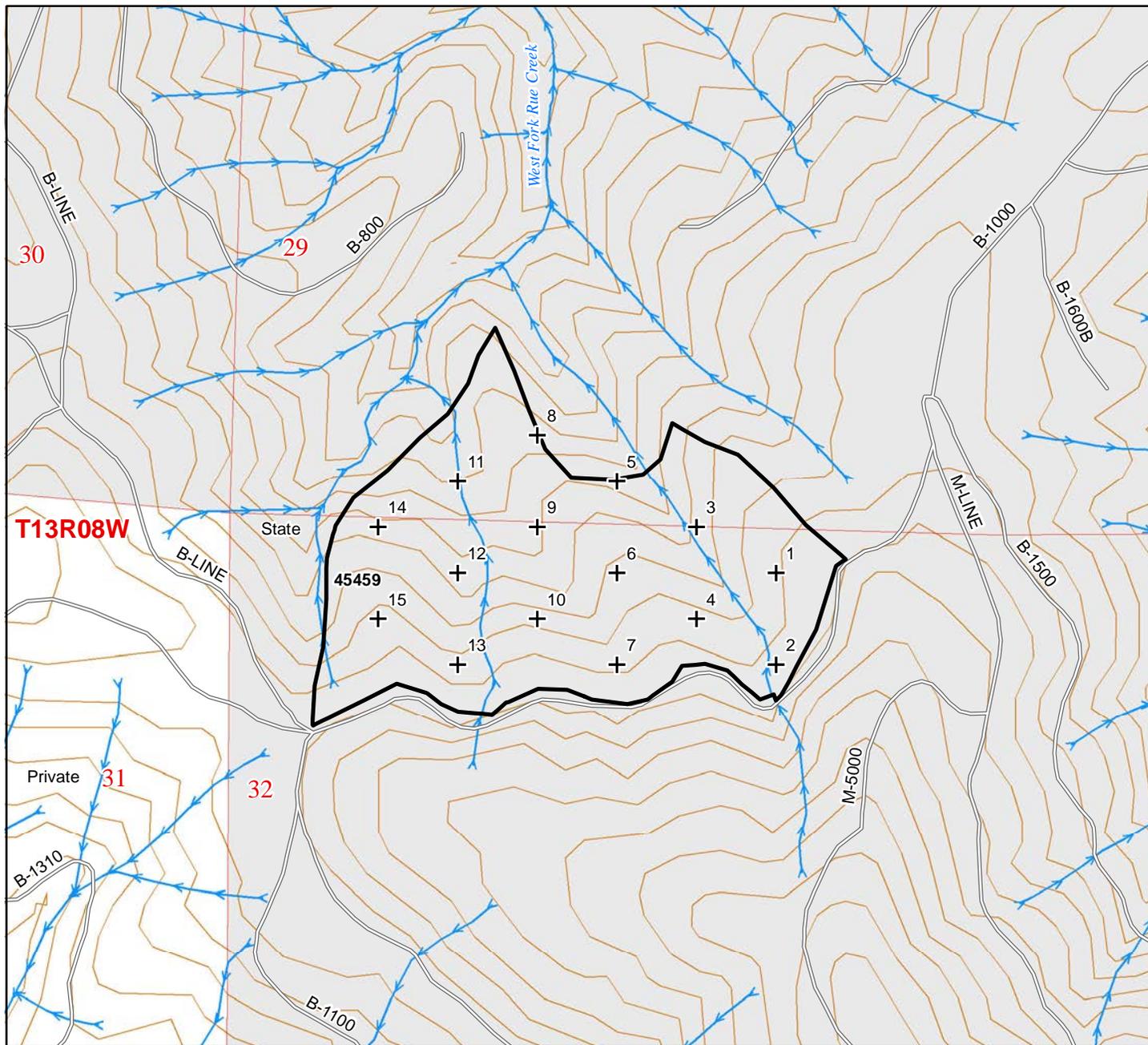
Work Unit: Lewis

Treatment Acres: 29

Unit No. 33

Unit Name: ASCEND BD U-1

FMU ID: 45459



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

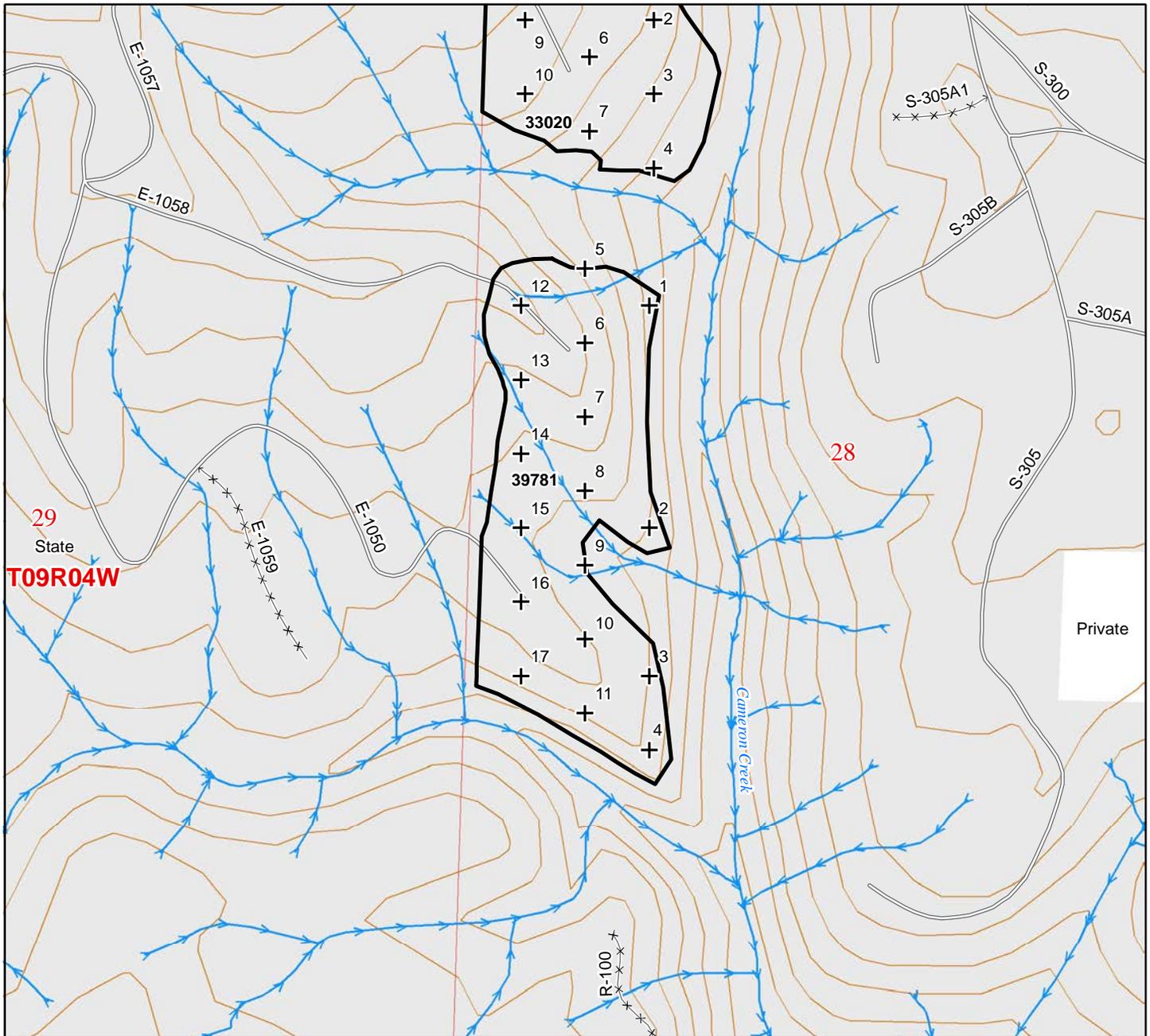
Work Unit: St Helens

Treatment Acres: 32

Unit No. 34

Unit Name: WANNIGAN U3

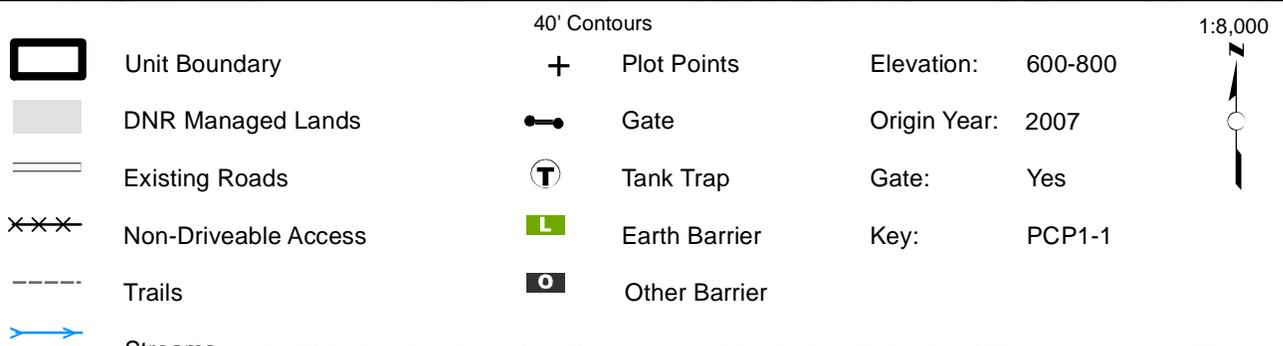
FMU ID: 39781



29
State
T09R04W

28

Private



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

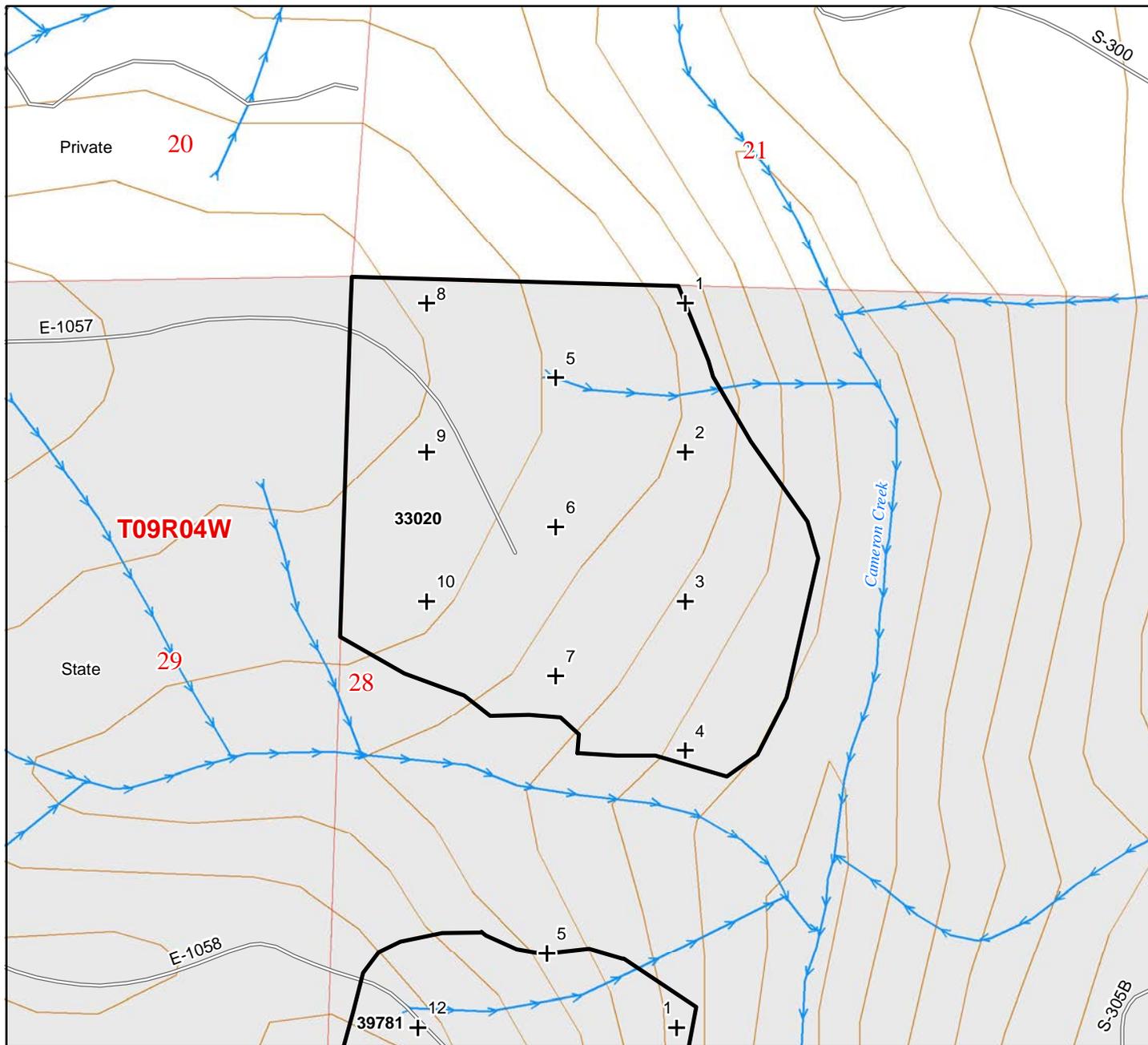
Work Unit: St Helens

Treatment Acres: 20

Unit No. 35

Unit Name: WANNIGAN U2

FMU ID: 33020



Unit Boundary



DNR Managed Lands



Existing Roads



Non-Driveable Access



Trails



Streams

40' Contours



Plot Points



Gate



Tank Trap



Earth Barrier



Other Barrier

Elevation: 600-800

Origin Year: 2007

Gate: Yes

Key: PCP1-1

1:4,000



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

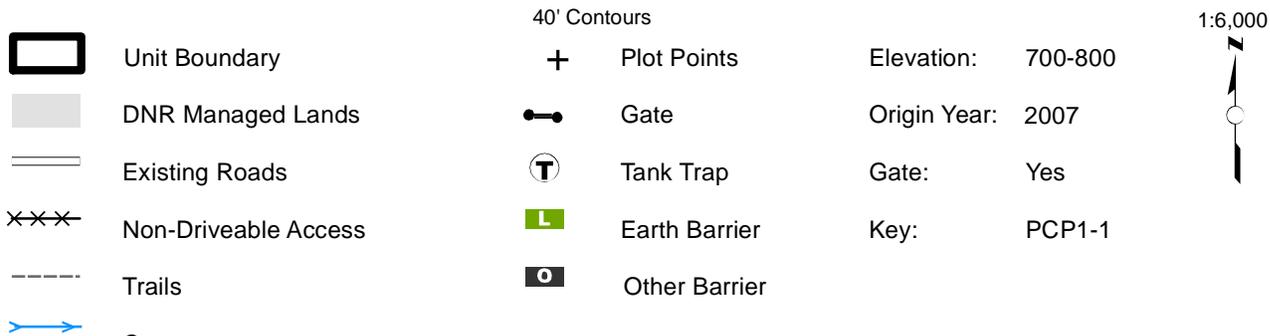
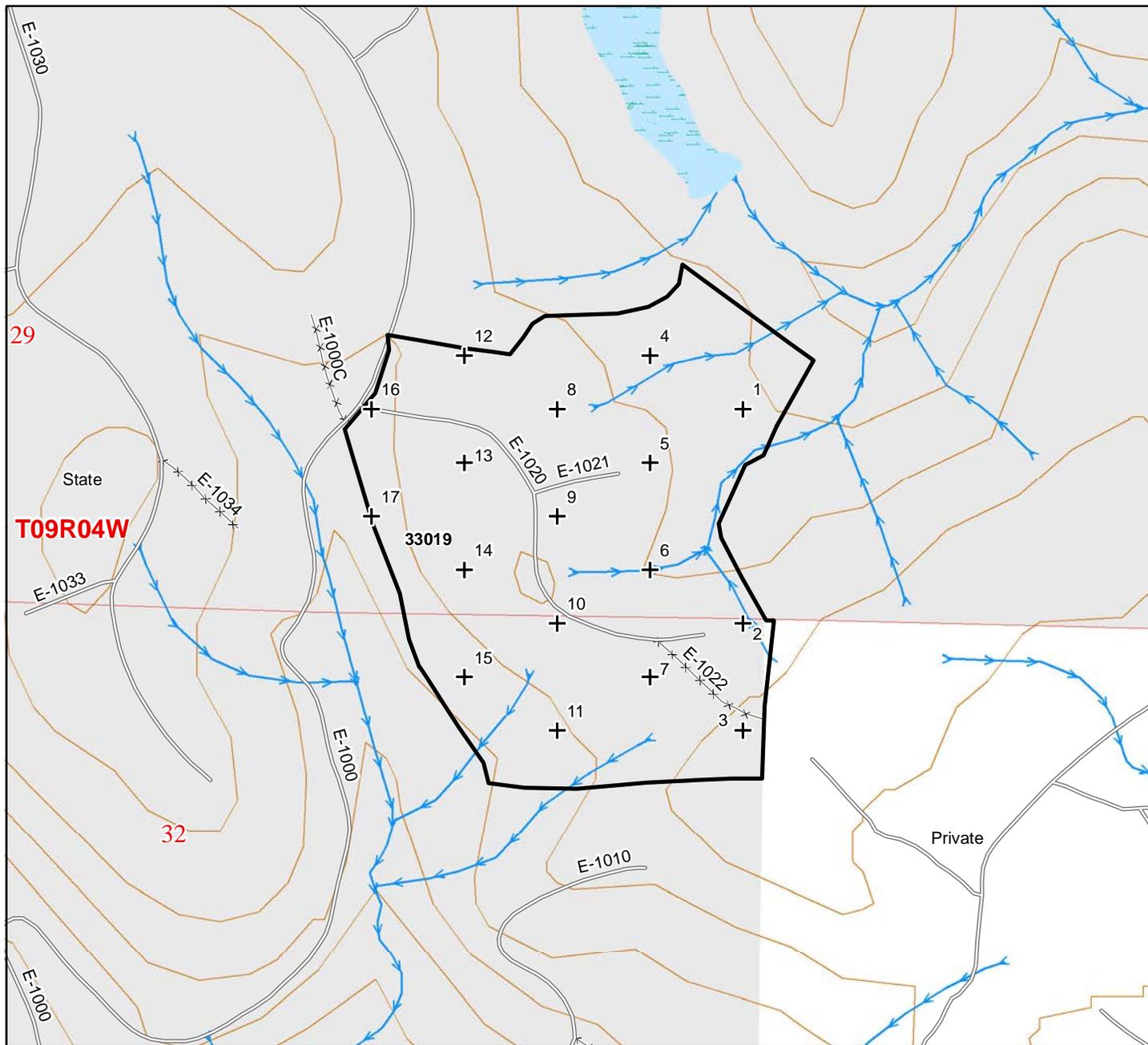
Work Unit: St Helens

Treatment Acres: 41

Unit No. 36

Unit Name: WANNIGAN U1

FMU ID: 33019



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

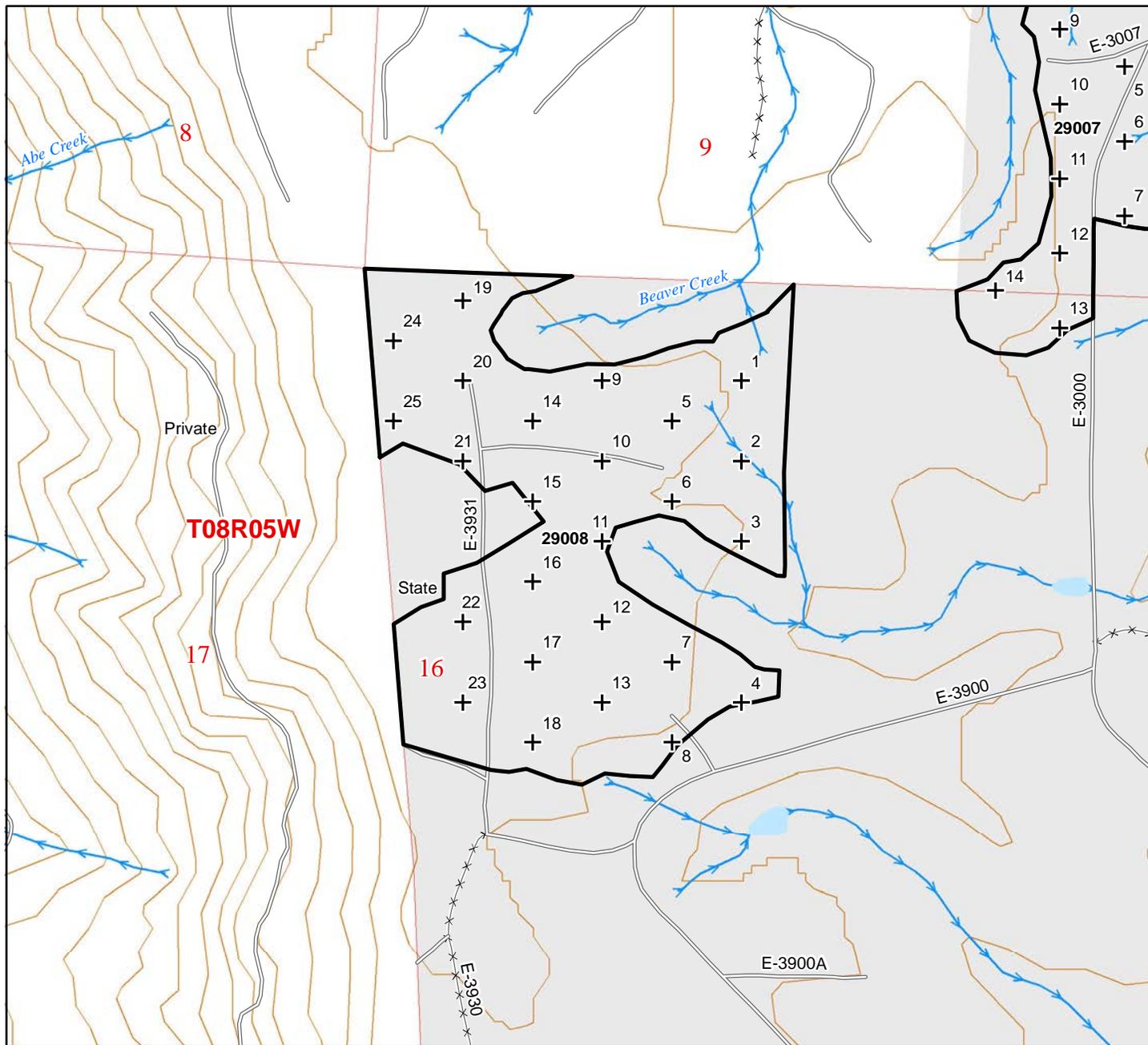
Work Unit: St Helens

Treatment Acres: 61

Unit No. 37

Unit Name: SMOOTH U2

FMU ID: 29008



Unit Boundary



DNR Managed Lands



Existing Roads



Non-Driveable Access



Trails



Streams

40' Contours



Plot Points



Gate



Tank Trap



Earth Barrier



Other Barrier

Elevation: 1400-1500

Origin Year: 2007

Gate: No

Key:

1:8,000



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

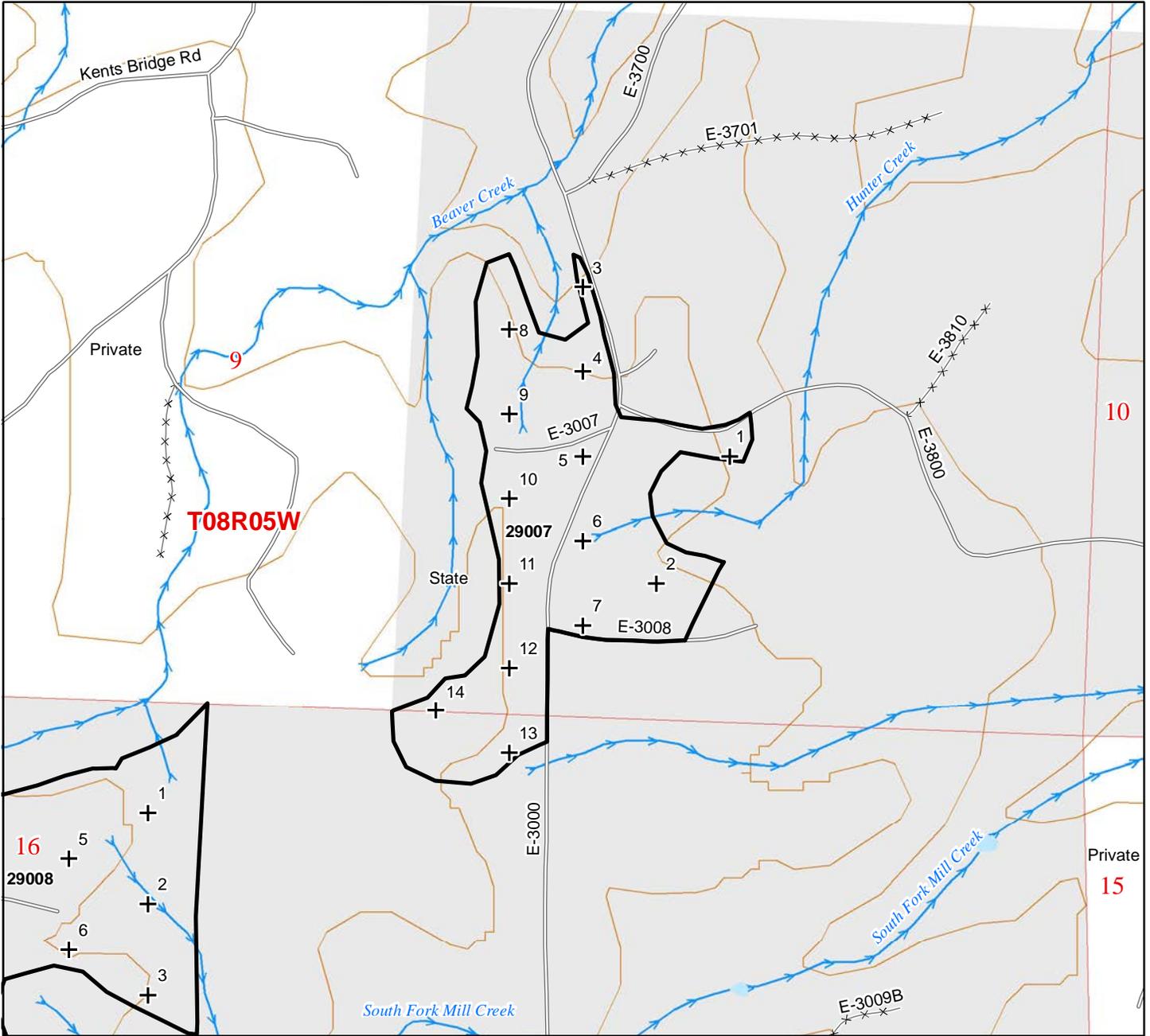
Work Unit: St Helens

Treatment Acres: 26

Unit No. 38

Unit Name: SMOOTH U1

FMU ID: 29007



	Unit Boundary		40' Contours		Elevation: 1300-1500
	DNR Managed Lands		Plot Points		Origin Year: 2007
	Existing Roads		Gate		Gate: No
	Non-Driveable Access		Tank Trap		Key:
	Trails		Earth Barrier		
	Streams		Other Barrier		

UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

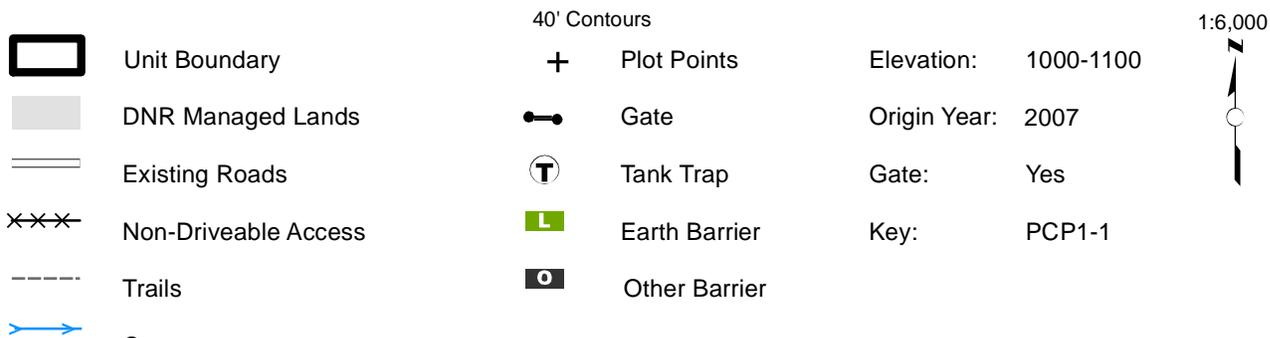
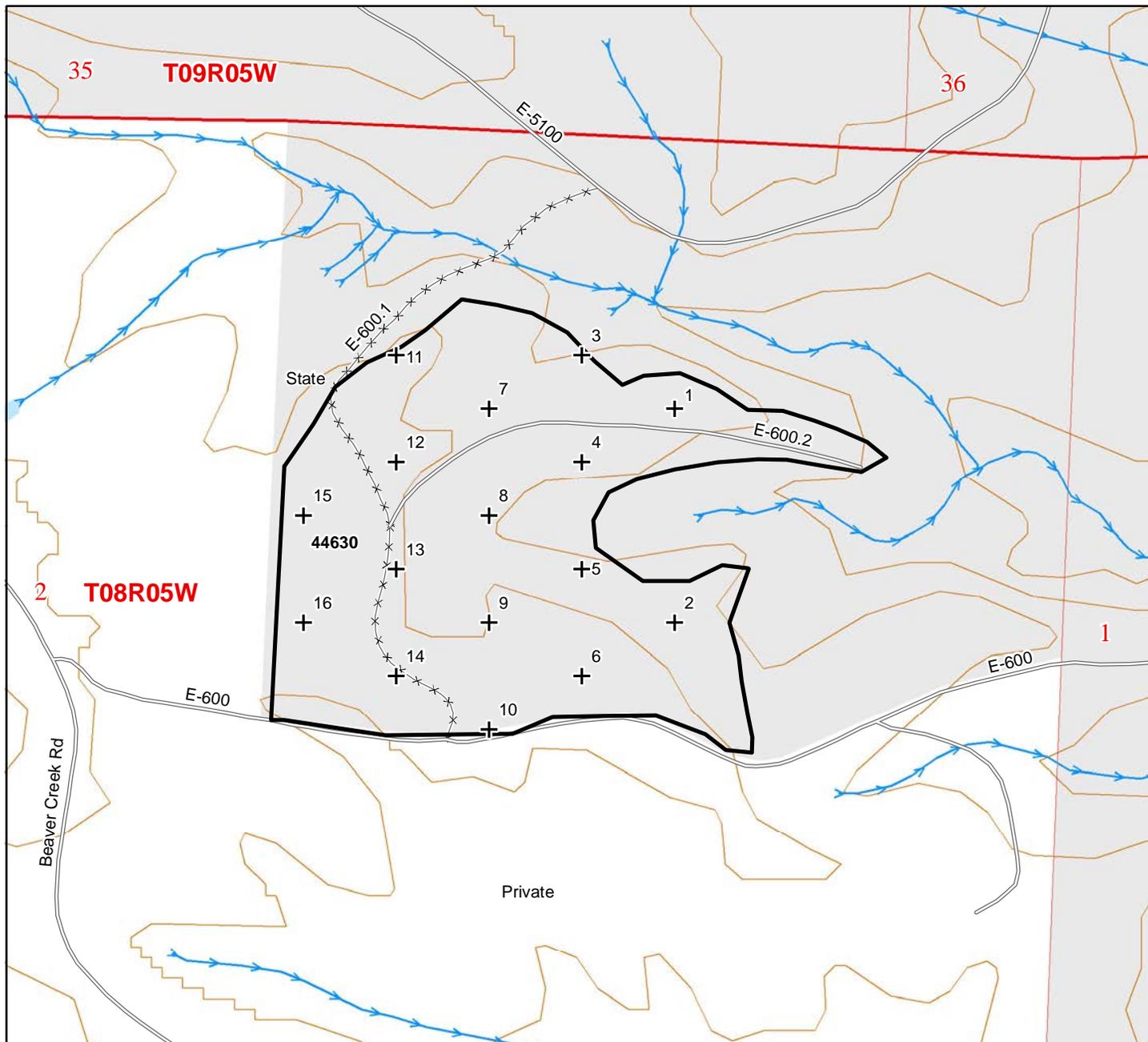
Work Unit: St Helens

Treatment Acres: 40

Unit No. 39

Unit Name: PATCHES U3

FMU ID: 44630



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

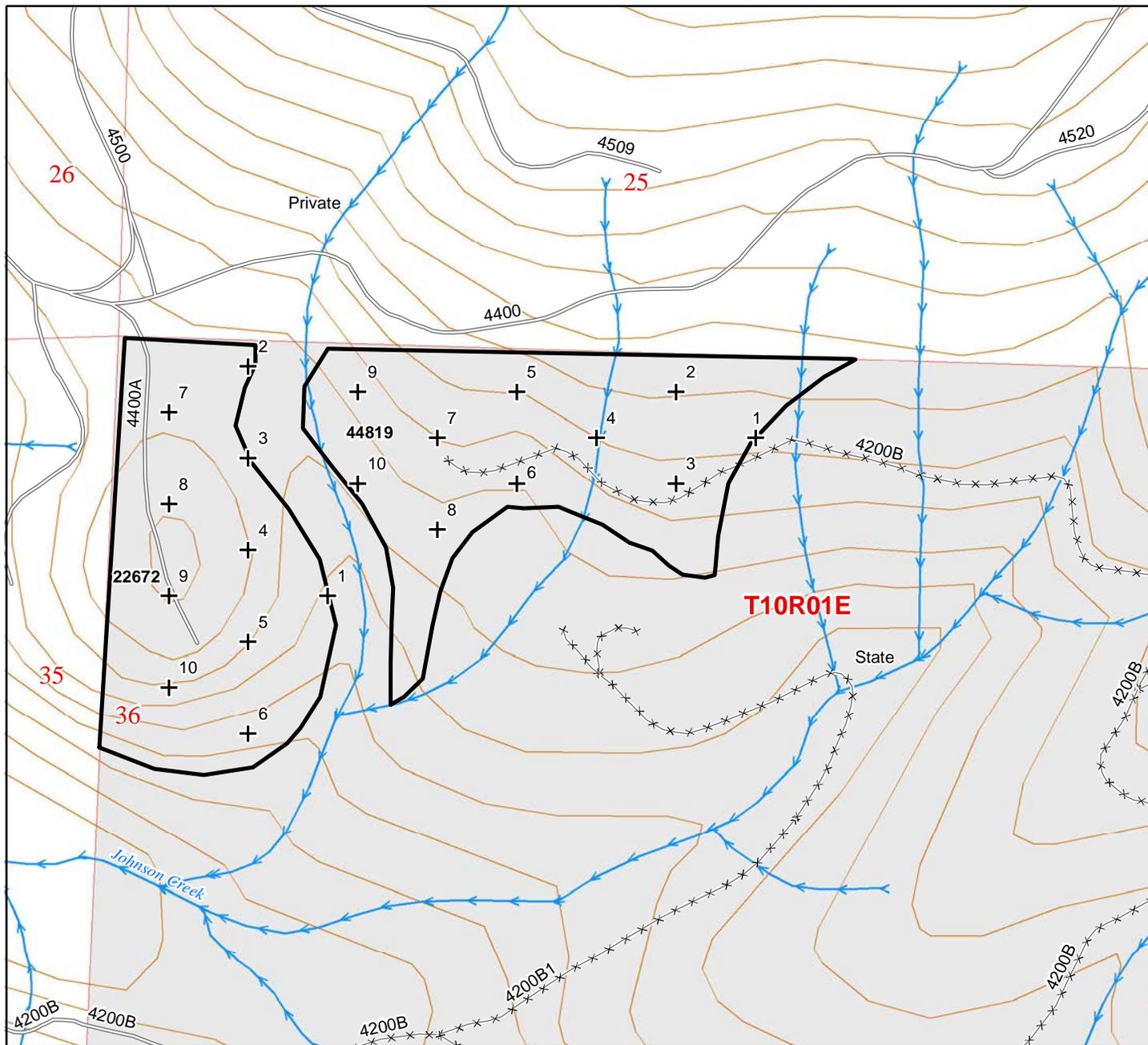
Work Unit: St Helens

Treatment Acres: 21

Unit No. 40

Unit Name: NORTH JOHNSON UNIT 2

FMU ID: 44819



- | | | | | | | |
|---|----------------------|---|---------------|--------------|-----------------------------|---|
|  | Unit Boundary |  | Plot Points | Elevation: | 800-1000 |  |
|  | DNR Managed Lands |  | Gate | Origin Year: | 2007 | |
|  | Existing Roads |  | Tank Trap | Gate: | Yes | |
|  | Non-Driveable Access |  | Earth Barrier | Key: | Contact IMF Prior to Access | |
|  | Trails |  | Other Barrier | | | |

UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

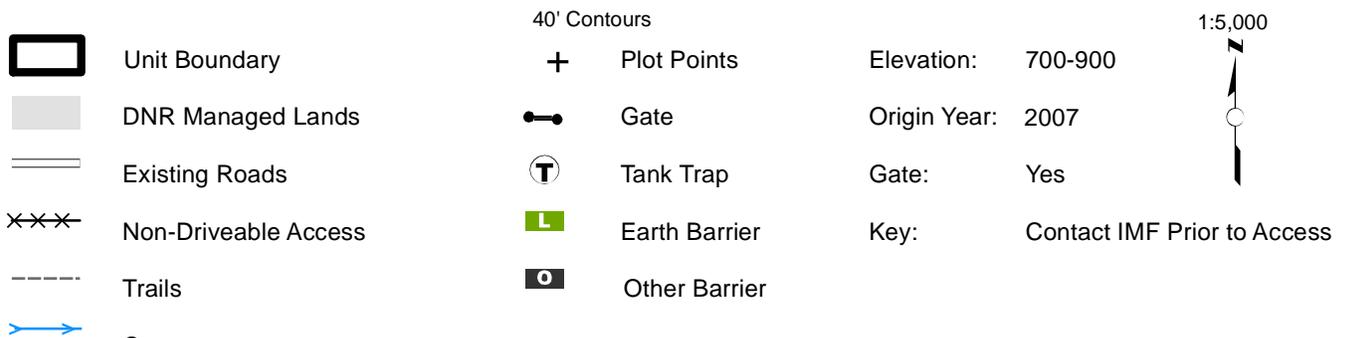
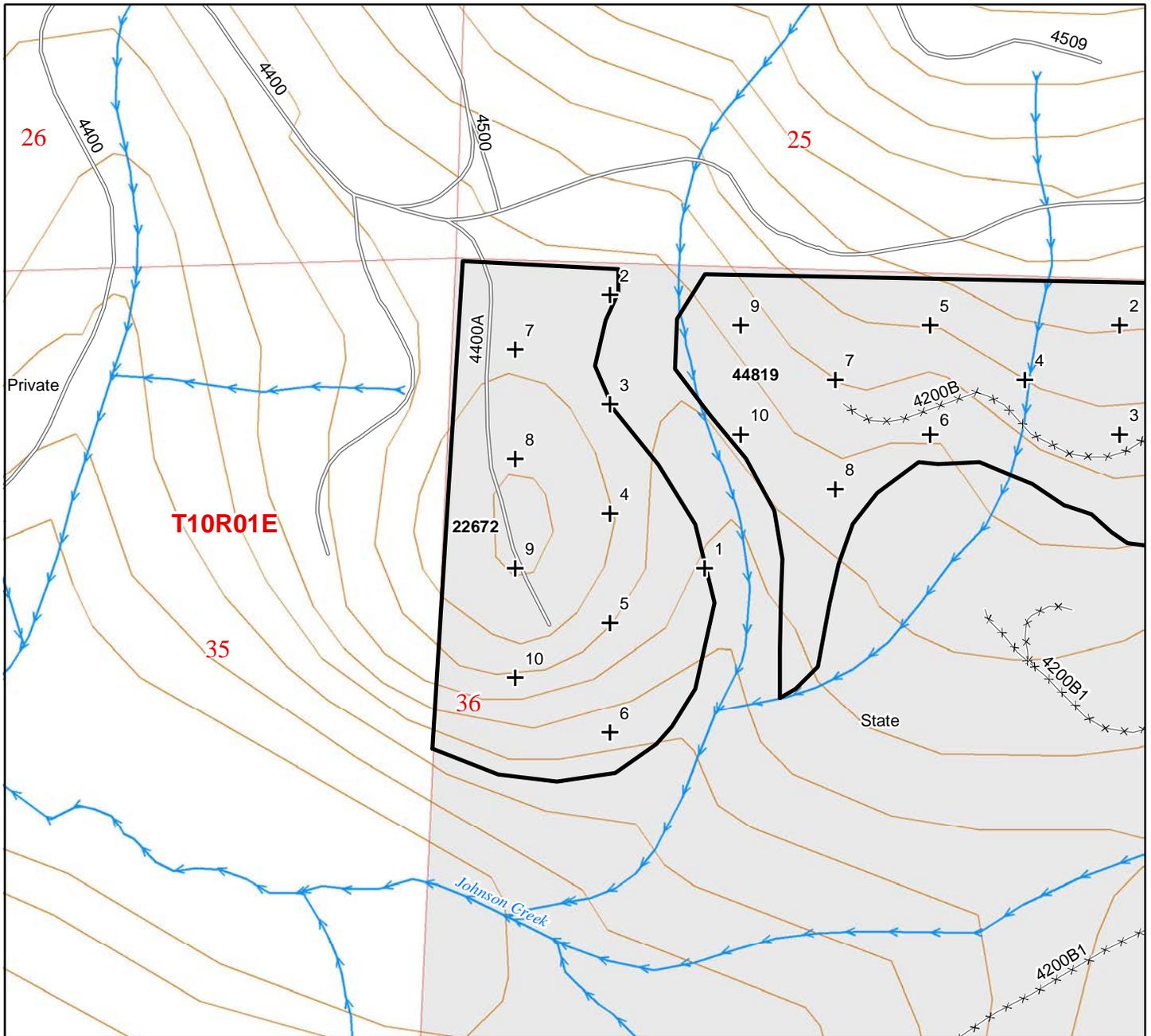
Work Unit: St Helens

Treatment Acres: 19

Unit No. 41

Unit Name: NORTH JOHNSON UNIT 1

FMU ID: 22672



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

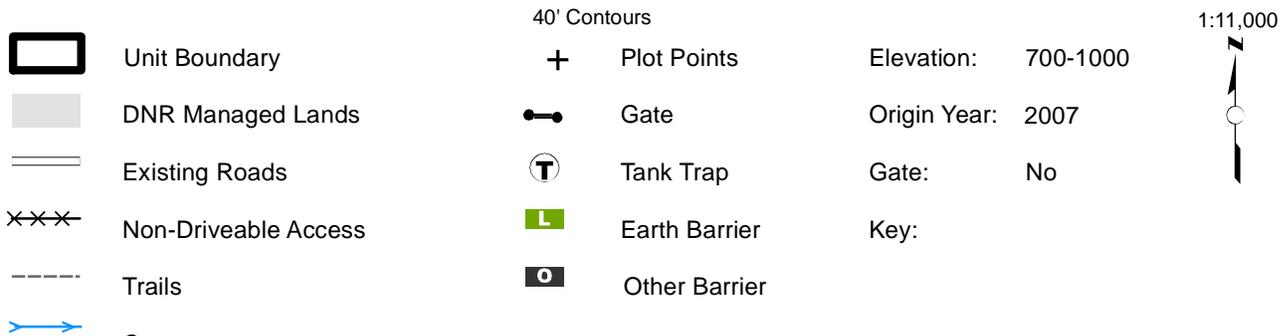
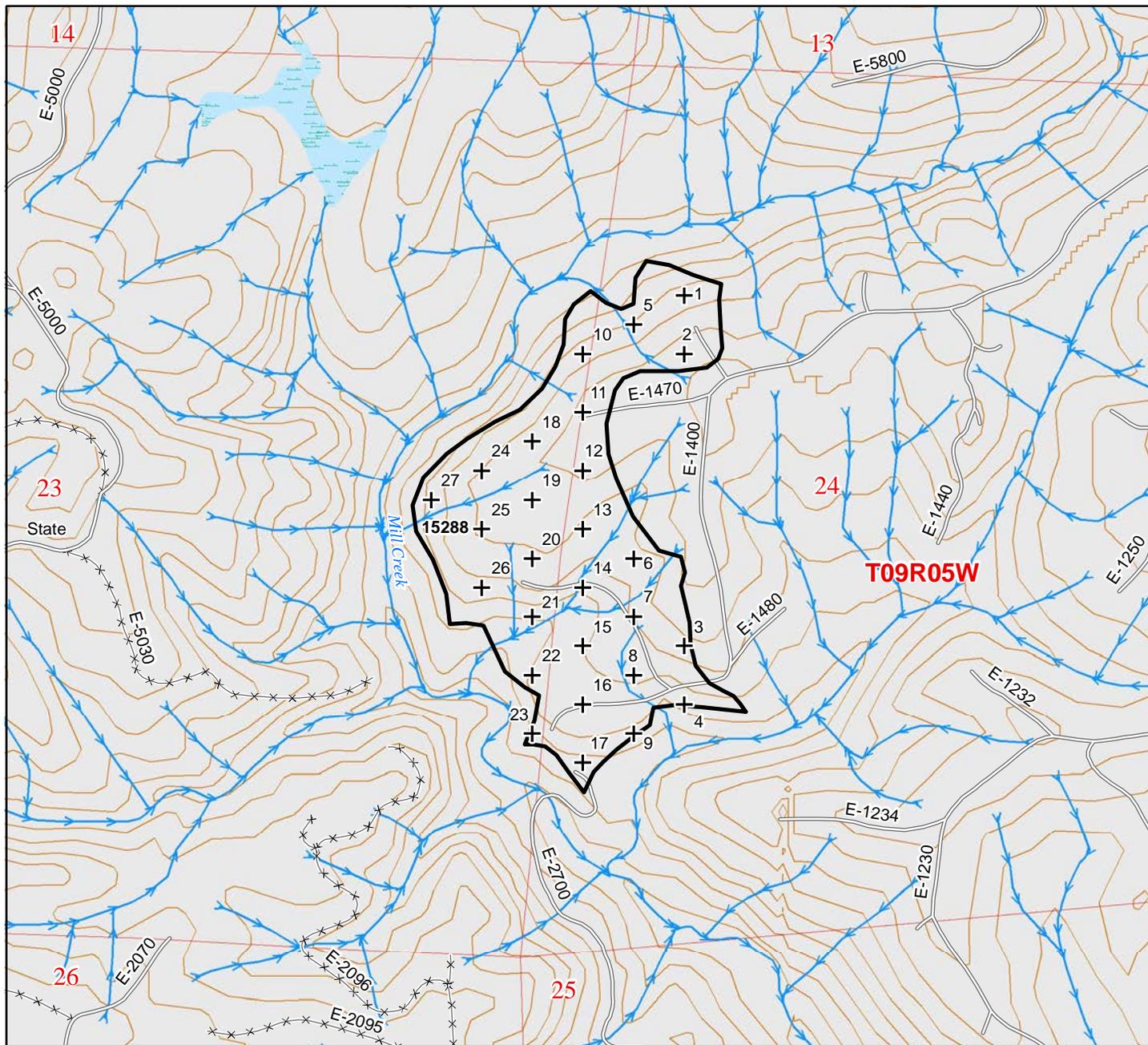
Work Unit: St Helens

Treatment Acres: 68

Unit No. 42

Unit Name: MILL CR #3

FMU ID: 15288



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

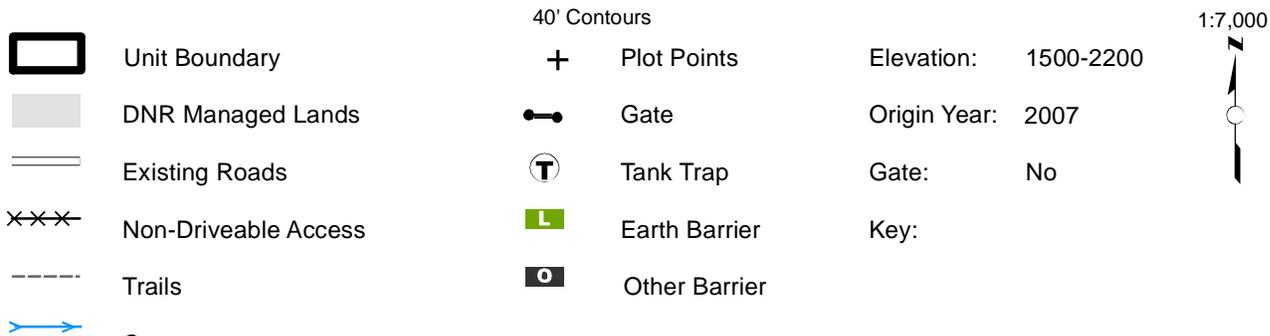
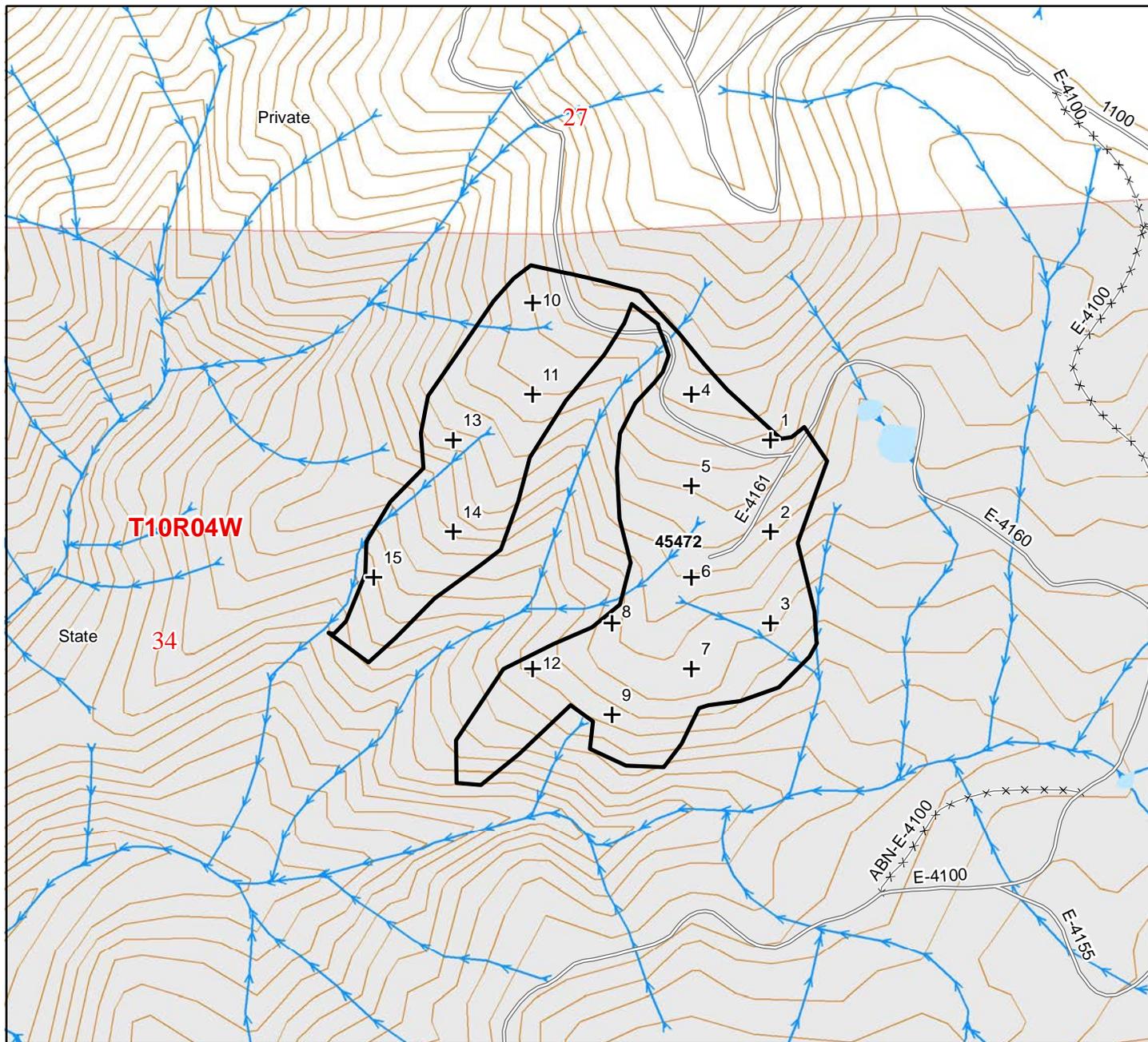
Work Unit: St Helens

Treatment Acres: 41

Unit No. 43

Unit Name: LONG JUMP U3

FMU ID: 45472



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

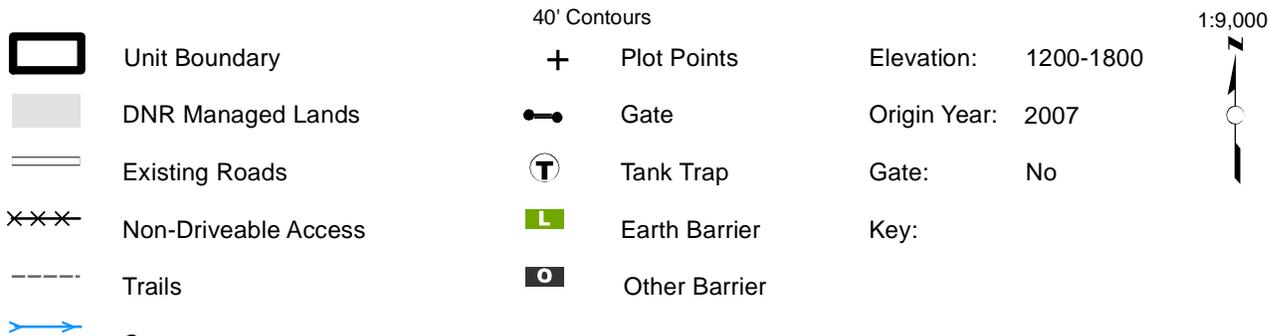
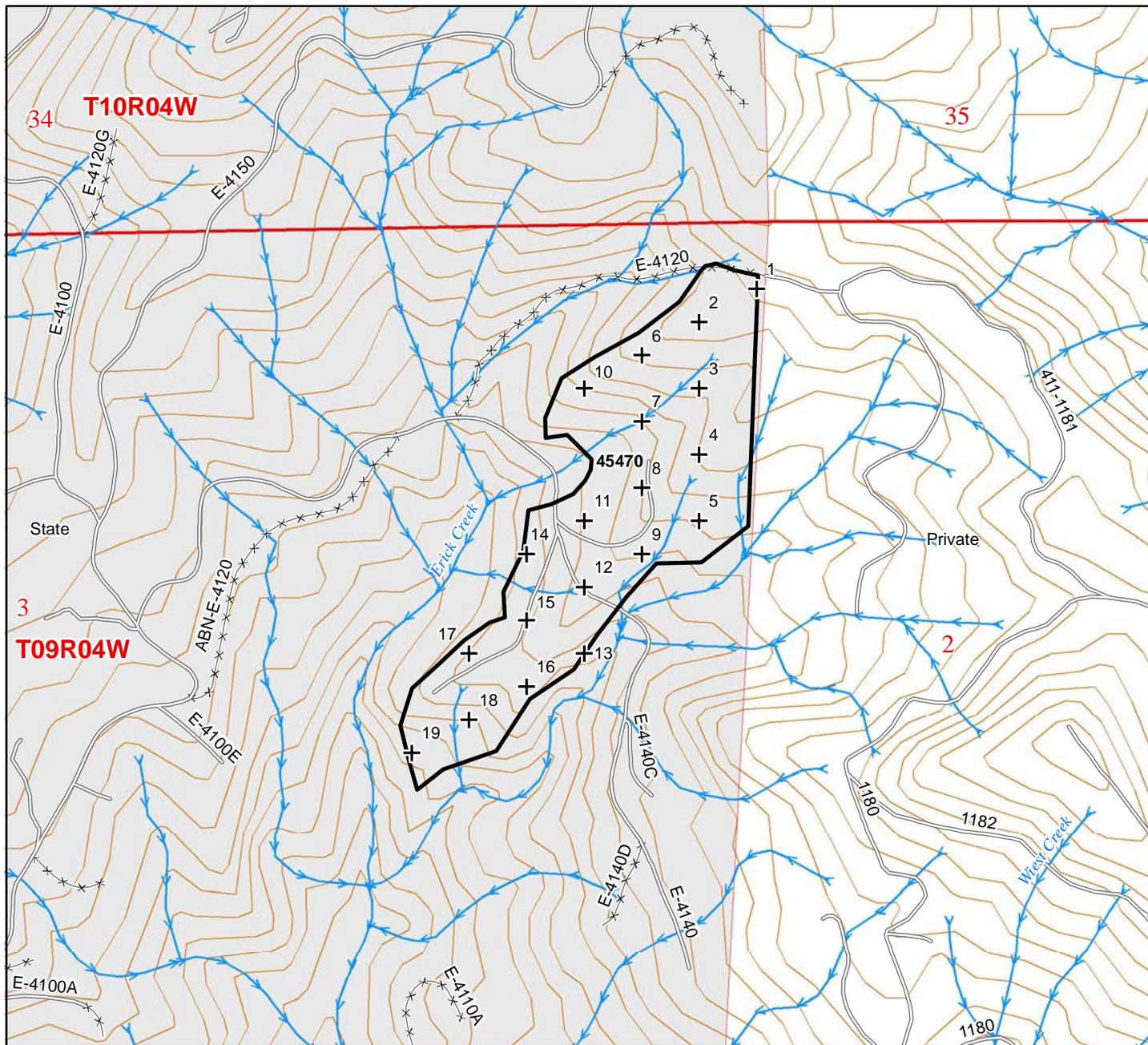
Work Unit: St Helens

Treatment Acres: 40

Unit No. 44

Unit Name: LONG JUMP U1

FMU ID: 45470



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

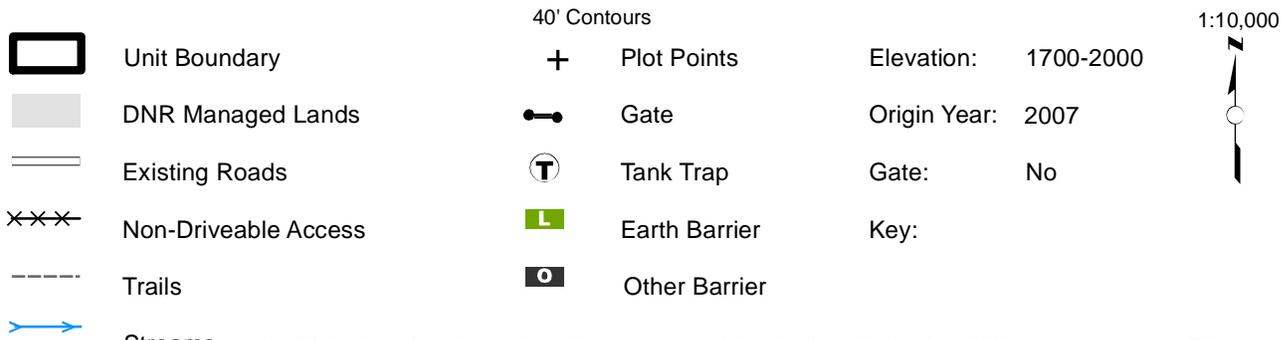
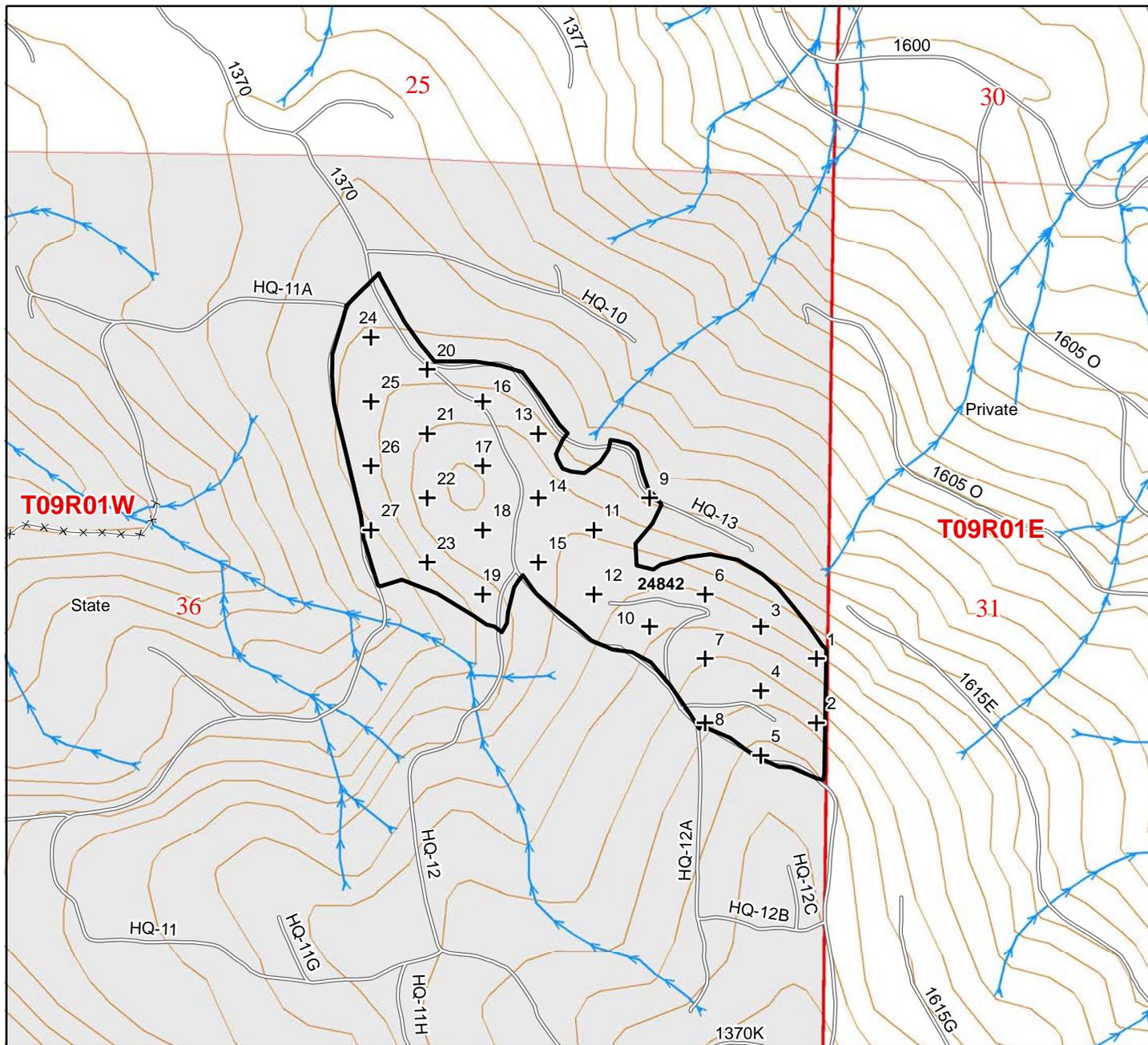
Work Unit: St Helens

Treatment Acres: 66

Unit No. 45

Unit Name: HONDO

FMU ID: 24842



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

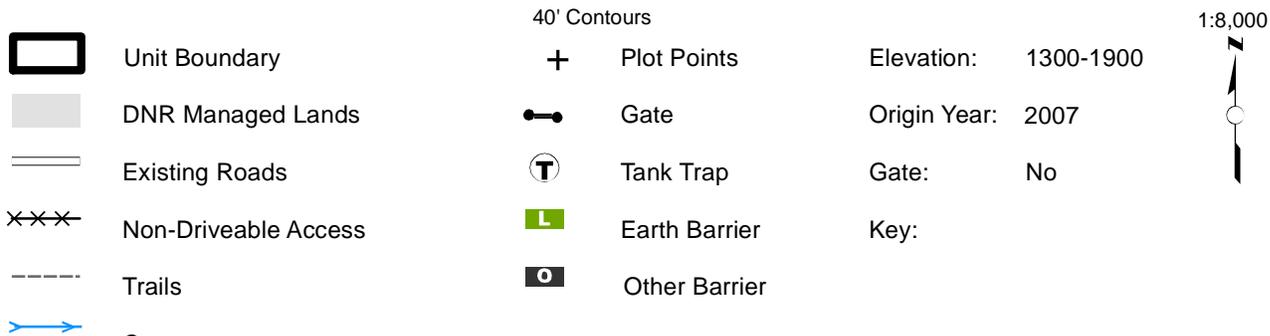
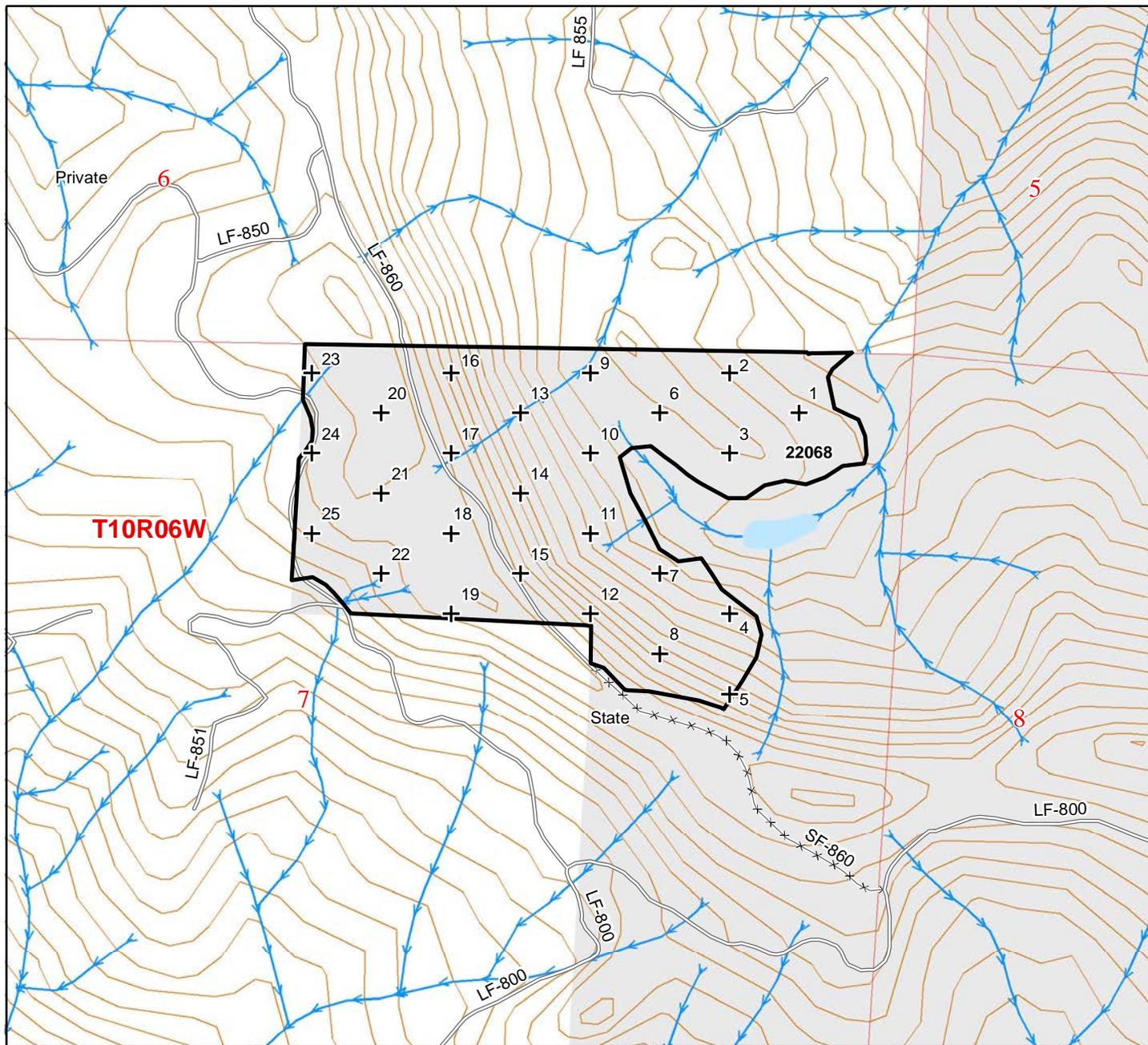
Work Unit: St Helens

Treatment Acres: 58

Unit No. 46

Unit Name: GONE WEST U3

FMU ID: 22068



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

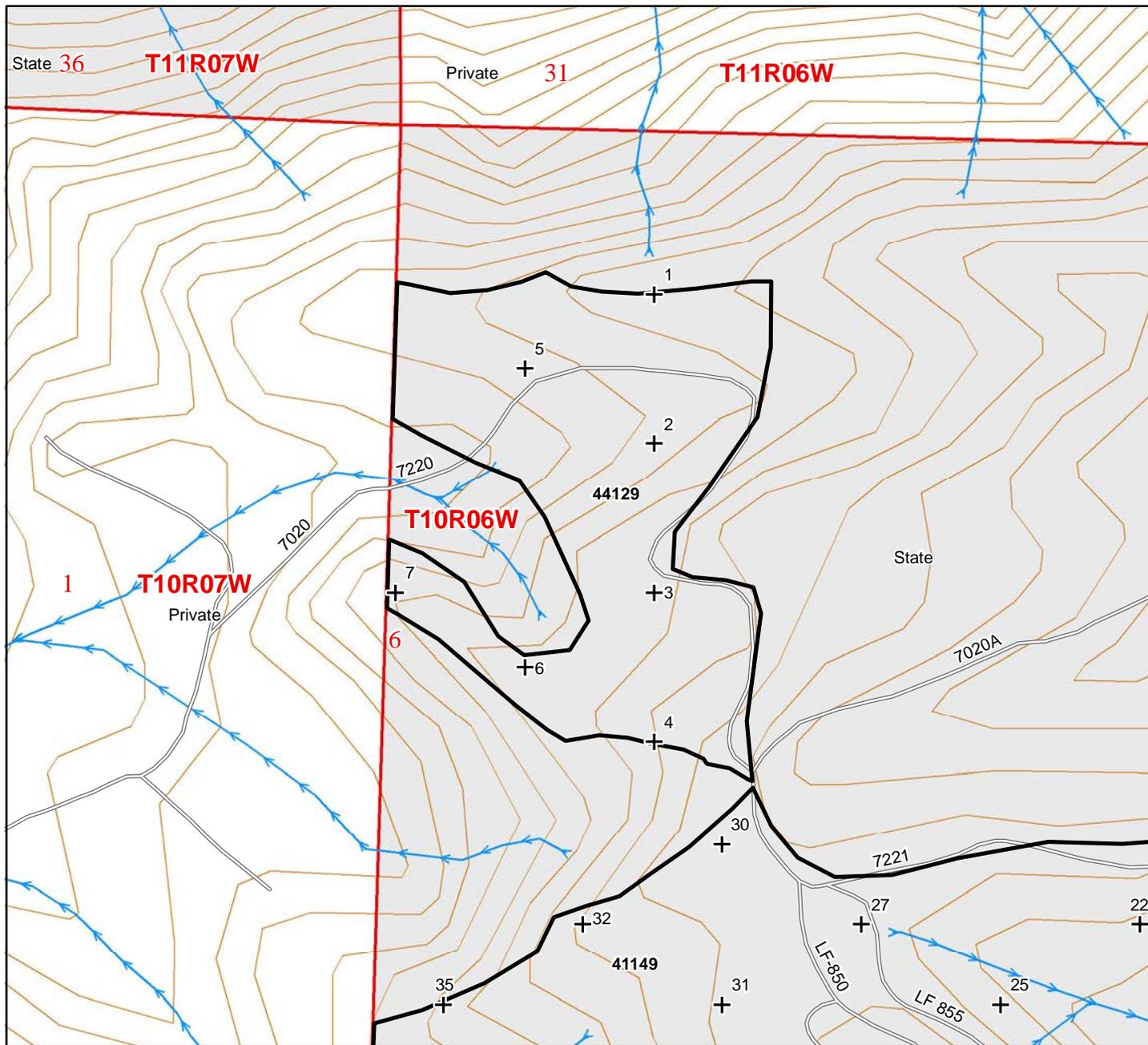
Work Unit: St Helens

Treatment Acres: 13

Unit No. 47

Unit Name: GONE WEST U2

FMU ID: 44129



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

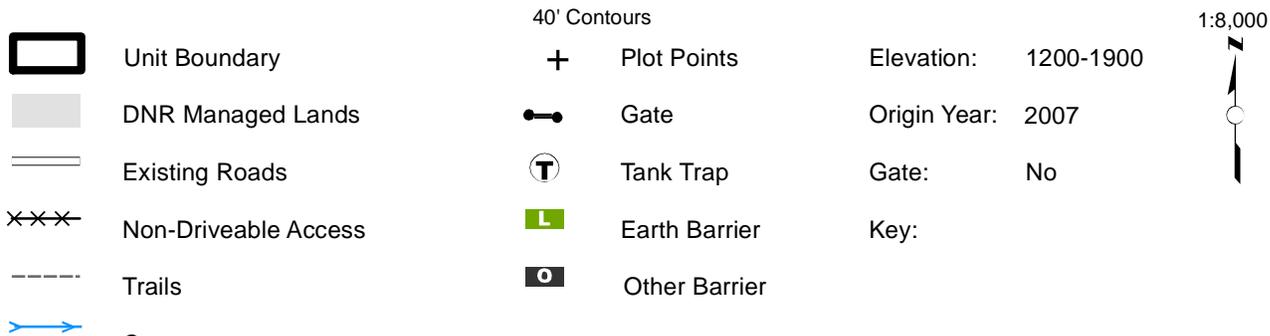
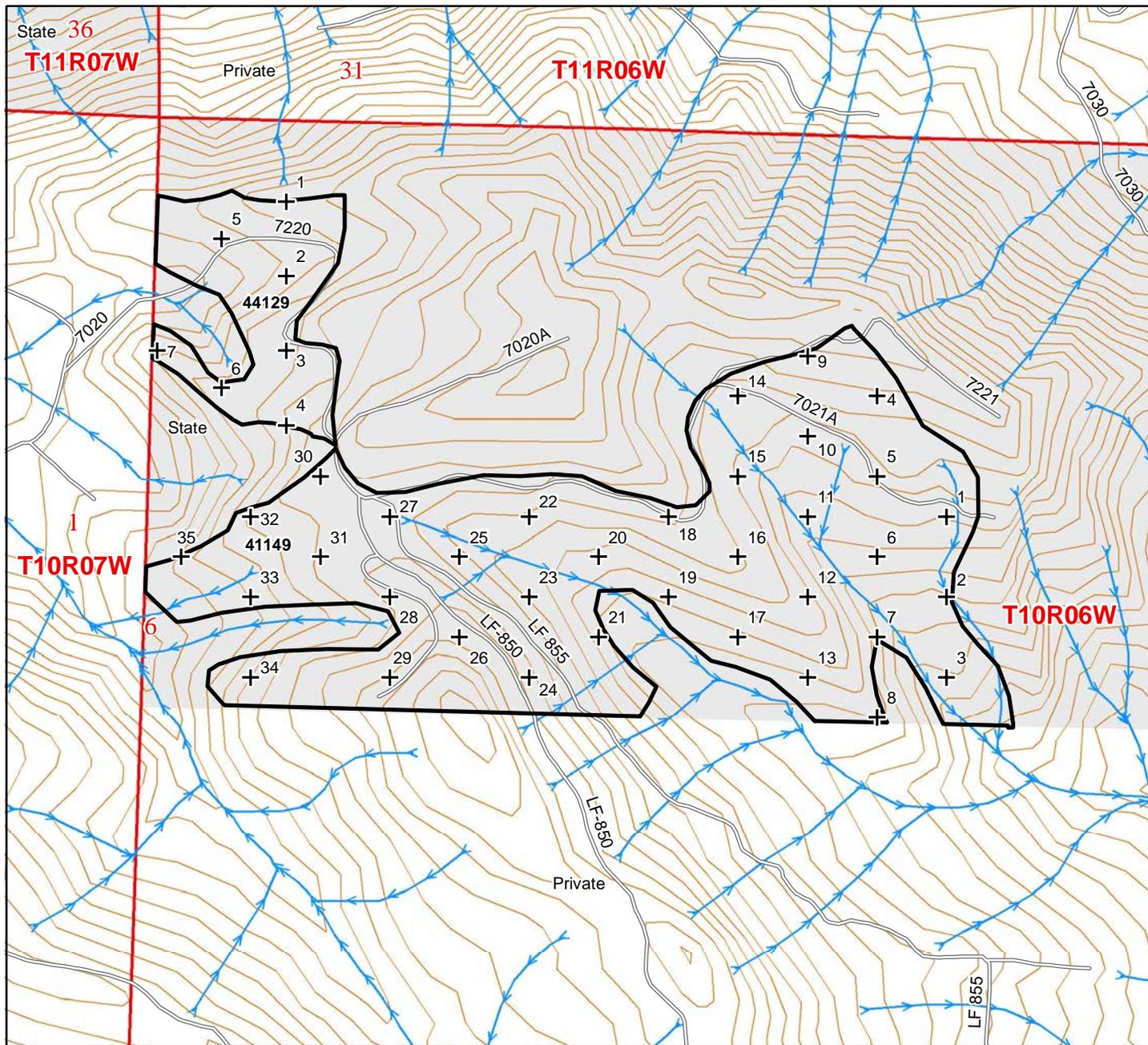
Work Unit: St Helens

Treatment Acres: 80

Unit No. 48

Unit Name: GONE WEST U1

FMU ID: 41149



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

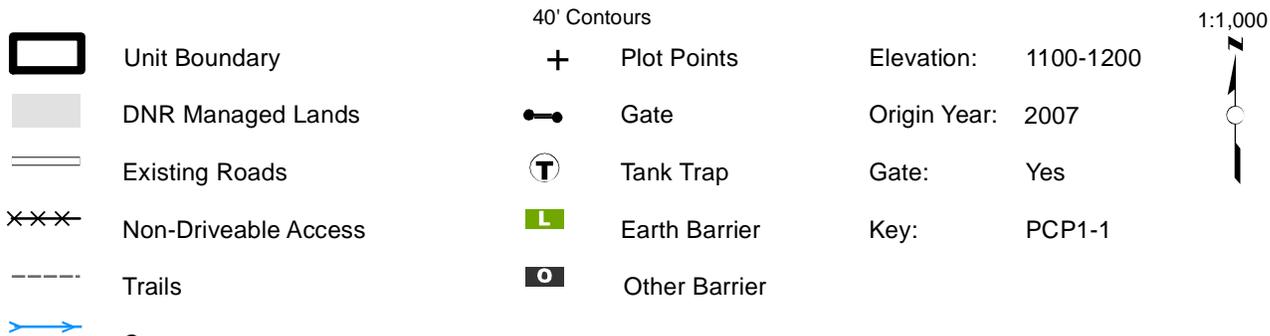
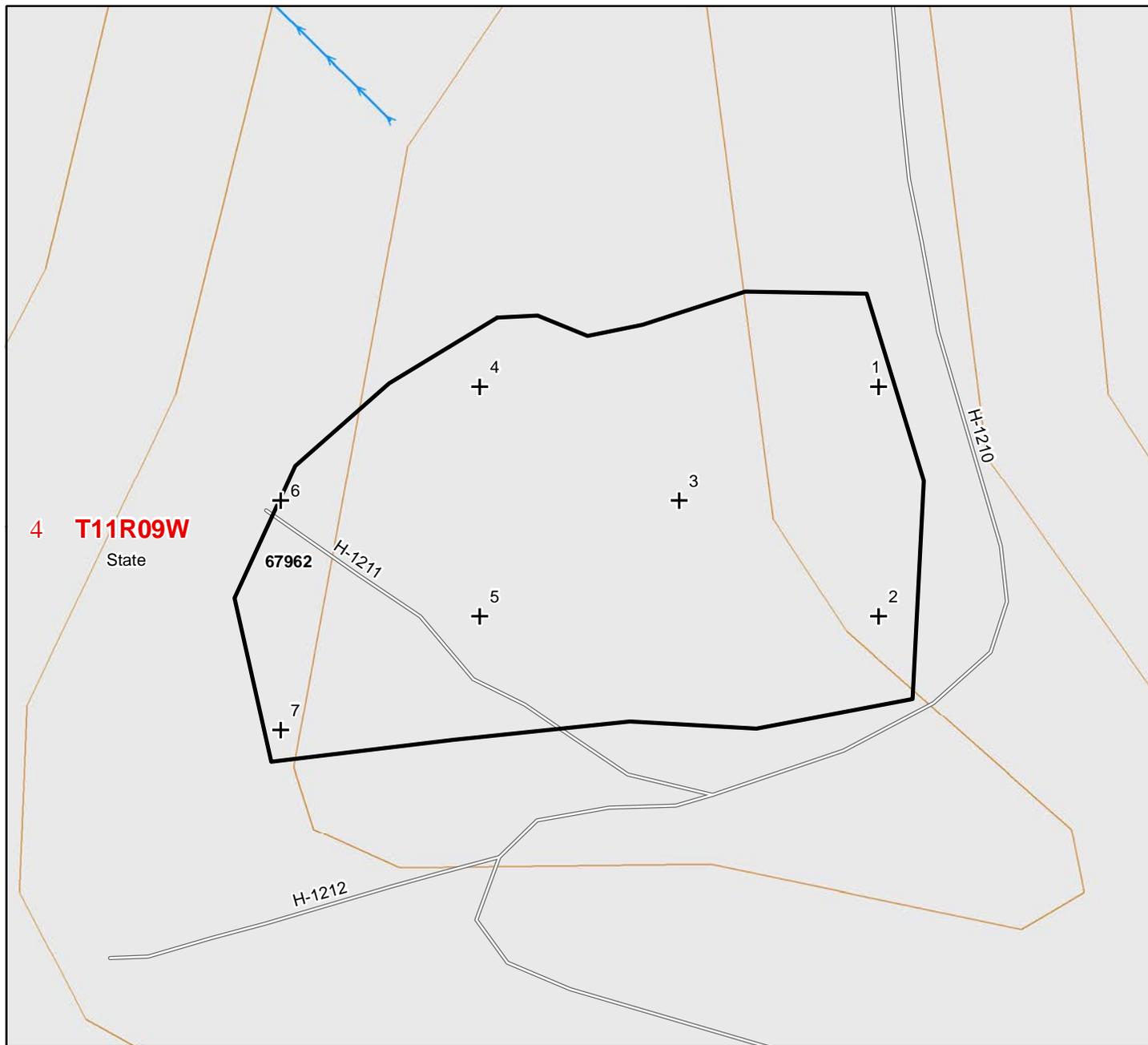
Work Unit: St Helens

Treatment Acres: 2

Unit No. 49

Unit Name: FOUR ACRE

FMU ID: 67962



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

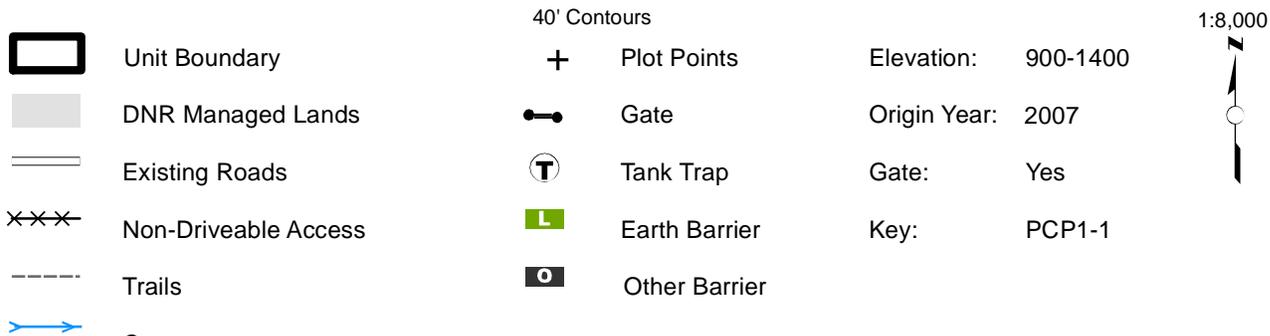
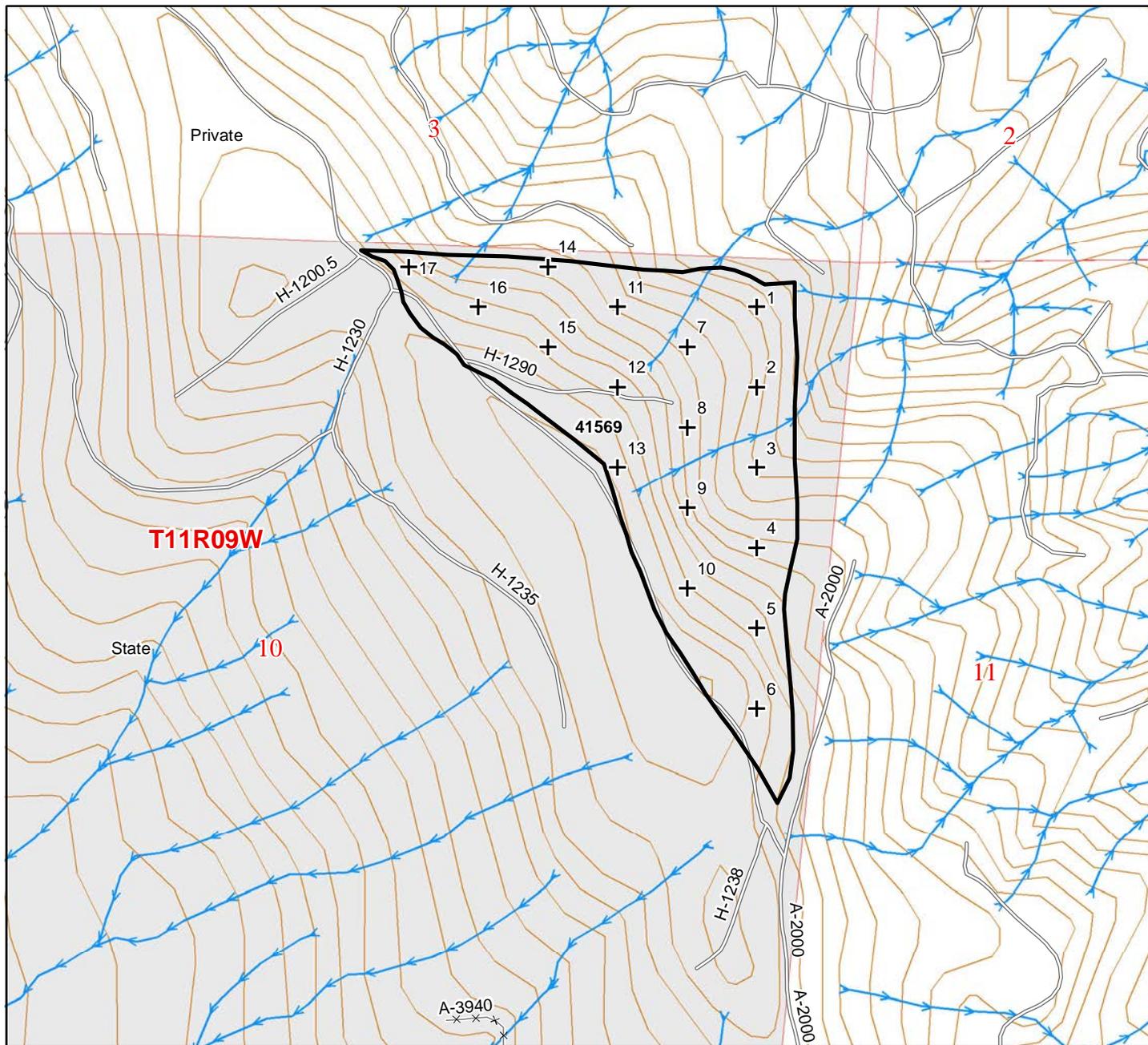
Work Unit: St Helens

Treatment Acres: 44

Unit No. 50

Unit Name: FIRST TIME U-2

FMU ID: 41569



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

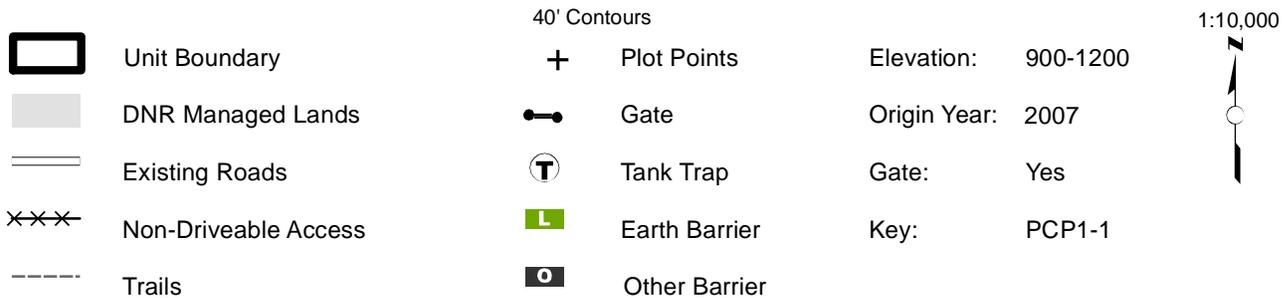
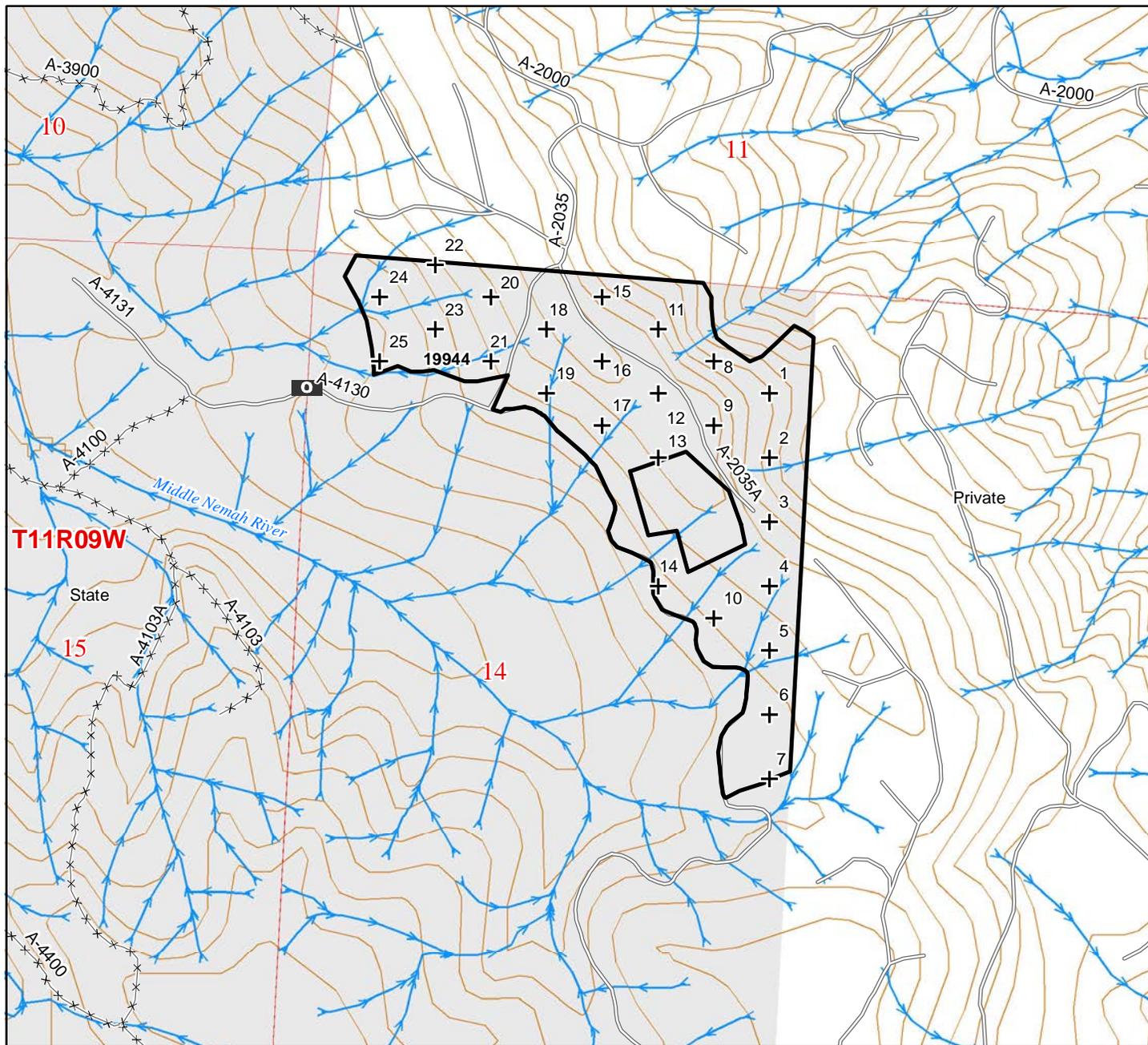
Work Unit: St Helens

Treatment Acres: 64

Unit No. 51

Unit Name: FIRST TIME U-1

FMU ID: 19944



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

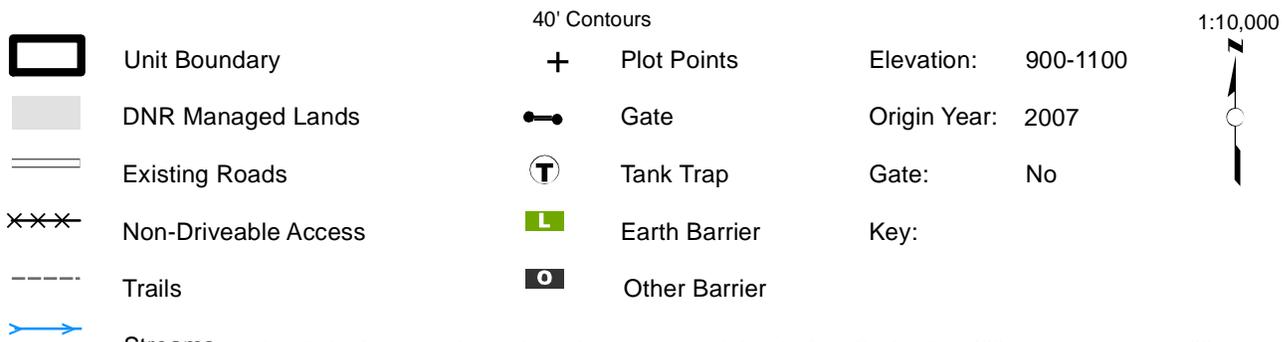
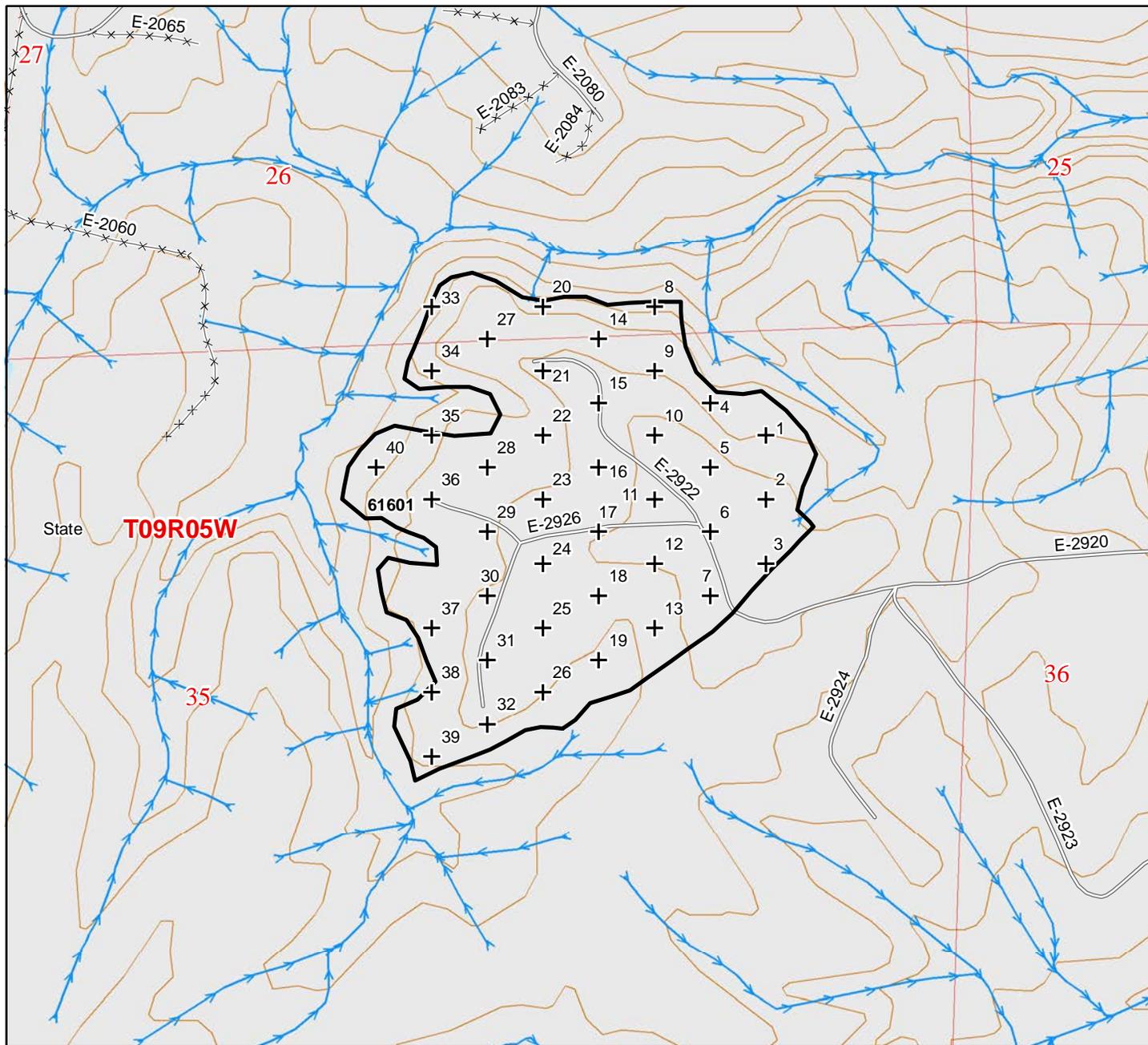
Work Unit: St Helens

Treatment Acres: 98

Unit No. 52

Unit Name: DERAILLEUR

FMU ID: 61601



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

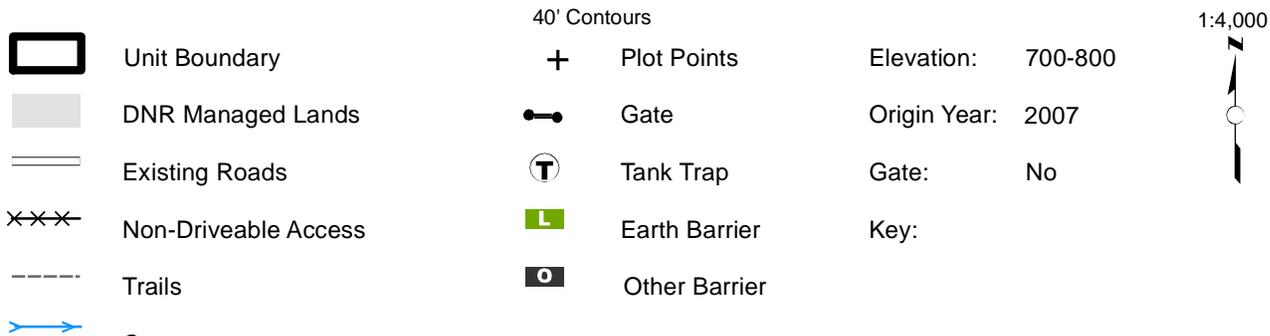
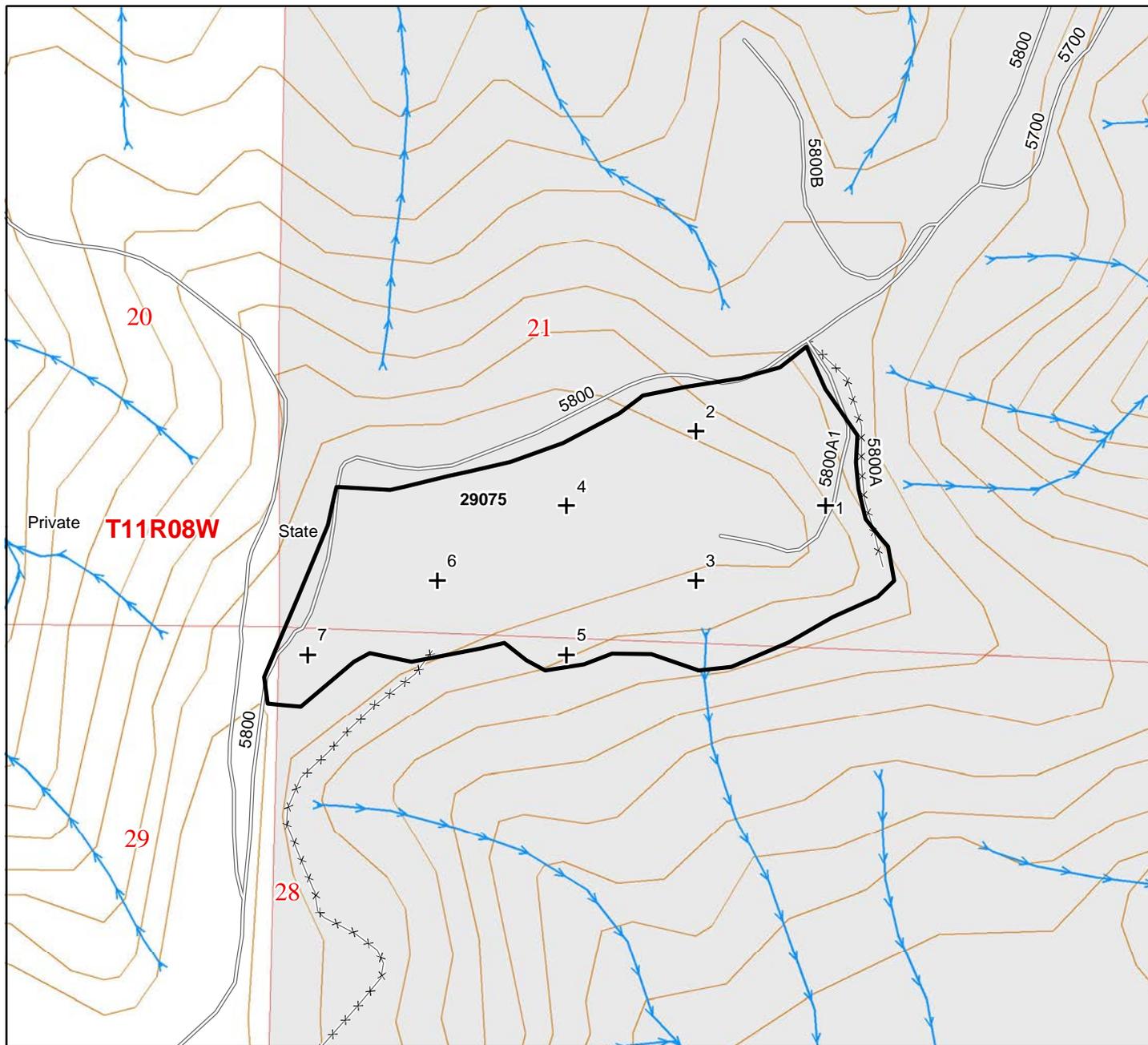
Work Unit: St Helens

Treatment Acres: 14

Unit No. 53

Unit Name: C-DORY

FMU ID: 29075



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

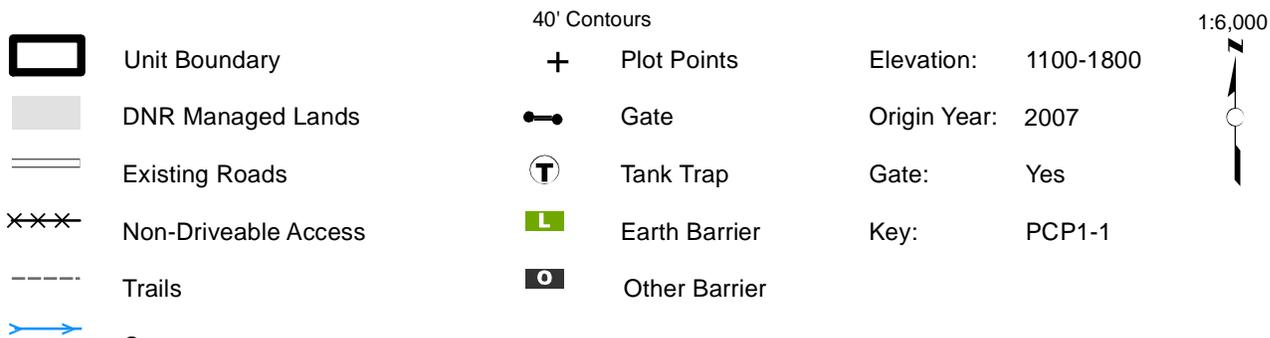
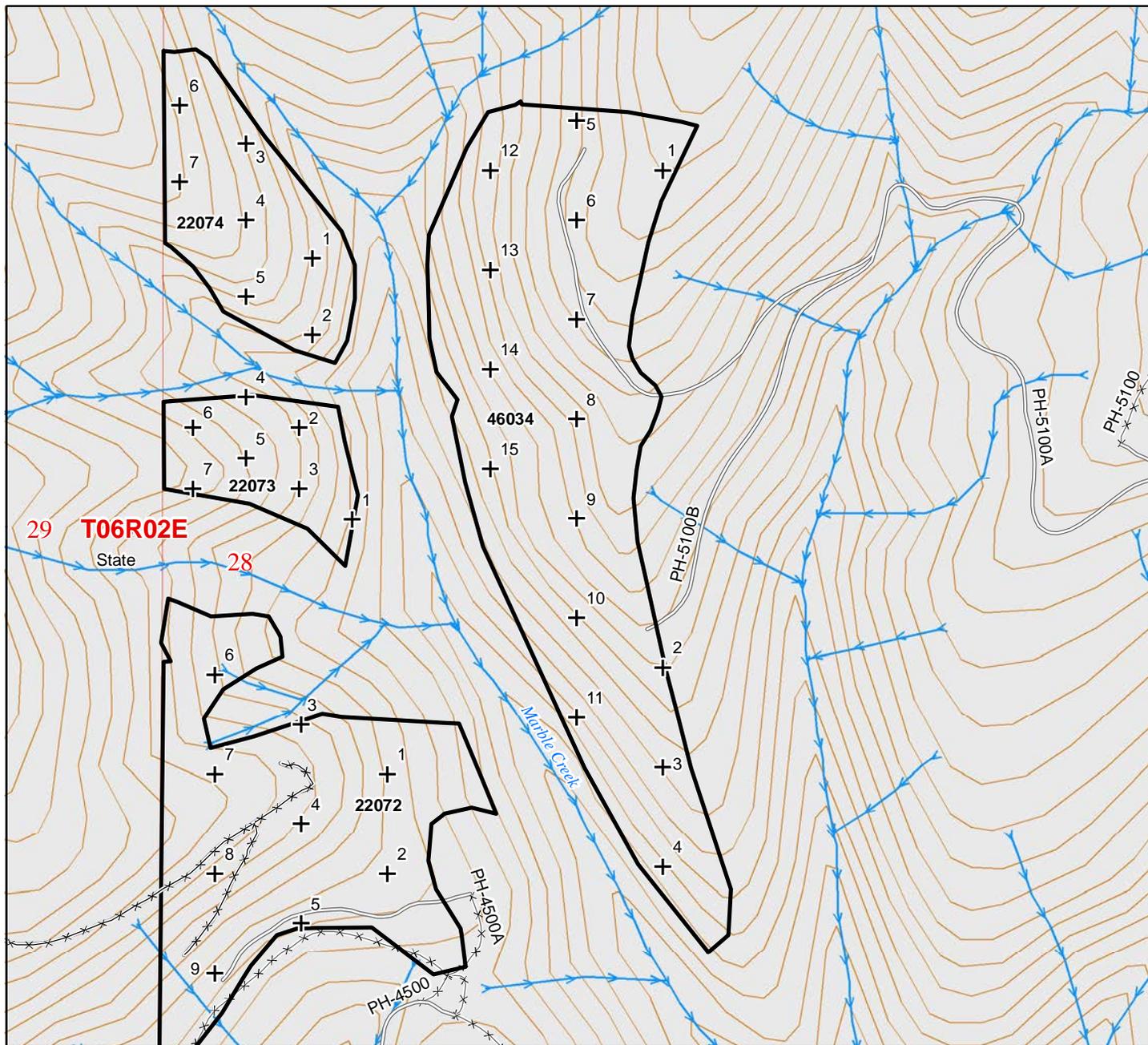
Work Unit: St Helens

Treatment Acres: 32

Unit No. 54

Unit Name: CAT EYE U4

FMU ID: 46034



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

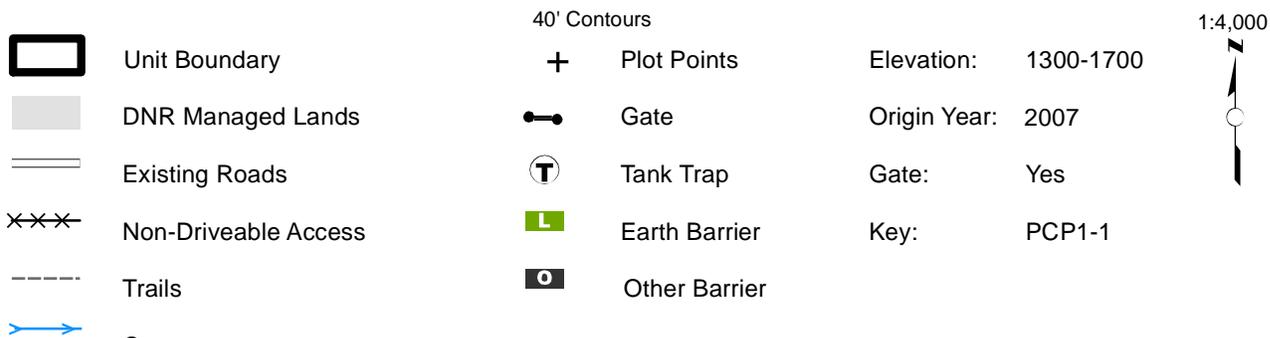
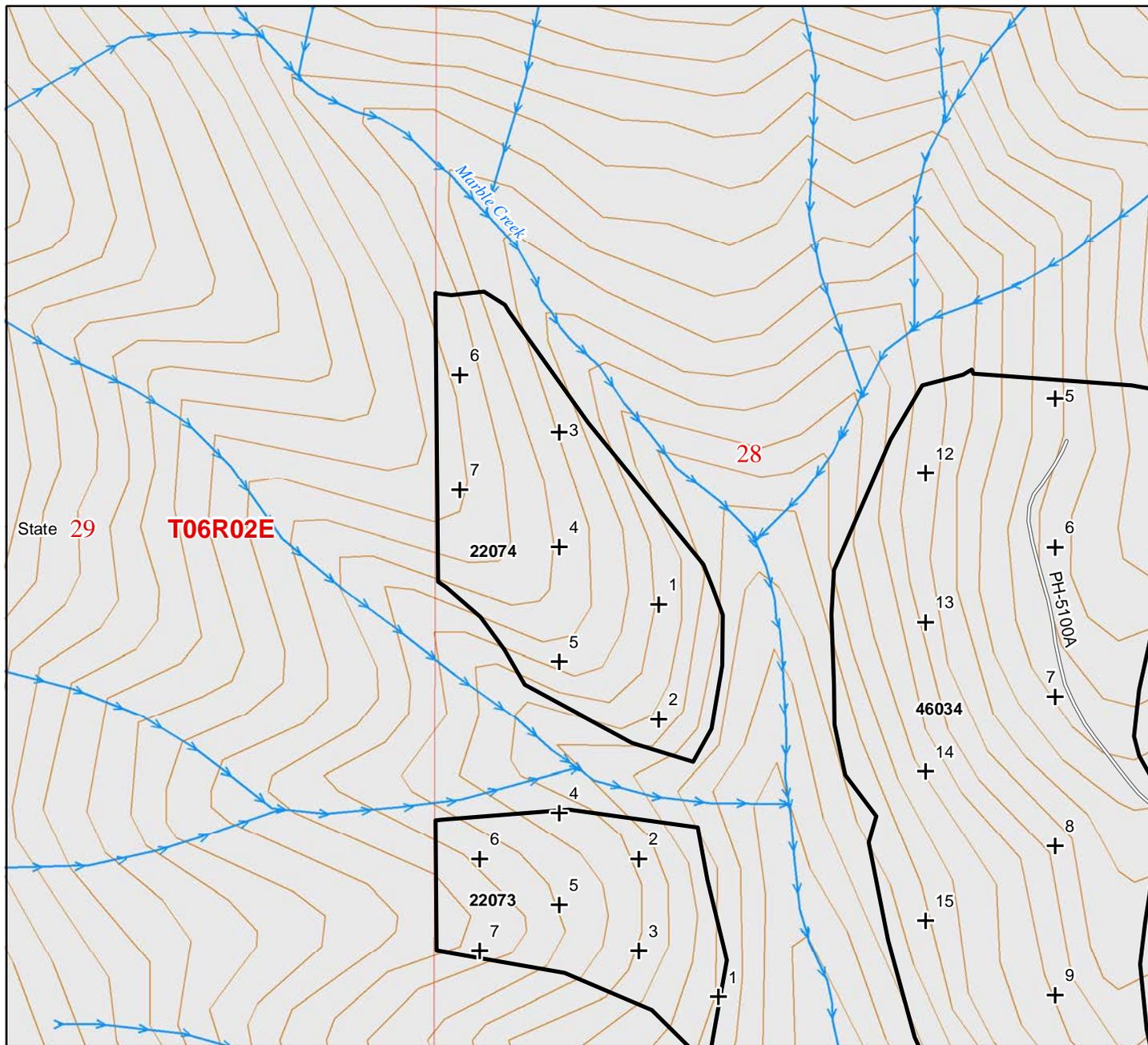
Work Unit: St Helens

Treatment Acres: 9

Unit No. 55

Unit Name: CAT EYE U3

FMU ID: 22074



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

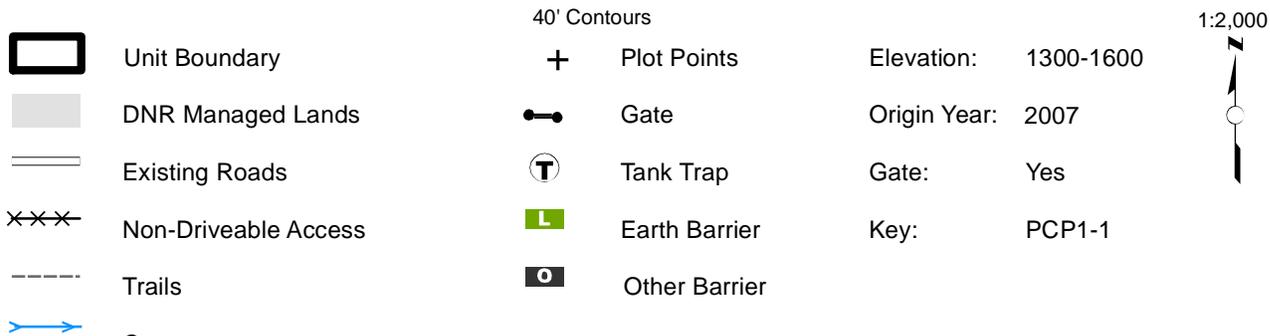
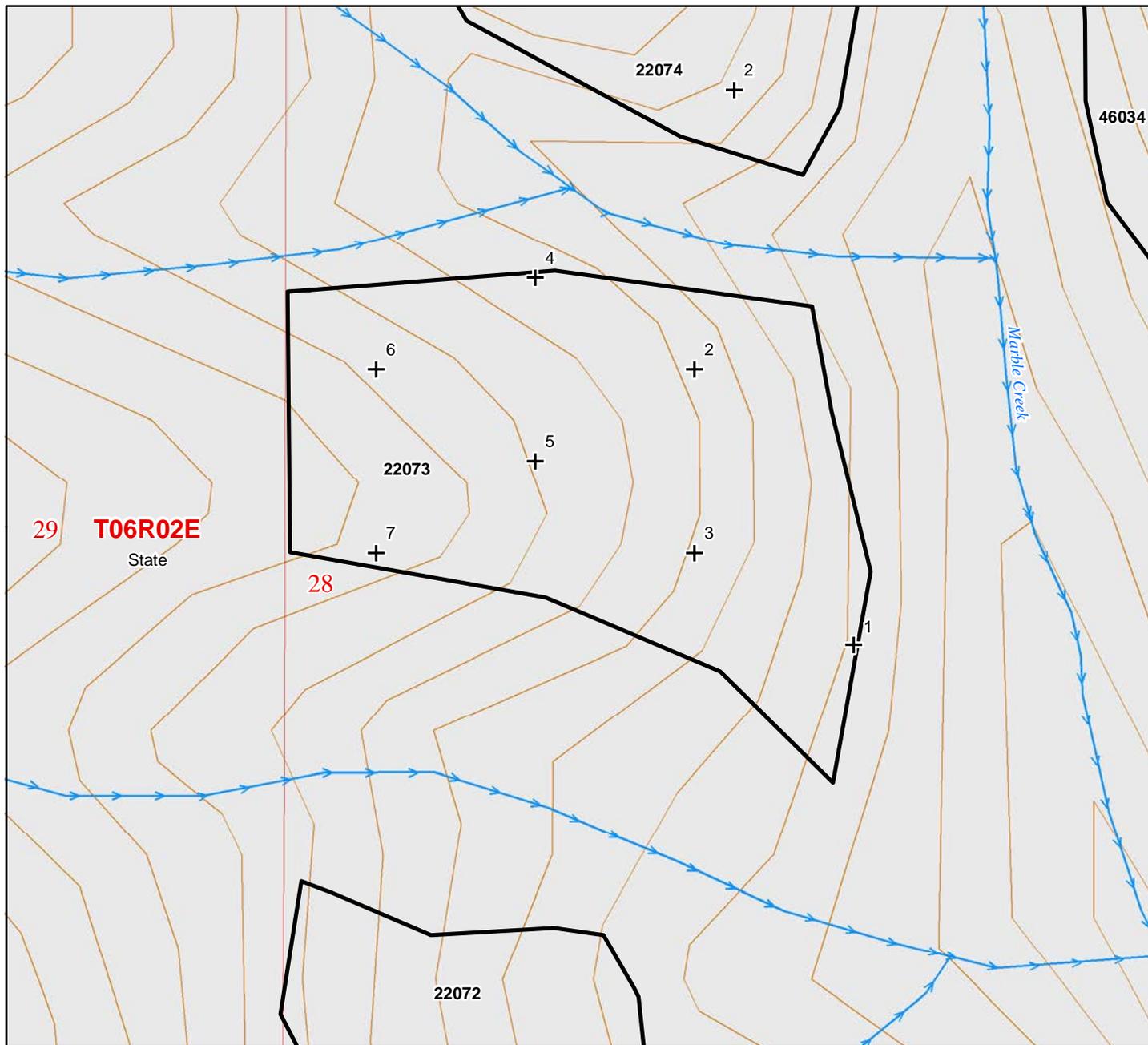
Work Unit: St Helens

Treatment Acres: 5

Unit No. 56

Unit Name: CAT EYE U2

FMU ID: 22073



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

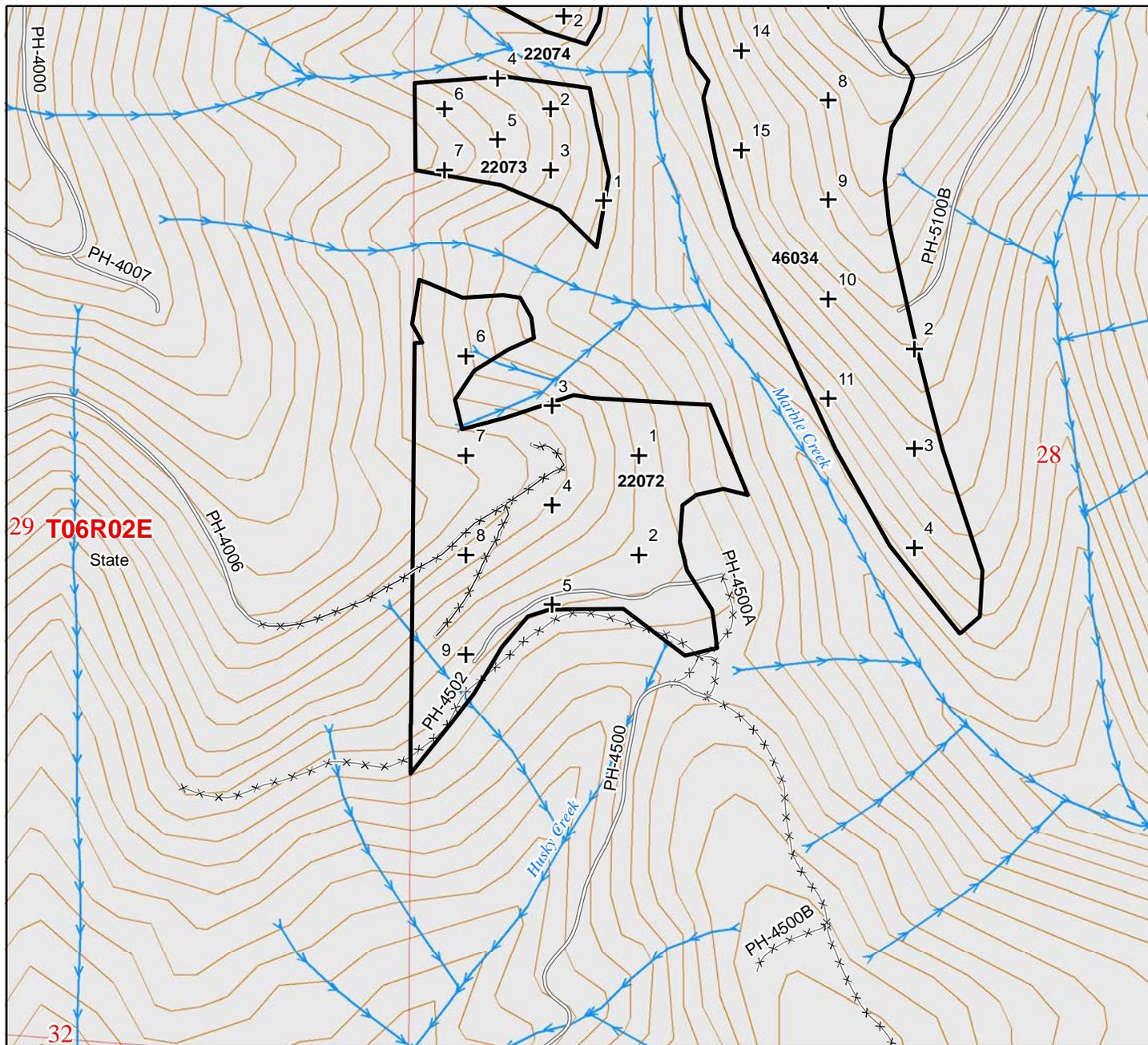
Work Unit: St Helens

Treatment Acres: 20

Unit No. 57

Unit Name: CAT EYE U1

FMU ID: 22072



Unit Boundary



DNR Managed Lands



Existing Roads



Non-Driveable Access



Trails



Streams

40' Contours



Plot Points



Gate



Tank Trap



Earth Barrier



Other Barrier

Elevation: 1200-1600

Origin Year: 2007

Gate: Yes

Key: PCP1-1

1:6,000



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

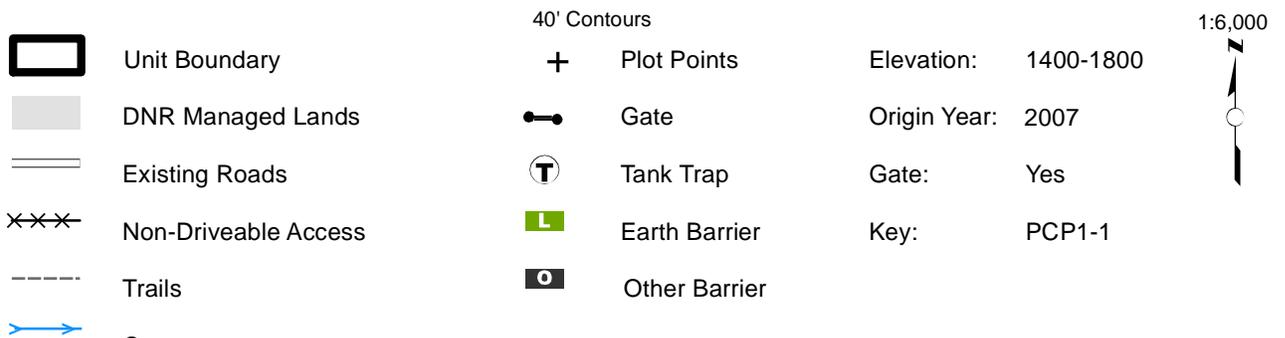
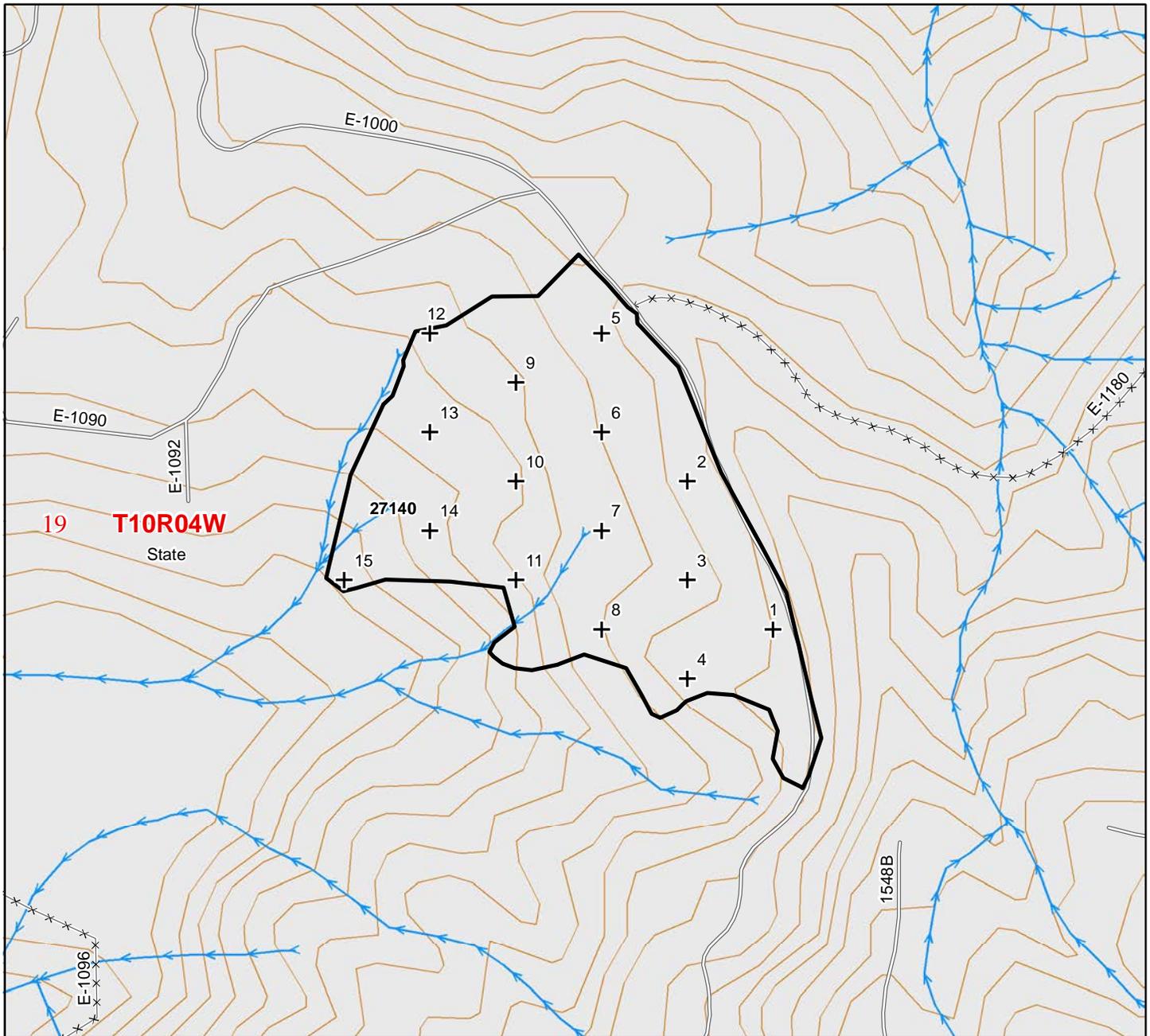
Work Unit: St Helens

Treatment Acres: 32

Unit No. 58

Unit Name: ADVERSE U1

FMU ID: 27140



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

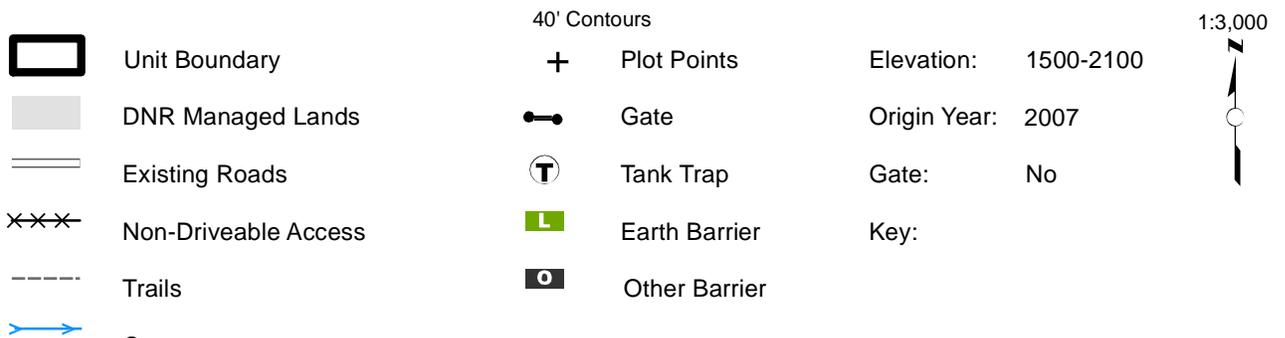
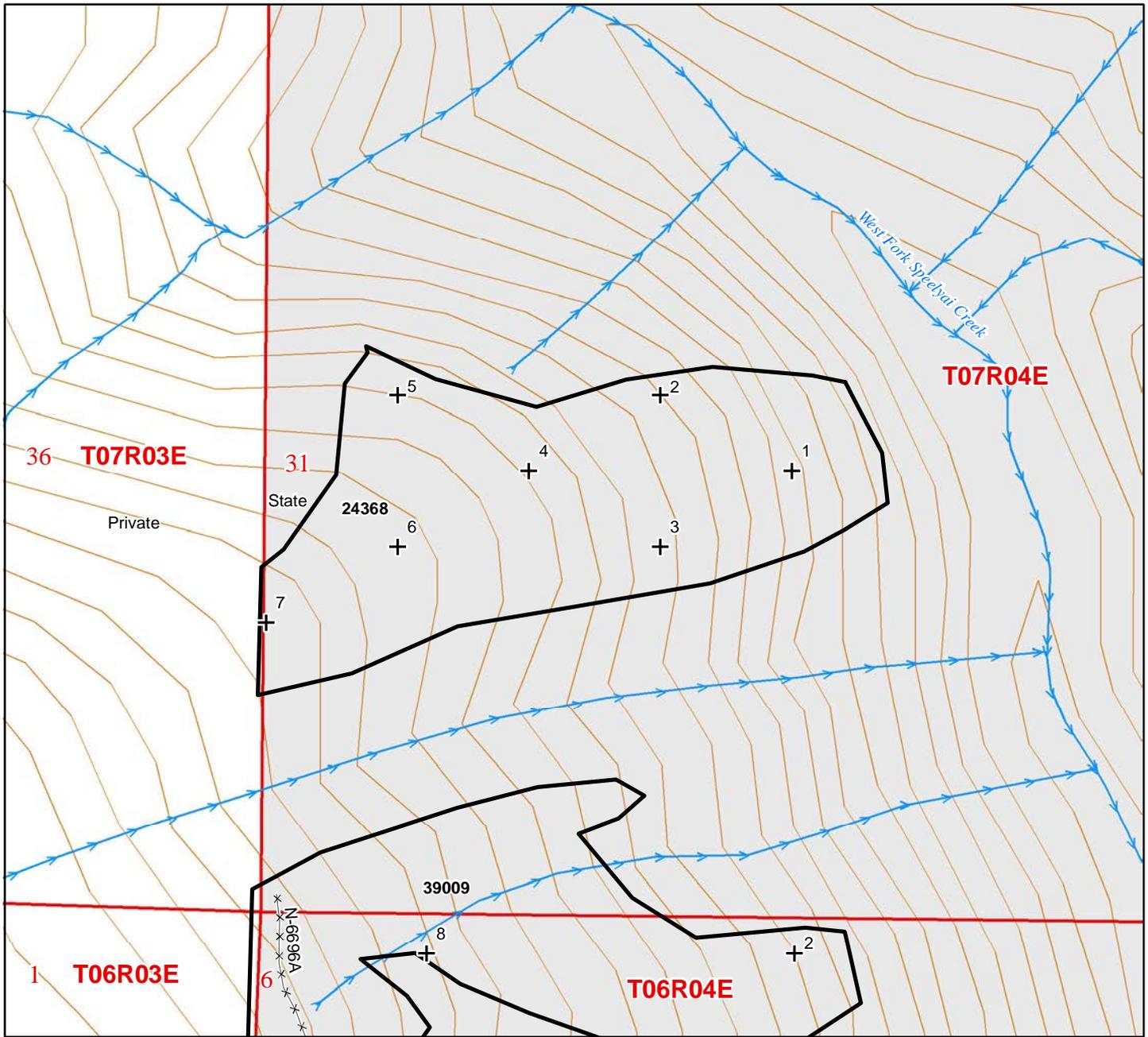
Work Unit: Yacolt

Treatment Acres: 8

Unit No. 59

Unit Name: WATERSHIP DOWN U3

FMU ID: 24368



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

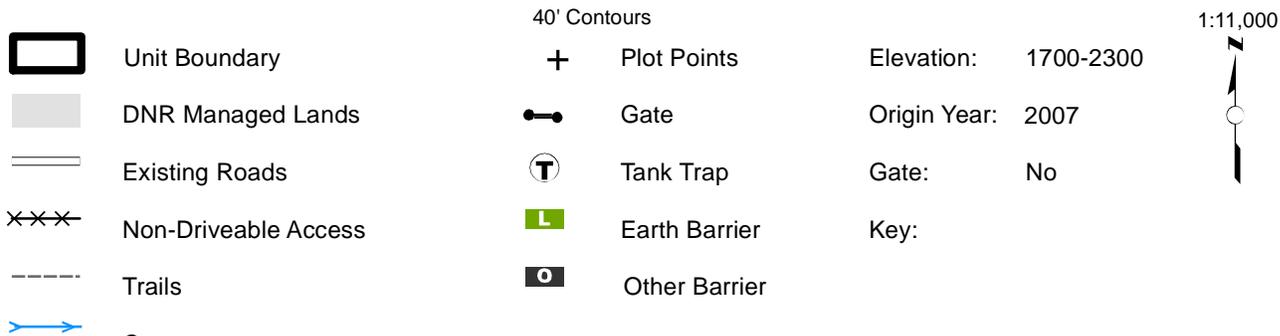
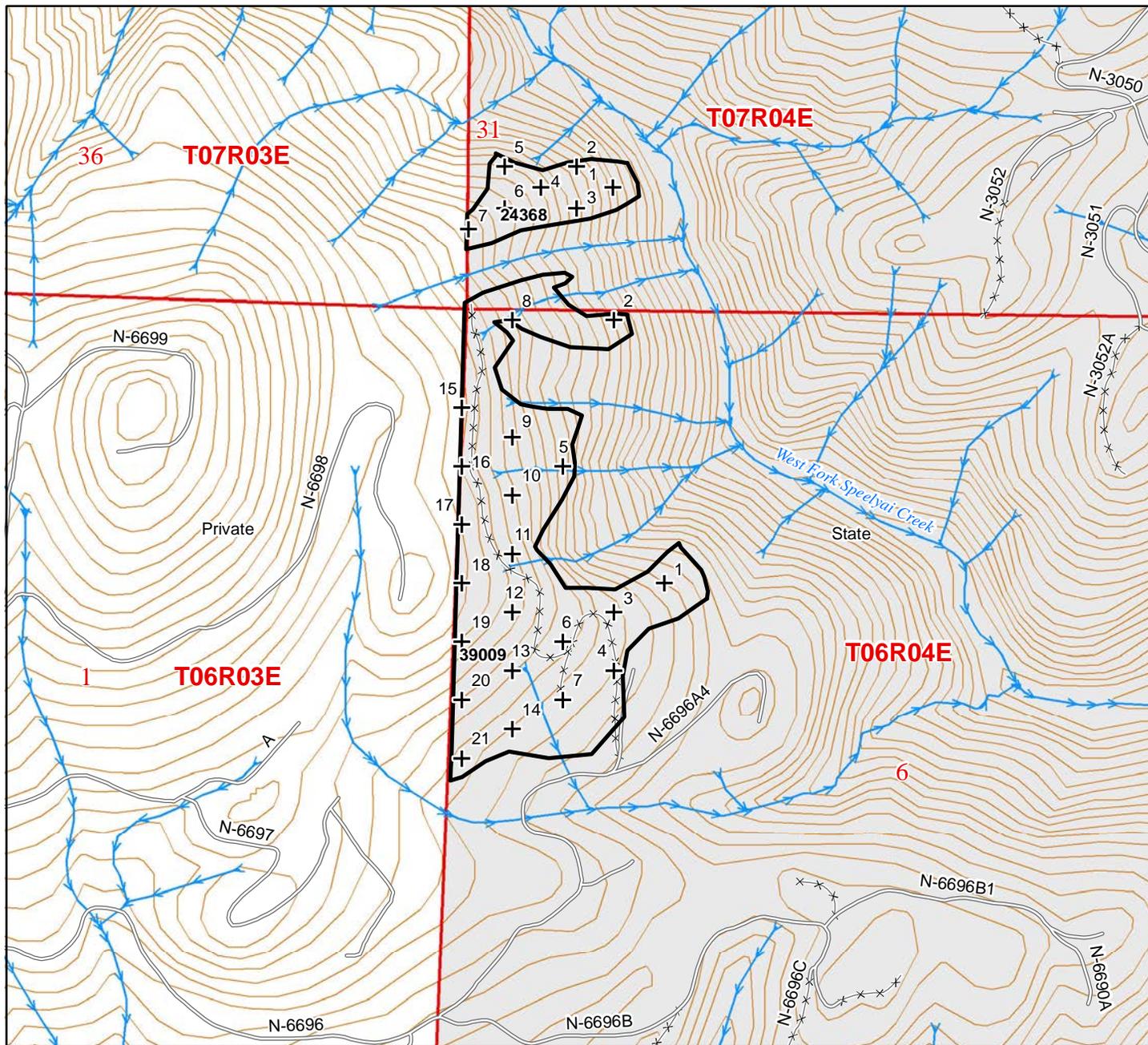
Work Unit: Yacolt

Treatment Acres: 51

Unit No. 60

Unit Name: WATERSHIP DOWN U2

FMU ID: 39009



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

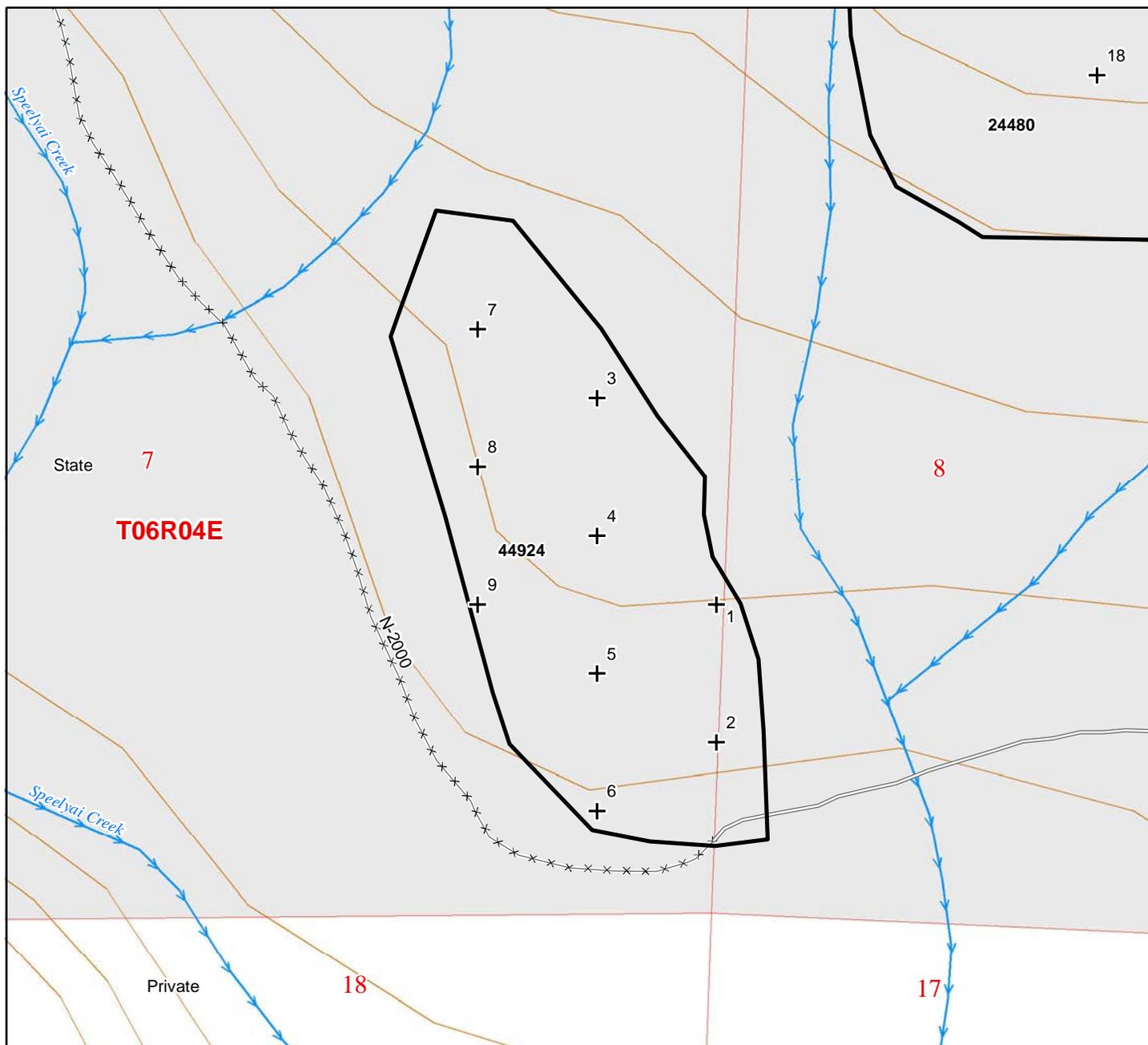
Work Unit: Yacolt

Treatment Acres: 4

Unit No. 61

Unit Name: TOLLGATE U3

FMU ID: 44924



Unit Boundary



DNR Managed Lands



Existing Roads



Non-Driveable Access



Trails



Streams

40' Contours



Plot Points



Gate



Tank Trap



Earth Barrier



Other Barrier

Elevation: 600-700

Origin Year: 2007

Gate: Yes

Key: PCP1-1

1:2,000



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

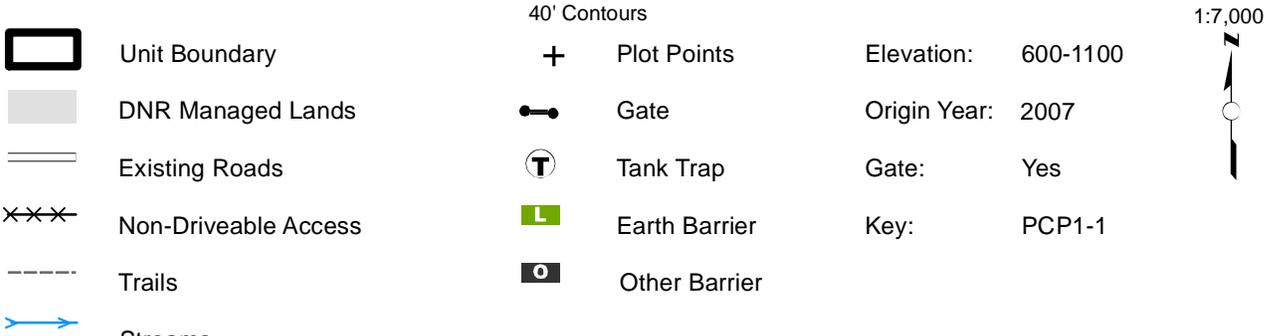
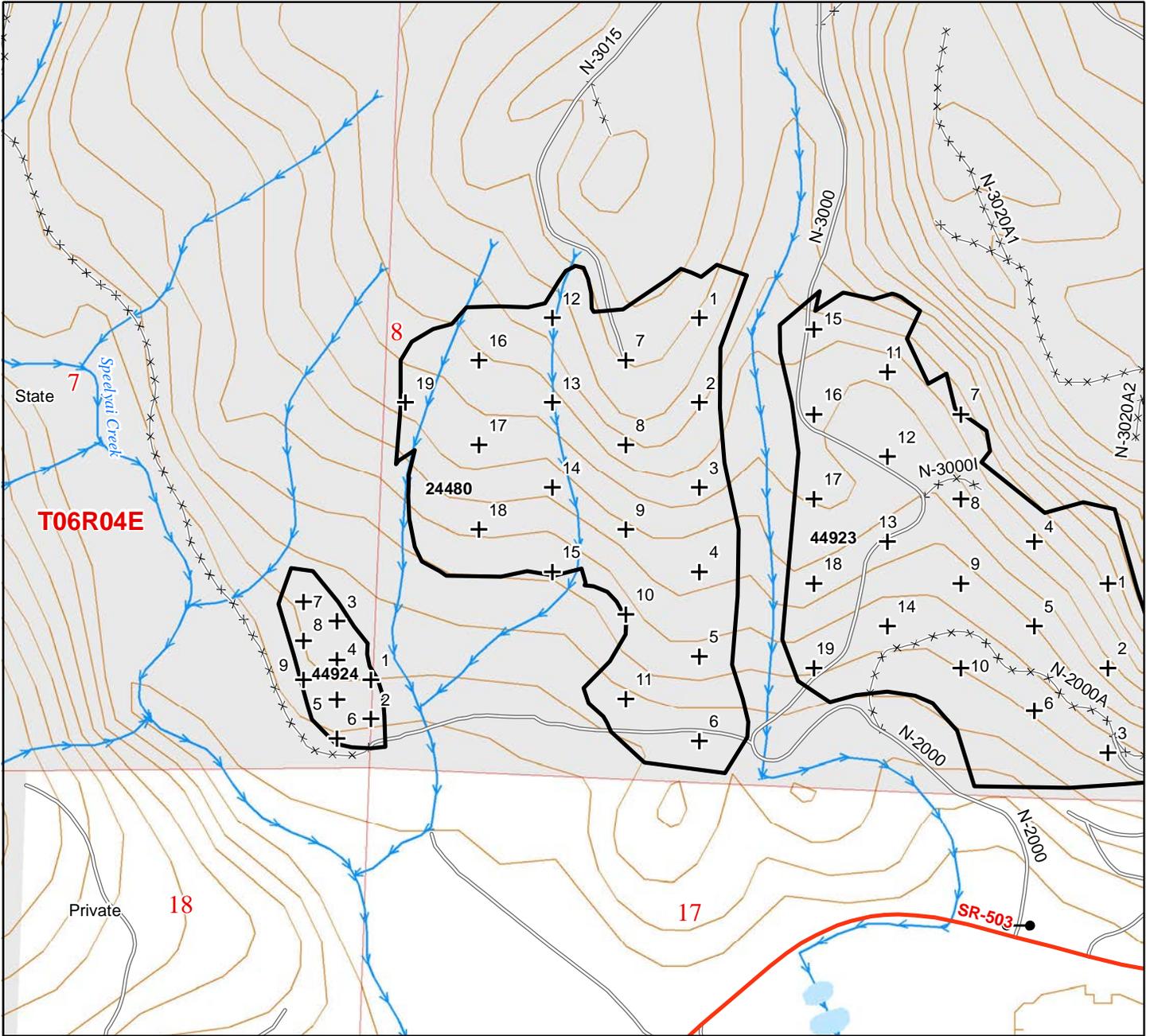
Work Unit: Yacolt

Treatment Acres: 38

Unit No. 62

Unit Name: TOLLGATE U2

FMU ID: 24480



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

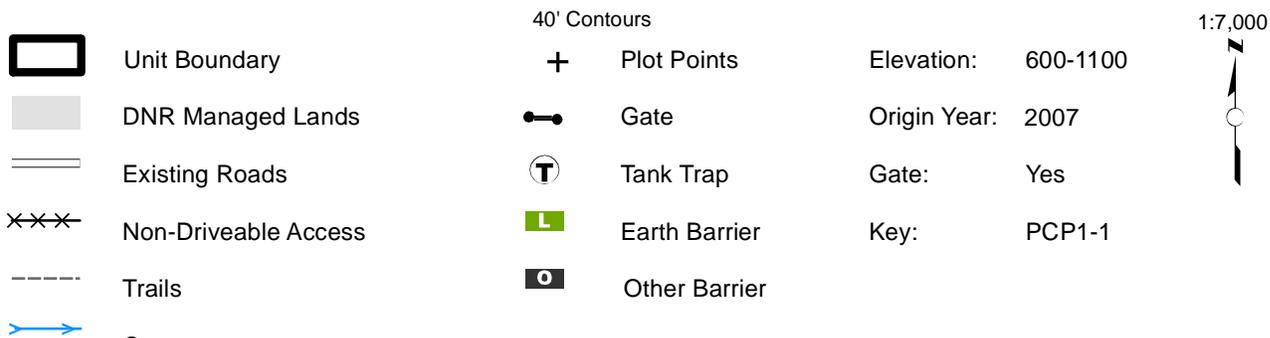
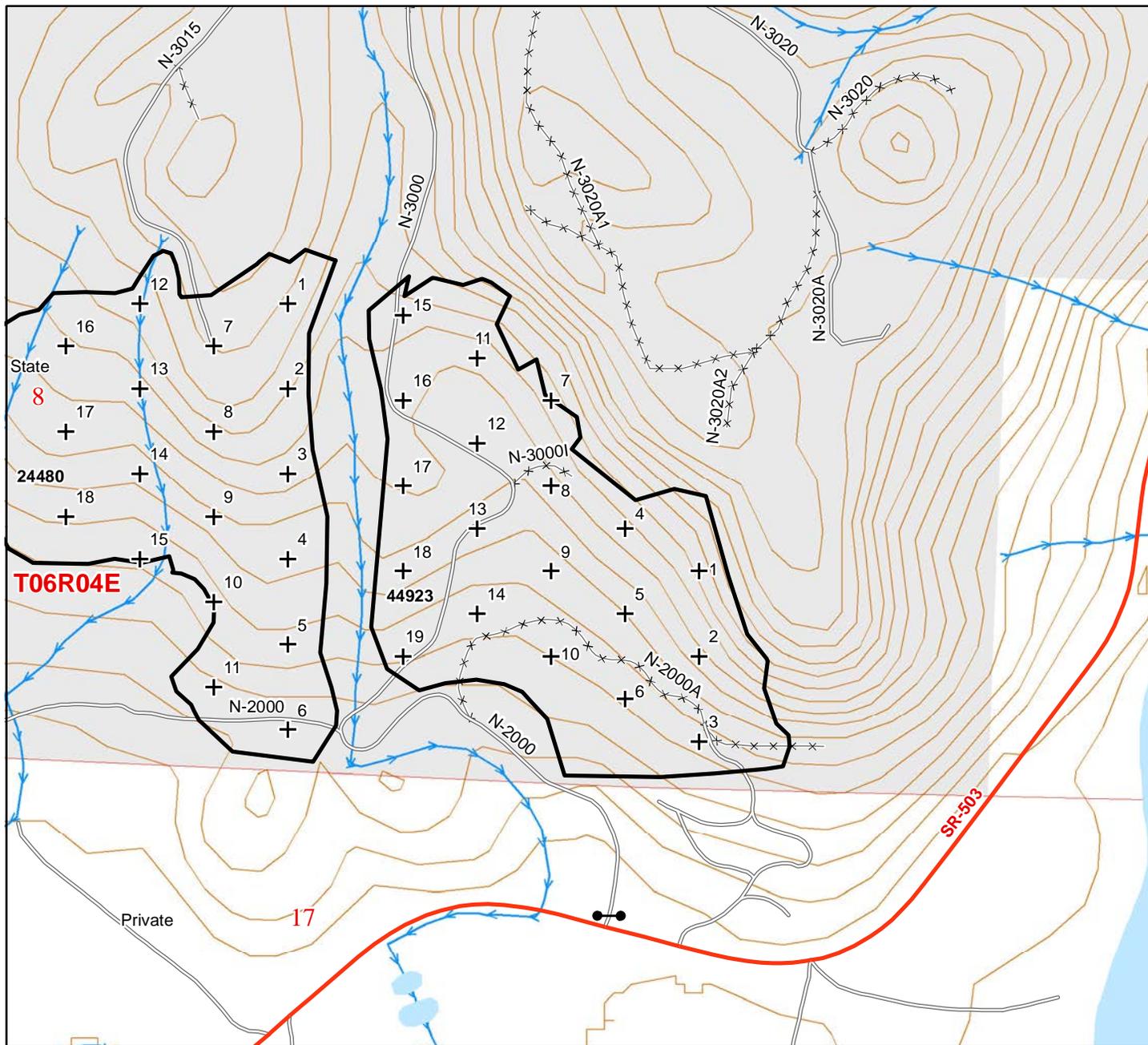
Work Unit: Yacolt

Treatment Acres: 41

Unit No. 63

Unit Name: TOLLGATE U1

FMU ID: 44923



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

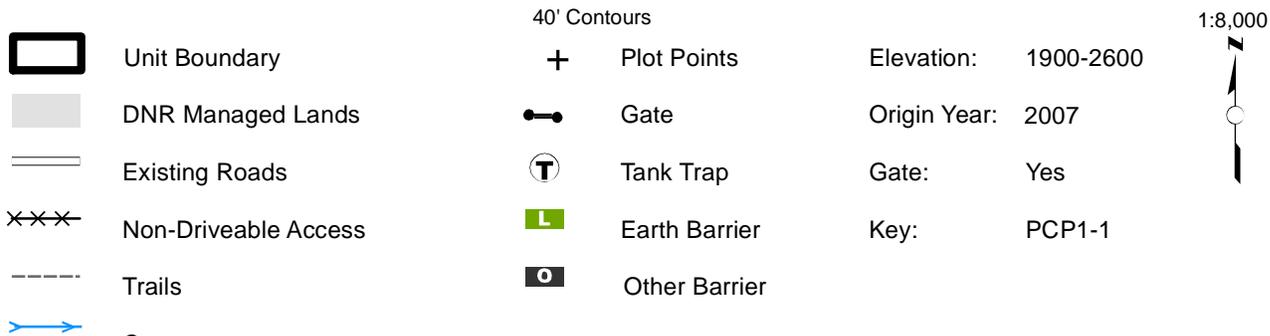
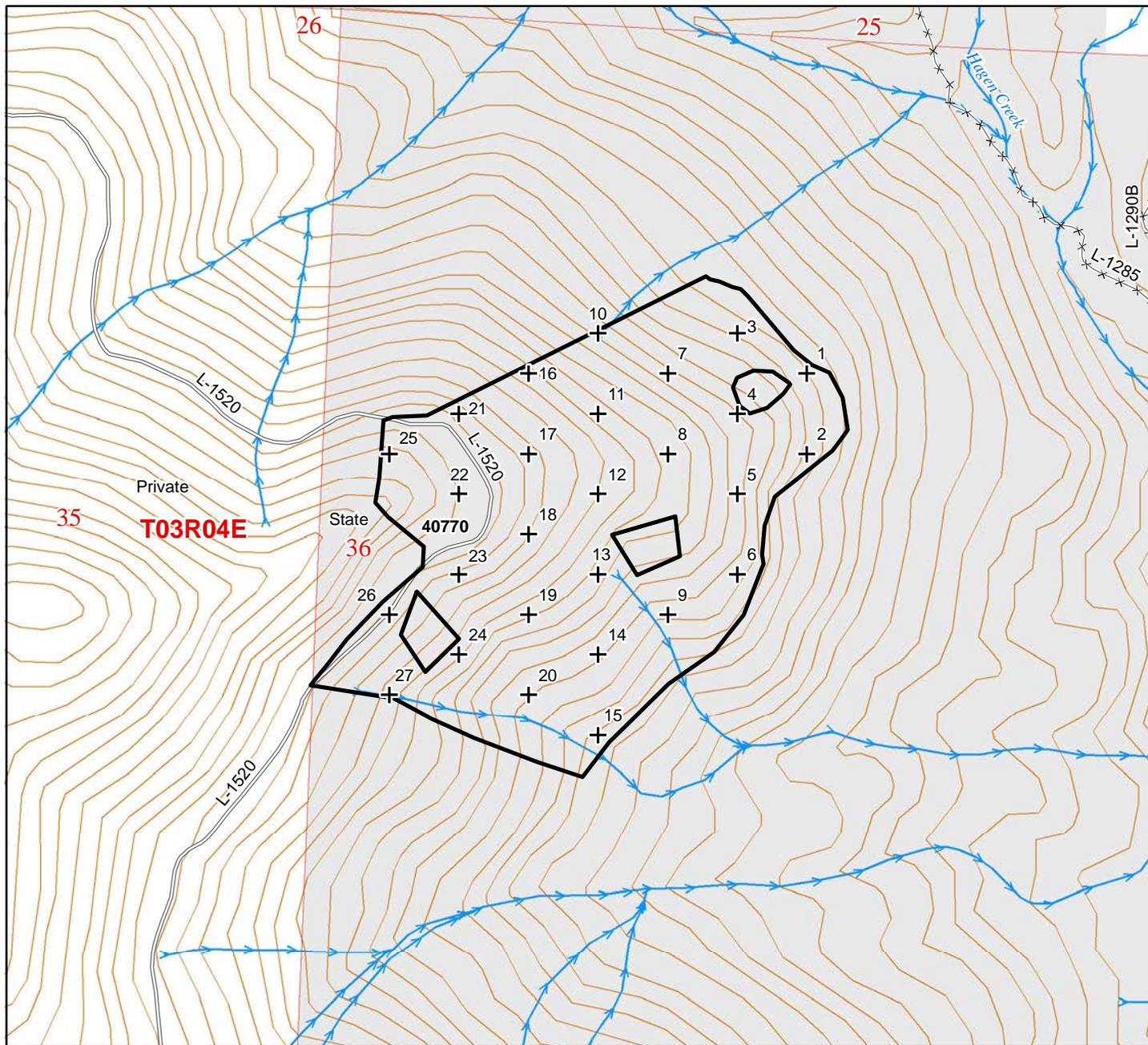
Work Unit: Yacolt

Treatment Acres: 63

Unit No. 64

Unit Name: SILVERADO U2

FMU ID: 40770



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

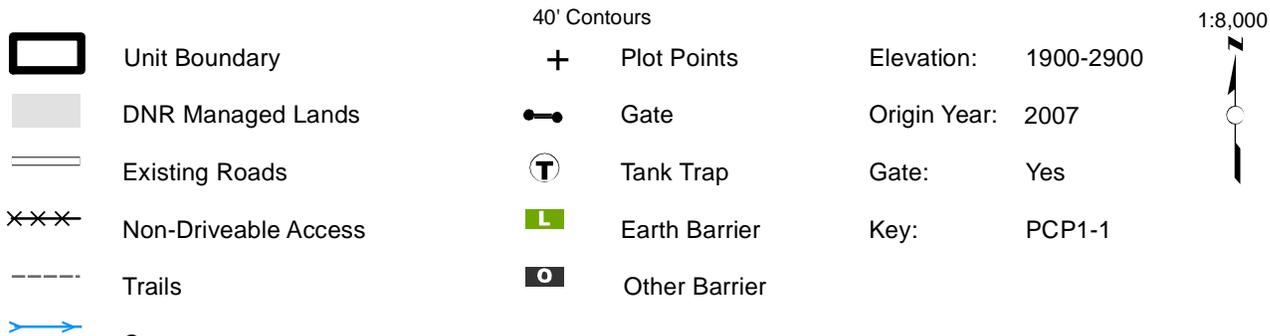
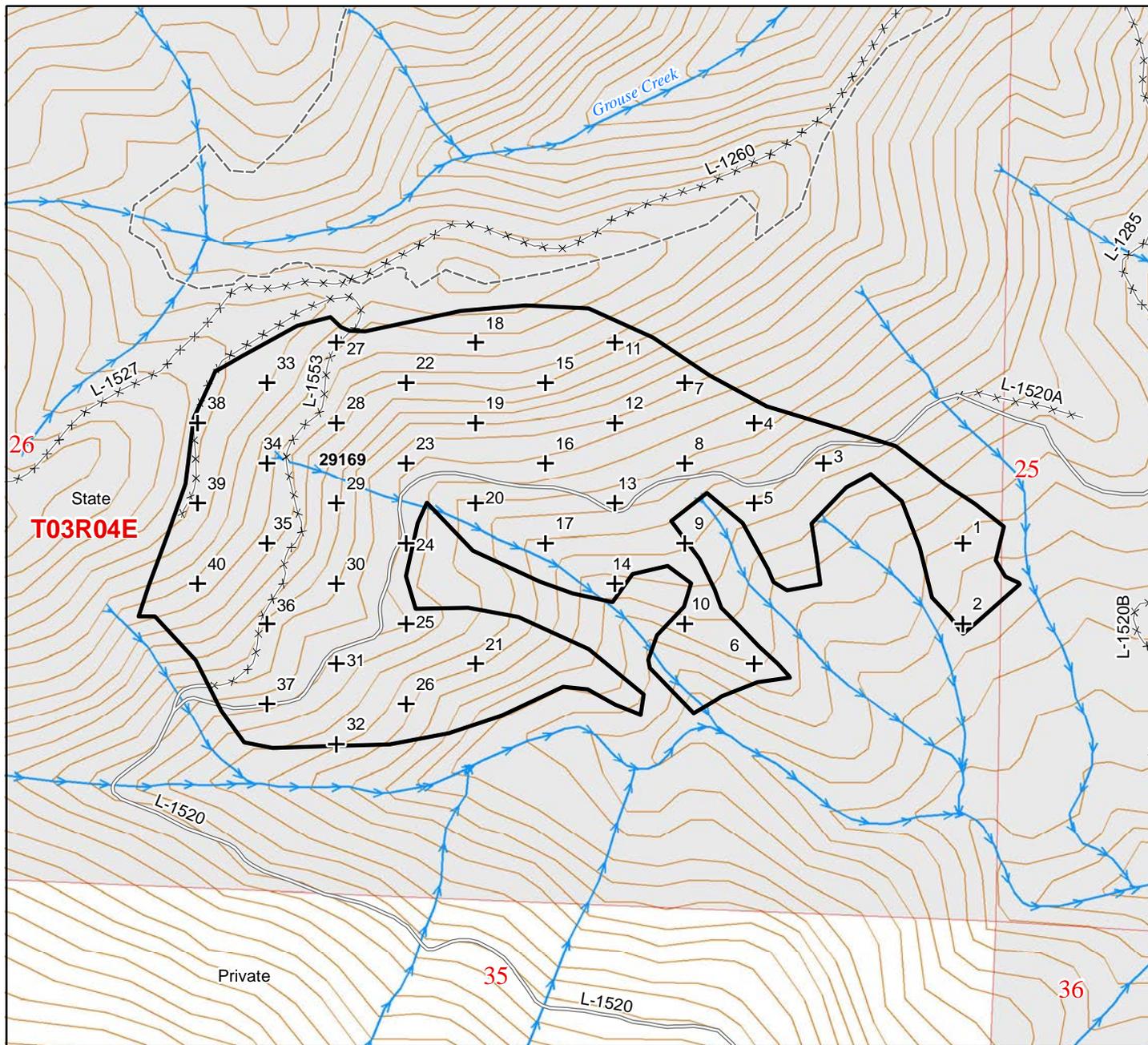
Work Unit: Yacolt

Treatment Acres: 97

Unit No. 65

Unit Name: SILVERADO U1

FMU ID: 29169



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

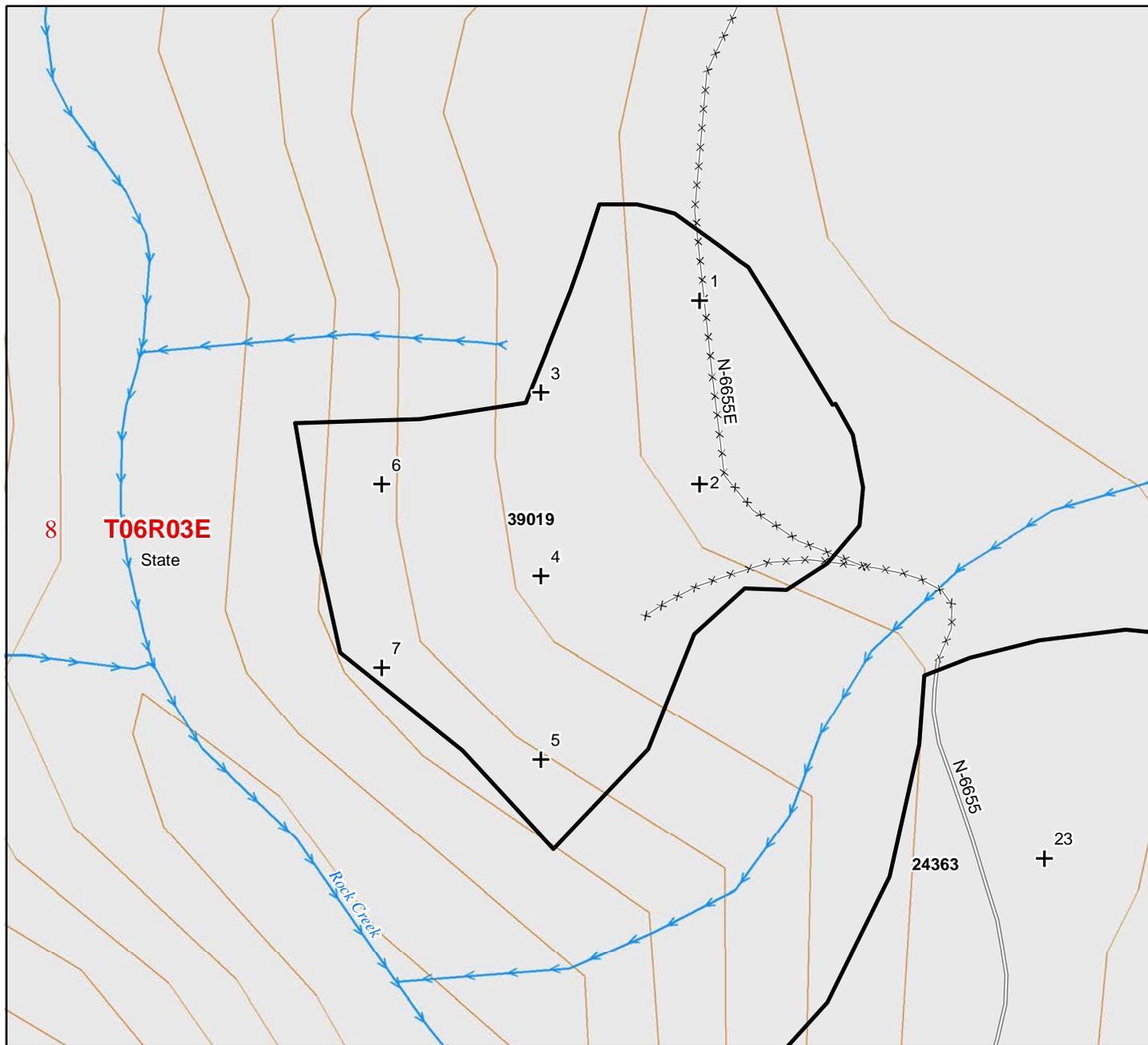
Work Unit: Yacolt

Treatment Acres: 5

Unit No. 66

Unit Name: ROCK SALT U2

FMU ID: 39019



Unit Boundary



DNR Managed Lands



Existing Roads



Non-Driveable Access



Trails



Streams

40' Contours



Plot Points



Gate



Tank Trap



Earth Barrier



Other Barrier

Elevation: 1600-1700

Origin Year: 2007

Gate: No

Key:

1:2,000



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

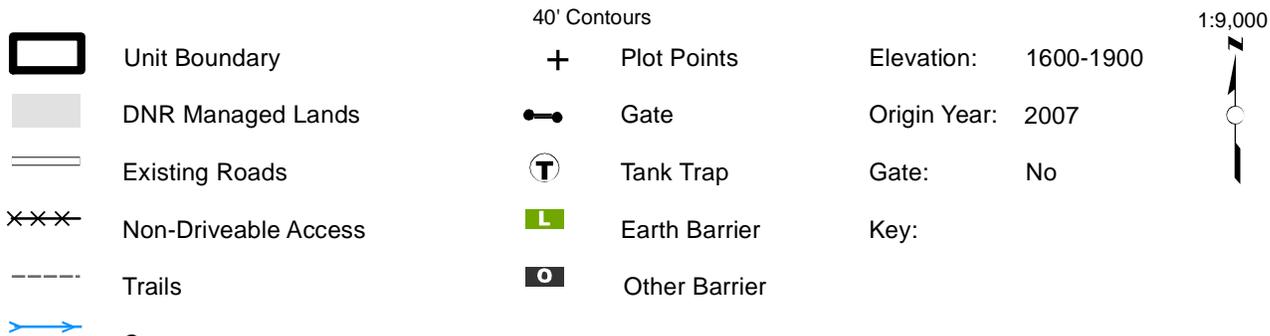
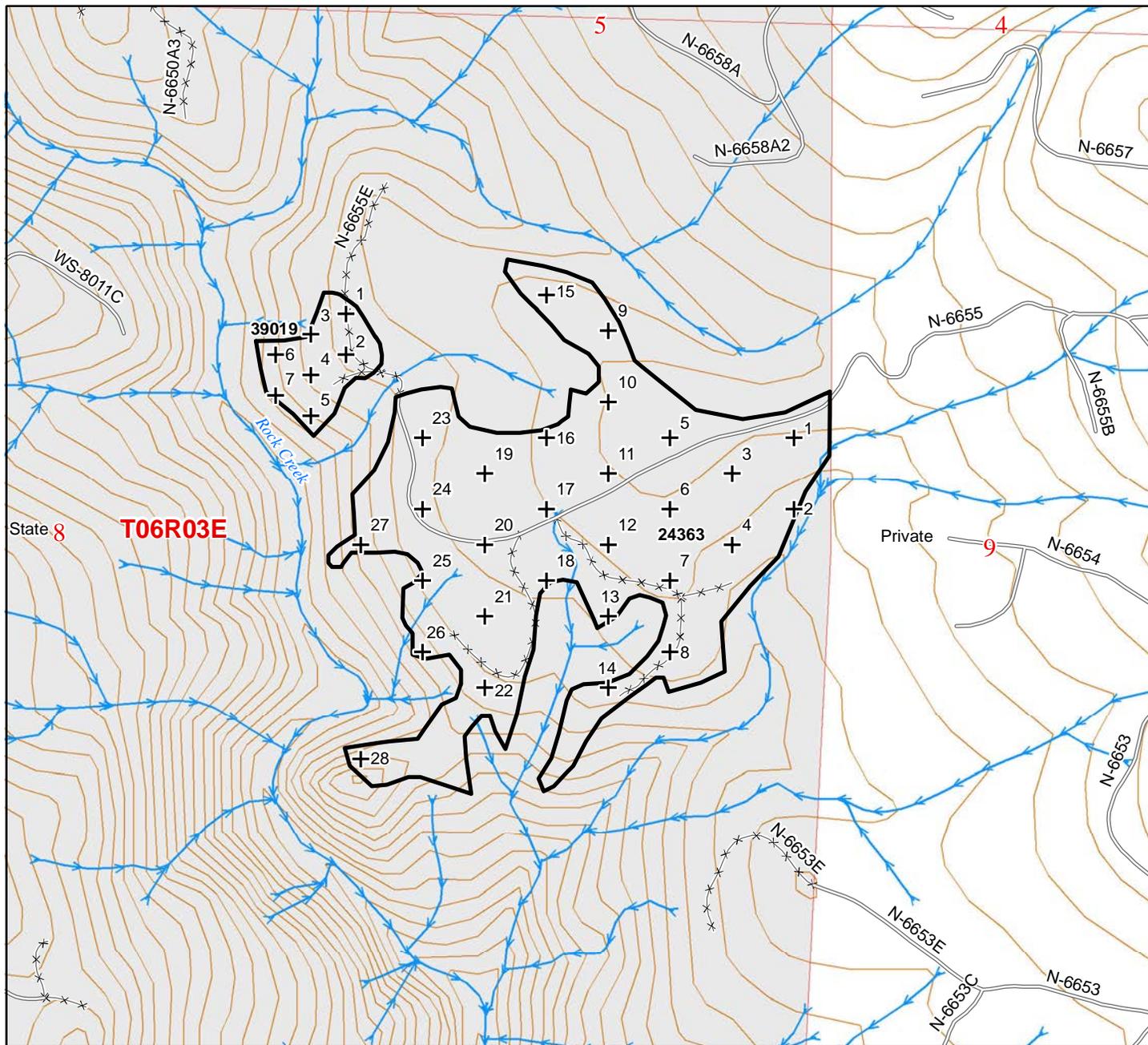
Work Unit: Yacolt

Treatment Acres: 64

Unit No. 67

Unit Name: ROCK SALT U1

FMU ID: 24363



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

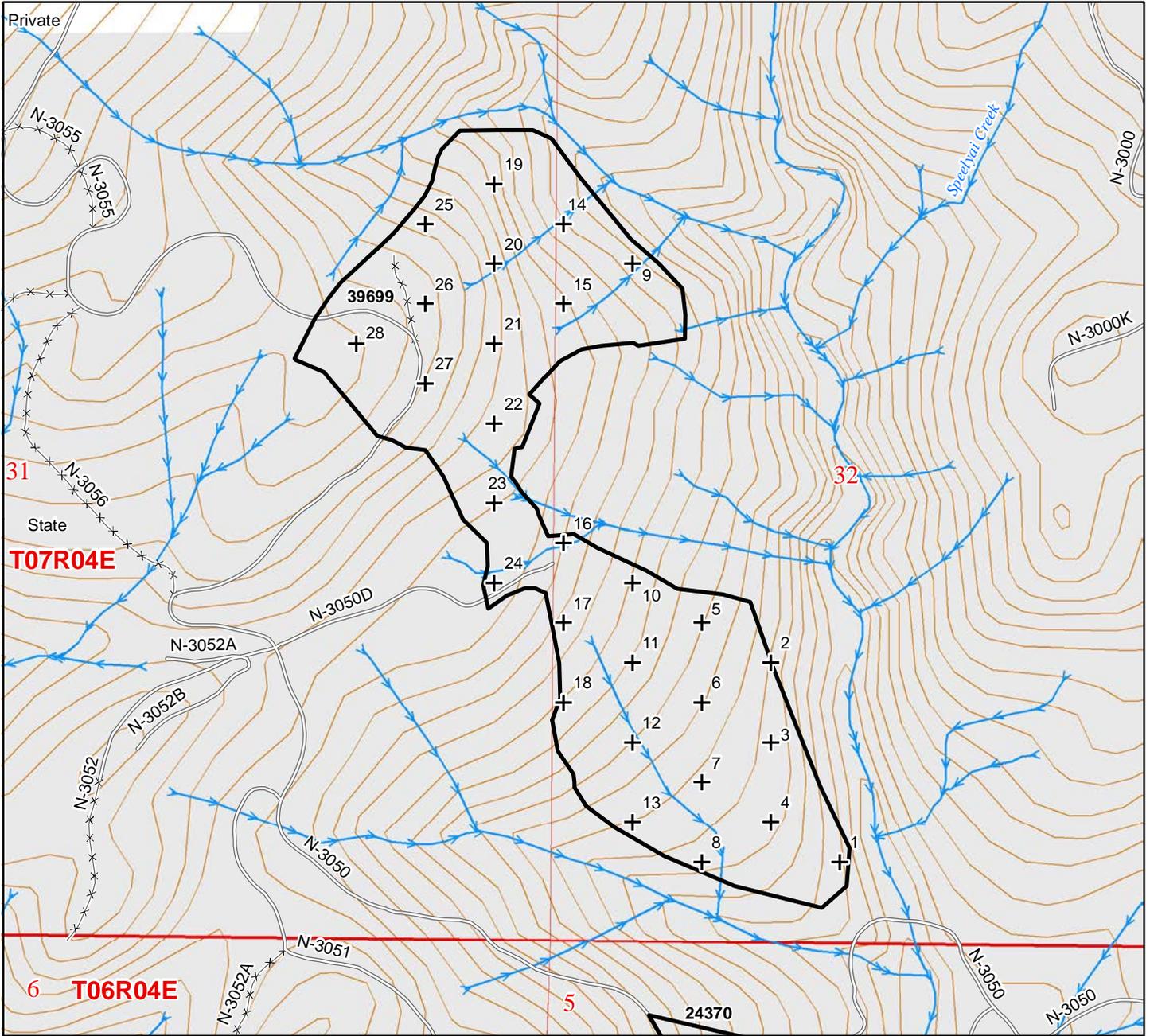
Work Unit: Yacolt

Treatment Acres: 68

Unit No. 68

Unit Name: PACK RAT U2

FMU ID: 39699



- | | | | | | | |
|--|----------------------|--|---------------|--------------|-----------|--|
| | Unit Boundary | | Plot Points | Elevation: | 1300-2200 | |
| | DNR Managed Lands | | Gate | Origin Year: | 2007 | |
| | Existing Roads | | Tank Trap | Gate: | Yes | |
| | Non-Driveable Access | | Earth Barrier | Key: | PCP1-1 | |
| | Trails | | Other Barrier | | | |

UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

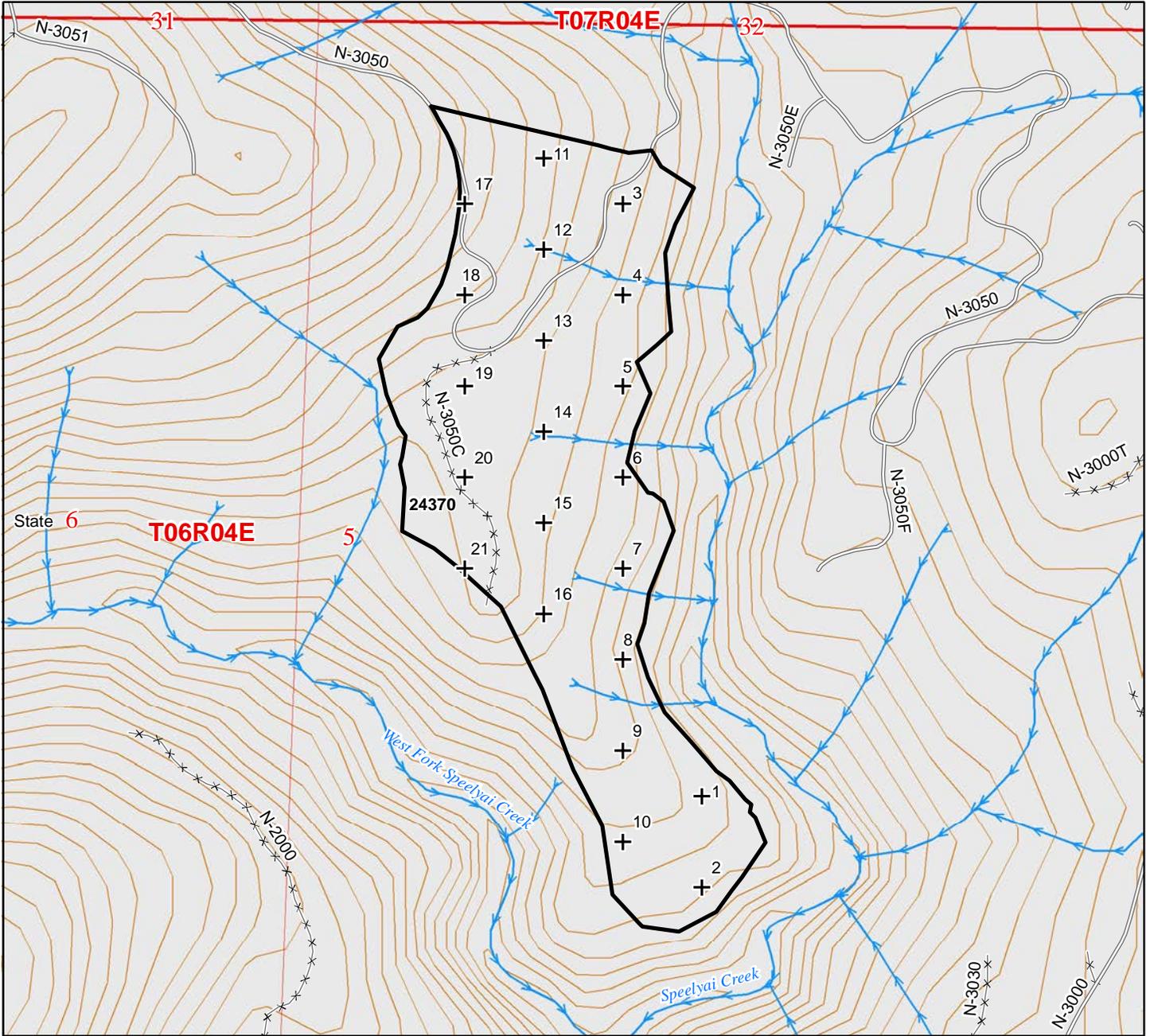
Work Unit: Yacolt

Treatment Acres: 51

Unit No. 69

Unit Name: PACK RAT U1

FMU ID: 24370



	Unit Boundary		Plot Points	Elevation:	1000-1600
	DNR Managed Lands		Gate	Origin Year:	2007
	Existing Roads		Tank Trap	Gate:	Yes
	Non-Driveable Access		Earth Barrier	Key:	PCP1-1
	Trails		Other Barrier		
	Streams				

UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

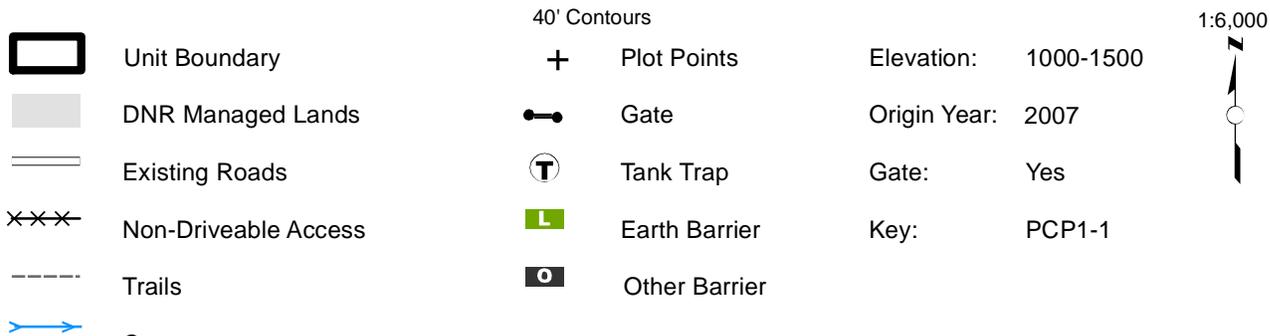
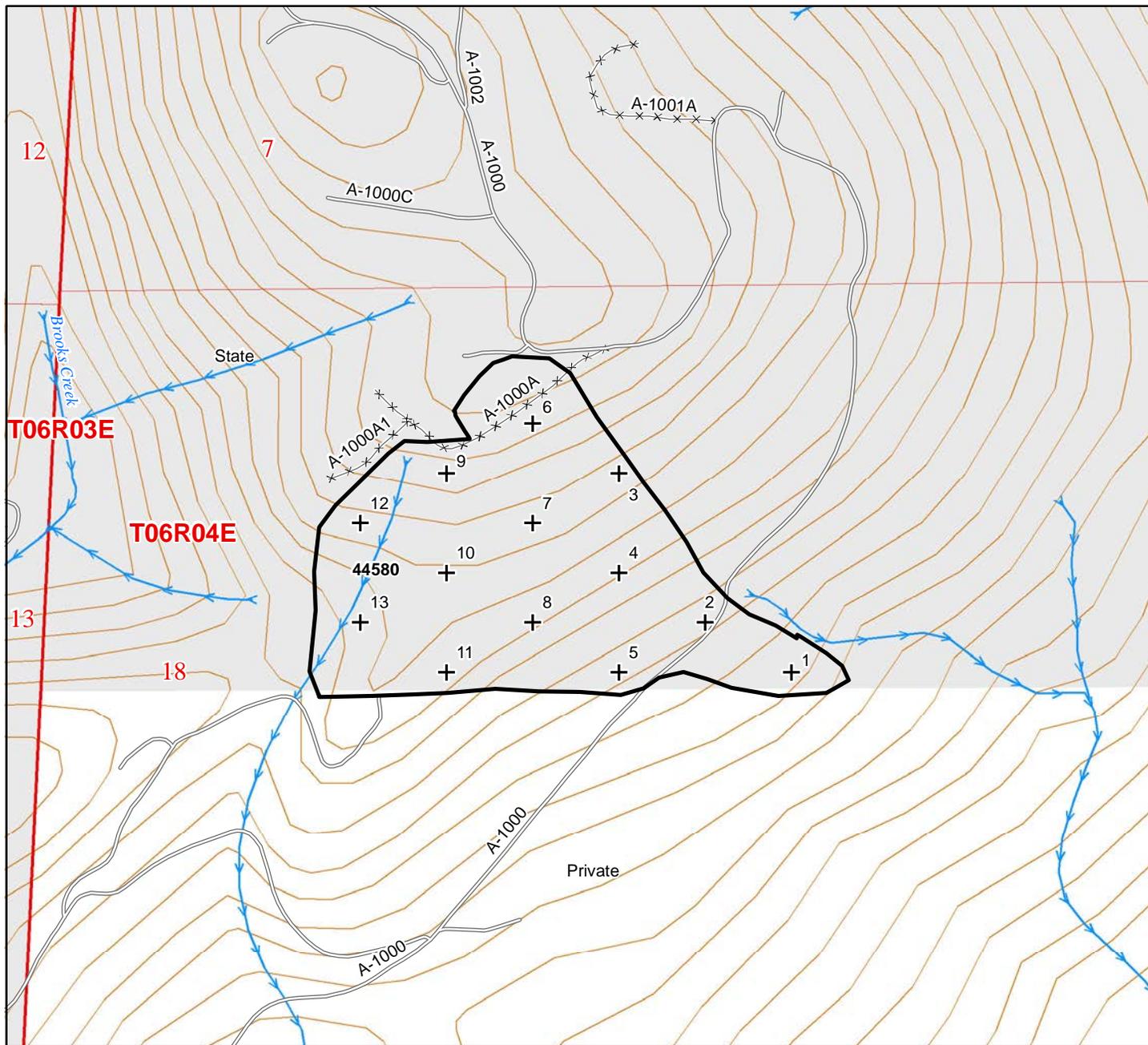
Work Unit: Yacolt

Treatment Acres: 26

Unit No. 70

Unit Name: HIGH CHAPARRAL U2

FMU ID: 44580



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

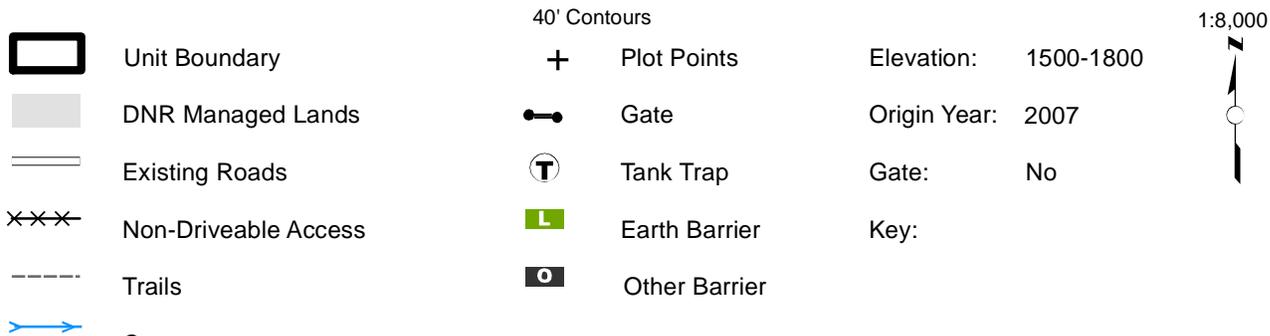
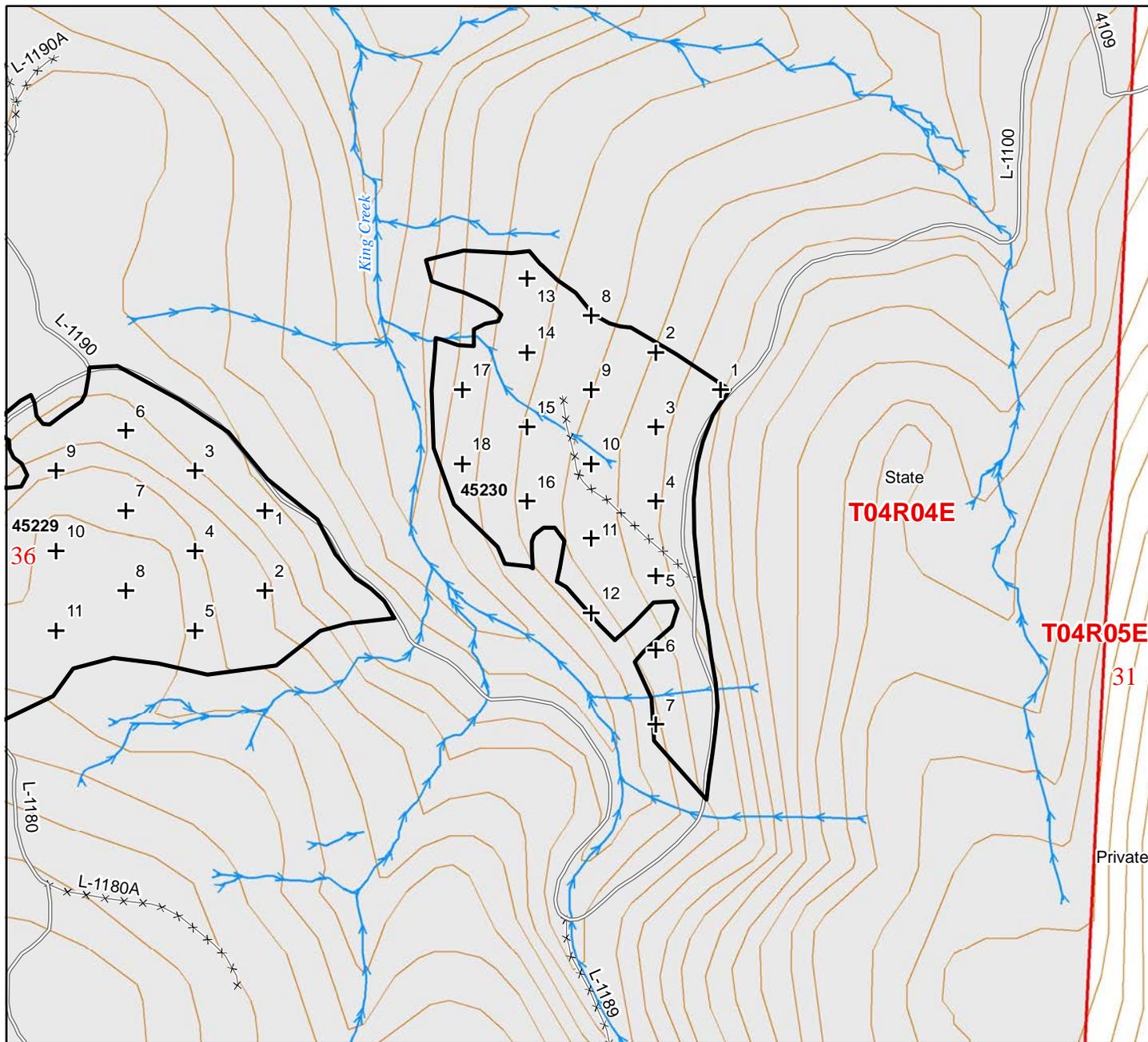
Work Unit: Yacolt

Treatment Acres: 36

Unit No. 71

Unit Name: CAVEMAN U5

FMU ID: 45230



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

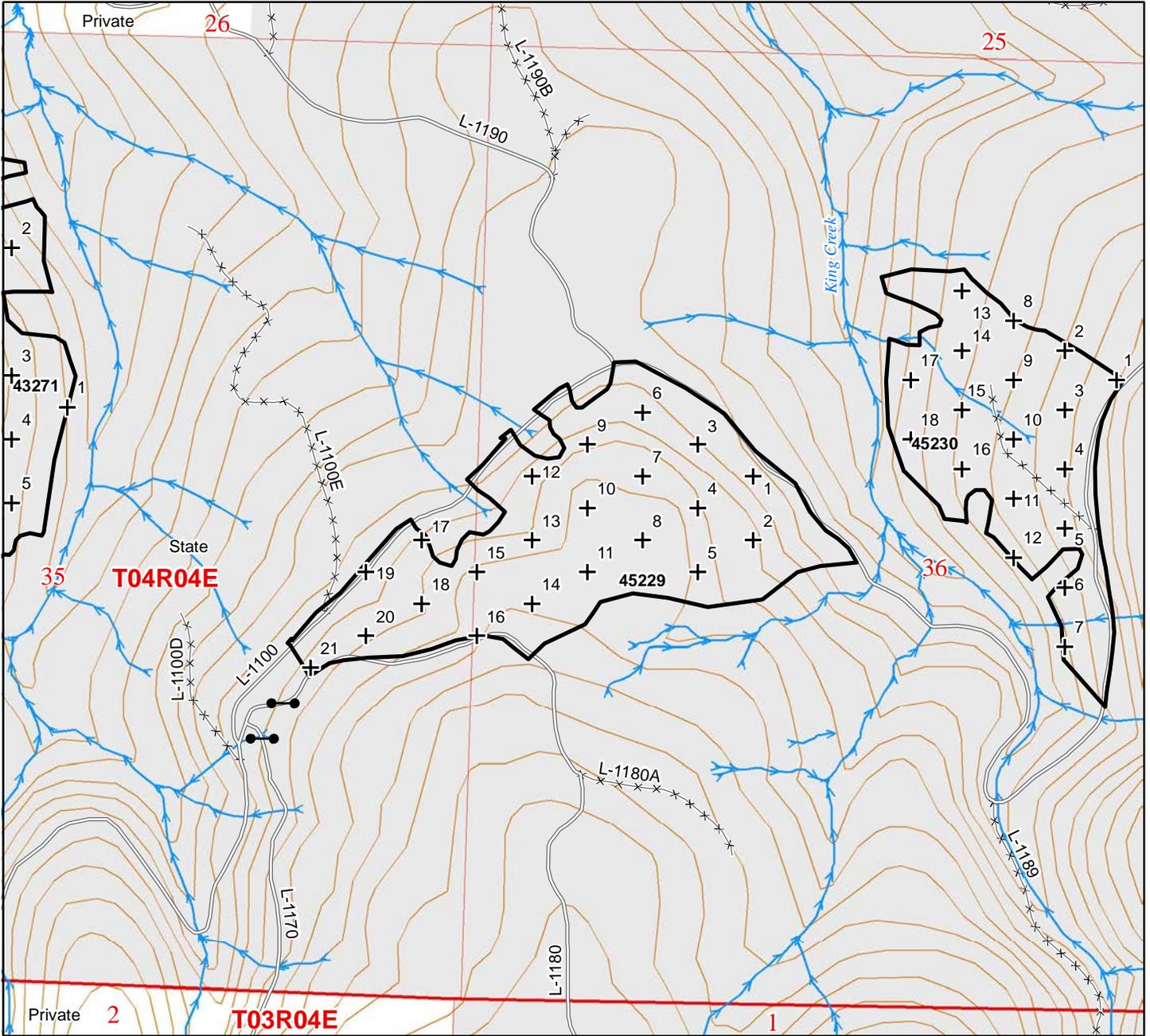
Work Unit: Yacolt

Treatment Acres: 56

Unit No. 72

Unit Name: CAVEMAN U4

FMU ID: 45229



- | | | | | | |
|--|----------------------|--|---------------|----------------------|----------|
| | Unit Boundary | | 40' Contours | | 1:10,000 |
| | DNR Managed Lands | | Plot Points | Elevation: 1600-1800 | |
| | Existing Roads | | Gate | Origin Year: 2007 | |
| | Non-Driveable Access | | Tank Trap | Gate: No | |
| | Trails | | Earth Barrier | Key: | |
| | Streams | | Other Barrier | | |

UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

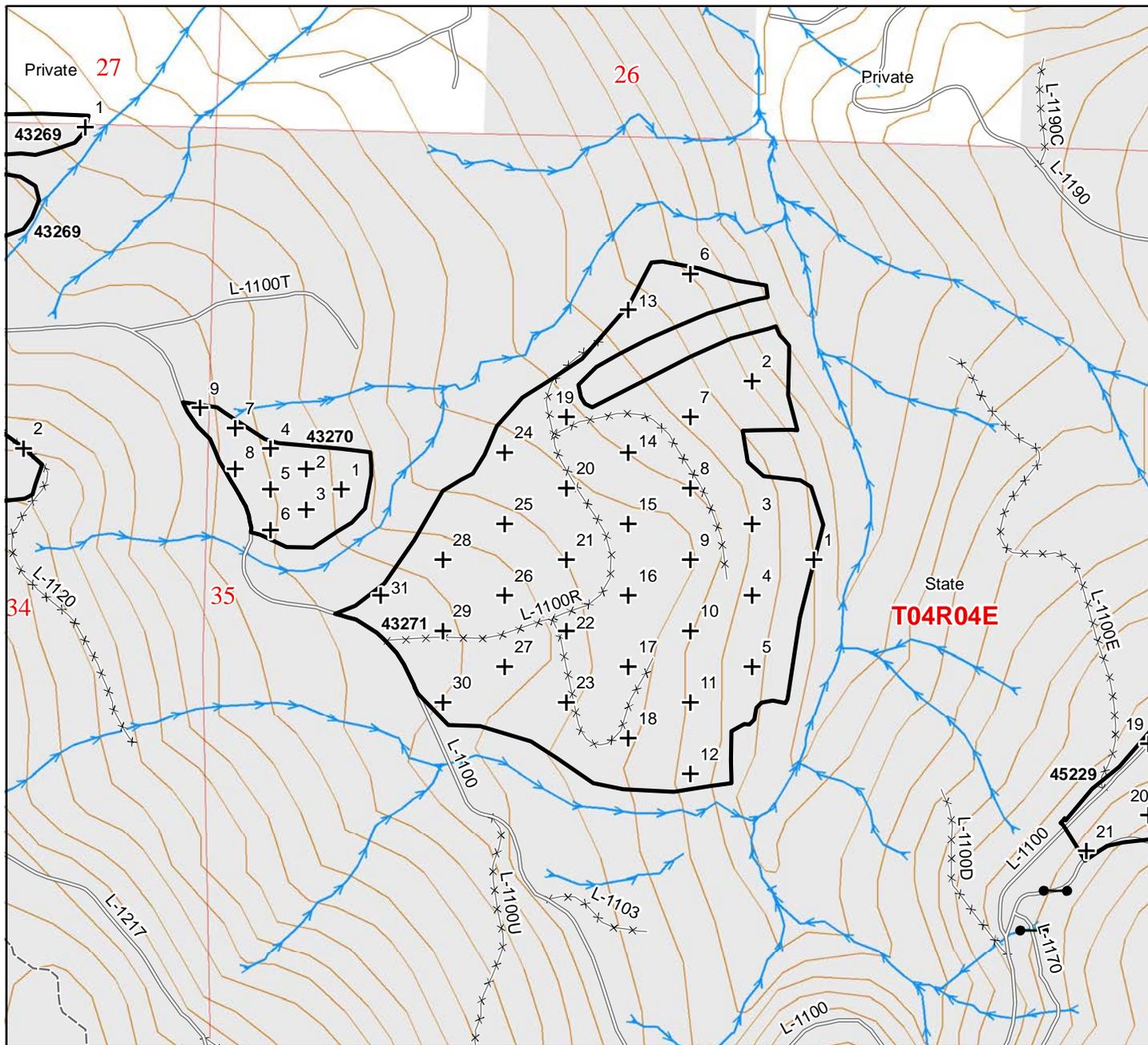
Work Unit: Yacolt

Treatment Acres: 81

Unit No. 73

Unit Name: CAVEMAN U3

FMU ID: 43271



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

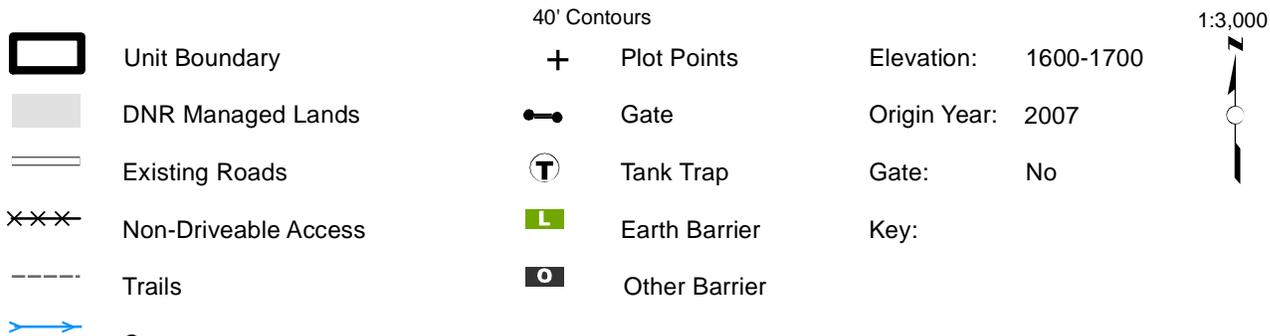
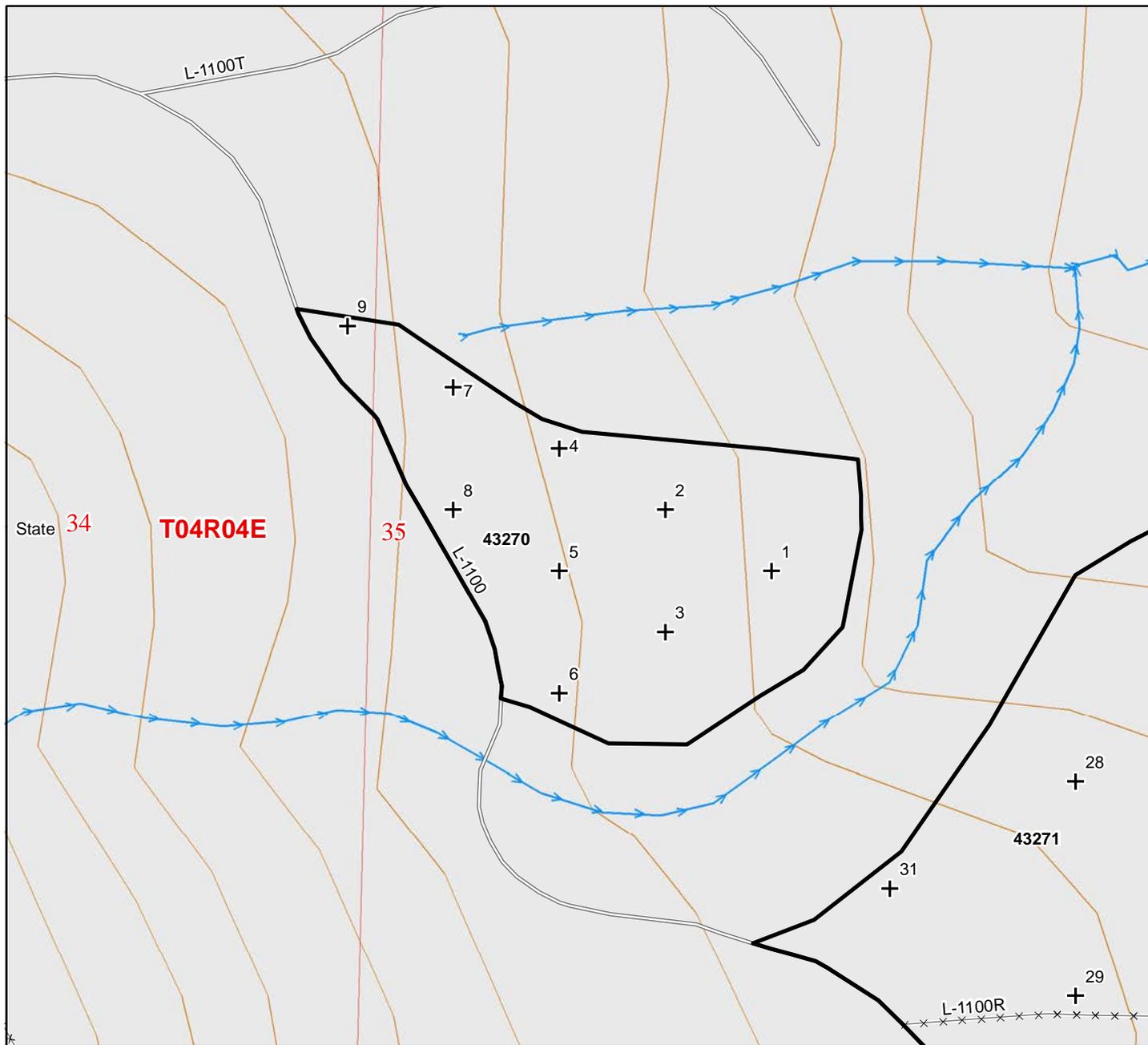
Work Unit: Yacolt

Treatment Acres: 8

Unit No. 74

Unit Name: CAVEMAN U2

FMU ID: 43270



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

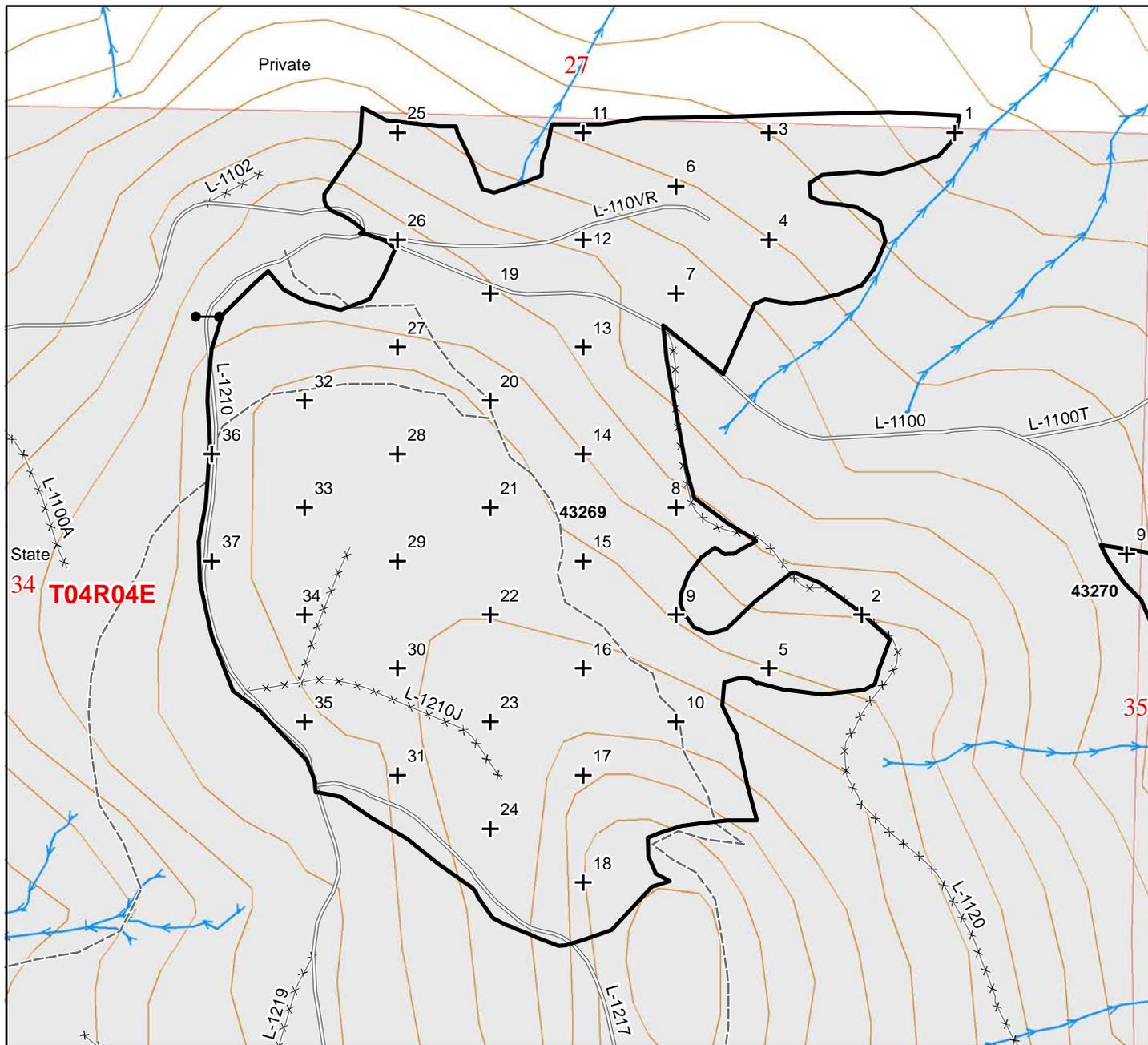
Work Unit: Yacolt

Treatment Acres: 92

Unit No. 75

Unit Name: CAVEMAN U1

FMU ID: 43269



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

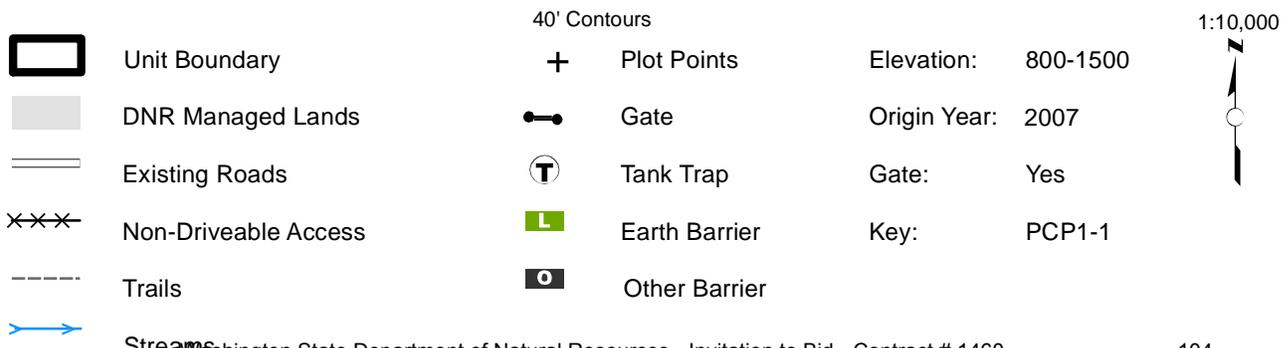
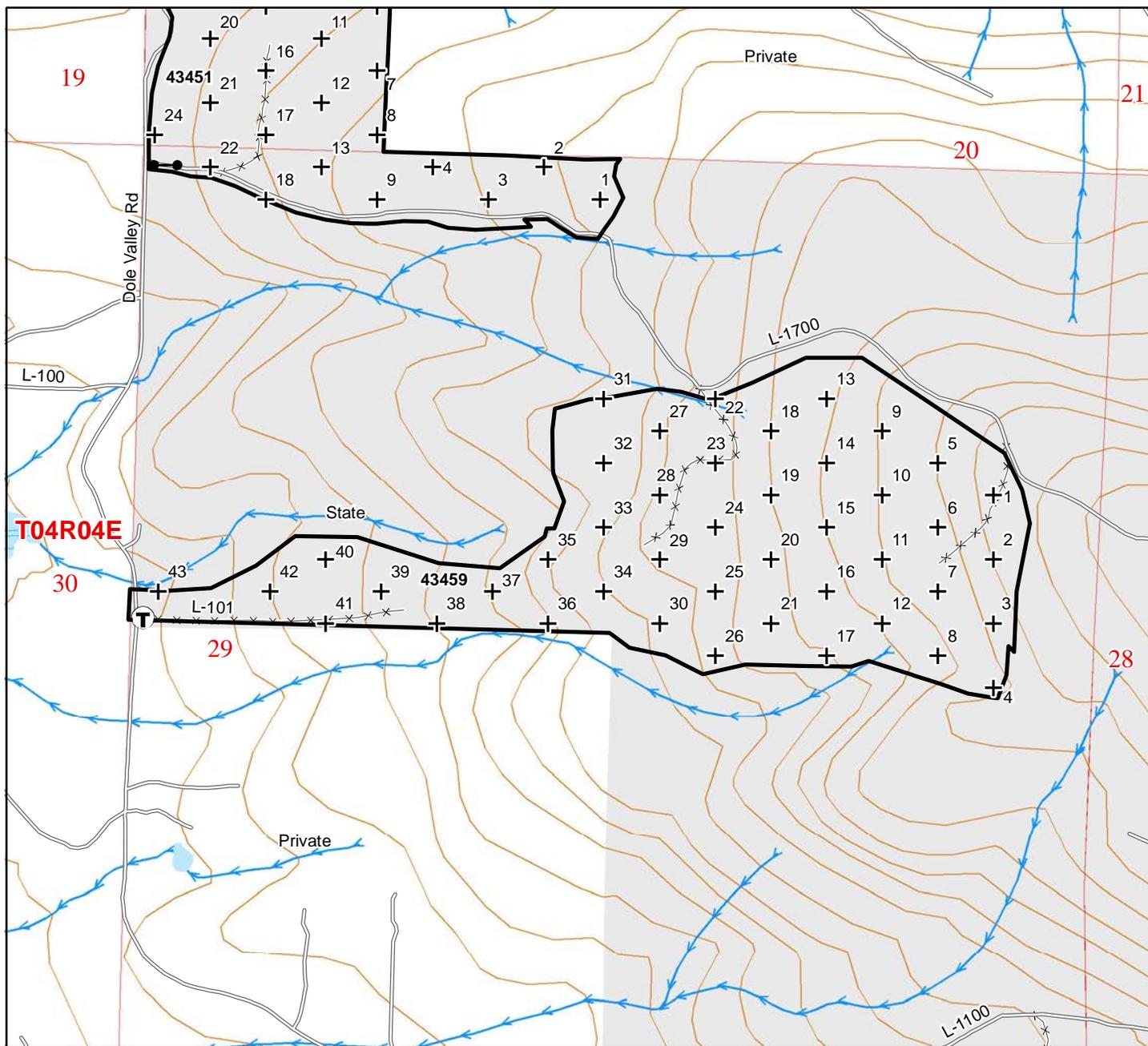
Work Unit: Yacolt

Treatment Acres: 105

Unit No. 76

Unit Name: CAMP ROBBER U4

FMU ID: 43459



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

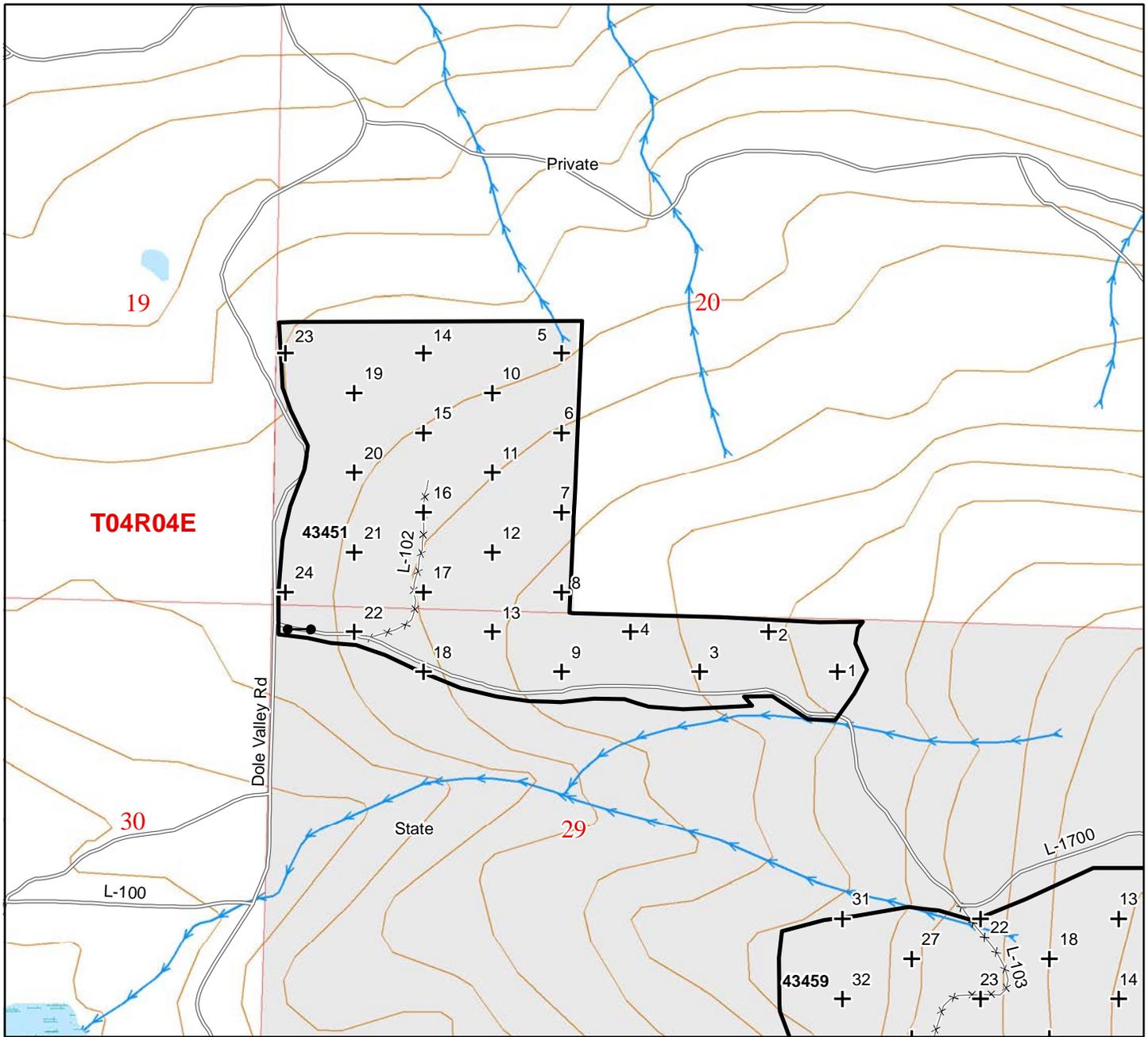
Work Unit: Yacolt

Treatment Acres: 56

Unit No. 77

Unit Name: CAMP ROBBER U3

FMU ID: 43451



Unit Boundary



DNR Managed Lands



Existing Roads



Non-Driveable Access



Trails



Streams

40' Contours



Plot Points



Gate



Tank Trap



Earth Barrier



Other Barrier

Elevation: 900-1100

Origin Year: 2007

Gate: Yes

Key: PCP1-1

1:8,000



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

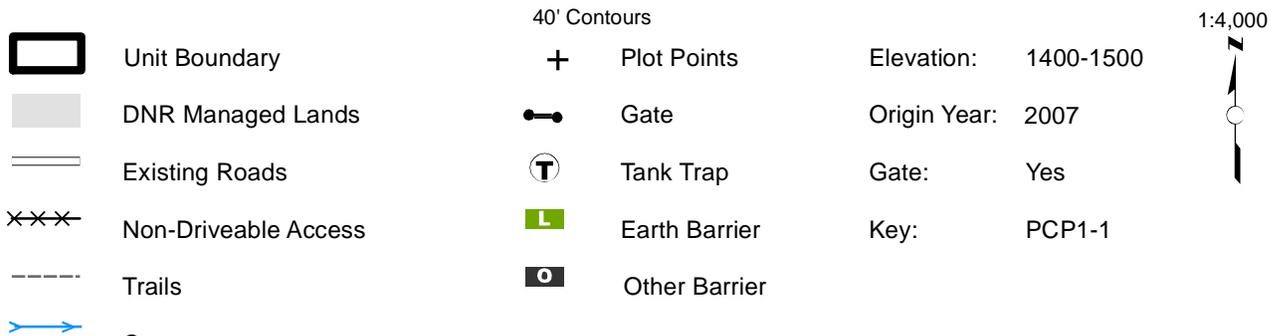
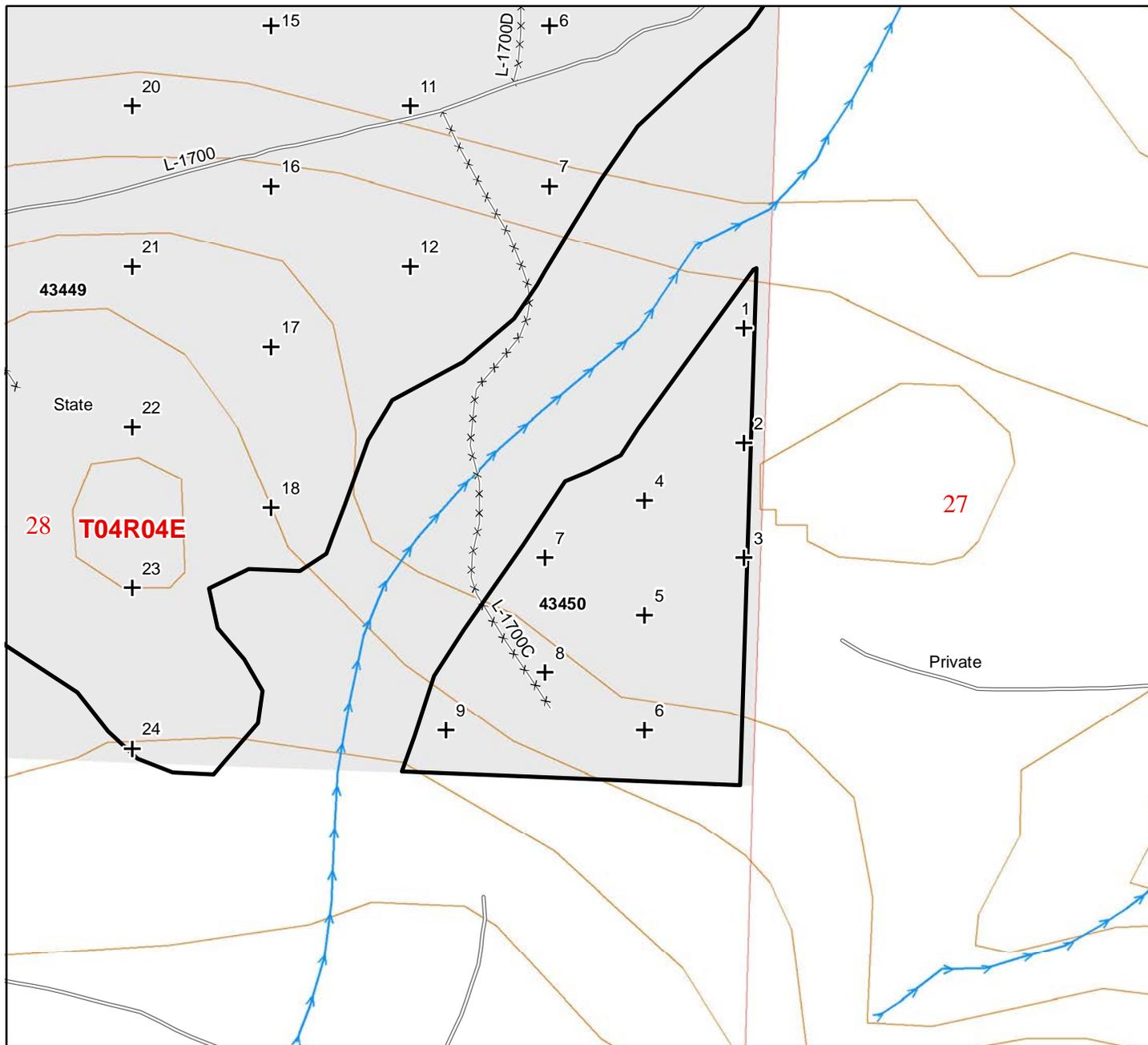
Work Unit: Yacolt

Treatment Acres: 11

Unit No. 78

Unit Name: CAMP ROBBER U2

FMU ID: 43450



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

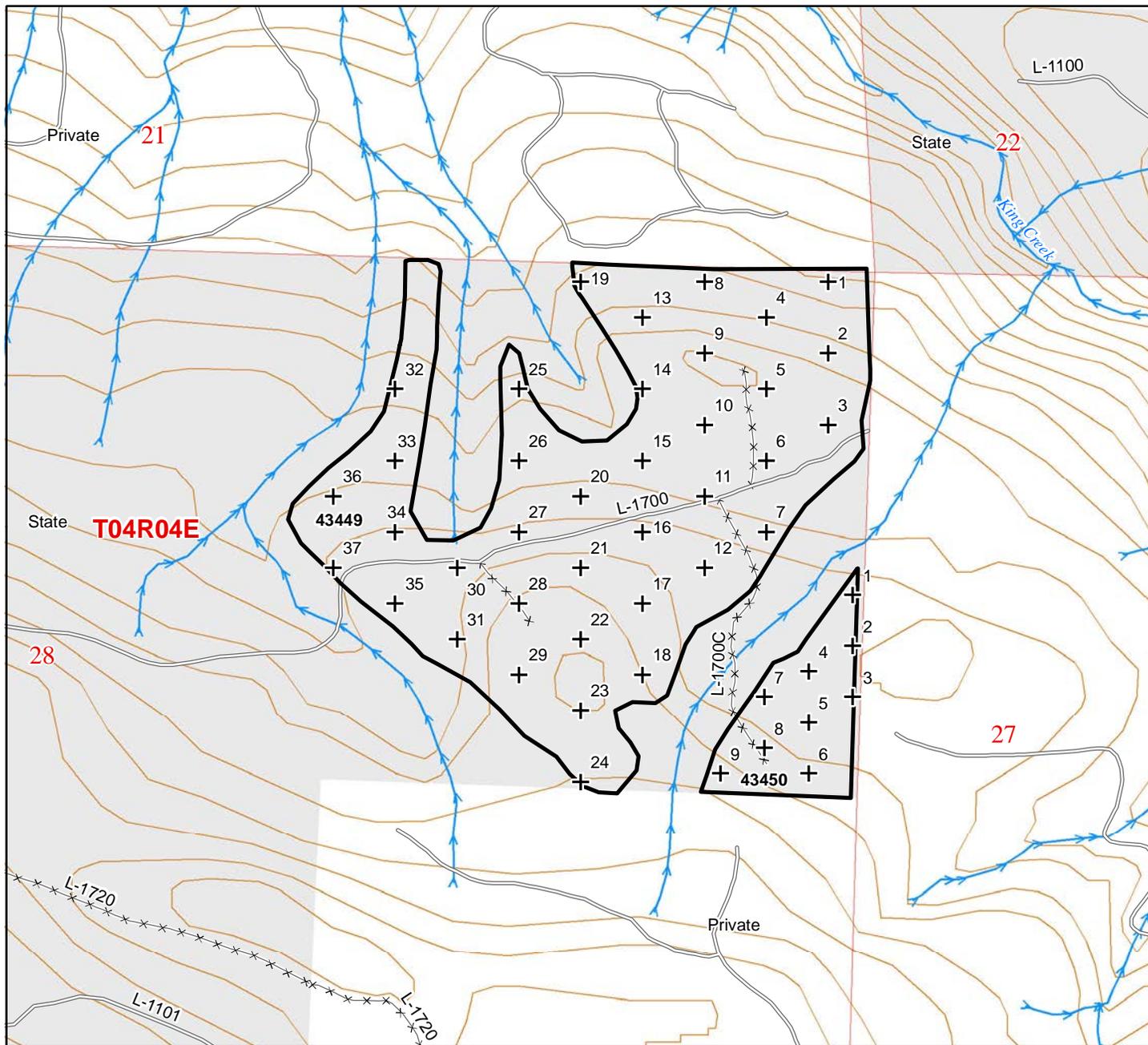
Work Unit: Yacolt

Treatment Acres: 88

Unit No. 79

Unit Name: CAMP ROBBER U1

FMU ID: 43449



Unit Boundary



DNR Managed Lands



Existing Roads



Non-Driveable Access



Trails



Streams

40' Contours



Plot Points



Gate



Tank Trap



Earth Barrier



Other Barrier

Elevation: 1200-1500

Origin Year: 2007

Gate: Yes

Key: PCP1-1

1:9,000



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

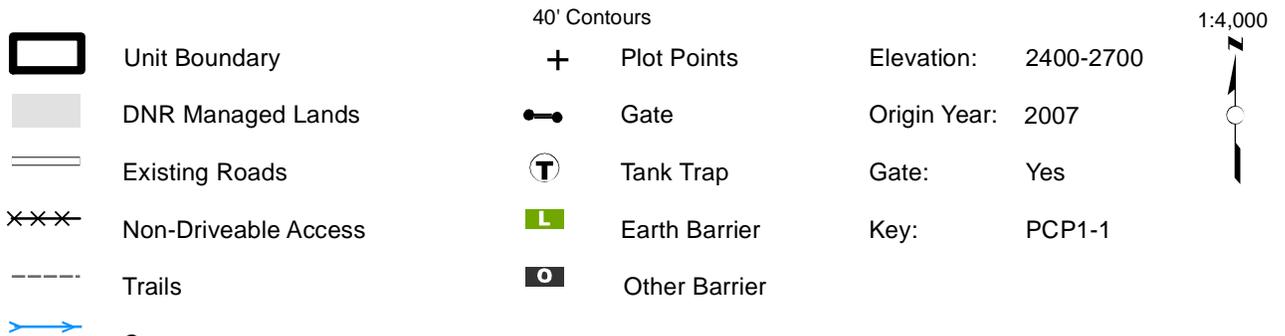
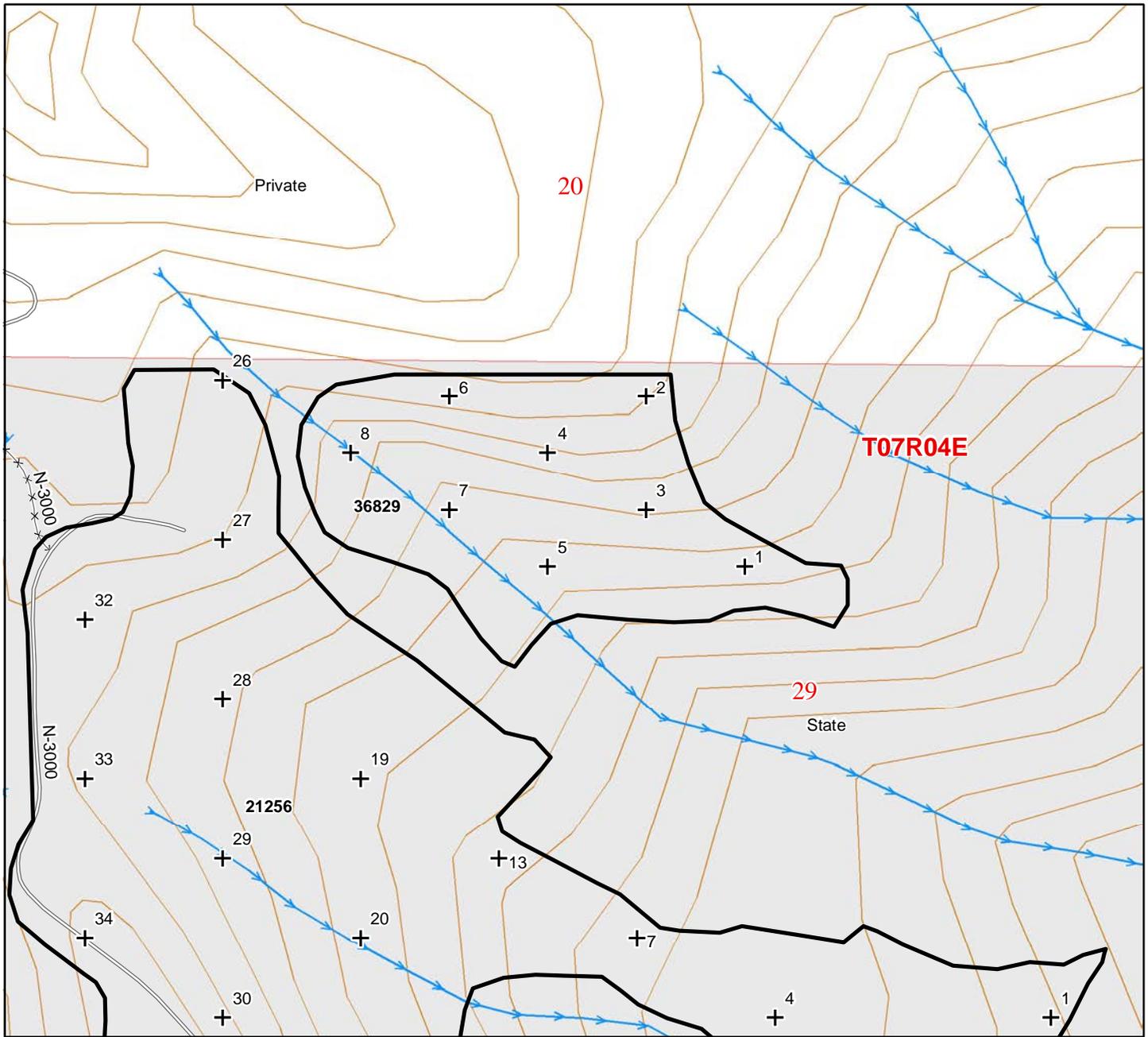
Work Unit: Yacolt

Treatment Acres: 11

Unit No. 80

Unit Name: BIG BULL U2

FMU ID: 36829



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

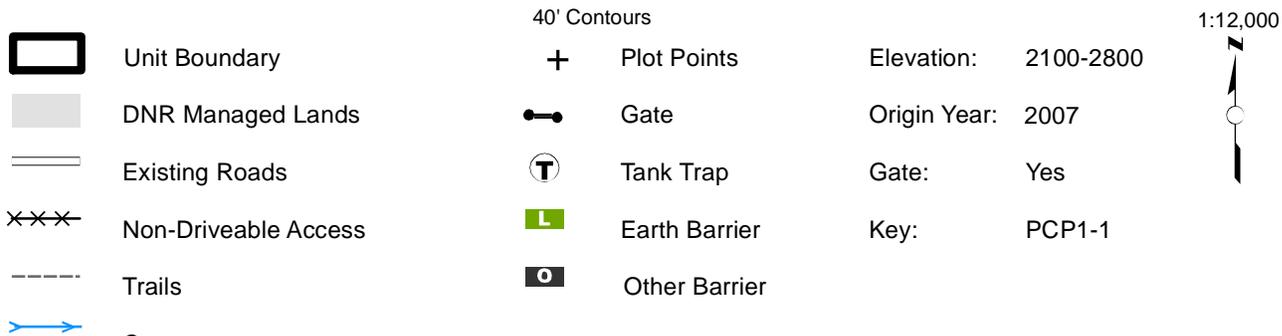
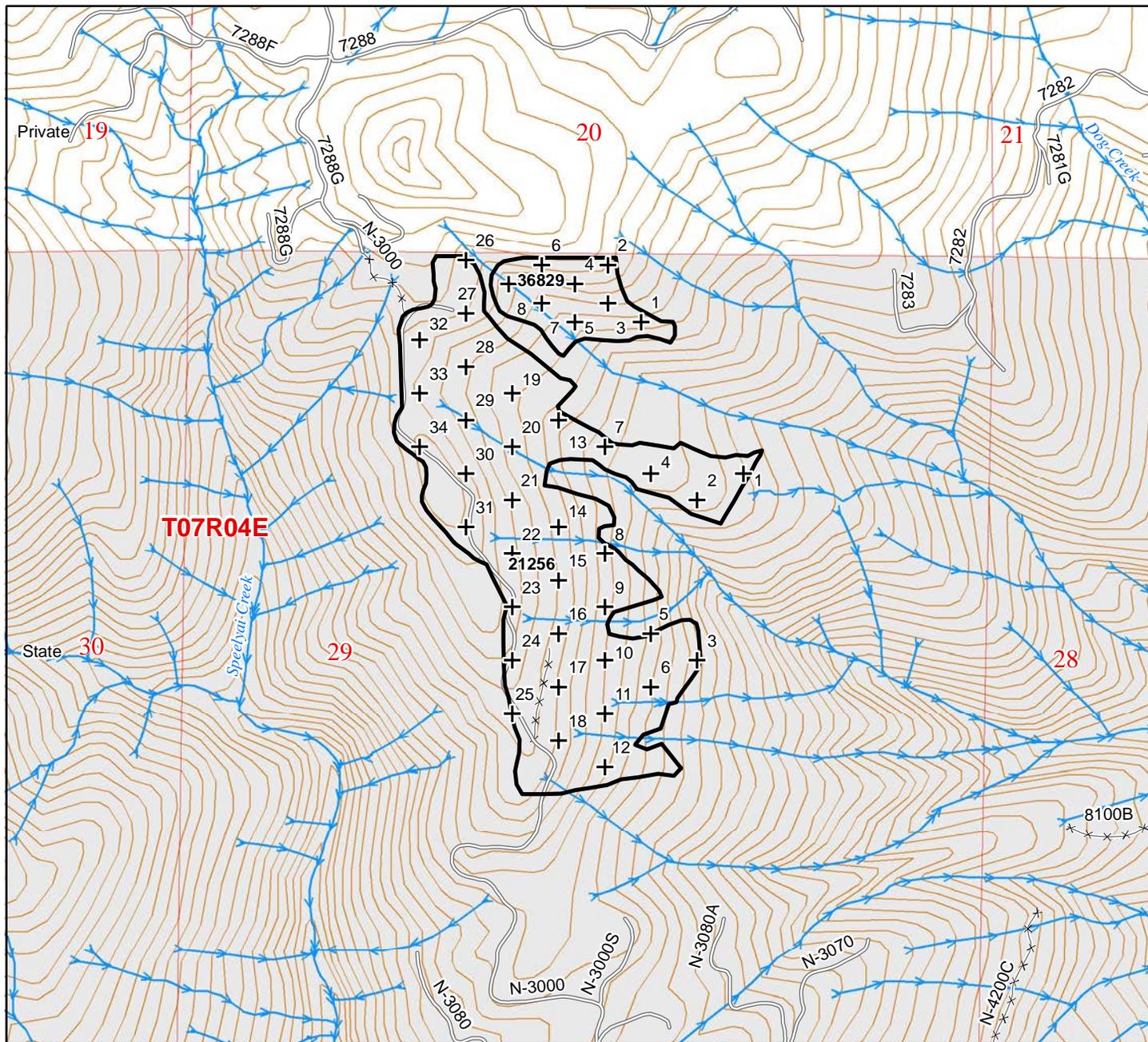
Work Unit: Yacolt

Treatment Acres: 82

Unit No. 81

Unit Name: BIG BULL U1

FMU ID: 21256



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

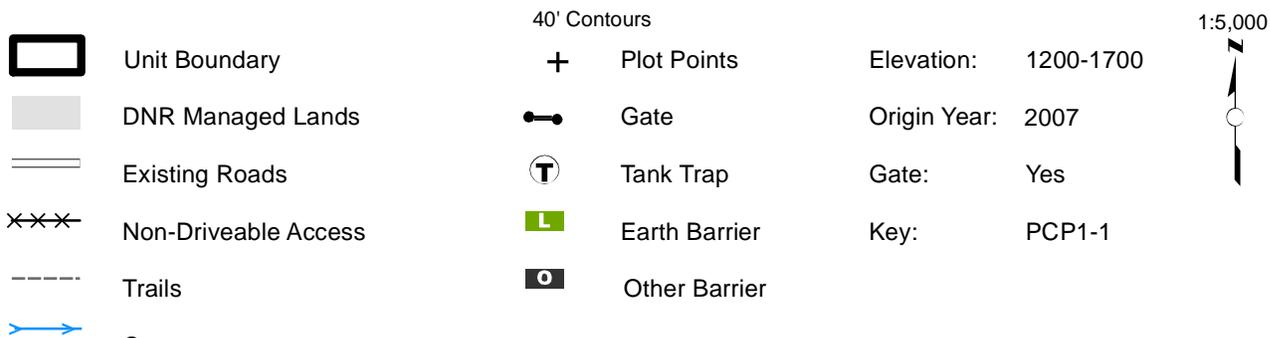
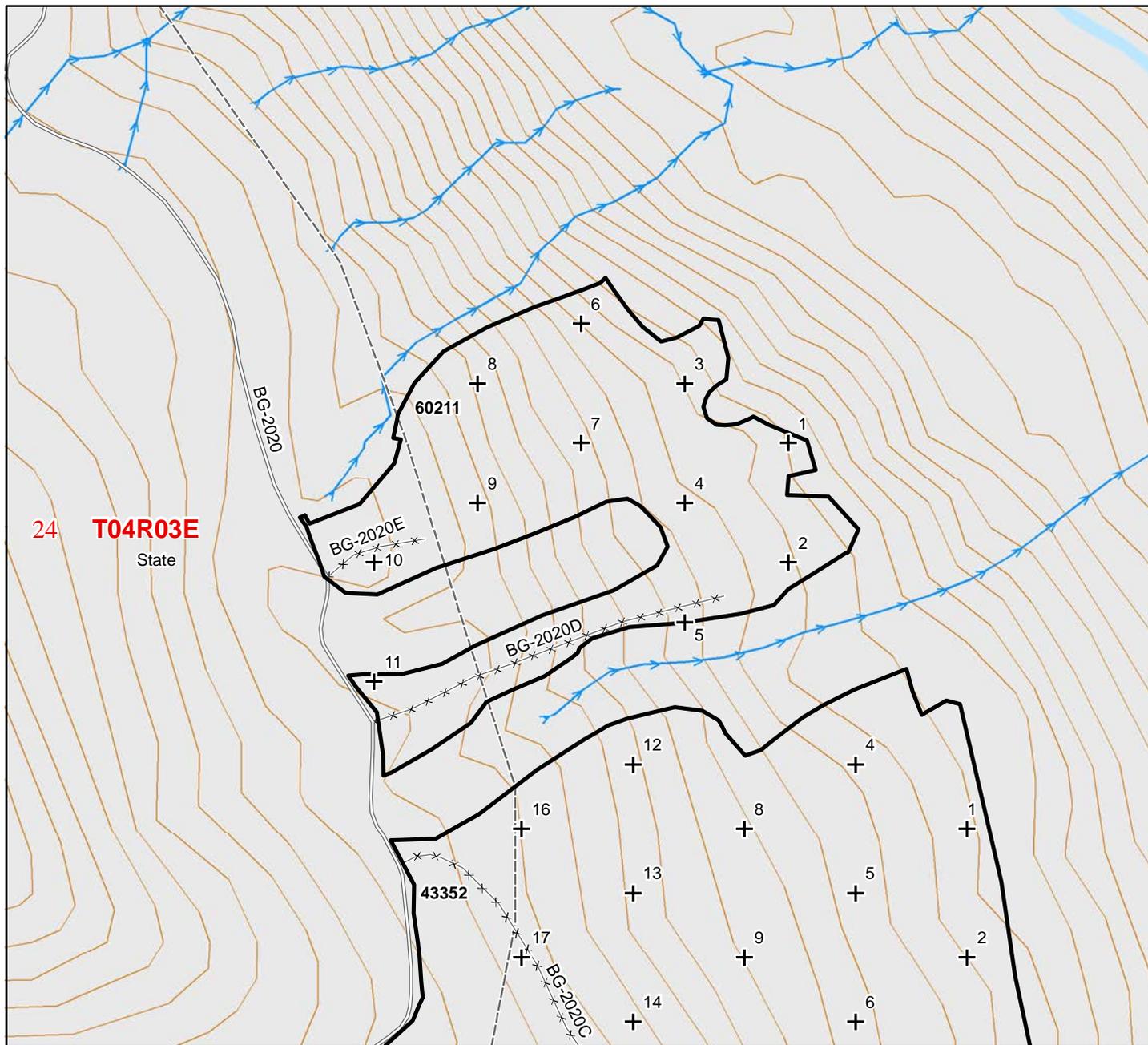
Work Unit: Yacolt

Treatment Acres: 20

Unit No. 82

Unit Name: AIRSTREAM U5

FMU ID: 60211



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

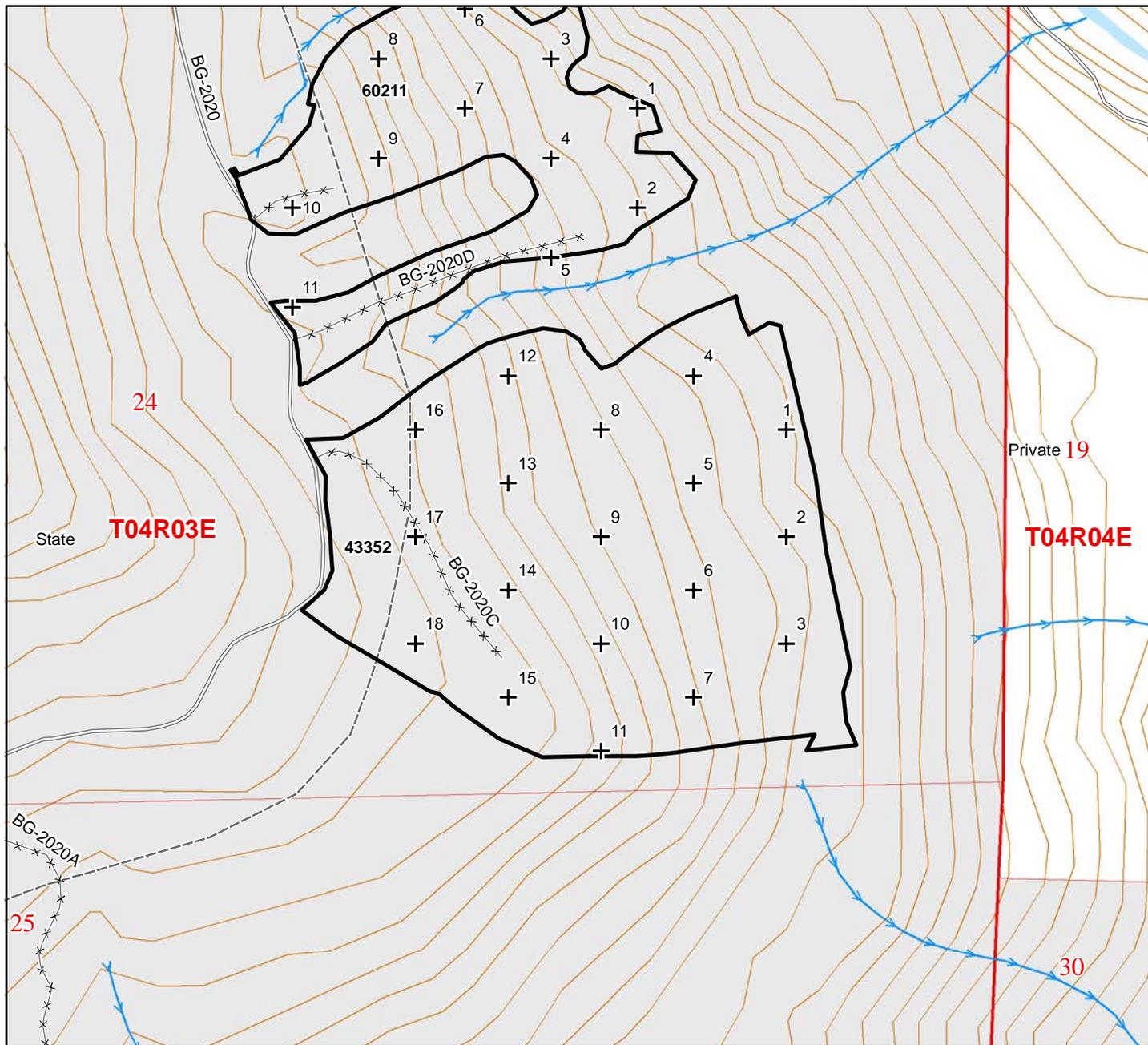
Work Unit: Yacolt

Treatment Acres: 46

Unit No. 83

Unit Name: AIRSTREAM U4

FMU ID: 43352



Unit Boundary



DNR Managed Lands



Existing Roads



Non-Driveable Access



Trails



Streams

40' Contours



Plot Points



Gate



Tank Trap



Earth Barrier



Other Barrier

Elevation: 1200-1700

Origin Year: 2007

Gate: Yes

Key: PCP1-1

1:6,000



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

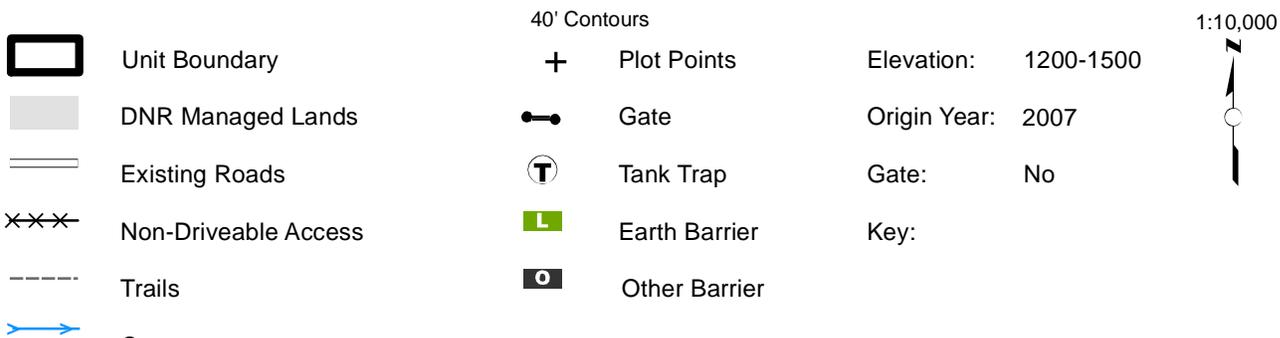
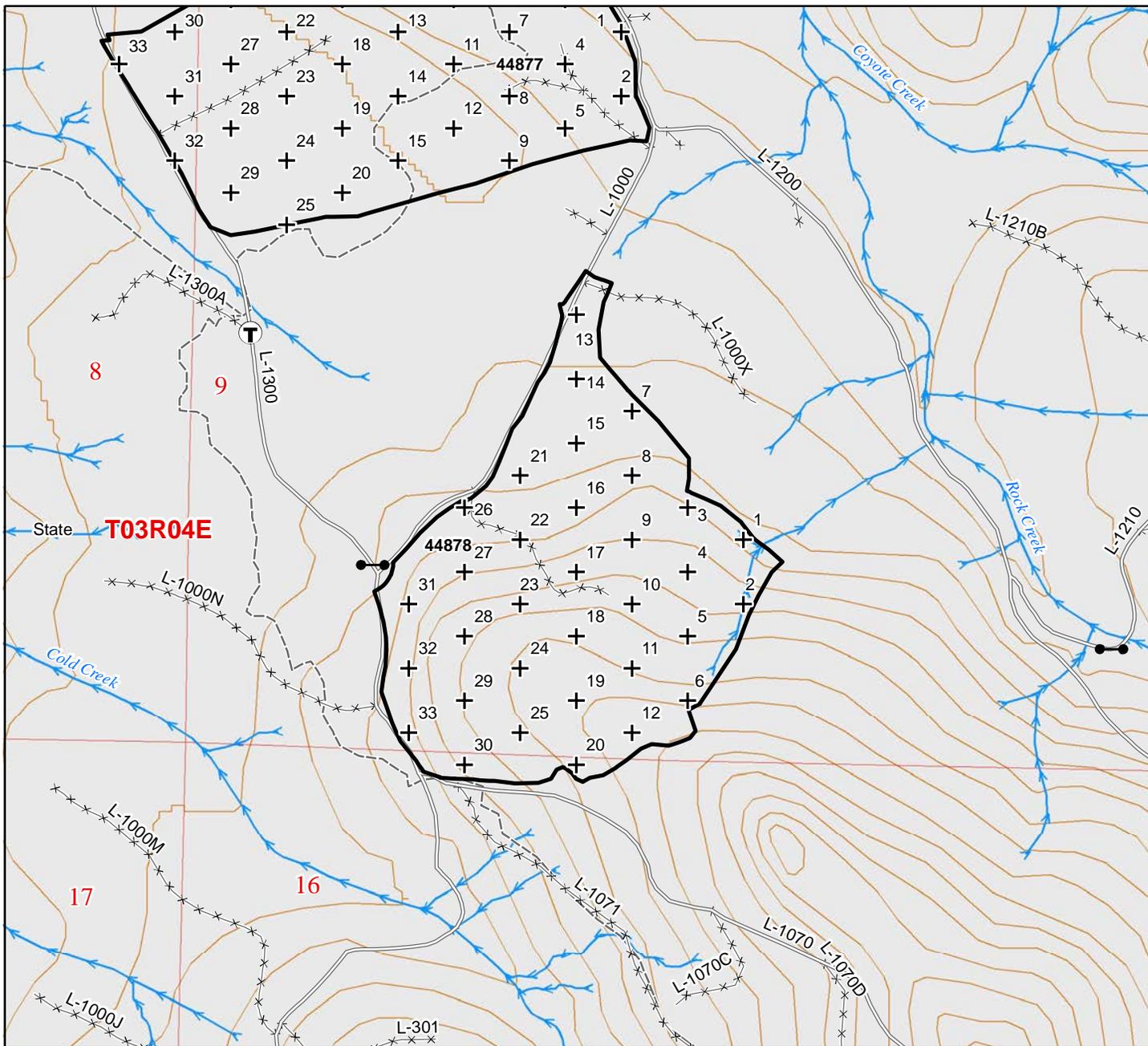
Work Unit: Yacolt

Treatment Acres: 77

Unit No. 84

Unit Name: ABBY ROAD U2

FMU ID: 44878



UNIT MAP

Activity Type: Free-To-Grow Survey Pacific Cascade Region

Bid No. 1460

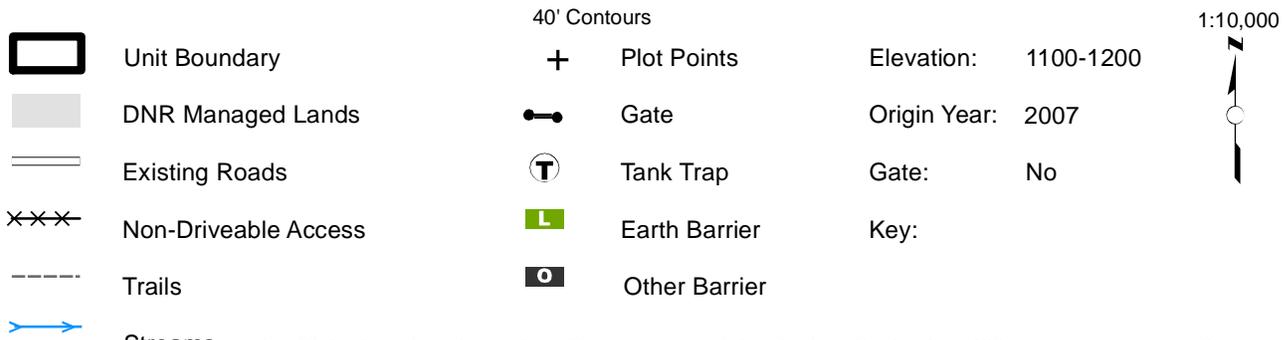
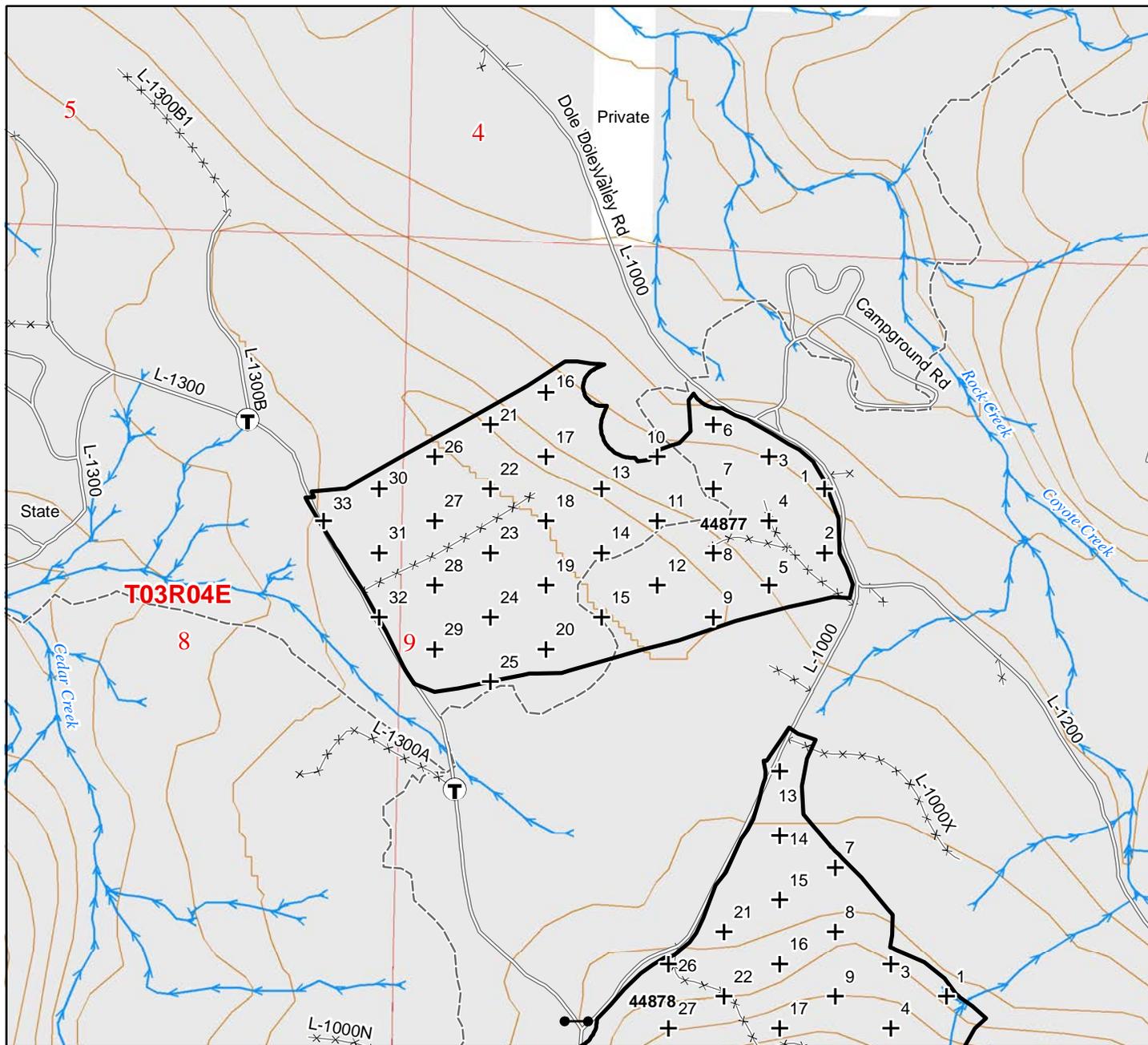
Work Unit: Yacolt

Treatment Acres: 74

Unit No. 85

Unit Name: ABBY ROAD U1

FMU ID: 44877



**SECTION IV
BID FORM**

YOUNG STAND DATA COLLECTION

INVITATION TO BID/CONTRACT NUMBER **1460**

At the following rates, the undersigned hereby offers and agrees to furnish materials, equipment, supplies, supervision, and services in compliance with all terms, conditions and specifications of Invitation to Bid/Contract Number **1460**.

All Units	Plots ¹	Contract Bid Price (Per Plot)	Contract Total ²
(1 – 85)	1,603	\$ _____	\$ _____

NOTE: Contract bid price will establish the per plot pay rate for ALL units.

The business named hereon is certified by the Office of Minority and Women's Business Enterprises and is bidding as a _____ owned business. (Enter either minority or woman, if appropriate.)

Firm Name _____ Address _____

Signature _____ City and State _____

Title _____ Phone _____

Note:

Detach and return one (1) copy of this form

¹An approximate number.

²Exclusive of Washington State Sales Tax.

**SECTION V
OFFER and CONTRACT AWARD**

OFFER (For Bidder Use Only)

On condition of a contract award within sixty (60) days of bid opening and for the bid price the undersigned hereby offers and agrees to furnish materials, equipment, supplies, supervision, and services in compliance with all terms, conditions and specifications of Invitation to Bid/Contract Number **1460**. Submittal of this document with authorized signature constitutes complete understanding of all terms and conditions. And further, submittal of this document constitutes acceptance of and agreement to comply with all terms and condition of the contract if awarded, and verifies that all goods and services will be available throughout the contract period.

(Company Name)

(Address)

(City) (State) (Zip)

(UBI No.)

(L & I Industrial Insurance Account No.)

(Farm Labor Contractor License No.)

(Federal I.D. No. or Social Security No.)

(Email)

By: _____

(Signature) (Date)

(Typed or Printed Name)

(Title)

(phone No.)

CONTRACT AWARD (For Dept. of Nat. Resources Use Only)

Contract Number **1460** is hereby awarded and executed between _____ and the State of Washington, Department of Natural Resources, to be effective _____, 20_____.

State of Washington,
Department of Natural Resources

By: _____

(Signature) (Date)

Eric Wisch
Pacific Cascade Region Manager

NOTE: Detach and return this form

**CONTRACTOR'S DECLARATION of
INDUSTRIAL INSURANCE STATUS**

INVITATION TO BID NUMBER 1460

The undersigned represents that they operate as ___ an individual, as ___ a partnership, or as ___ a corporation incorporated in the State of _____. The undersigned further certifies that they ___ will, ___ will not, be assisted by other individuals in the performance of this contract.

For the purpose of Industrial Insurance premiums payable to the Department of Labor and Industries, every individual in a partnership or joint venture must sign this bid sheet. Individuals not signing the bid sheet but assisting with the contract work will be considered workers for the purpose of Industrial Insurance except at the express approval of the Department of Labor and Industries.

Firm Name _____	Labor & Industries Account # _____
Signature _____	Washington Business License # _____
Title _____	Additional Signatures _____
Address _____	_____
City and State _____	_____
Business Phone _____	_____
Home Phone _____	_____

To whom it may concern:

This is to advise persons engaged in contracting forest activities of their liabilities under the mandatory provisions of the Industrial Insurance Act, Title 51 RCW.

The law provides benefits for a worker, injured in the course of his employment, or his family or dependents in case of death of the worker.

Worker is defined in the law as every person employed by an employer or every person working under an independent contract, the essence of which is that person's personal labor.

As one who contracts to perform forest activities you may require the assistance of other individuals to complete these contracts. If such is the case you are required to establish an industrial insurance account with the Department of Labor and Industries and pay the prescribed premium on behalf of your workers.

In the event you obtain the assistance of another person or persons to perform work in connection with your contract, regardless of the circumstances, you should contact the Department of Labor and Industries at one of its statewide service locations or its Olympia headquarters in the General Administration Building. You will then be provided with the necessary information regarding opening an account, premium rates, and reporting requirements.

The law also provides that any agency or firm that lets a contract is liable for payment of industrial insurance premiums should the contractor fail to do so. The agency or firm may also withhold money due the contractor to insure payment of premium. Consequently, failure to comply with the above requirements could delay payment of retained funds.

Note:

Return one (1) copy of this form.

RES 55-3513 (6/84)

Contract XXXX Pre-Work Form

Meeting Time & Date:
Meeting Place:

Attendee's Name, Contract Responsibilities			
#	Name	Role	Cell Phone #
1		Contract Manager	
2		Compliance Forester	
3		Designated Contract Representative	

Contractor Business Phone:

Fax:

Type of Equipment on Job:

Vehicles (make, model, year, color):

- 1
- 2
- 3

Crew Size:

Special or /Tool Requirement Reminders:

Remarks:

Start date:

State Holidays:

Department Representative

Contractor Representative

Contact Information Region Office:

Chris Rasor - 360.575.5058 or Cell 360.880.8288
Mary Hovey - 360.575.5065 - Payment Questions

Contract Administrators: