

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT

EA COVER SHEET

EA Addendum - 10/15/01

RESOURCE AREA: Grants Pass FY & REPORT # EA Number OR-110-00-15

ACTION/TITLE: Free and Easy 2 Forest Management Project

LOCATION: T. 38 S. R. 8.W, Section 33

T. 39. S, R. 8 W., Sections 5, 11, 14, 15, 23, and 25, Willamette Meridian

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Free & Easy 2 Project
EA Addendum
- Fuel Reduction Treatments -
October 15, 2001

I. Introduction and Background

This EA addendum evaluates proposed slash treatment fuel reduction changes on approximately 68 acres of commercial thin / harvest and approximately 333 acres where other vegetation treatments are proposed in the Free & Easy 2 project EA. The objective of the changes is to accomplish the Free & Easy 2 project's fuel reduction objectives more effectively, quickly and at lower cost.

Recent experience in southwest Oregon has demonstrated the utility of using large excavators equipped with a 30+ foot boom and a hydraulic chipping/shredding head (*aka* "slashbuster") to reduce fuel loading and fuel hazard. The machine mechanically shreds slash and/or live vegetation. The treatment immediately and substantially alters the fuel profile. This reduces the potential need for prescribed burning and lowers burn intensities where prescribed fire has a role. It will result in fuel conditions that make fire control easier in the event of a wildfire. Treatment costs are highly favorable as compared to the hand piling and burning treatments.

II. Proposed Action

The proposed change is to use a slashbuster machine to shred /chip fuels with followup broadcast burning in the units noted in the Table A-1 below. This treatment would be implemented in place of the previously proposed hand slashing and/or hand pile and burning fuel reduction treatments. Low intensity (winter/spring) broadcast burning on the mechanically treated areas would likely be within a 1-5 year period after mechanical treatment. This is to further reduce fuel loadings and to meet other applicable objectives such as meadow restoration.

Table A-1: Units where Slashbuster treatments are proposed.

<u>Unit</u>	<u>Approx slashbuster acres</u> **	<u>Purpose of Treatment Change / Comments</u>
Commercial Thin / Timber Harvest units (or portions of units)		
17-3	26	To chip slash created from harvest activities and to reduce the understory fuels by reducing the densities of brush, hardwoods and sub-merch conifers. Fuel treatment / slashing in this unit will be scheduled to occur after the manzanita harvest effort is completed in the five acre manzanita harvest area.
23-2 & 3	7	Only where tractor logging is done.
25-3	25	To chip slash created from harvest activities and to reduce the understory fuels by reducing the densities of brush, hardwoods and sub-merch conifers.
33-1	10	To chip slash created from harvest activities and to reduce understory fuels by reducing brush, hardwoods and sub-merch conifer densities.
Total	68	
Non-timber harvest Units		
14-6	30	To slash the encroaching brush and thin conifers and hardwoods adjacent to and within the meadows.
23-2	12	To reduce the understory fuels by reducing the densities of brush, hardwoods and sub-merch conifers.
23-3	23	To slash the encroaching brush and to thin conifers and hardwoods adjacent to and within the meadows.
23-4	203	To slash the encroaching brush and to thin conifers and hardwoods adjacent to and within the meadows.
23-6	5	In the SW1/4NE1/4 of Section 23
25-1	28	To reduce the understory fuels by reducing the densities of brush, hardwoods and sub-merch conifers.
25-2	32	To reduce the understory fuels by reducing the densities of brush, hardwoods and sub-merch conifers.
Total	333	

** The indicated acreages are estimated net and exclude portions of the unit that are riparian reserve, excessive slope, or special status plant buffers.

Units in Section 23 have the highest priority for changing the treatments as they are adjacent to rural residential areas and are within the wildland-urban interface (National Fire Plan).

The BLM does not, however, currently have access rights to the 120 acres in the S1/2SW1/4 and SW1/2SE1/4 of section 23. Treatment of these areas would be contingent on obtaining access rights from an adjacent private landowner that would allow machinery to be “walked” into the proposed treatment areas.

The following *project design features* would be integral to the proposed treatment changes:

1. The slash buster machine will be restricted to slopes generally less than 35%, or where more than 35% occurs in short pitches.
2. Only low ground pressure (<4 psi) machinery equipped with semi-grouser tracks would be permitted. The shredding head would be mounted on an articulated boom of at least 30' in length.
3. The machine will not operate in or through riparian reserves.
4. Slashbuster operations will be permitted only when soil moisture content is less than 20% at the 6" depth on non-serpentine soils and 20% at the 8-12" depth on serpentine derived soils.
5. Slashbuster operations would not be permitted between February 15 and June 30 to reduce potential impacts on song bird nesting. Slash buster operations would not be permitted in Section 23 OI unit 10 and portions of OI unit 3 prior to July 31 to avoid the flowering and fruiting period for *Calochortus howellii*.
6. In those portions of the proposed units where the slash buster is precluded from operating, slash/fuel treatments would be accomplished by hand where needed in the manner indicated in the EA.
7. As stated in the EA, post treatment evaluations would be completed after each stage of vegetation treatment to review fuel treatment needs at that point and to update treatment proposals as needed.
8. Slash buster treatments proposed on non-timber harvest sites and on serpentine sites would be staged in approximately 50 acre increments. On-site soil impacts (compaction and disturbance) would be monitored after slashbusting and prior to burning for each increment and prior to starting operations in the succeeding increment. Operating procedures may be adjusted if impacts are greater than anticipated.
9. In section 23, slashbuster treatment area includes a trail/road system utilized by the Limestone Challenge Endurance Ride, and other casual users. If the trail tread is obliterated or obscured by the slashbuster, slash would be moved off the trail and the trail tread re-established.
10. No mechanical operations would be conducted within special status plant buffers.
11. In areas of continuous brushfield, a minimum of two (2) "clumps" per acre of brush would be left untreated. A "clump" is an area approximately 25' x 25'. The intent of these clumps is to provide hiding, foraging and nesting cover for a variety of wildlife species.

The location priority for the untreated clumps will be moister micro-sites such as northerly aspects or concavities. These moister sites would have had a slightly different fire disturbance regime from the areas around them and would have the best potential for brush/shrub species to attain a larger size with normal fire disturbance." Where they exist, no-treatment special status plant buffers may be considered as "clumps" for this purpose. In other cases the location of the clumps will be up to the discretion of the equipment operator but will be at least 100' apart. No-treatment "clumps" would not be implemented in the meadow restoration or timber harvest areas.

IV. Environmental Consequences

1. Resource: Soils and Water

The slash buster treatments are composed of two parts: First, the shredding of target vegetation, then broadcast burning within 1 to 5 years after mechanical treatments. The total area of treatment will be about 221 acres (153 acres will be in non-timber harvest units, 68 acres in timber harvest units). The environmental effects on soils consist of disturbance, compaction, and retarding plant growth rate.

Monitoring of slashbuster operations in BLM's Ashland Resource Area have shown that approximately 17% of the treated acres are in direct contact with the tracks of the chipper due to the 60' cutting swath of the cutting head. Of that 17% area, monitoring has shown that due to the fact the tracks are riding on an 8" to 12" layer of cut vegetation, only 2% - 4% of the project area showed any soil compaction. Under this proposal, the chipper will be limited to 35% slope or less, and the cut vegetation will be spread over the entire area. Depths of cut vegetation are projected to be between 6 and 12 inches. This would provide ample material to prevent channeling of runoff. In addition, the chipper will not enter any identified riparian areas, leaving all vegetation within the riparian areas intact.

There may not be a continuous layer of shredded slash on the ground surface that would serve to protect the soil from the tracks of the slashbuster particularly in the non-timber treatment units which are predominantly on serpentine soils. It will depend on the amount and type of vegetation on the sites that will be treated. In such cases it is anticipated that the extent of compacted / disturbed area will not exceed 8% of any treated unit. A project design feature calls for monitoring the first stage of slash treatment to monitor ground conditions before proceeding further. This will allow for adjustments to operating procedures if soil compaction and disturbance are greater than 4% (i.e., a maximum of 4% of the treated area is compacted).

If there is 6 to 12 inches of continuous shredded vegetation left on the soil surface, erosion and sedimentation should not be an effect of this treatment. Broadcast burning will result in a mosaic pattern of lightly burned areas that are discontinuous and surrounded by unburned shredded slash and vegetation. Also, the lightly burned surface will still be protected by a layer of ash and partially burned shredded slash. Under this scenario, it is anticipated that very little if any localized erosion will occur. No sediment should reach streams as a result of this treatment.

The additions of shredded slash to the soil surface may reduce plant growth rate as the material decomposes. This would be due to nutrient sequestration particularly nitrogen. It would also be due to separation of the mineral soil surface from the ground surface. There may be a change in soil biological community makeup. As adjustments are made for the change in physical, chemical conditions in the soil media. The magnitude of these changes is expected to be slight because: 1) this practice is being proposed on predominately serpentine soil where growth rates are already slow due to elevated magnesium levels, and 2) burning the shredded slash will release nutrients to the soil as well as significantly reducing thickness of the surface mulch.

Cumulative effects at the 5th and 6th field watershed level of this treatment are limited to very slight increase in compaction. This would be less than 0.1 percent increase by aerial extent. The level of compaction for 6th field watersheds would remain at moderate levels.

2. Resource: Vegetation and Silviculture

No new substantive vegetation / silviculture effects have been identified beyond those discussed in the Free & Easy 2 EA. (See Botany discussion below)

3. Resource: Wildlife

The proposed action will maintain a mosaic of habitats in the short term and in the long term for a variety of wildlife. Approximately 25' by 25' clumps of vegetation will remain with the treated area. These clumps along with untreated riparian reserves and areas where the machine cannot reach will maintain wildlife cover and nesting structure for species that prefer chaparral. On a landscape scale, the proposed action will begin to reverse the trend of senescent brush fields and meadows with encroaching woody vegetation. In the long term, the treated areas will provide quality meadows and rejuvenated chaparral stands. There are no anticipated adverse effects to sensitive species or species listed under the ESA.

4. Resource: Botany

a. Introduction

The effects discussed below are based on a review of several slashbuster treated units in the Ashland resource area and field visits to several Free and Easy II units proposed for this treatment. The following observations were made of areas treated with a slashbuster:

- Reduction in canopy cover varied from unit to unit. Units where canopy of hardwood trees (oaks, madrones) were maintained at higher levels (perhaps 30-40%) and shrubs were removed for 30' around hardwood trunks showed a healthier understory with more native grasses present. Native grasses seemed more common under the canopy of hardwoods.
- In recently treated units where dense brush existed, bare soil was common, especially on slopes, where tire tracks from the slashbuster could be seen from a distance. Canopy was

greatly reduced. Slashbusting of brush left no herbaceous layer, most likely because not much of a layer existed before treatment due to densities. No mitigations for soil erosion were in place.

- In older units, a high percentage of weedy species were present in the understory, especially where the canopy was greatly reduced (i.e. 10 - 20% coverage left) and native grasses were not seeded in after burning.
- In units where burning did not take place, germination of understory species seemed impeded by depth of slash left.
- In units where madrones were treated, intense sprouting took place where high levels of brushing would be required. Manzanita and buckbrush both appeared to come back in from seed; not from re-sprouting.
- Units where clumps of vegetation were left to create a mosaic (versus units where canopy was reduced consistently across the landscape except for draws) showed higher potential for a healthy diversity of habitats. These units seemed to replicate the pattern of the natural fire regime before the suppression era rather than the industrial, equal spacing of the other units.

b. Environmental Consequences

1) Effects on Native Vegetation in General

The effects of slashbusting on native vegetation could be both positive and negative. By broadcasting slash instead of handpiling it, conditions for prescribed burning would better replicate natural, low intensity burns on the landscape, as long as the slash layer is not too thick. A thick layer of slash could create conditions where high intensity fire could damage the soil and seedbed to a point where any species in the herbaceous layer would have difficulty re-establishing.

Other negative effects would be the promotion of noxious weed spread. This is of particular concern in the units identified in section 25. The species, scotch broom, grows along the rural interface of these units. Scotch broom thrives on openings created by disturbance. It may completely take over such openings and will eventually out compete most of the native vegetation surrounding it. Non-native annual grasses will also be a concern in most units since their existence is common in the pastures adjacent to the project. Non-native grasses will be encouraged due to the amount of soil disturbance in these areas.

Proposed Mitigating Measure #1: - Complete initial eradication treatments for Scotch broom and any other state listed noxious weed found on these units before any type of slash buster or fuels treatment takes place. A combination of hand pulling, cutting and swiping with herbicide will be necessary on a repeated basis to control this species. Burn slashbusted areas where non-native grasses are common as soon as possible after treatment. Re-seed these areas with native grasses.

2) Effects on Special Status or Survey and Manage Species:

The following units contain special status or survey and manage plant populations: 23-2&3, 23-3&4, 25-1, 25-2, 25-3, 14-6.

Effects to such species from the slashbuster could include soil surface disturbance that could damage important mycorrhizal connections necessary for the viability of many species. In particular, *Cypripedium fasciculatum*, found in two locations would be most vulnerable. Even though 100' radius buffers have been installed, surrounding soil disturbance could still effect the viability of these populations due to disruption of mycorrhiza that could be directly tied to this species.

Proposed Mitigating Measure #2: Keep the slashbuster as far away from these buffers as possible. This could be accomplished by maneuvering away and using the 30' boom when working close to these buffers.

The Bureau Sensitive species *Calochortus howellii*, *Microseris howellii* and *Senecio hesperius* are found scattered in serpentine meadows as well as under serpentine shrubs such as buckbrush in unit 23-4. Direct contact from slashbuster grousers would most likely kill individual plants, reducing population viability. The cutting of slash around these plants could also damage flowers and fruits, reducing the reproductive potential of populations. This is especially true for *Calochortus howellii* which flowers in late June.

Proposed Mitigating Measure #3: Use a combination of buffers and the no treatment clumps described in the PDFs throughout Unit 23-4 to protect the three serpentine meadow species discussed.

The prescribed burning of slashbuster debris could be beneficial to the above species if debris is scattered lightly across the units where handpiles aren't required. As serpentine savannah plants, these species have most likely evolved with low intensity natural fire. Fire could bring a flush of new growth in new areas. Slash from this treatment could impede germination of these species if left on the ground.

Proposed Mitigating Measure #4: Burn units where serpentine savannah rare plants are located as soon as possible after slash buster treatment to open up the soil for germination of these species. Prescribed burning would be allowed in clumps and buffers as long as fire behavior could remain at a moderate level.

The lichen species, *Bryoria tortuosa* and *Sulcaria badia*, occur mostly on the ecotone between forest and serpentine shrubland. These species are also scattered through the dense shrub beyond the forest edge that is encroaching into the meadows, especially on older manzanita. The main source substrate for these species is ponderosa and Jeffrey pine. *Dendriscoaulon intricatum* grows on most oak species mixed in with conifers on ridge lines; its main substrate being black oak.

It will be impossible to avoid effects to these species using a slashbuster treatment. In order to adequately reduce hazard fuels, numerous individuals will be eliminated. However, if done correctly, this should probably be advantageous as it will substantially reduce the potential for a high intensity fire that could completely eliminate populations.

Proposed Mitigating Measure #5: Use a combination of buffering and flagging of individual source trees to protect the highest concentration of these lichen species. To ensure that hazardous fuels are reduced around lichen population areas, pull slash away from buffer edges and flagged trees so that slash depth is less than 1'. In the non-timber harvest units, retain all oaks greater than 6" DBH and pull slash away from the boles so that slash depth beneath the crowns is less than 1' in depth. This will help to maintain a healthy native grass component under their canopies.

3) Cumulative Effects

It appears that due to its economic feasibility, the slash buster machine will become more widely used across the landscape. It seems to be an ideal tool for reduction of dense hazardous fuels. Wide spread use of the machine in conjunction with vegetation treatments that result in evenly spaced, low canopy coverage stands could result in landscapes or large areas with homogeneous vegetation conditions and a consequent reduction of habitat or species diversity and an increase in noxious weeds. Projects such as the present one that include treatment constraints that ensure a diversity of habitats are maintained and that native seedbeds are protected should help counter any cumulative effects that might otherwise occur across the landscape.

5. Resource: Fisheries / Aquatic

a. Affected Environment

The proposed action will not take place within any riparian reserves. Several fish-bearing streams are located within the project area. Slashbusting fuel reduction treatments will take place in units adjacent to these streams and up to 2 miles upstream of fish-bearing reaches. Southern Oregon/Northern California (SONC) coho salmon, which are federally listed as threatened, are potentially present within 0.25 miles of units in Section 33, where coho critical habitat is found in Reeves Creek. For an expanded description of fish distribution, see the fisheries affected environment section in the main Free and Easy 2 Environmental Assessment.

b. Environmental Consequences

No effects to fisheries or aquatic resources are anticipated from the proposed action change. This determination includes short and long term, direct and indirect, and cumulative effects. Impacts have been considered temporally on the short term and long term scales, and spatially at the project/site and watershed scales. There would be no effect to coho salmon or coho critical habitat from the proposed action.

Project Design Features restrict slashbusting to areas outside of riparian reserves. The riparian reserve widths established for fish-bearing, perennial, and intermittent streams (300 feet, 150 feet, and 100 feet, respectively) are sufficient to isolate the streams from any effects of the proposed action. In the event that a dry draw which leads into a riparian reserve is treated, the reserve width will extend into the draw the same width as on either side of the stream.

6. Resource: VRM / Recreation / Cultural

The visual effects of slashbuster treatments would be consistent with the VRM Class III objectives pertinent to the project area.

Recreational use of the area is light to moderate and the slashbuster treatments will not impact recreational activities. The proposed clearing of slash from the trail in section 23, will address potential impacts on the Limestone Challenge Endurance Ride and other casual users of that trail.

7. Resource: Fuels / Fuel Hazard / Air Quality

Fire hazard reduction: The mechanical shredder / slashbuster cuts and shreds vegetation up to 16" in diameter into pieces ranging from <2' in length and <4" in diameter. This creates a compact fuel bed 6" to 12" in depth. "Jackpots" or fuel concentrations are effectively chipped and scattered over a wide area reducing fuel bed depth. Fire behavior in treated units is primarily a low intensity ground fire with low to moderate rates of spread easily controlled by ground forces during either wildfire or prescribed fire. Due to the lower intensity fire behavior, prescribed under burning or broadcast burning can be accomplished with lower risks, requiring less personnel and equipment than would normally be required prior to the chipper treatment.

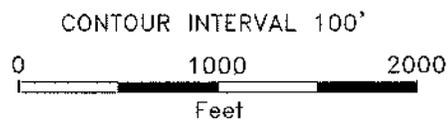
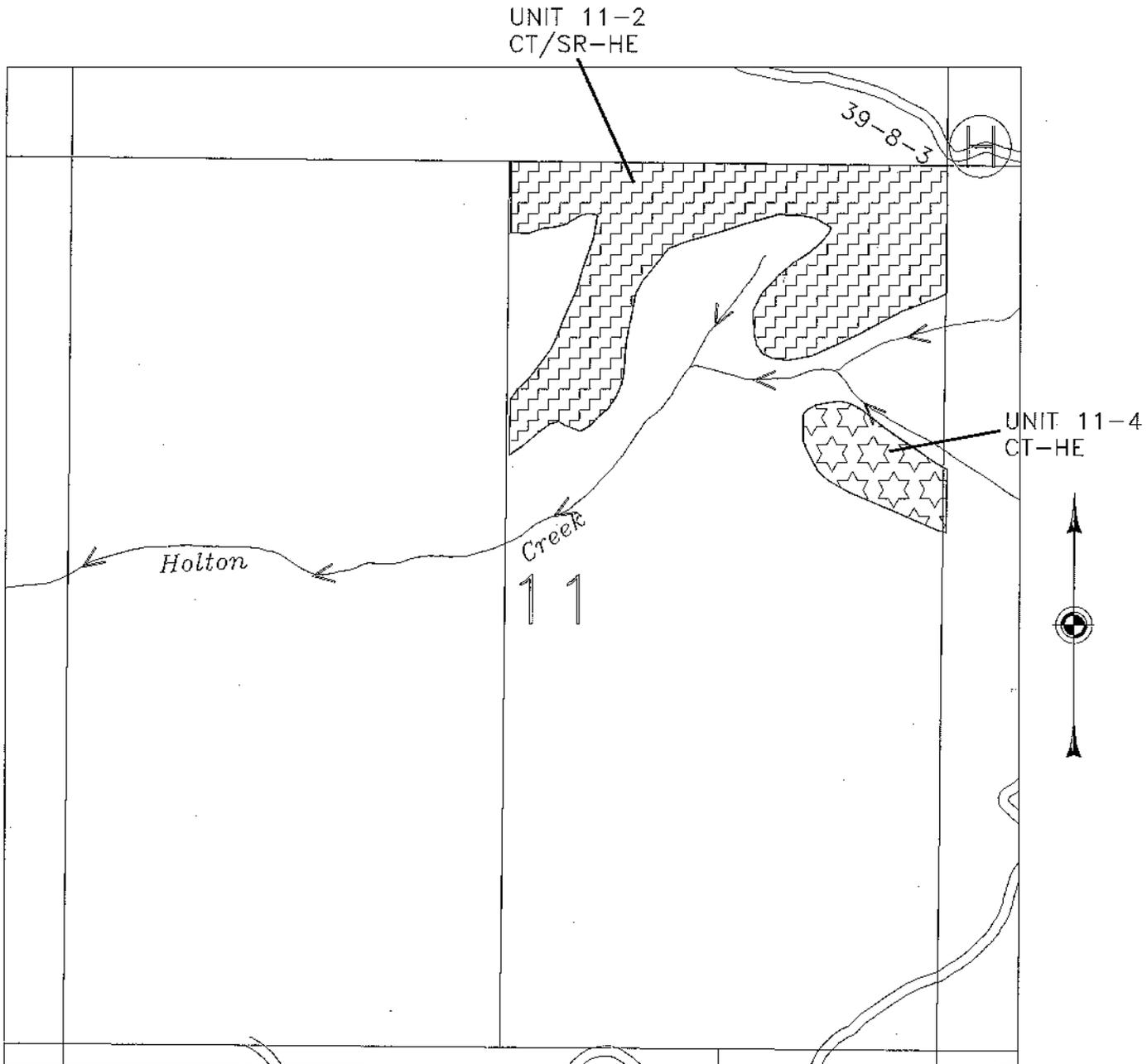
Mechanical shredding results in an immediate reduction in fuel hazard by substantially altering the fuel profile. The subsequent prescribed burning will further lower burn intensities.

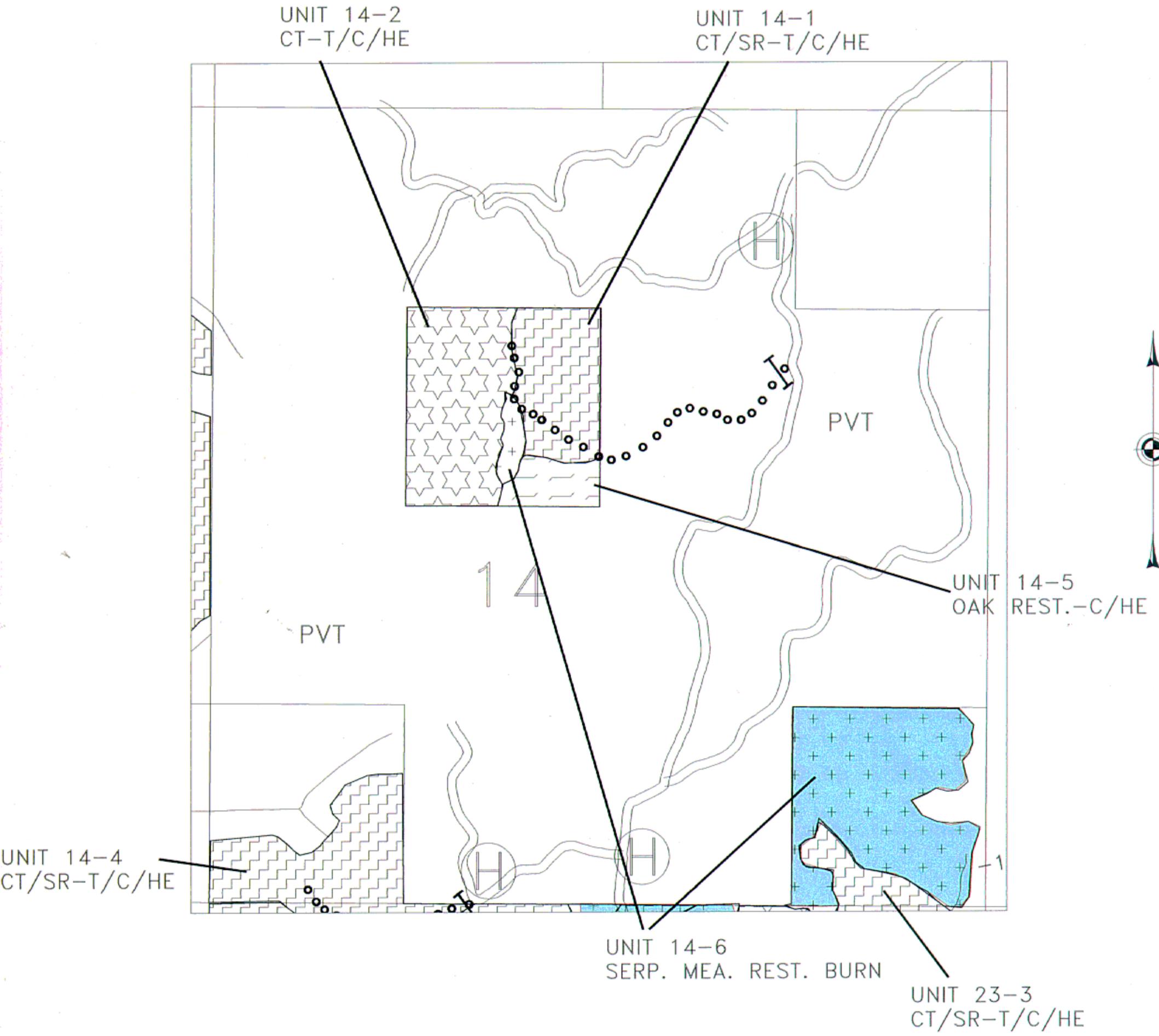
Relative costs: Costs are highly favorable as compared to the hand piling and burning treatments. The average cost of using a slash buster for precommercial thinning is \$350 / acre and chipping is \$210 / acre. Recent experience with this type of machine on the Medford District for fuel treatment work indicates that costs can be reduced by 30% or more relative to broadcast burning (\$300 - \$500 ac.) and slashing/ handpile burning (\$1,200 ac.). Pretreatment with a shredder also reduces risk of escape due to the lower intensity prescribed burns that can be done.

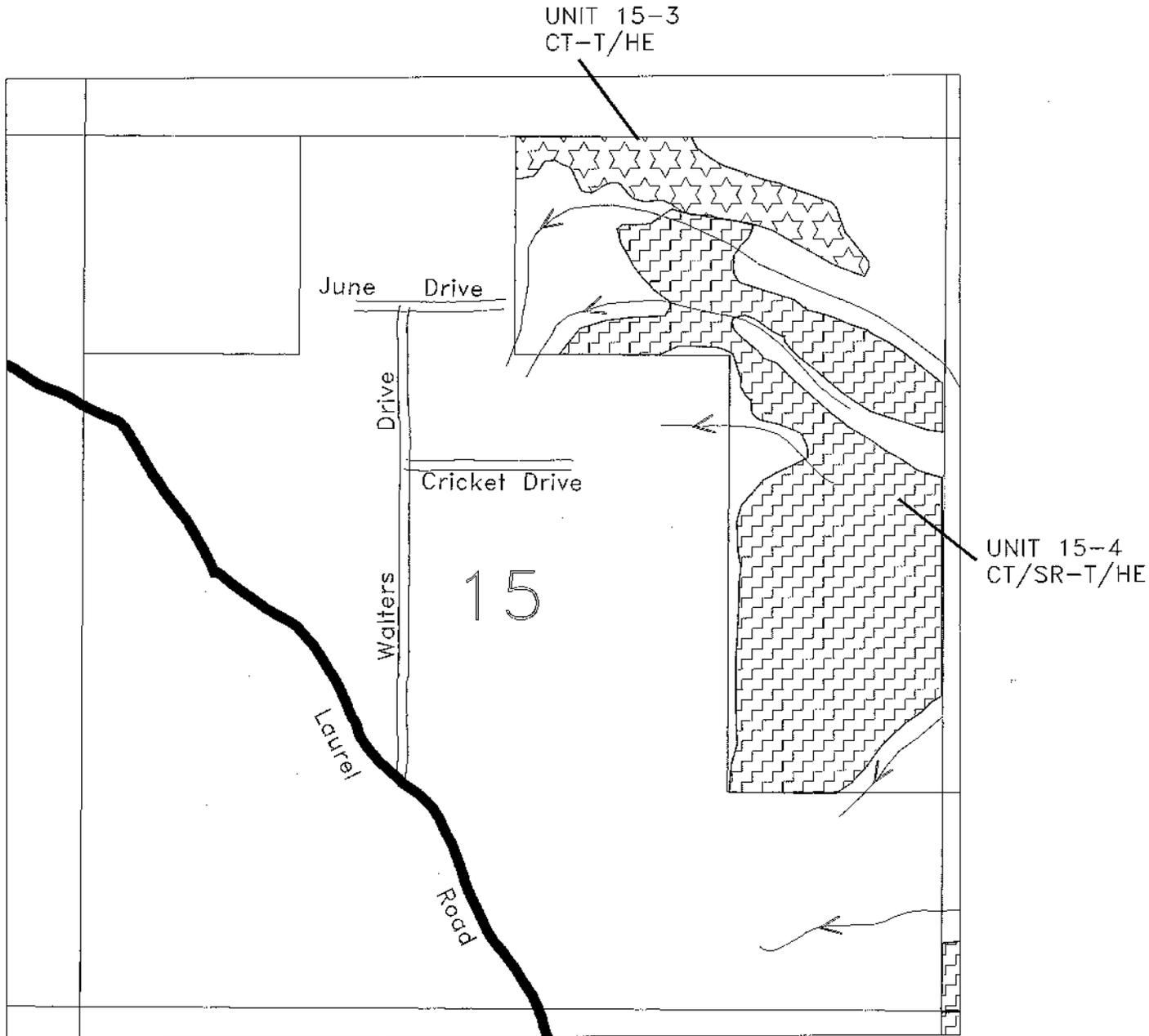
Air Quality: Treating fuels with a shredder / slashbuster can reduce the potential level of overall emissions in those instances where acres of burning can be reduced. Air quality impacts can be more easily mitigated or reduced by the treatment's broadening the window for prescribed burning.

Slash Buster

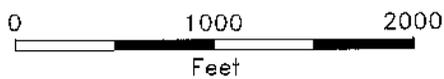
General Specifications/Capability- (John Deer 200LC) Total operating weight for this machine is 48,250 lbs. Width is 10' 6" with 32" semi grouser shoes. Length is 31' 7". This track mounted excavator can work on slopes up to 45% with ground pressures of 2-4 psi. The cutter head rotates at a adjustable speed of 300 - 400 RPMs. The chipper is capable of cutting and mulching trees up to 16" diameter. With it's 30' reach it allows the operator to thin and chip with less track movement, cutting down on soil disturbance. Fuel tank capacity is 80 gallons and fuel consumption is 3 -5 gallons an hour.



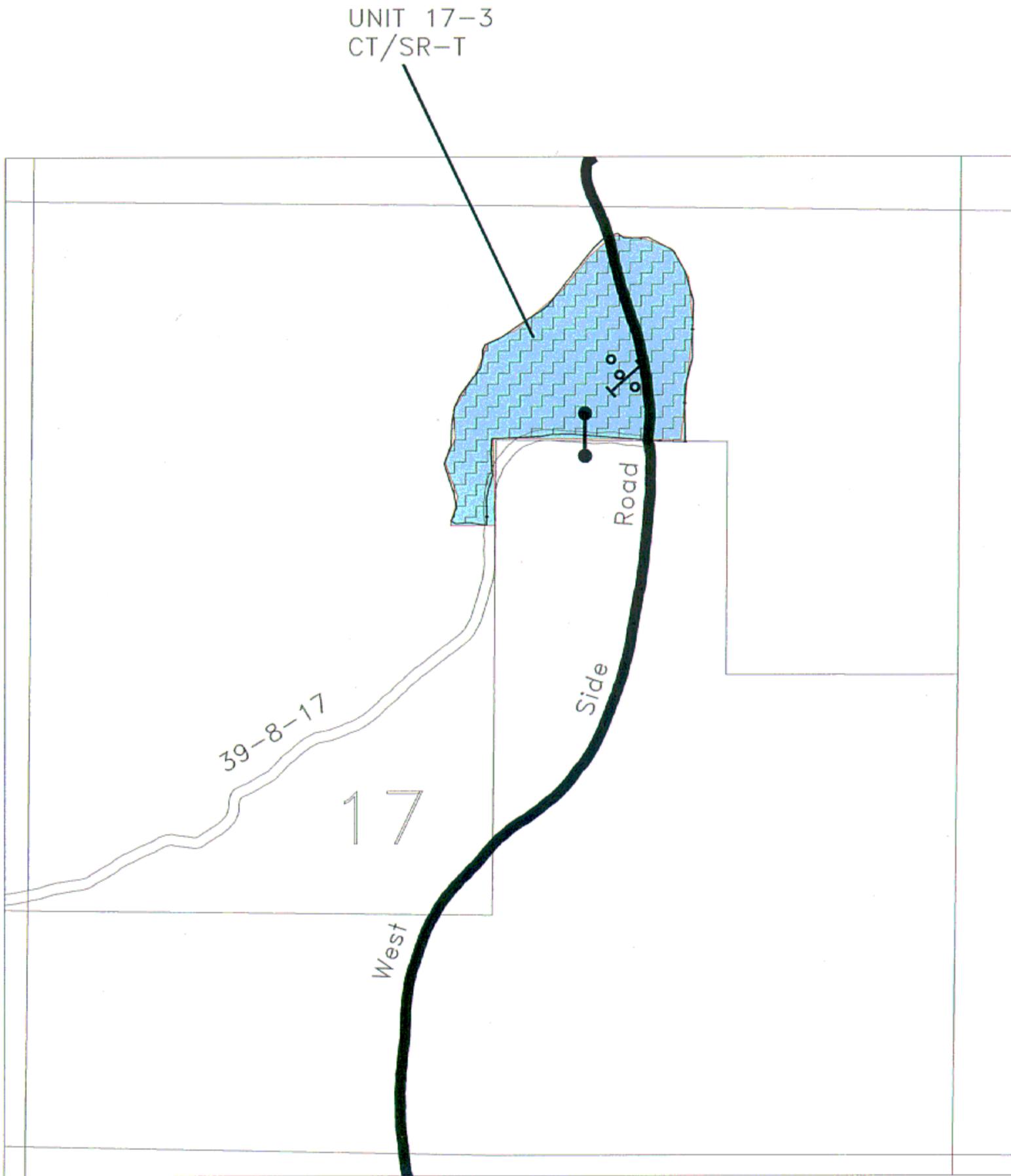




CONTOUR INTERVAL 100'



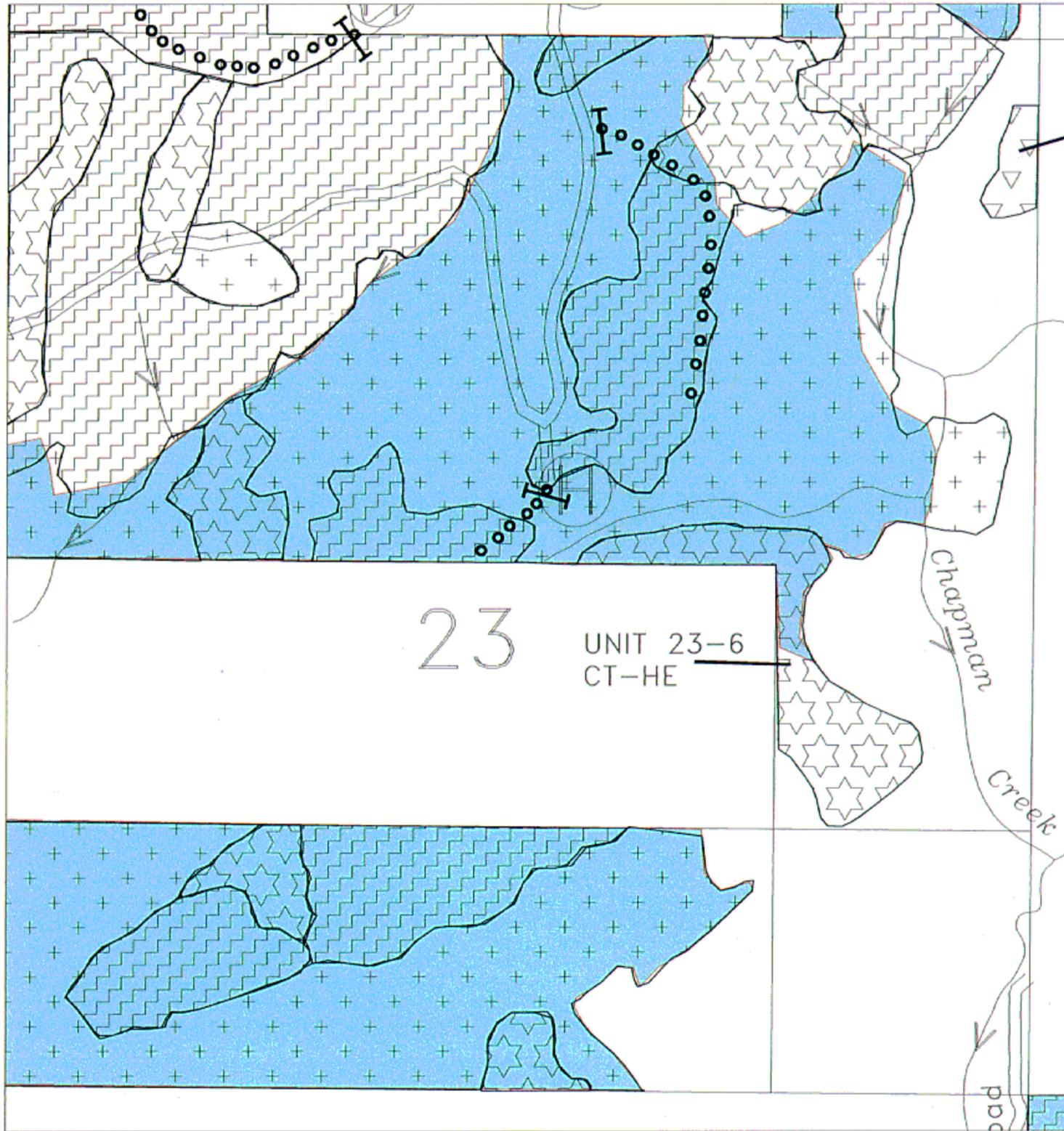
PVT



CONTOUR INTERVAL 100'



UNIT 23-3
CT/SR-T/C/HE



UNIT 23-1
CT-HE

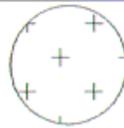
UNIT 23-2
CT-T/C/HE



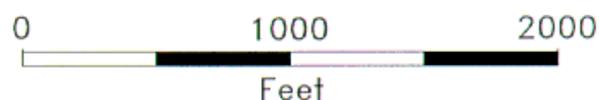
23

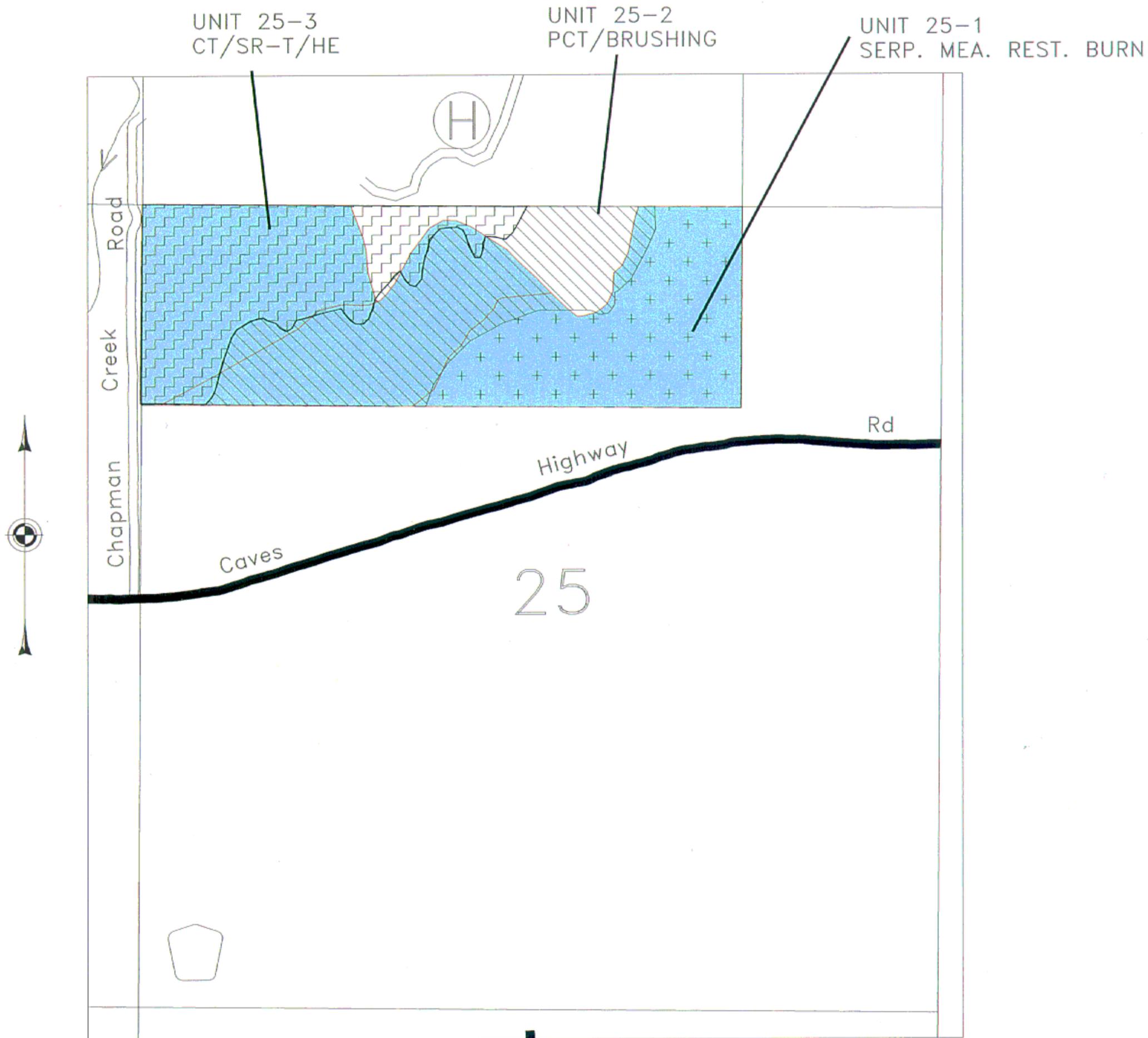
UNIT 23-6
CT-HE

UNIT 23-4
SERP. MEA. REST. BURN

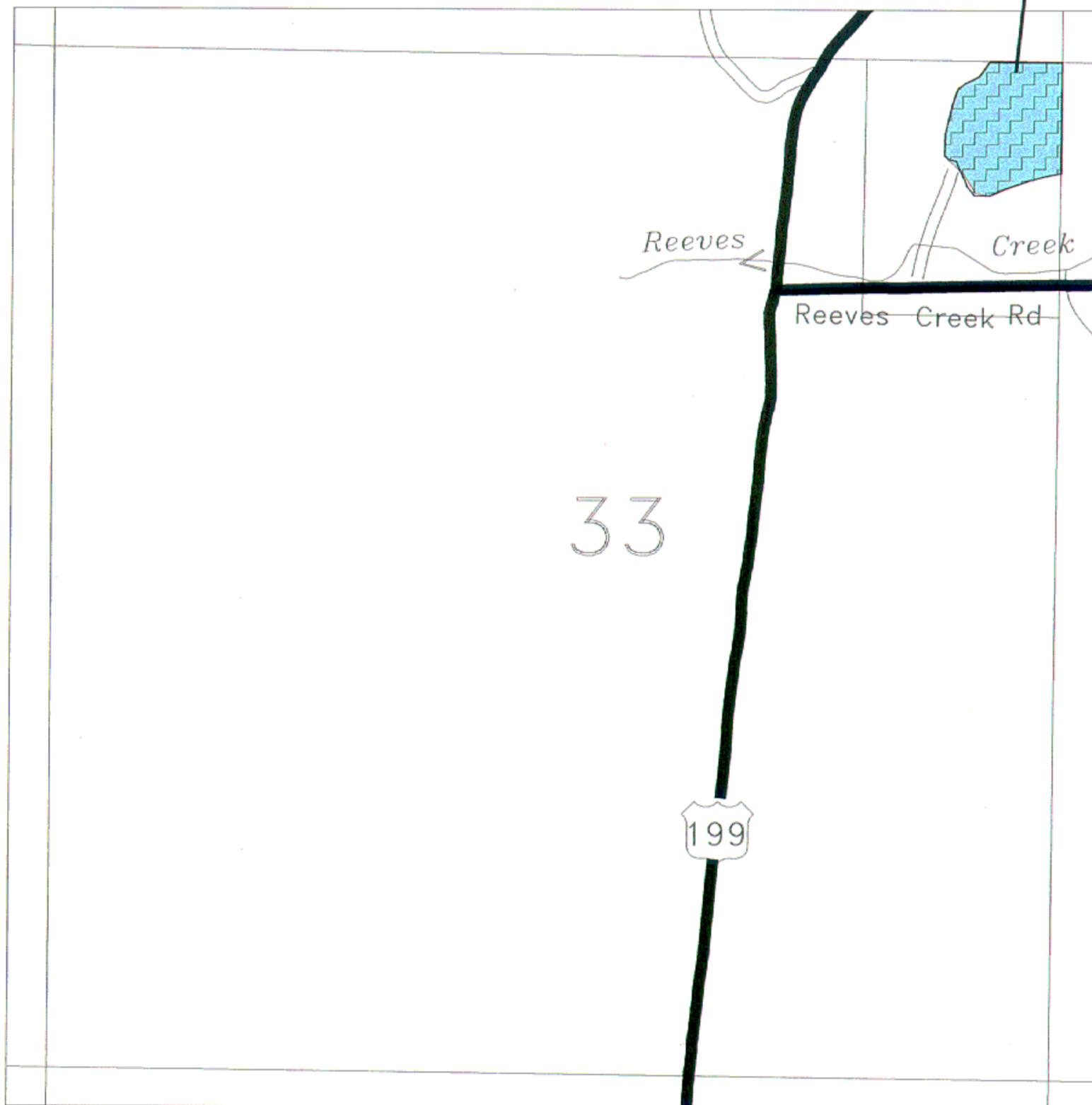


CONTOUR INTERVAL 100'





UNIT 33-1
CT/SR-T



CONTOUR INTERVAL 100'



LEGEND

 EXISTING ROAD

 PAVED ROAD

 SPUR TO BE CONSTRUCTED

 STREAM

O&C BLM LAND

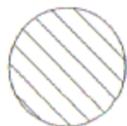
PVT PRIVATE LAND

PD BLM LAND

 EXISTING GATE

 EARTH/LOG BARRICADE TO BE CONSTRUCTED

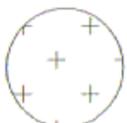
 POTENTIAL HELICOPTER LANDING

 PRE-COMMERCIAL THIN/BRUSHING

 COMMERCIAL THIN

 SHELTERWOOD RETENTION

 COMMERCIAL THIN/SHELTERWOOD RETENTION

 SERPENTINE MEADOW RESTORATION BURN

 OAK RESTORATION

 PROPOSED SLASHBUSTER USE AREA