FOR ADMIN. USE ONLY				TIMBER HARVESTING PLAN	FOR ADMIN. USE ONLY	
Amendments-date & S or M				STATE OF CALIFORNIA		
1.		7.		DEPARTMENT OF FORESTRY	THP No.	1-00-314 HUM
				AND FIRE PROTECTION		
2.		8.		RM-63 (01/00)	Dates Rec'd	AUG 07 2000 AUG 25 2000
				THP Name--Roddiscraft A-F		
3.		9.		STCO #18-0001	Date Filed	SEP 04 2000
4.		10.		SC # 718xxx	Date Approved	OCT 24 2000
				Unit A ID # 440904 Unit B ID# 440901		
5.		11.		Unit C ID # 440803 Unit D ID# 440802	Date Expires	OCT 23 2003
				Unit F ID#543301 Unit E ID# 440902, 440903		
6.		12.		If this is a Modified THP, check box	Extensions	1) [ ] 2) [ ]
				[ ]		

This Timber Harvesting Plan (THP) form, when properly completed, is designed to comply with the Forest Practice Act (FPA) and Board of Forestry rules. See separate instructions for information on completing this form. NOTE: The form must be printed legibly in ink or typewritten. The THP is divided into six sections. If more space is necessary to answer a question, continue the answer at the end of the appropriate section of your THP. If writing an electronic version, insert additional space for your answer. Please distinguish answers from questions by font change, bold or underline.

SECTION I - GENERAL INFORMATION

This THP conforms to my/our plan and upon approval, I/we agree to conduct harvesting in accordance therewith. Consent is hereby given to the Director of Forestry and Fire Protection, and his or her agents and employees, to enter the premises to inspect timber operations for compliance with the Forest Practice Act and Forest Practice Rules.

1. TIMBER OWNER(S) OF RECORD: Name **Simpson Timber Company**

Address **P.O. Box 68**

City **Korbel** State **CA** Zip **95550** Phone **(707) 668-4400**

Signature _____ Print **Jim Brown** Date 8/4/00

NOTE: The timber owner is responsible for payment of a yield tax. Timber Yield Tax information may be obtained at the Timber Tax Section MIC:60, State Board of Equalization, P.O. Box 942879, Sacramento, California 94279-0060; phone 1-800-400-7115; BOE. Web Page at http://www.boe.ca.gov.

2. TIMBERLAND OWNER(S) OF RECORD: Name **R.H. Emerson and Son LLC and Simpson Timber Co**

Address P.O. Box 1189

City Arcata State CA Zip 95518 Phone

Signature Bill Blackwell Print Bill Blackwell (Unit "F") Date

3. LICENSED TIMBER OPERATOR(S): Name **Same as #1** Lic. No. **A-6968**

(If unknown, so state. You must notify CDF or LTO prior to start of operations.)

Address

City State Zip Phone

Signature _____ Print **John Plantin** Date 8/4/00

4. PLAN SUBMITTER(S): Name **Same as #1**

Address

City State Zip Phone

(If submitter is not 1, 2, or 3 above. He/she must sign below. Ref. Title 14 CCR 1032.7 (a)

Signature _____ **John Plantin** Date 8/4/00

RECEIVED
AUG 25 2000
COAST AREA OFFICE
RESOURCE MANAGEMENT

RECEIVED
AUG 07 2000
COAST AREA OFFICE
RESOURCE MANAGEMENT

In evaluating cumulative impacts, the RPF considered the factors set forth herein.

A. WATERSHED RESOURCES

Factors considered in the evaluation of cumulative watershed impacts are listed below. All references to the cumulative impact assessment area (CIAA) in this section refer to the geographic assessment area for watershed resources described above under

Identification of Resource Areas.

A 1. Watershed impacts are based on significant on-site and down-stream cumulative effects on beneficial uses of water, as defined in the Water Quality Control Plan for the North Coast Region, as adopted by the North Coast Regional Water Quality Control Board on December, 9, 1993, and subsequently approved by the State Water Resources Control Board on August, 18, 1994.

A 2. Watershed effects that may be produced by timber harvest and other activities include those discussed below.

A (2a) Sediment effects -

Stream sedimentation. Sediment production, transport, and deposition play key roles in determining the quality of salmonid spawning, rearing, and resident habitat. Redwood Creek tributaries within the assessment area have relatively high stream gradients with numerous pools and riffles. Pools and spawning gravels in Redwood Creek were adversely impacted by a combination of poor harvesting practices and major storm events prior to 1975. The construction of haul roads immediately adjacent to Redwood Creek during the 1950's and 1960's activated numerous large slides along Redwood Creek. Impacts to Redwood Creek included channel aggradation, the filling of pools, gravel embeddedness, and stream bank erosion. The 1964 flood was a major event that resulted in larger scale road failure in the drainage. Since 1975, no large floods have occurred and channel morphology and streambed particle sizes are gradually approaching the conditions that prevailed before the 1964 flood (Redwood National and State Parks-Draft Redwood Creek Watershed Analysis. 1995). The implementation of the 1973 Z'berg-Njedly Forest Practice Act, and the Forest Practice Rules authorized by the Act, have greatly changed the manner in which timber harvest operations are conducted. Increase in suspended sediment is not expected to be significant in this plan, considering the protective measures described below. Watercourse protection zones, equipment exclusion zones, no-cut buffer zone along the unstable areas, and soil stabilization measures incorporated into the THP throughout the CIAA will provide sediment traps and filter strips to prevent significant amounts of sediment from reaching the streams within the assessment area. Operation of the plan combined with other projects and naturally occurring events should result in no significant adverse cumulative effects relating to sediment, temperature, and the probable stream turbidity.

Measures that have been taken to ensure watershed integrity and limit short and long term potential, probable sediment introduction into this watershed include an emphasis on:

- Cable yarding on moderate slopes (> 45%) to minimize soil disturbance.
- Helicopter yarding on moderate ground to reduce soil and ground disturbance
- Avoiding harvesting within the steep inner gorge area and retaining no cut harvest zone.
- Avoid constructing new seasonal roads to access isolated units A, C, D, F for cable and tractor logging.
- Avoid constructing roads parallel to Class I and II streams to facilitate cable and tractor harvesting
- Utilize old existing roads and skid trails while reconstructing a road to unit B. to minimize excavation.
- Opted not to harvest one unit located between two major watercourses within the slide prone area below landing #3.
- Re-install old failed or washed out culvert with new oversized culverts along Roddiscraft Road.
- Established a no cut WLPZ and HRA along the riparian zone of Snow Camp Creek
- Armoring around the inlet and the outlet of the culvert with rock to reduce potential erosion.
- No heavy equipment operations within or adjacent to WLPZs.
- Stabilize the helicopter landings by grass seeding and straw mulching.
- Simpson's road maintenance program.
- Install adequate and proper waterbars and rolling dips on seasonal roads to disperse surface flow during winter months .
- Grass seed and straw mulch all temporary crossing prior to the winter period.
- Implementation of all recommendations and mitigations imposed by the geologist in the attached Geology report.

The protection provided in the FPRs and the mitigations measures described throughout this THP will effectively prevent significant soil erosion and sediment transport from the proposed plan. No significant adverse cumulative impact related to sediment effect are anticipated as a result of operations conducted pursuant to this THP.

A 2b. Water Temperature Effect: North coast streams are inherently less susceptible to impacts from solar radiation and stream temperature increases than inland streams. Even low gradient streams are unlikely to experience temperature increases detrimental to aquatic habitat characteristics unless the entire shading riparian canopy is removed and its regrowth prevented. Large segments of the riparian overstory were cut or otherwise removed along Redwood Creek and the other major watercourses in the assessment area during logging and storm events between 1950 and 1975. Recent inspections of the riparian zones within the upper reach of the Redwood Creek and its tributaries within the assessment area indicate that the current riparian canopy cover ranges between 70% to 90%. However, the lower stream reach along Redwood Creek has little canopy cover due to past events. In general, most stream reaches have a well-developed overstory canopy composed primarily of deciduous hardwoods and scattered conifers (Douglas-fir).

Given the cool coastal climate, summer fog intrusion, and the canopy retention prescribed on Class I and Class II watercourses throughout the assessment area, there is little reason to believe that stream temperature is a critical factor in limiting the quality of habitat for fish or other aquatic species within this CIAA. There are no recorded temperature data along upper Redwood Creek within the assessment area, however, there are a few temperature data recorded just north of this assessment area along Pardee Creek and Lake Prairie Creek, which are all tributaries of the Redwood Creek. The aspect, topography and canopy cover along these monitored creeks are similar to creeks within this plan area. The temperature data collected at these locations indicated that temperatures were very favorable and should not significantly or adversely be affected by timber harvesting operations associated with this THP, or when operations pursuant to this THP are considered in conjunction with other projects in the area. The temperature data compiled from the monitoring sites located along Pardee Creek and Lake Prairie Creek and the map depicting the locations of these stations are attached at the end of Section IV.

A 2c. Organic Debris Effects: Studies over the past few decades have identified the importance of large organic debris (LOD) in providing long term stream diversity, structure, and complexity. Unfortunately, this was not recognized until recently, and past management practices did little to protect whatever necessary LOD was in place, or provide for recruitment of LOD over the long term. In addition to the removal of LOD as part of "stream cleaning" projects, it was common practice in the past to harvest most, and sometimes all, of the conifers located along streams. Construction of truck roads directly adjacent to watercourses also reduced the occurrence of conifers within riparian zones. The above-described practices have resulted in less LOD in the streams than is desirable.

Conifer species are of primary importance for LOD recruitment due to their resistance to decay, and therefore inherent longevity once they enter the stream channel. Although some hardwood dominated riparian zones have developed as a result of past management practices, many of the riparian zones along watercourses within the CIAA have sufficient conifer trees to serve as candidate material for LOD recruitment in the future. Simpson's policy of retaining 70% of the overstory and 50 % of the understory in Class I WLPZs, and 70% total canopy retention in most Class II WLPZs, in conjunction with Forest Practice Rules governing conifer leave trees within WLPZs, should ensure that there will be an increasing supply of conifers to serve as sources of LOD along these watercourses and their tributaries in the future. Therefore, no significant adverse cumulative impact on LOD is foreseen as a result of timber operations related to this THP.

A 2d. Chemical Contamination Effects: Operations on this plan should not have a significant impact on chemical contamination within assessment area watercourses. The only likely contaminants associated with this plan are nutrients which may be released if slash burning is necessary, accidental release of fuels and oils from heavy equipment, and drift or spills from possible mishandling of herbicides if herbicide application is necessary to control vegetation competing with planted seedlings.

Slash burning will only be utilized if it is deemed necessary to prepare the site for reforestation in units B, and E. The timing of prescribed burns is predicated upon the existence of atmospheric and fuel moisture conditions that will result in low intensity burns, thus minimizing the potential for nutrient release. Watercourse protection measures incorporated in the Forest Practice Rules and this THP also minimize the risk that nutrient release from controlled burns will impact streams.

Possible contamination from fuels and oils is limited by servicing equipment in locations away from watercourses. In addition, spill contingency plans have been prepared and personnel have been trained in their implementation so that there will be a prompt and effective response in the unlikely event that a spill of chemical contaminants should occur.

completion of harvesting activities, logged areas are planted with young trees as soon as possible to assure prompt and adequate reforestation. To promote survival and rapid growth of these young trees, herbicides may be applied to control competing vegetation. Herbicides suppress the growth of competing vegetation, thus reducing the competition for sunlight, nutrients and water. Such competition can cause seedling mortality and retard the growth of surviving conifers, significantly delaying both the re-establishment of forested conditions on the site and the timing of future harvesting operations. Herbicides may also be used along roadsides to prevent vegetation from encroaching into the roadway, reducing visibility and preventing the drying of road surfaces.

Although differing methods exist to control competing vegetation, the use of herbicides is often the option chosen due to the demonstrated effectiveness and safety of chemicals registered for use in forestry, compared to the much higher cost of alternative methods that are usually not as effective. Herbicides are applied by trained and certified applicators according to product label instructions and federal and state regulations governing the use of pesticides. Studies conducted over many years have consistently reaffirmed that there are no significant problems associated with accumulation or persistence in soil or water of registered pesticides commonly used in forestry, when applied as prescribed.

This THP neither mandates nor proposes the use of herbicides in the project area. Any use of herbicides would be subject to a completely separate regulatory process. Application of pesticides on timberlands is regulated by both the Department of Pesticide Regulation and is monitored by the North Coast Regional Water Quality Control Board (NCRWQCB), in separate regulatory proceedings. Operational practices have been developed to protect the beneficial uses of the waters of the State during and after herbicide applications. These practices have evolved into Best Management Practices (BMPs) that, when fully implemented, are designed to provide maximum protection to these beneficial uses. The NCRWQCB's annual Executive Officer's Report regarding herbicide use states that when herbicides are applied in accordance with BMPs discharges of herbicides to waters of the State are controlled. In fact, monitoring data demonstrate that forestry applications of pesticides have little, if any, immediate or incremental impact on water quality or aquatic habitat.

No significant adverse cumulative effects relating to chemical contamination are anticipated as a result of harvesting or herbicide application on this plan.

A 2e. Peak Flow Effects: Late spring through early fall flows may increase slightly due to the removal of trees as part of these timber harvesting operations, and streams that do not support mid-summer flow may sustain surface flow for a longer period of time into the summer. Winter peak flows should be unaffected by timber harvest. Any peak flow effects should decrease as vegetation develops on the site. Therefore, no significant adverse cumulative effects relating to peak flows are anticipated.

A 3. Watercourse Condition: Following is a list of channel characteristics and factors that describe current watershed conditions and assist in evaluation of potential project impacts. The description of the watercourse conditions of the upper reach of the Snow Camp Creek and un-named tributaries of the Redwood Creek that are associated with this plan are based on RPF's personal observation during the plan layout.

Gravel Embedded: The upper reach of Snow Camp Creek and the unnamed tributaries of the Redwood Creek have high to moderate stream gradients throughout the CIAA. Where gravel occurs in riffles, the gravel tends to be embedded with fine material, but not beyond what one expects to find for this geological type. As discussed above, the schistose/sedimentary parent material of this area creates a high background of fine sediment and the gravel never appears to be free of fine sediment. Timber operations should not result in gravel embeddedness within these streams. The riparian zones within the THP area have been protected with enhanced WLPZs and no cut buffer zones.

Pools Filled: Because of the geology of this area, streams within this CIAA have a high natural background level of sediment. Rapid stream flows during the winter months appear to be keeping pools from overfilling. Operation of this plan should not accelerate or increase filling of the pools. The riparian zones within the THP area have been protected with enhanced WLPZs and no cut buffer zones.

Aggrading: Recent observation of the upper reach of Snow Camp Creek and the unnamed tributaries of the Redwood Creek did not indicate evidence of excessive channel aggradation. Some aggradation does occur during the winter months when the class II and III tributaries to the Redwood Creek are flowing water within the CIAA. The class II and III tributaries to Redwood Creek facilitate the transportation of fine detritus material into these creeks during winter months. Timber operations should not accelerate or increase aggradation because of the enhanced riparian zones protection afforded in this THP.

Bank Cutting: Natural bank cutting is evident throughout upper reach of Snow Camp Creek and the unnamed tributari[illegible] the Redwood Creek, mainly because of the erosive nature of the parent material. However, this plan is not expected to affec[illegible] bank cutting because no heavy equipment is permitted within the riparian zones. The riparian zones within the THP area have been protected with enhanced WLPZs and no cut buffer zones.

Bank Mass Wasting: Natural shallow inner gorge failures are visible along the immediate side slopes of Snow Camp Creek and within the upper reach of Redwood Creek drainage in the CIAA. These small slides appear to be associated with high winter flows undercutting streamside banks. These small natural slides appear to revegetate quickly and usually do not become a continuous source of sediment. Heavy bank wasting is not visible along the lower portion of the creek. The unstable areas depicted in the map have stabilized and young growth trees and shrubs are growing on it. Operations of this plan should not result in increased mass wasting because of the enhanced WLPZs and no cut buffer zones provided throughout this plan.

Down Cutting: Downcutting as evidenced by undercut or eroded stream banks is not present above what would be expected under natural conditions. Timber operations on this THP should not result in increased down cutting. The riparian zones within the THP area have been protected with enhanced WLPZs and no cut buffer zones.

Scoured: Pools appear to be partially scoured within the lower reach of the Snow Camp Creek but contain some fine sediment that would be expected in this geologic soil type. A dense cover of streamside understory vegetation is present along most of the Class I and II portions of the watercourses within the CIAA. Based on observations of stream segments, timber operations on this THP should not result in increased stream channel scouring. The riparian zones within the THP area have been protected with enhanced WLPZs and no cut buffer zones.

Organic Debris: Very little organic debris is embedded within these watercourses. The LOD that was generated within the CIAA during the early logging era has not moved downstream due to its size and the lack of stream velocity to move it. Timber operations should not affect the streams within the plan area. Simpson's policy is to retain 70% of the overstory canopy in Class I and 70% of the total canopy in Class II WLPZs within the CIAA, assuring that a source of large woody debris is available for recruitment near stream sides in the future.

Stream side Vegetation: The overstory along the watercourses within the CIAA is comprised of Douglas-fir, tan oak, maple and red alder. Crown canopy closures within the plan area range from 70% to 90%. Since 1990, Simpson's retention standards in Class I and Class II WLPZ's have exceeded what is required by the Forest Practice Rules. Simpson's retention of 70% total canopy within Class II watercourses will enhance the streamside vegetation over that required by the Forest Practice Rules. The understory in these streamside areas is comprised of a thick growth of evergreen huckleberry, salmon berry, elderberry, salal, ferns and red alder characteristic of coastal forest areas. Operation of this timber harvest plan should not have any negative impacts on streamside vegetation. The riparian zones within the THP area have been protected with enhanced WLPZs and no cut buffer zones.

Recent Floods: The winter storms of 1994/1995 were relatively heavy, but were only considered four to five year events. Inspections of roads, culvert installations, and watercourses in the assessment area revealed only one major road failure. The lack of major storm damage in this watershed is a positive reflection on Simpson's road building and maintenance program, and harvesting practices discussed within this addendum. The winter storms of 1996/1997 were also relatively heavy; however this storm did not reveal any major road or culvert failures within the assessment area. The November storm of 1998 was high intensity rainfall in a 24-hour period. The resulting peak flow was approximately a 10-15 year event. These storms, while creating numerous minor problems, have not caused significant damage in the CIAA. Operation of this timber harvest plan should not have any negative impacts. The riparian zones within the THP area have been protected with enhanced WLPZs and no cut buffer zones.

Overall Assessment: Simpson's road building and timber harvesting operations within the assessment area have not resulted in significant cumulative adverse environmental impacts to Snow Camp Creek. The protection measures provided to all class I and II watercourses within the assessment area should mitigate any potential impact to the main Redwood Creek downstream from the plan area. In addition, Simpson has also replaced many of the old dilapidated rusted culverts with over sized culverts along the Roddiscraft Road to reduce all potential sediment sources and is continually upgrading the pipe sizes.

Potential Impacts on the Redwood Creek from this proposed plan.

Considering the management practices discussed above and mitigation incorporated within this plan to ensure the protection of watershed resources, it is unlikely that this plan will have any significant adverse impact on the watershed resources of the Redwood Creek. The Redwood Creek watershed encompassing tremendous variety in geology, soil types, and aquatic habitats. The harvesting conducted on 100 acres of this THP is regulated by the California Forest Practice Rules and the mitigations prescribed throughout this THP should prevent any significant adverse environmental impacts.

Turbidity is an optical property of water. During the winter months, suspended sediment is the main cause of turbidity in the Redwood Creek. The main source of this sediment in this youthful Franciscan topography is the presence of very erosive soil series. Other potential sources affecting Redwood Creek include livestock grazing, un-surfaced roads that do not have proper functioning erosion control structures, unstable roads, and gravel extraction.

Significant adverse cumulative sediment related impacts from timber harvesting or road construction would most likely result in increased turbidity in the Redwood Creek. Timber harvesting methods and road location, design and construction techniques and ground impacts avoidance have been implemented in this THP and in past young-growth THPs in other portions of Simpson's ownership that are designed to prevent significant adverse sediment related impacts. In addition to the operating methods incorporated into past THPs and this THP to prevent significant adverse sediment impacts, STCo has implemented increased watercourse protection beyond what is required in the Forest Practice Rules to minimize and reduce any sediment input within Simpson's ownership in Redwood Creek watershed.

Also, Simpson has incorporated a specific road maintenance and inspection program within this watershed (as described in Section III of the addendum) to ensure that significant adverse sediment related impacts related to road maintenance will not develop. Operation of this THP should not create a significant cumulative sediment related impact to the Redwood Creek, because of very little new road construction, helicopter logging majority of the units, and enhanced protection provided around the unstable areas.

Simpson's overall long-term harvesting plans for the Redwood Creek drainage and other Redwood Creek tributaries on Simpson's ownership have been concentrated on minimizing sediment by developing mid-slope and ridge-top road systems that avoid steep, unstable areas and encourage the use of cable or helicopter yarding where appropriate. In areas where roads were constructed on steep slopes, full bench, minimum width, roads were constructed using end-haul construction techniques. Simpson has utilized skyline cable and helicopter systems extensively for harvesting second growth timber on steeper slopes and around the unstable areas and class II inner gorges.

Water temperature in the upper Redwood Creek is not a problem during the high flow winter months when incoming solar radiation is limited. Warm water could become a problem in the summer months in the lower reach of Redwood Creek, particularly during low-flow years. During low water conditions, the available water is easily heated by incoming solar radiation. The most crucial temperature dependent period is while the fish embryos are in redds. During this period, cool water with a high concentration of dissolved oxygen is required. For the most part, nest sites are occupied during high-flow cooler months, when water temperatures are relatively low in the Redwood Creek. With the exception of very low-flow years, adults and large juveniles can usually migrate to more favorable sites when temperatures begin to rise.

Simpson Timber Company retains at least 70% of the overstory and 50% of the understory in all Class I WLPZs and 70% of the total canopy along most of the Class II WLPZs within its ownership. This increased overstory retention will aid in maintaining current water temperature regimes in the streams within the assessment area and provide increased protection for filter strip properties, slope stability, and fish and wildlife values.

As discussed above, potential impacts from this operation on this 303(d) designated impaired watershed, with regards to excessive sediment and temperature, are extremely unlikely. However to insure that our harvesting practices do not result in causing adverse cumulative impacts, additional site specific mitigation have been incorporated within this THP (see Note:4 (3) (b)) above.

Considering the mitigation incorporated in the FPRs and the site specific mitigation measures described above this THP should not result in significant adverse sediment, turbidity or temperature related impacts, or when combined with the past, present, or future THPs in the CIAA.

B. SOIL PRODUCTIVITY:

Appendix-Technical Rule Addendum No. 2 under Soil Productivity states:

"Cumulative soil productivity impacts occur when the effects of two or more activities, from the same or different projects, combine to produce a significant decrease in soil biomass production potential. These impacts most often occur on-site within the project boundary, and the relative severity of production losses for a given level of impact generally increases as site quality declines."
The primary factors influencing soil productivity that can be affected by timber harvesting are discussed below.

B 1. Organic Matter Loss: Organic matter loss can cause a decrease in site productivity due to loss of support for critical soil microbial activity and diminished capability of the soil to store moisture in a form readily available to both plants and soil microorganisms. Organic matter displacement can cause localized or microsite impacts on soil productivity within a THP area, but this impact is effectively mitigated by limits placed on the use of ground skidding equipment by the Forest Practice Rules and this THP. Organic matter loss is primarily from erosion and volatilization. Losses from erosion are discussed below. The potential loss from fire is associated with wildfire and not controlled burns, which are of much lower intensity. Timing of the ignition of a prescribed burn, if required in units B, E, will be predicated upon the existence of temperature, wind, humidity, and fuel moisture conditions that will result in a low intensity burn. Such conditions allow retention of large woody debris and the finer organic matter concentrated at the soil/litter interface. These burns may result in nutrient release that is beneficial to prompt revegetation of the site, but should not result in a net loss of soil productivity due to organic matter loss. Units A, C, D, and F will be yarded by helicopter and the broadcast burn will not be conducted on these units, therefore, the loss of organic matter is not expected.

The risk of organic matter loss due to wildfire is reduced by Simpson's road network that has been developed as result of timber harvesting activities, its fire prevention program, and fire fighting equipment that is required to be on site during timber operations.

B 2. Surface Soil Loss: Loss of topsoil can significantly reduce soil productivity, as the majority of nutrients are contained in the upper few inches of the soil profile. Displacement of topsoil is unavoidable in tractor skid roads and truck roads. However, loss of topsoil can be minimized by proper installation and maintenance of erosion control structures within the groundbased area and the exclusion of tractors from areas with steep slopes. Mechanical site preparation with equipment capable of moving or displacing soil will be implemented only during the summer months within unit E only. No heavy equipment will operate within the helicopter and cable units.
Re-vegetation of the site is also a key factor in reducing the longer term potential for surface soil loss due to erosion. Vegetation will reclaim this project area swiftly through both natural means and artificial regeneration. This will significantly reduce the potential for long term erosion processes to occur from either raindrop impacts or sheet erosion. Since the helicopter units will not be burnt, the probability of erosion due to raindrop or sheet erosion is greatly reduced by retaining logging slash and live hardwood trees within these units.

B 3. Soil Compaction: Soil compaction can affect site productivity through loss of the ability of the soil to transmit air and water and by restricting root penetration. Significant compaction usually occurs when soil moisture conditions are high enough to facilitate soil plasticity. The majority of the plan area will be either cable or helicopter logged, therefore no heavy equipment are permitted within these units. Only a portion of unit E will be tractor logged. The restrictions on operations during the winter period as specified in the addendum will prohibit tractor operations on these soils during periods of high soil moisture. Soil compaction on unit E will be at a level where the impacts are minimized and overall effects are insignificant. Natural soil processes such as frost action, shrink-swell cycles, and the activity of soil biota are also expected to add new micropores to the soil and reduce the effects of compaction that do occur. Observations of past projects in the vicinity of this THP on similar soil types indicate that significant soil compaction has not occurred. Young conifers appear to regenerate and grow well on these forest soils after harvesting operations.

B 4. Growing Space Loss: This project proposes to construct approximately 400 ft of seasonal road and reconstruct 500 ft. of temporary road that will remove approximately .5 acre from tree production. The remainder of the new road right-of-way acres will be regenerated in conjunction with harvesting on this plan and not removed from tree production. The construction of these roads will enable the transportation of forest products as well as facilitate forest management activities. The construction of these roads are necessary to facilitate harvesting of units B and E. The removal of this growing space will not cause a significant impact.

Site Id = Based on Township(00) ; Range(00); Section(00); Site Number(00)
Interval = The recording interval (hours:min.) used to collect the data.
Highest 7 Day Period = The period in which the highest **7DMAVG** was recorded.
7DMAVG = 7 Day Moving Average. This is the highest average temperature during a 7 day period.
7DMMX = 7 Day Mean of the Maximum daily temperatures for the same period as the **7DMAVG.**
Max Date = The date of the maximum temperature recorded
Max = The Maximum temperature recorded
Min after Max = The Minimum temperature following **Max Date.** Intended to show diurnal fluctuation for the **Max Date**

Stream Name	Site ID	General Location	Class	Year	Dates Monitored			Interval	Highest 7 Day Period			7DMAVG	7DMMX	Max Date	Max	Min after Max
Lake Prairie	05041901	above washout on Lake P. rd.	2	1996	5/4	to	9/2	2:24	7/25	to	7/31	14.8	15.1	7/29	15.2	14.9
Lake Prairie	05041901	above washout on Lake P. rd.	2	1997	2/12	to	11/18	2:24	8/6	to	8/12	15.4	17.5	8/7	18.5	14.6
Lake Prairie	05041901	above washout on Lake P. rd.	2	1998	4/23	to	10/25	2:30	7/18	to	7/24	15.6	17.1	7/25	17.8	14.9
Lake Prairie	05041901	above washout on Lake P. rd.	2	1999	1/1	to	10/10	1:12	7/10	to	7/16	14.1	15.9	7/13	17.1	13.6
Pardee	05043201	end of SPI 490 rd.	1	1996	5/4	to	9/2	2:24	7/25	to	7/31	14.4	14.9	7/28	15.2	14.0
Pardee	05043201	end of SPI 490 rd.	1	1997	2/12	to	11/18	2:24	8/7	to	8/13	13.6	14.1	8/8	14.8	12.6
Pardee	05043201	end of SPI 490 rd.	1	1998	4/23	to	10/25	2:30	7/18	to	7/24	14.1	14.7	7/26	15.2	14.3
Pardee	05043201	end of SPI 490 rd.	1	1999	1/1	to	10/10	1:12	7/10	to	7/16	12.2	12.9	7/13	14.3	12.3

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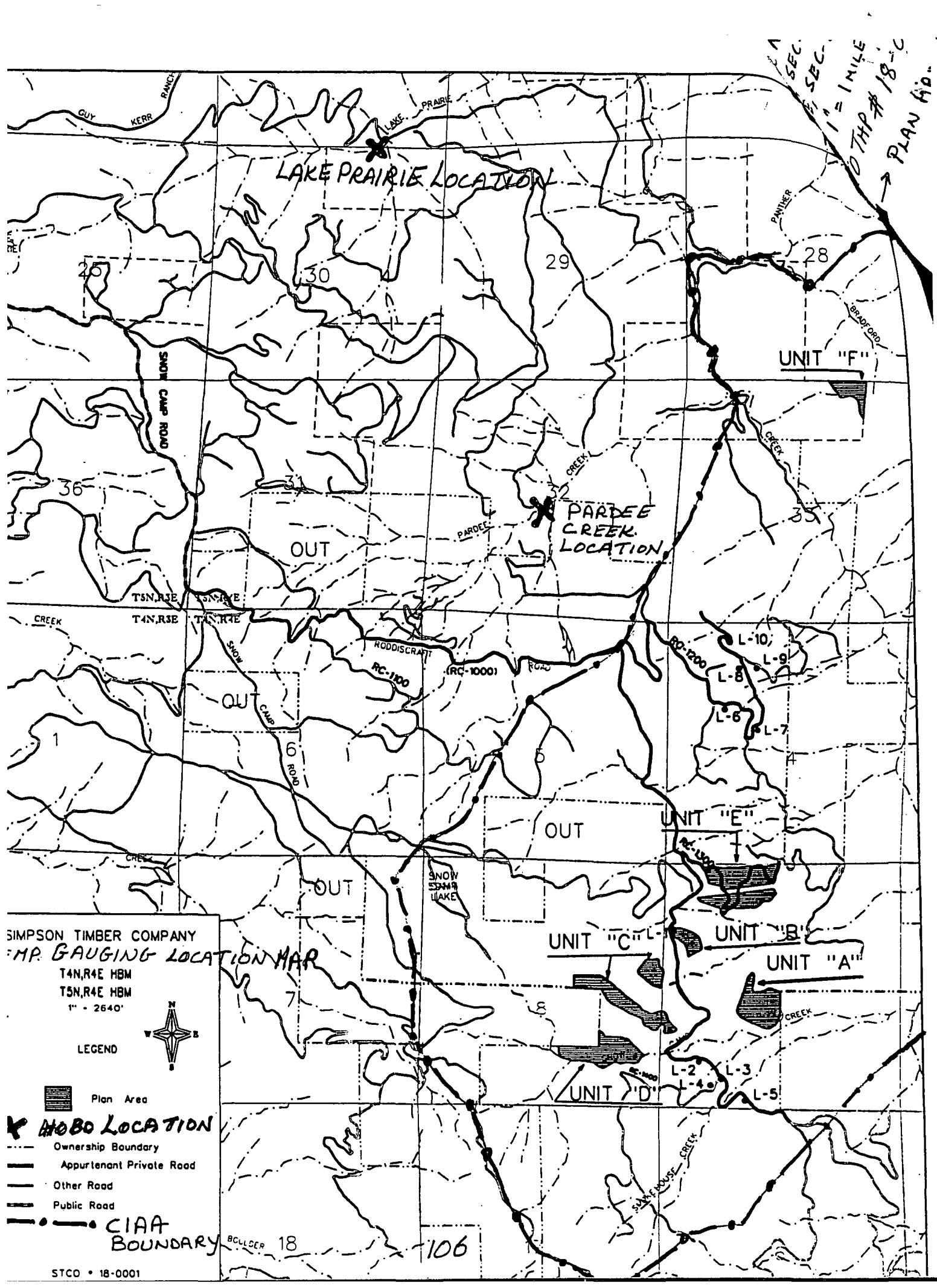
LAKE PRAIRIE LOCATION
PARDEE CREEK LOCATION
UNIT "F"
UNIT "E"
UNIT "C"
UNIT "B"
UNIT "A"
UNIT "D"
OUT
OUT
OUT
OUT
SNOW CAMP ROAD
RODDISCRAFT
(RC-1000)
RC-1100
RC-1200
L-10
L-9
L-8
L-6
L-7
L-2
L-3
L-4
L-5
SNOW SWAMP LAKE
SNAKE HOUSE CREEK
PANTHER CREEK
BRADFORD
GUY KERR RANCH
LAKE PRAIRIE
T5N,R3E
T5N,R4E
T4N,R3E
T4N,R4E
SIMPSON TIMBER COMPANY
TMP. GAUGING LOCATION MAP
T4N,R4E HBM
T5N,R4E HBM
1" = 2640'
LEGEND
Plan Area
HOBO LOCATION
Ownership Boundary
Appurtenant Private Road
Other Road
Public Road
CIAA BOUNDARY
STCO • 18-0001
BOULDER 18
106
PLAN NO.