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Forest Service

Tongass
National
Forest

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July 1993

Central Prince of Wales Final Environmental Impact Statement

Ketchikan Pulp Company Long-Term Timber Sale Contract

RECORD OF DECISION

United States Department of Agriculture | Forest Service | Alaska Region | Tongass National Forest
Ketchikan Area
Federal Building
Ketchikan, AK 99901

Reply To: 1950

Date: July 14, 1993

Dear Reader

Attached is the Record of Decision (ROD) for the Central Prince of Wales Project Area for the Ketchikan Pulp Corporation Long Term Timber Sale Contract. If you requested complete documentation of this decision, the following items should be found in the package:

Record of Decision
Volume 1: Final Environmental Impact Statement
Volume 2: Appendices A - F
Volume 3: Appendix g
Alternative Map Pack (with seven maps)

If you requested the quick review documentation of this decision, the package should include only the ROD, Summary, and Alternative Map Pack. Copies of the entire Final EIS are available for review at Forest Service Offices in Ketchikan, Thorne Bay, and Craig. Copies have also been sent to libraries throughout Southeast Alaska.

The ROD documents my final decision on the selection of an alternative, and the factors considered in reaching the decision. The effective date of implementation for the decision and the Notice of Rights of Appeal are also specified in the ROD.

I want to thank those of you who took the time to review and comment on the Draft Environmental Impact Statement and also those who participated in the Subsistence Hearings. Your interest in the management of the Tongass National Forest is appreciated. I also want to extend a special thanks to those who requested a quick review documentation of this decision in lieu of the entire set of the Final EIS.

Sincerely,

David D. Rittenhouse

DAVID D. RITTENHOUSE
Forest Supervisor

Enclosures

Central Prince of Wales
Final Environmental Impact Statement

Ketchikan Pulp Company Long-Term Timber Sale Contract

Record of Decision

Ketchikan Area—Tongass National Forest
USDA Forest Service
Alaska Region

Lead Agency	USDA Forest Service Tongass National Forest Ketchikan Area
Responsible Official	Forest Supervisor Ketchikan Area Tongass National Forest Federal Building Ketchikan, AK 99901
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Record of Decision

Background

In 1951 the Forest Service entered into a long-term timber sale contract with the Ketchikan Pulp Company (KPC) to harvest approximately 8.25 BBF, valid for the period 1954 to 2004. In response to the post war boom, Japanese interest in Alaska timber, and the desire to establish a stable industry in Southeast Alaska, Congress authorized the Forest Service to develop this Long-Term Contract and others, for a total supply of nearly 23 BBF over the life of the contracts.

The purpose and need for this project is to make timber available in accordance with the KPC Long-term Timber Sale Contract (No. A10fs-1042) while providing for other resources in accordance with the Tongass Land Management Plan (TLMP) and other direction (Final Environmental Impact Statement, Chapter 1). Approximately 290 million board feet of sawlog and utility volume is expected to be supplied from the Central Prince of Wales (CPOW) Project Area in approximately nine separate offerings that would contribute to volume requirements under the contract. Reasons for scheduling the environmental analysis of the CPOW Project Area for timber harvest at this time are described in Appendix A of the Final Environmental Impact Statement (EIS). Appendix A also contains a discussion of the current timber supply and the timber volume requirements of the contract.

Public scoping, data collection and analysis, and document production began with issuance of the Notice of Intent published in the Federal Register on August 30, 1991. This Record of Decision (ROD) and the Final EIS disclose the environmental effects of the alternatives considered and document the decision for authorization of activities within the Project Area.

Decision

This Record of Decision documents my decision to make timber volume available from the CPOW Project Area to meet KPC Long-term Timber Sale Contract requirements. My decision encompasses the following:

- the volume to make available under the contract in this Project Area in approximately nine "timber offerings";
- the location and design of timber harvest units;
- the location and design of road systems;
- the location and design of log transfer facilities;
- necessary standards and guidelines, mitigation measures, and enhancement opportunities for resources other than timber;
- whether there may be a significant restriction on subsistence use and if so, related findings and measures to minimize impacts on subsistence users.
- road management objectives to include closures for resource protection.

It is my decision to select Alternative F5 with modifications for implementation in the CPOW Project Area (see the description of Alternative F5 in Chapter 2 of the Final EIS). This decision is responsive to issues raised during scoping, data gathered and analyzed, public responses to the Draft EIS, and testimony received at the subsistence hearings.

Specifically, I select Alternative F5 (as modified) and authorize the required actions to implement this decision. Furthermore:

1. I modify Alternative F5 by specifying leave strips of approximately 300- to 500-feet, or wildlife islands generally greater than 5 acres to be left in each of the following units or strings of units so that none of their created openings exceed 100 acres. I found these openings would have been justified to exceed 100 acres on the basis of relative total costs of preparation, logging, and administration of harvest cuts, even if I had not made these modifications. However, I have decided to reduce the size of these openings with leave strips and wildlife islands. These leave strips and islands will play an important role in ecosystem management by providing wildlife corridors, structural diversity within units, snag recruitment, legacy trees, refugia for vascular plants, and smaller openings (under 100 acres). The area's left un-harvested for the purposes of this project will be examined for possible future harvest is subsequent projects. These changes reduce the total harvest in Alternative 5 by approximately 5.8 MMBF and result in only two openings exceeding 100 acres in size. These two openings which will exceed 100 acres are justified on the basis of logging and transportation system requirements. These units are described in Appendix 1 of the ROD.

   571-225,571-256,571-257,571-258 Expand buffer to a total width of 300 to 500 feet on Naukati Creek between units 571-257 and 571-258.

   572-211,572-222 Provide a 300 to 500 foot leave strip between the units to connect the riparian corridors on the north and south ends of unit 572-222.

574-247,574-248 Provide wildlife leave islands in patches at least 5 acres, and totalling at least 17 acres to insure the total opening does not exceed 100 acres.

579-203,579-205,580-202 Incorporate a buffer with a total width of 300 to 500 feet between units 579-203 and 579-205.

579-215,579-216,579-219 Incorporate a buffer with a total width of 300 to 500 feet on the Class 3 Stream separating units 579-215 and 579-216.

580-212,580-213 Expand the gap between units 580-212 and 580-213 to provide a 300 to 500 foot distance.

580-218,580-219 Provide wildlife leave islands in patches at least 5 acres, and totalling at least 14 acres to insure the total opening does not exceed 100 acres.

580-227,580-227B,580-230 Expand the gap between units 580-227 and 580-230 to provide a 300 to 500 foot distance.

582-214,582-215 Incorporate a buffer with a total width of 300 to 500 feet on the Class 3 Stream separating units 582-214 and 579-215.

583-215,583-216 Expand the buffer on the Class 2/3 Stream on the northeast side of the units to ensure the total opening size does not exceed 100 acres.

583-242,583-243 Incorporate a buffer with a total width of 300 to 500 feet on the Class 3 Stream separating units 583-242 and 583-243.

584-250,584-251 Expand the buffer either on Little Ratz Creek by 5 acres to insure the total opening does not exceed 100 acres.

584-272 Provide wildlife leave islands in patches at least 5 acres, and totalling at least 32 acres to insure the total opening does not exceed 100 acres.

585-201,585-202,585-203 Expand the gap between units 585-201 and 585-202 to provide a 300 to 500 foot distance.

586-226,586-227 Incorporate a buffer with a total width of 300 to 500 feet on the Class 3 Stream in unit 586-227.

586-232,598-242 Expand the gap between units 586-232 and 598-242 to provide a 300 to 500 foot distance.

588-212,588-212B,588-213,588-213B Expand buffer to a total width of 300 to 500 feet on the Fork of Staney Creek between units 588-212B and 588-213B.

588-259,588-260,588-261,588-262,588-263 Expand buffer to a total width of 300 to 500 feet between units 588-259 and 588-260.

588-269,588-270 Provide wildlife leave islands in patches at least 5 acres, and totalling at least 30 acres to insure the total opening does not exceed 100 acres.

588-310,588-312 Provide a buffer totaling 12 acres along the Class 3 stream in the units.

588-322 Provide a 300 to 500 foot leave strip between the units to connect the riparian corridors on the northwest and southeast ends of unit 588-322.

588-327 Provide wildlife leave islands in patches at least 5 acres, and totalling at least 11 acres to insure the total opening does not exceed 100 acres.

589-203,589-204,589-205 Expand buffer to a total width of 300 to 500 feet on the Class 3 stream between units 589-203 and 589-204.

590-210,590-211 Provide wildlife leave islands in patches at least 5 acres, and totalling at least 7 acres to insure the total opening does not exceed 100 acres.

590-229,590-230 Provide wildlife leave islands in patches at least 5 acres, and totalling at least 7 acres to insure the total opening does not exceed 100 acres.

571-226,571-227,571-260 Provide a gap between units 571-226 and 571-227 to maintain a 300 to 500 foot distance. Also, provide a gap between units 571-226 and 571-260 to maintain a 300 to 500 foot distance.

571-253 Provide a 300 to 500 foot leave strip between the unit and the adjacent second growth stand.

579-215,579-216,579-217,579-218,579-219 Provide a gap between units 579-215 and 579-216 to maintain a 300 to 500 foot distance. Also, expand the gap between units 579-216 and 579-217, 579-218 to maintain a 300 to 500 foot distance.

584-218 Provide a 300 to 500 foot leave strip between the unit and the adjacent second growth stand.

586-216,586-217,586-218,586-218B Expand buffer to a total width of 300 to 500 feet on the Class 3 stream between units 586-218 and 586-218B. Also expand the gap to total width of 300 to 500 feet between units 586-217 and 586-218.

588-283,588-285,588-286,588-287 Expand buffer to a total width of 300 to 500 feet on the Class 3 stream between units 588-285 and 588-286. Also, expand buffer to a total width of 300 to 500 feet on the Class 3 stream between units 589-283 and 588-285. Maintain the southern most tip of unit 588-283 as a wildlife island.

589-230,589-231,589-232,589-233 Expand the gap to a total width of 300 to 500 between units 589-230 and 589-231. Also, expand the gap to a total width of 300 to 500 feet between units 589-230 and 589-232.

598-220,598-222,598-222B Provide a 300 to 500 foot leave strip between the units and the adjacent second growth stand that is not 5 feet tall.

2. The Selected Alternative will harvest about 9,836 acres of commercial forest land in approximately nine separate timber offerings to meet the requirements of the KPC Long-term Timber Sale Contract. This specified harvest will provide approximately 267 MMBF of sawlog and utility volume. There will be 237 units associated with the specified harvest. ROD Appendix 1 lists each unit approved for harvest and also displays the harvest units greater than 100 acres and the reasons for exceeding this size. Design features of the harvest units are described in detail on the Harvest Unit Design Cards in Appendix G of the Final EIS. Silvicultural prescriptions will be developed for each unit prior to harvesting.

3. The Selected Alternative includes selective harvest, rather than clearcut harvest, for portions or all of 24 harvest units. This is consistent with Forest Service Chief's policy to reduce the amount of clearcutting. ROD Appendix 1 displays a list of harvest units for which selective harvest is prescribed. The selective harvest prescriptions for these units are intended to promote regeneration (especially red and yellow cedar), provide for stand structural diversity, maintain riparian habitat, maintain scenic quality, and leave young, vigorously growing trees. The impacts to residual trees will be minimized. The Harvest Unit Design Cards in Appendix G of the Final EIS provide specific direction for field layout to accomplish these objectives.

4. The Selected Alternative includes reconstruction of 78 miles of existing Forest system road, construction of 100 miles of new system road, and construction of 5 miles of temporary road in order to access the specified timber harvest units. Appendix G of the Final EIS contains the Road Cards with direction for the location of each road. ROD Appendix 2 lists road segments and road management objectives for future management of the transportation system.

5. The existing Log Transfer Facilities (LTF's) located at Naukati, Whale Pass, Coffman Cove, Winter Harbor, and Thorne Bay will be used to transfer logs to the water after timber harvest. No new LTF's will be developed. The Thorne Bay facility consists of a gravity slide ramp for sliding log bundles into the water, with a chain assist for slowing the velocity of bundles entering the water. The other facilities use the A-Frame method for transferring logs into the water. This consists of a stationary mat with a falling boom for lifting logs from the truck to the water. This system is located on a shot rock embankment with a vertical bulkhead to access deep water, accommodating operations in all tidal periods.

6. This Record of Decision identifies mitigation measures authorized to reduce or eliminate adverse environmental effects of the timber harvest and road construction activities specified in the Selected Alternative. Chapter 2 of the Final EIS specifies the implementation and effectiveness monitoring that will be conducted to determine if the resource management objectives have been met.

7. ROD Appendix 1 includes descriptions of the enhancement opportunities for the Selected Alternative which are feasible following implementation of this action. These opportunities will be included in Sale Area Improvement (SAI) plan(s) developed in conjunction with the timber sale contract documents for each offering.

8. I have identified certain lands which contain important wildlife habitat which will be retained (retention) in their current condition for the duration of this project. These lands are depicted on the map labeled Old Growth Prescription in the map packet. Subsequent projects and NEPA analysis may specify changes in the locations of these areas; however, sufficient acreage will exist in an old-growth condition at all times to meet the requirements for the Old Growth Prescription specified in the 1979 Forest Plan (as amended).

9. Finally, I have determined that there may be a significant possibility of a significant restriction of subsistence use of deer in the Project Area for the communities of Coffman Cove, Craig, Hollis, Hydaburg, Kasaan, Klawock, Thorne Bay, and Whale Pass. However, (a) such restriction is necessary, consistent with sound management of public lands; (b) the amount of public land involved to implement the Selected Alternative is (considering sound multiple-use management of public lands) the minimum necessary; and (c) reasonable measures to minimize impacts on subsistence

have been adopted to the maximum extent practicable while still meeting the purpose and need for this project.

Reasons For Decision

1. In making my decision, I worked to assure consideration of all issues and to take into account the competing interests and values of the public. There was many divergent public, personal, and professional opinions expressed during this project. My decision was not an easy one. This decision (nor any other) will probably not completely satisfy any one particular group or individual. However, I considered all views, and I believe the decision I have made is reasonable. The Selected Alternative provides a beneficial mix of resources for the public within the framework of the existing laws, regulations, policies, public needs and desires, and capabilities of the land, while meeting the stated purpose and need for this project. I also considered factors of national policy in the selection of the final alternative. These essential considerations of national policy included reductions in clearcutting, providing ecosystem management, and reducing below cost timber sales.

2. My decision to implement this Selected Alternative is in conformance with the Tongass Land Management Plan (TLMP) as amended, and sound National Forest management. I have considered the need to help maintain a current timber supply to KPC (as required by the KPC Long-Term Timber Sale Contract) in support of community stability. I have also considered the need to provide strong protection measures for fish, wildlife, and other resources important to subsistence, recreation, commercial, and other uses.

3. I have determined that the harvest volume of the Selected Alternative meets the purpose and need defined for the project.

4. I have deferred timber harvest in those large un-fragmented blocks of old growth about which the public and the State of Alaska expressed concerns. My objective is to maintain their integrity for as long as possible as we continue to learn more about old growth dependant species, and to maintain options for various viable population strategies being considered in the Forest Plan Revision. The large un-fragmented blocks that I have maintained include: Barnes Lake, Honker Divide, Paul Young Creek, and Mabel Creek. These areas were identified by either the State of Alaska, the Interagency Viable Population Committee, or specific individuals as important old growth blocks. They will be retained as old-growth habitat for the duration of this project. The other remaining large block in the project area which will be entered for some timber harvest, is the Staney Creek block. There were no specific public concerns regarding Staney Creek block remaining un-fragmented. However, all of these blocks will remain available for harvest in the long term. This decision will defer harvest activities in them only for the duration of this project. Any future harvest will be considered through the NFMA and NEPA process.

5. During the public comments, a unit was identified which had a wolf denning area adjacent to it. After consultation with the Alaska Department of Fish and Game, I

have decided to harvest this unit with the mitigation measures they specified. The analysis of effects of wolves in Chapter 3 of the Final EIS indicated that "Gray wolves do not exhibit a preference for specific habitats or habitat characteristics (Paradiso and Nowak 1982). The presence and well being of gray wolves appears to be dependant on the availability of prey rather than land form, climate or vegetation." Furthermore, the timber harvest unit is more than one quarter mile away from the denning area, and is separated by a stream which will not be crossed. A lake is adjacent to the denning area, and since the harvest unit is not between the denning area and the lake, access to the lake by the wolves will not be affected. Finally, road access to the unit will be from the southwest and; since the denning area is on the northeast side of the unit, road construction should not have an impact. The Alaska Department of Fish and Game recommended some timing restrictions on road construction and timber harvesting, as well as closure of some roads after completion of post sale activities which I am adopting.

6. Caves are an important resource in the CPOW Project Area. I have taken additional measures to protect the cave resources in the Project Area. All units which were identified to be on karst formations (areas typically associated with caves) were surveyed by the Karst Resource Group (KRG). A total of 167 units were inventoried, of which 35 contained cave features. Of the 35 units containing cave features, 24 had recommendations for mitigation measures and/or deferring the unit while the other 11 could be harvested as proposed and still protect the cave resources. The recommended mitigation measures for the 24 units have been incorporated to ensure protection of the cave resources. Several other units were discovered to contain caves where none was thought to exist. Appropriate measures to protect these cave resources in these units have also been taken. Furthermore, I have specified mitigation measures to protect any cave resources should additional locations be found during project implementation.

7. All alternatives are consistent with the proportional harvest requirements specified in the Tongass Timber Reform Act (TTRA) and as outlined in the Forest Service Handbook. In addition, The Selected Alternative meets or improves the proportionality which existed prior to the passage of the TTRA for all management areas with the exception of K03. The majority of management area K03 is contained within the Lab Bay Project Area which is currently being analyzed for future harvest as part of a separate EIS. To provide the greatest flexibility for addressing proportionality in the Lab Bay project, the Selected Alternative for CPOW will defer harvest on all units in Management Area K03 which contain volume class six or seven.

8. I have ensured that all alternatives including the Selected Alternative meet the visual quality objectives (VQO's) as specified from the priority travel routes and their viewsheds. These priority travel routes and viewsheds include: west coast waterway at Staney Creek, west coast waterway at Kussan Point, west coast waterway at Sarkar Cove, west coast waterway at Sarheen Creek, Whale Pass, Barnes Lake, Sweetwater Lake, Hatchery Lake, Clarence Strait at Baird Peak, Clarence Strait at Ratz Harbor, and Clarence Strait at Sal Creek. Actual viewpoints used in the analysis for meeting the VQO's for each viewshed are specified in Chapter 3 of the Final EIS. Other travel routes will meet the visual quality objective of maximum modification.

9. I have verified that the harvest levels proposed for the Selected Alternative are consistent with the principles of long-term sustained yield and non-declining even flow. Analysis in Chapter 3 of the Final EIS and the Tongass Forest Plan Draft Revision indicate that these harvest levels can be sustained over time.

I also considered information presented by the CPOW ID Team Leader, who expressed concerns in his public comments on the Draft EIS, in the Draft EIS, and in his resource report which indicated he felt that the harvest levels could not be sustained. However, closer examination indicated that his analysis considered only a portion of the suitable timber land base in making those estimates, and therefore are not considered to be accurate. This situation was further verified by field crews during the development of the Selected Alternative and is discussed further in Chapter 3 of the Final EIS.

The opinion which he expressed was based on the Multi-entry Logging Plan (MELP) he developed as part of the project. The role of this project level analysis did not have an objective of redetermining the lands are suitable for future timber harvest for the entire project area. It was to identify relatively low risk to environmental concern units, which are suitable for timber harvest, meet Forest Plan standards and guidelines, and to display the effects associated with their harvest. The purpose of the project's MELP was to identify potential units, not exclude areas from harvest over the long term.

Furthermore, the issue as to which scenario on future harvest levels is most accurate, does not change the purpose and need of this project, the environmental effects of the proposed actions, or the reasonably foreseeable effects (year 2004).

The information collected as part of this project is being considered in the Forest Plan Revision. The site specific information contained in the MELP on timber suitability as identified through on-the-ground field verification by District employees during the field recon, will be transmitted to the Forest Plan revision Team. They will be requested to update the Forest Plan data base to reflect this information. However, I believe the suitability calls made by CPOW ID Team Leader during the initial MELP design from air photos and GIS information is not supported by enough on the ground information at this time to conclude that these areas could never be harvested in the future and are physically unsuitable for timber production.

This issue has been studied by many others as well. The conclusions CPOW ID Team Leader drew from the MELP regarding future harvest levels are not consistent with conclusions made in other studies. The Irland Group report and the Forest Service Evaluation of the Irland group report also concluded some fall downs may occur. However, these fall downs were not nearly as great as those predicted by CPOW ID Team Leader, except in the area of economics. However, economics is a temporary criteria and should not be used for removal of areas from the suitable land base or from future analysis for timber harvest. This is especially true in project level analysis. I do not believe I have adequate information to forecast future costs and prices at this time to make site specific amendments to the Forest Plan to remove lands from the suitable land base based on economics alone.

After this project is completed, the MELP will continue to change and be periodically redone or revised. MELP analyses are meant to be dynamic to reflect changing information. Each future project for this area will reconstruct a new MELP for that specific project. As an example, previous MELP's for this project area excluded all side slopes over 75% from harvest. It is now recognized that slope percentage is just one factor that needs to be considered to identify unstable slopes for exclusion from timber harvest. Therefore, use of a MELP as a definitive tool for estimating future harvest levels in the long term is not appropriate.

In summary, although there was personal and professional disagreement as to what the exact future harvest levels will be, there was sufficient information regarding the environmental consequences for me to make a reasoned choice among the alternatives as presented.

10. I have designed the Selected Alternative so that only two units or combinations of units will exceed 100 acres. For all other areas where openings greater than 100 acres could occur, I have specified that leave strips of approximately 300- to 500-feet or wildlife islands greater than 5 acres be maintained to break up these larger areas into openings of less than 100 acres. In addition to providing openings of less that 100 acres, leave strips and wildlife islands such as these are a vital component of ecosystem management. These leave strips will provide for wildlife corridors, snag islands, legacy trees, and refugia for vascular plants. The two units which do exceed 100 acres are justified on the basis of logging/transportation system requirements. These units are described in Appendix 1 of the ROD.

11. In the development of the Selected Alternative, I have taken action to implement the Chiefs policy on ecosystem management and a reduction in clearcutting. In addition to the expanded buffers and wildlife islands previously mentioned, I have specified that all or portions of 24 units will be harvested using primarily uneven-aged management. This includes the entire geographic area adjacent to Sarkar Lakes. All 15 units in this area will generally be harvested with selective cutting. The objectives in designing these units are to maintain goshawk foraging habitat, protect cave resources, and protect riparian habitat. Other units in the Selected Alternative will also utilize uneven-aged management to provide visual quality and riparian habitat. There are an additional 9 units which will use shelterwood silvicultural treatments to promote regeneration, especially for red and yellow cedar. All units in the selected alternative, except those described above, are prescribed for clearcut harvest. Clearcutting of these units will meet the objective of maintaining fast growing, mistletoe free stands of mixed species and is the optimum method of harvesting. Finally, all units will include ecosystem management principals including possible leaving of standing green trees, small islands and other forms of structural diversity. The specific objectives for each unit are listed in Chapter 3 of the Final EIS and in the Unit Design Cards, Appendix G of the Final EIS.

12. Selective harvest is a relatively new silvicultural system in Southeast Alaska. However, the units for which selective harvest is prescribed were identified and designed to ensure the success of the prescription. This includes removing a portion of the trees within the unit, while successfully retaining regeneration, individual trees, and/or groups of trees. The specific harvest objectives are described in the Harvest Unit Design Cards. Silviculture and logging system specialists will apply this direction in the preparation of the units for harvest. Sale administrators will ensure that the logging operations accomplish the harvest objectives for these units. Implementation of these prescriptions is intended to add to our knowledge of alternate treatments for Southeast Alaska timber types.

13. I have designed the selected alternative to provide the highest economic return to the Federal Government while still meeting the previously mentioned resource objectives. While all alternatives provide a positive mid-market net stumpage, the selected alternative provides the highest return at $3.83 per thousand board feet. In accomplishing this objective I considered the input from the Ketchikan Pulp Company during the public comment period on the Draft EIS.

14. KPC's response included dropping all units that were included to be helicopter logged. After careful consideration I have decided to retain a mix of logging systems to accomplish the goals and objectives of protecting the resources. 56 units are scheduled to be helicopter logged in the Selected Alternative. I have retained this logging system in the ROD to help mitigate cave, wildlife and visual resource concerns. Scheduling units that use helicopter logging systems will help disperse harvest, decrease road densities and help stabilize the percentage of helicopter logging required in future entries. Since road access is minimized with the helicopter yarding system, returns to the State from the 25% Fund will be reduced since a part of that fund is calculated from Purchaser Credit received for road construction.

    After KPC's review of the Draft EIS unit cards displaying the logging/transportation systems and unit volumes/acre, they commented on the economics of harvesting particular units. KPC commented that 17 units in the Draft EIS had questionable economic viability and 63 units should be deleted. After weighing all of the public input, and assessing resource effects, I have decided to keep 15 of the 17 economic concern units in the Selected Alternative and defer 60 of the 63 units commented on for deletion. I want to be clear however, that to maintain the future timber supply, these areas will need to be considered for harvest in subsequent projects.

How Issues Are Addressed

In the following summary, I detail how the Selected Alternative addresses each of the significant issues. Refer to Table 1 of this Record of Decision to supplement the following discussion and provide a comparison of the proposed activities and environmental consequences of the alternatives, including the Selected Alternative.

Issue 1

Cost effectiveness of timber harvest operations

All alternatives, including the Selected alternative, have a positive estimated mid-market stumpage rate. The Selected Alternative produces the highest mid-market stumpage rate at $3.83 per thousand board feet. Actual returns from the harvest will be determined for each timber offering based on current market conditions as determined through the Timber Sale Appraisal process.

Another indicator of timber harvest economics is the amount of helicopter logging required. Generally speaking, the most expensive logging system is helicopter, followed by slackline. Only one alternative completely excludes helicopter yarding; all other action alternatives, including the Selected Alternative, have between 22 and 28 percent of the harvest volume requiring helicopter yarding. The Selected Alternative contains 26 percent of the volume in helicopter yarding. I felt it was not reasonable to postpone all helicopter yarding for future projects.

The economics of timber harvesting is also indicated by the amount of non-helicopter volume which can be harvested per mile of new specified road construction (helicopter volume was excluded because it generally does not have associated new road construction). All alternatives are virtually the same, with the Selected Alternative

having the best timber recovery in terms of MMBF per mile of new road construction (1.95 MMBF).

The economics of timber harvest operation is also indicated by the amount and cost of road construction, reconstruction, and bridge construction. The Selected Alternative has the lowest amount of road construction and associated cost. It builds a total of 100 miles with total construction and reconstruction costs at $17.2 million. The other alternatives have costs that range from $17.3 million to $23.0 million.

Issue 2

Impact of timber harvest operations on subsistence use

This issue reflects public concern for the availability of wildlife, marine life, and plants for customary and traditional use by rural Alaska residents. The Alaska National Interest Lands Conservation Act (ANILCA) requires the Forest Service to determine if proposed activities may significantly restrict use of subsistence resources. If such a finding is made, then ANILCA requires public hearings and determinations regarding actions to minimize impacts prior to proceeding with a project.

Chapter 3 of the Final EIS contains the ANILCA 810 subsistence analysis. In summary, the analysis concludes that there is a significant possibility of a significant restriction of subsistence use of Sitka black-tail deer in the Project Area for the communities of Coffman Cove, Craig, Hollis, Hydaburg, Klawock, Thorne Bay, and Whale Pass. This is a possibility regardless of which alternative is implemented, including the no-action alternatives. The proposed actions will not significantly restrict affect the subsistence harvest of Sitka black-tail deer for other rural communities including Kasaan, Petersburg, Point Baker, Port Protection, and Wrangell. Furthermore, the foreseeable effects of the action alternatives do not present a significant possibility of a significant restriction for subsistence resources other than deer.

Road management objectives have been specifically designed to mitigate the effects on wildlife populations which are affected by increased road access. Road Management Objectives for the Selected Alternative generally will discourage public access in areas where there is a potential for the over harvest of deer, marten, wolves, and black bears. Roads will generally be closed in the Project Area in Wildlife Analysis Areas (WAA's) 1315 for wolves and black bears; 1319 for deer; 1420 for deer, wolves, marten, and black bear; 1422 for marten; 1527 for wolves, marten and bear. This is a change of direction from the Record of Decision for the Final Environmental Impact Statement for the 1989-94 Operating Periods. These road management objectives are listed by individual road in ROD Appendix 2.

Finally, the Selected Alternative reflects efforts of the Forest Service to minimize effects on subsistence resources used by those rural communities that would be most likely to receive the highest priority for game in the event of an ANILCA Section 804, Tier II restriction. The Selected Alternative defers timber harvest for subsistence resources in the following areas; Paul Young Creek, Barnes Lake, Honker Divide, Neck Lake, and Mabel Creek. In addition unit 580-235 was deleted and unit 581-204b was changed to a selective harvest for subsistence resources.

Issue 3 Impact of timber harvest operations on wildlife habitat

The greatest direct effect on wildlife habitats would be the loss of old-growth and change of forest habitat. Special emphasis habitats such as beach and estuary fringe are protected through timber harvest unit and road location and design. The Selected Alternative would not reduce any of the six habitat types in the Project Area more than 3 percent (see Chapter 3 of the Final EIS). All alternatives would result in impacts consistent with implementation of the current TLMP and Alternative P of the Proposed Forest Plan Revision.

All action alternatives, including the Selected Alternative, would decrease current habitat capabilities for the nine key Management Indicator Species (MIS) seven percent or less and, in most cases, less than five percent. Habitat capability is calculated utilizing models, and does not necessarily indicate current or future populations, but rather is a means to measure potential effects.

Forest fragmentation is another indicator of potential effects on wildlife. Increased amount of forest fragmentation indicates reduced habitat potential for species which are thought to be dependant on interior old-growth forest habitat. One way to analyze forest fragmentation is to measure the reduction of large, contiguous blocks of old-growth forest. All action alternatives reduce the acres remaining in large (greater than 10,000 acres) old-growth blocks by less than seven percent. The Selected Alternative was specifically designed to retain the greatest amount of large old-growth blocks. It retains 95 percent of the current acreage in these blocks. These old-growth forest blocks in the Project Area will remain a diverse and largely natural environment. With few exceptions, wildlife habitats will remain well connected by beach and estuary fringe, stream buffers, and many muskegs, steep slopes, and areas not scheduled for harvest.

Another indicator of effects on wildlife habitat values is the impact on the proposed Habitat Conservation Areas (HCA's) identified by the Interagency Viable Populations Committee. The recommendation of this Committee is still draft, but can be used as a comparison between alternatives. This Committee proposed two large blocks of habitat for HCA's in the Project Area. All alternatives contain some harvest units within these HCA's. The Selected Alternative was specifically designed to retain large old growth blocks, including the block within the Honker Divide HCA. The Selected Alternative harvests only 129 acres (0.1 percent) within this HCA. In addition, it harvests only 831 acres (3.6 percent) within the Staney Creek HCA.

Effects on wildlife can also be estimated by the amount of land identified for the Old Growth Prescription (retention). All alternatives harvest some of the retention identified in the 1989-94 Final EIS. The Selected Alternative harvests less of this acreage than any other alternative. It harvests 1,639 acres of the 35,034 acres previously identified. This amounts to less than 5 percent. In addition, the Selected Alternative identifies additional retention areas to be maintained for the duration of this project. These additional areas are contained in large un-fragmented blocks which provide higher benefits for some species than the smaller fragmented blocks identified in the 1989-98 Final EIS. The overall change is a net increase in retention acres from 35,034 to 44,711 acres, an increase of 9,677 acres (27.6 percent).

Issue 4

Impact of timber harvest operations on Honker Divide

The exact boundaries of the area known as Honker Divide are not clearly defined or universally accepted. This project defines Honker Divide as including all land drained by the Thorne River-Hatchery Creek system, from Barnes Lake to the Thorne River Bridge. This includes all or portions of VCU's 552, 573, 574, 575, 576 (south), 577 (east), 578, 596, and 597. This issue focuses on the impact of timber harvest operations on the wildlife and recreational values of Honker Divide and other resources there of special concern.

The selected alternative makes special efforts to avoid additional harvest in the Honker Divide old-growth block. One of the main objectives of the Selected Alternative is to avoid fragmentation of large old growth blocks, specifically including Honker Divide. Only 436 of 86,651 acres (0.5 percent) within the ridge-to-ridge definition of Honker Divide are harvested in the selected alternative. Furthermore, the proposed Honker Divide Habitat Conservation Area (HCA) will have only 129 acres (0.1 percent) harvested, and the entire Wild and Scenic River corridor eligible for inclusion in the National Wild and Scenic Rivers System will be excluded from harvest.

Issue 5

Impact of timber harvest operations on fish habitat and water quality

Chapter 3 of the Final EIS concludes that the potential effects on fish habitat and water quality are minimal for all alternatives. All alternatives meet the requirements and the intent of the Clean Water Act and the Tongass Timber Reform Act. Implementation of proposed fish habitat enhancement projects will increase the habitat for fish production. Implementation of the TTRA requirement to provide a minimum 100-foot buffer on Class I streams and Class II streams flowing directly into Class I streams will effectively mitigate direct stream channel impacts from proposed timber harvest and road construction activities. Adherence to Best Management Practices (BMP's) outlined in the Soil and Water Conservation Handbook (FSH 2509.22) during timber harvest and road construction activities will minimize the potential for impacts on fish habitat. BMP's are noted on individual Harvest Unit Design Cards and Road Cards, Appendix G of the Final EIS.

In a memo to District Rangers dated December 31, 1992, I directed that actions be taken immediately to ensure that all TTRA buffers meet the minimum 100-foot width, or the minimum width prescribed to meet standards and guidelines for streams when the buffer is greater than 100-feet in width. These actions include a quality control program to ensure accurate measurement of the minimum buffer width and length, and finally, training personnel to fully implement TTRA buffers. The District Ranger will be held fully accountable for proper implementation of TTRA requirements.

The relative risk for each alternative was rated in terms of the potential for a mass-wasting event that could directly or indirectly result in increased sediment to Class I streams. This rating does not imply that such an event will occur; rather, it ranks the alternatives on the basis of the potential for a mass-wasting event to occur, which may or may not result in an increase in stream sediment.

The Selected Alternative has the lowest amount of Class I and II stream crossings of any alternative.

Although it has the largest amount of acres being harvested, it utilizes uneven-aged management in many areas containing steep unstable slopes or riparian soils. The

selected alternative has the next to the lowest amount of acres being clearcut, and uses partial cuts on 16 percent of the acres harvested, the most of any alternative.

The Final EIS also predicts that no significant changes in stream temperature regimens, large woody debris recruitment, or stream nutrient cycles are expected as a result of timber harvest activities. Riparian buffers and stream crossings as prescribed on the Harvest Unit Design Cards and Road Cards in Appendix G of the Final EIS will minimize any adverse effects to water quality and fish habitat resulting from the authorized activities.

Each alternative also has limits specified on the amount of cumulative watershed disturbance as described by the standards and guidelines in the Supplement to the Proposed Revised Forest Plan. All alternatives will limit the amount of cumulative watershed disturbance within each watershed to less than 35 percent of the total land base within a 15-year period.

Furthermore, cumulative timber harvest will not exceed 25 percent of the acres associated with class 3 streams in the high gradient contained riparian process group every 20 years for each 3rd order or larger watershed.

Specific units were identified in areas that have characteristics for stream temperature sensitivity. These units have mitigation measures specified in this ROD to offset this temperature sensitivity.

Issue 6

Impact of timber harvest operations on visual quality and recreation

This issue addresses concerns for outdoor recreation and scenic viewing opportunities offered in and around the CPOW Project Area and the effects timber harvest and transportation system development may have upon these opportunities.

The Selected Alternative locates timber harvest within previously un-harvested areas and increases development within the existing developed areas. However, the Project Area contains only a small amount of the total recreation opportunities on the Tongass National Forest, and there are similar recreation opportunities nearby. This shift in recreation opportunities is a minor impact when viewed forest wide.

All alternatives have similar effects on the distribution of Recreation Opportunity Spectrum (ROS) acres within the Project Area. None of the action alternatives have a more than 1 percent difference in any ROS Class.

The current recreation inventory for the CPOW Project Area contains 60 Recreation Places. Thirty-four of these places will not be directly affected by any of the proposed activities in the alternatives. The Selected Alternative has the second lowest amount of timber harvest activities proposed in these Recreation Places. It contains some timber harvest in 14 of the 60 Recreation Places. The Selected Alternative also utilizes uneven-aged management or partial cuts for the area immediately adjacent to the Sarkar Lakes primitive area, thereby reducing effects from even-aged harvest systems.

All alternatives including the selected alternative meet the visual quality objectives as specified from the priority travel routes and their viewsheds. These priority travel routes and viewsheds include: west coast waterway at Staney Creek, west coast waterway at Kussan Point, west coast waterway at Sarkar Cove, west coast waterway

at Sarheen Creek, Whale Pass, Barnes Lake, Sweetwater Lake, Hatchery Lake, Clarence Strait at Baird Peak, Clarence Strait at Ratz Harbor, and Clarence Strait at Sal Creek. Other travel routes will meet the visual quality objective of maximum modification.

Issue 7 Long-term stability of local communities

This issue reflects concern about community employment and stability, and about maintaining Alaskan lifestyles. Community stability is important to the Forest Service in it's land management decision making. Land use designations, scheduling of activities and rural development program decisions, are all made with consideration of local community stability.

Implementation of the Selected Alternative authorizes harvest of approximately 267 million board feet of timber volume. Additionally, it authorizes new road construction on approximately 100 miles of road, reconstruction of 78 miles of existing road, and construction of 5 miles of temporary road. It continues the operation in the sort yards at Thorne Bay. The Selected Alternative provides raw materials to support the Ketchikan pulp mill and sawmill. Harvest of this level will produce 583 average annual jobs over the next 4 years. This is the highest level of any of the alternatives considered in detail due to the level of harvest.

None of the alternatives is projected to have any effect on income or employment opportunities in the sport or commercial fishing industries or those related economic sectors. Since little commercial recreational activity takes place in the Central Prince of Wales Project Area and because the alternatives affect only some of the inventoried Recreation Places, no significant impact is expected on employment and income opportunities in the recreation and tourism industry.

I have verified that the harvest levels proposed for the Selected Alternative are consistent with the principles of long-term sustained yield and non-declining even flow. Analysis in Chapter 3 of the Final EIS and the Tongass Forest Plan Draft Revision indicate that these harvest levels can be sustained over time.

I also considered information presented by the CPOW ID Team Leader, who expressed concerns in his public comments on the Draft EIS, in the Draft EIS, and in his resource report in which he felt that the harvest levels could not be sustained. However, closer examination indicated that his analysis considered only a portion of the suitable timber land base in making those estimates, and therefore are not considered to be accurate. This situation was further verified by field crews during the development of the Selected Alternative and is discussed further in Chapter 3 of the Final EIS.

The opinion which he expressed was based on the Multi-entry Logging Plan (MELP) he developed as part of the project. The role of this project level analysis did not have an objective of redetermining the lands are suitable for future timber harvest for the entire project area. It was to identify relatively low risk to environmental concern units, which are suitable for timber harvest, meet Forest Plan standards and guidelines, and to display the effects associated with their harvest. The purpose of the project's MELP was to identify potential units, not exclude areas from harvest over the long term.

Furthermore, the issue as to which scenario on future harvest levels is most accurate, does not change the purpose and need of this project, the environmental effects of the proposed actions, or the reasonably foreseeable effects (year 2004).

The information collected as part of this project is being considered in the Forest Plan Revision. The site specific information contained in the MELP on timber suitability, as identified through on-the-ground field verification by District employees during the field recon, will be transmitted to the Forest Plan revision Team. They will be requested to update the Forest Plan data base to reflect this information. However, I believe the suitability calls made by CPOW ID Team Leader during the initial MELP design from air photos and GIS information is not supported by enough on the ground information at this time to conclude that these areas could never be harvested in the future and are physically unsuitable for timber production.

This issue has been studied by many others as well. The conclusions CPOW ID Team Leader drew from the MELP regarding future harvest levels are not consistent with conclusions made in other studies. The Irland Group report and the Forest Service Evaluation of the Irland group report also concluded some fall downs may occur. However, these fall downs were not nearly as great as those predicted by CPOW ID Team Leader, except in the area of economics. However, economics is a temporary criteria and should not be used for removal of areas from the suitable land base or from future analysis for timber harvest. This is especially true in project level analysis. I do not believe I have adequate information to forecast future costs and prices at this time to make site specific amendments to the Forest Plan to remove lands from the suitable land base based on economics alone.

After this project is completed, the MELP will continue to change and be periodically redone or revised. MELP analyses are meant to be dynamic to reflect changing information. Each future project for this area will reconstruct a new MELP for that specific project. As an example, previous MELP's for this project area excluded all side slopes over 75% from harvest. It is now recognized that slope percentage is just one factor that needs to be considered to identify unstable slopes for exclusion from timber harvest. Therefore, use of a MELP as a definitive tool for estimating future harvest levels in the long term is not appropriate.

In summary, although there was personal and professional disagreement as to what the exact future harvest levels will be, there was sufficient information regarding the environmental consequences for me to make a reasoned choice among the alternatives as presented.

Issue 8

Impact of timber harvest operations on karst ecosystem and cave resources

Cave areas are an important resource in the Project Area. Due to the mitigation measures incorporated to protect the cave resources in the Project Area, no alternatives are expected to have effects on any significant cave resources. All units which were identified to be on karst formations were surveyed by the Karst Resource Group (KRG). A total of 167 units were inventoried, of which 35 contained cave features. Of the 35 units containing cave features, 24 had recommendations for mitigation measures and/or deferring the unit while the other 11 could be harvested as proposed and protect the cave resources. Of the 24 units requiring mitigation, 6 were deferred, 6 units had substantial portions of the proposed unit deferred, and the remaining 12 received mitigation measures which included buffers, reconfiguring

the unit, and requirements for helicopter logging so that no roads would be built which might damage cave resources. Other mitigation measures include directionally falling timber away from cave features, requiring partial and full suspension, and re-routing roads to avoid cave features. These recommended mitigation measures have been incorporated to ensure protection of the cave resources. Several other units were discovered to contain cave features where none was thought to exist. Appropriate measures to protect these cave resources in these units have also been taken. Furthermore, I have specified mitigation measures in Chapter 2 to protect any cave resources should additional locations be found during project implementation.

Public Involvement

Public involvement has been instrumental in identifying issues, formulating alternatives, and influencing this decision. Public scoping and involvement activities for the Central Prince of Wales Project Area are listed in Chapter 1 and Appendix D of the Final EIS. A summary of the significant issues was provided in a previous section of this ROD and in Chapter 1 of the Final EIS.

Coordination With Other Agencies

From the time scoping was initiated, meetings and site visits with interested State and Federal agencies have occurred. Issues were discussed and information was exchanged.

Two meetings were held in Juneau with the State of Alaska including the Department of Governmental Coordination, Department of Fish and Game, Department of Natural Resource, Department of Environmental Conservation. One meeting was held before the Draft EIS to discuss possible issues or concerns, and another meeting was held between the Draft and Final EIS to discuss the State's comments.

A Biological Assessment was prepared and sent to the U.S. Fish and Wildlife Service, and to the National Marine Fisheries Service, as part of the Section 7 consultation under the Endangered Species Act.

Meetings also were held with the Alaska Department of Fish and Game in Ketchikan prior to the release of the Draft EIS to brief them on the alternatives to better focus their comments on the document.

Consultation was held in Ketchikan with the Alaska Department of Fish and Game to discuss changes to the amount and distribution of the Old Growth Prescription (retention) acres.

The subsistence analysis documented in the Chapter 3 of the Final EIS was a cooperative effort by the Forest Service, ADF&G, and Jack Kruse from University of Alaska, Anchorage.

Appendix B of the Final EIS lists many of these meetings, and the Final EIS identifies the agencies who were informed of and/or involved in the planning process (see List of Agencies, Organizations, and Individuals to Whom Copies of this Statement Were Sent). See also the discussion of subsistence in the section entitled Findings Required by Law, later in this ROD.

Alternatives

Alternatives Eliminated From Detailed Consideration

Eight alternatives were considered but eliminated from detailed study. These Alternatives are:

Alternative A

Several public comments received during scoping requested the Forest Service provide a higher level of timber outputs from the CPOW Project Area during this planning period. The IDT developed an alternative which considered harvest of all units proposed in every alternative. The only reason for eliminating any unit under this alternative was to comply with NFMA constraints on maximum size of harvest units. The focus of this alternative was to analyze the maximum amount of timber that could be harvested from the Project Area at this time, while meeting all standards and guidelines and environmental regulations.

Alternative A proposed to harvest 303 individual harvest units, totaling 353 MMBF of sawlog plus utility volume from 12,890 acres. Alternative A was dropped from consideration because it exceeded the stated purpose and need for the project by 63 MMBF (22 percent).

Alternative B

Numerous public comments requested the Forest Service reduce the level of timber outputs from the CPOW Project Area during this planning period. Many of the commenters questioned if harvest levels could be sustainable within the Project Area throughout the rotation. The Forest Service's position is that sustainability of resource outputs is to be maintained at the Forest level and not at the project level. But in response to public input, the IDT used the TLMP Draft Revision to assess 'sustained' levels of harvest within the Project Area. This analysis is displayed in Chapter 3 of the Final EIS in the timber section and indicates that harvest levels can be sustained both on the Ketchikan Area as a whole, and within the northern part of Prince of Wales Island.

In response to this issue of reduced harvest levels, the IDT developed an alternative which avoided harvest in the following areas: draft Habitat Capability Areas (HCA's) proposed by the Interagency Viable Population Committee, high-use subsistence areas,

areas with significant cave features, areas managed under the 1989-94 LTS EIS to provide old-growth habitat, areas adjacent to Sarkar and non-National Forest System land, areas within goshawk post-fledging territories, harvest units with soils concerns, and all specific units where the public requested harvest be deferred. Harvest units were selected to maximize areas that had received field reconnaissance, to achieve at least 1.5 MMBF of harvest per mile of new road construction, to provide closely grouped offering areas to minimize forest fragmentation, and to provide offering areas to each log dump.

Alternative B proposed to harvest 54 individual harvest units, totaling 70 MMBF of sawlog plus utility volume from 2,454 acres. It proposed 21 MMBF scheduled for helicopter yarding.

Alternative B was dropped from consideration because it failed to meet the stated purpose and need for the project by 220 MMBF. More information on why lower volumes were not considered is included in Appendix A.

Alternatives C, D, and E

These alternatives were presented to the public in April 1992 as Alternatives 2, 3, and 4, respectively. They all proposed to harvest less than the volume required by the stated purpose and need, proposing harvest levels that were 269, 242, and 232 MMBF, respectively. These alternatives were reduced to 220, 205, and 189 MMBF respectively after incorporating the recon information. They were eliminated from detailed study because they failed to meet the stated purpose and need by 70, 55, and 101 MMBF respectively.

Alternative F

This alternative was originally presented in the Draft EIS as Alternative 3. For the Final EIS, it was modified to incorporate refined site-specific information. It also proposed deferral of harvest in specific areas identified by public comments and subsistence testimonies as important subsistence use areas.

As modified, Alternative F proposed to harvest 146 individual harvest units, totaling 177 MMBF of sawlog plus utility volume from 6,473 acres. Of that total, it proposed 56 MMBF scheduled for helicopter yarding.

Alternative F was dropped from further consideration because it failed to meet the stated purpose and need for the project by 113 MMBF. More information on why lower volumes were not considered is included in Appendix A.

Alternative G

This alternative used Alternative 4 from the Draft EIS as a baseline and considered deferral of harvest in all units which Ketchikan Pulp Co. (KPC) expressed concern with harvest. Most of their concern was related to timber economics.

Alternative G proposed to harvest 193 individual harvest units, totaling 222 MMBF of sawlog plus utility volume from 7,897 acres. Of that total, it proposed no helicopter yarding.

Alternative G was dropped from consideration because it failed to meet the stated purpose and need for the project by 68 MMBF. More information on why lower volumes were not considered is included in Appendix A.

Alternative H

This alternative used Alternative A as a baseline and considered deferral of harvest in all units which the Alaska Department of Fish and Game expressed concern with harvest. Most of their concern was related to forest fragmentation and loss of wildlife habitat.

Alternative H proposed to harvest 232 individual harvest units, totaling 278 MMBF of sawlog plus utility volume from 9,926 acres. It proposed 76 MMBF planned for helicopter yarding.

Alternative H was dropped from consideration at the request of the State of Alaska since they did not intend their comments to be considered as a full alternative.

Alternatives Considered for Detailed Study

Seven alternatives for making timber available to KPC from the CPOW Project Area were considered in detail. For each alternative, this section provides a discussion of: (1) the emphasis or intent of the alternative, (2) various resource outputs associated with implementation, (3) environmental consequences, and (4) guidelines used in selecting units and roads consistent with the emphasis. Alternatives are compared in detail later in Table 1.

Alternative 1 (No Action)

Emphasis. The emphasis of this alternative is to propose no new timber harvest from the CPOW Project Area for the Long-Term Contract at this time. It does not preclude timber harvest from other areas at this time, or from the CPOW Project Area at some time in the future. It does not preclude harvest of units analyzed under previous NEPA documents but not yet felled as of the CPOW ROD. NEPA requires a "No Action" alternative be analyzed in every EIS to serve as a benchmark by which effects of the other action alternatives are to be measured. The Existing Condition map, in the separate map packet, shows the distribution of vegetation associated with no new timber harvest.

Outputs. There are no new timber harvest outputs associated with this alternative, including timber receipt returns to the State of Alaksa.

Consequences. There would be no new harvest within high-use subsistence areas identified by the Tongass Resource Use Cooperative Survey (TRUCS) or by public comment and subsistence hearings in relation to CPOW. Current subsistence use patterns could continue. There would be no new harvest within Honker Divide, or within old-growth habitat or extended rotation areas identified by the 1989-94 LTS EIS. The habitat capability for black-tailed deer associated with this alternative is an estimated 10,245 deer. There would be 74,061 acres of old-growth forest within blocks over 10,000 acres. Changes in visual conditions would be attributable only to natural processes, and there would be no timber harvest adjacent to recreation places. There would be no harvest of volume class 4/5 timber in management area K03, which could be used to help bring proportionality within tolerances prescribed by the Forest Service Handbook (FSH). There would be no new timber related employment associated with the Long-Term Contract. When harvest of units offered under the 1989-94 ROD are completed, loggers working in the Project Area would either be out of work or else displaced to other areas.

Guidelines. There were no units selected for this alternative.

Alternative 1a (No Action/No Harvest)

Emphasis. The emphasis of this alternative is to propose complete cessation of all timber harvest activities in the Project Area, including any areas analyzed under previous NEPA documents but not yet felled as of the date of the CPOW ROD. These previously analyzed areas include harvest units totaling approximately 1,000 acres and 30 MMBF analyzed under the 1989-94 LTS EIS, and approximately 25 acres and 0.48 MMBF analyzed for independent timber sales. This alternative does not preclude timber harvest from other areas at this time, or from the CPOW Project Area at some time in the future. This alternative serves as a further benchmark by which to measure the effects of the other alternatives.

Outputs. There are no timber harvest outputs associated with this alternative, including timber receipt returns to the State of Alaksa.

Consequences. There would be no harvest within high-use subsistence areas identified by the TRUCS or by public comment and subsistence hearings in relation to CPOW. Current subsistence use patterns could continue. There would be no harvest within Honker Divide, or within old-growth habitat or extended rotation areas identified by the 1989-94 LTS EIS. The habitat capability for black-tailed deer associated with this alternative is an estimated 10,280 deer. There would be 74,061 acres of old-growth forest within blocks over 10,000 acres. Changes in visual conditions would be attributable only to natural processes, and there would be no timber harvest adjacent to recreation places. There would be no timber related employment from this Project Area until a ROD from a future NEPA project authorizes additional timber harvest. There would be no harvest of volume class 4/5 timber in management area K03, which could be used to help bring proportionality within tolerances prescribed by the Forest Service Handbook (FSH). Loggers working in this Project Area would either be out of work or else displaced to other areas. There would likely be substantial financial claims against the Forest Service based upon cancellation of timber harvest operations within previously offered harvest units.

Guidelines. There were no units selected for this alternative. There would be 74,061 acres of old-growth forest within blocks of 10,000 acres under the no-action alternatives, 1 and 1A.

Alternative F2

Emphasis. The emphasis of this alternative (shown as Alternative 2 in the Draft EIS) is to meet the defined purpose and need while configuring planned harvest units throughout the Project Area to reduce harvest of high value wildlife habitat and to maintain the integrity of the Habitat Conservation Areas (HCA's) proposed by the Viable Population Committee. This includes the 90,000-acre Honker Divide HCA (34,000 acres of which lie within the CPOW Project Area), and the 23,000-acre Staney Creek HCA. This approach emphasizes a deferral of harvest within valuable wildlife habitats and seeks to minimize the effects of forest fragmentation. This alternative focuses on harvest of areas already roaded or close to existing roads, thereby minimizing timber entry into unroaded areas. The Alternative F2 map, in the separate map packet, shows the harvest units and associated roads proposed by this alternative in relation to physical and geographic features of the Project Area.

Outputs. Alternative F2 schedules the harvest of 228 individual harvest units, totaling 264 MMBF of sawlog plus utility volume from 9,373 acres. Of this harvest, 20 units totaling 23 MMBF and 976 acres are planned for partial cut; the remainder are planned for clearcut harvest. Also included are approximately 4 MMBF of right-of-way volume associated with new road construction. This alternative requires the construction of 110 miles of new specified roads plus 4 miles of temporary roads. It proposes 60 MMBF scheduled for helicopter yarding and on the remaining units achieves 1.85 MMBF per mile of specified road construction. Economic analysis indicates a net mid-market stumpage value of $3.29 per MBF.

Consequences. Of the 9,373 acres proposed for timber harvest, some is planned within high-use subsistence areas, as identified by the Tongass Resource Use Cooperative Survey (TRUCS) (2,830 acres) and by public comment/subsistence hearings in relation to CPOW (1,655 acres). There are 566 acres of harvest within the ridge-to-ridge definition of Honker Divide, and harvest within the draft HCA's proposed by the Viable Population (VPOP) Committee–the Honker Divide HCA (79 acres) and the Staney Creek HCA (47 acres). Harvest is also planned within extended rotation (458

acres) and old-growth habitat (1,654 acres) areas identified by the 1989-94 Long Term Sale Final EIS.

This alternative has the habitat capability to support an estimated 9,934 deer. It maintains 70,217 acres of old-growth forest in 10,000-acre blocks. Alternative F2 results in a shift of approximately 19,000 acres from Semiprimitive Non-Motorized (SPNM) to Roaded Modified (RM), based upon the Recreation Opportunity Spectrum. This alternative will provide an annual average of 572 timber-related jobs over a four-year period.

Guidelines. Guidelines used in selecting units and roads which would be consistent with the emphasis of Alternative F2 include the following:

- Minimize timber harvest within all known goshawk habitat management areas.

- Minimize timber harvest within the draft HCA's proposed by the Viable Population Committee, including the HCA within Honker Divide and the smaller HCA in the Staney Creek area. Much of this area is high value habitat for wildlife species thought to be associated with large blocks of old-growth forest.

- Defer harvest within individual units which were identified during field recon as having high local use by wildlife.

- Minimize forest fragmentation in other areas by concentrating timber harvest adjacent or in close proximity to existing roads.

Alternative F3

Emphasis. The emphasis of this alternative (shown as Alternative 4 in the Draft EIS) is to meet the stated purpose and need while configuring planned harvest units throughout the Project Area with an increased focus on providing economic viability for this timber entry. This alternative does not propose any helicopter timber harvest. This approach emphasizes positive net economic return to the U.S. Treasury and to KPC for the proposed harvest units, by seeking to minimize logging and road costs. This alternative focuses on harvest of units where the timber volume per acre is relatively high (subject to TTRA proportionality constraints) and where the harvested volume approximates 2.0 MMBF per mile of new road construction. The Alternative F3 map, in the separate map packet, shows the harvest units and associated roads proposed by this alternative in relation to physical and geographic features of the Project Area.

Outputs. Alternative F3 schedules the harvest of 241 individual harvest units, totaling 260 MMBF of sawlog plus utility volume from 9,519 acres. Of this harvest, 19 units totaling 18 MMBF and 832 acres are planned for partial cut; the remainder are planned for clearcut harvest. Also included are approximately 4 MMBF of right-of-way volume associated with new road construction. This alternative requires the construction of 135 miles of new specified roads plus 11 miles of temporary roads. It proposes no units scheduled for helicopter yarding and achieves 1.92 MMBF per mile of specified road construction. Preliminary analysis indicates a net mid-market stumpage value of $2.41 per MBF.

Consequences. Of the 9,519 acres proposed for timber harvest, some is planned within high-use subsistence areas, as identified by the TRUCS (2,726 acres) and by public comment/subsistence hearings in relation to CPOW (3,428 acres). There are 1,194

acres of harvest within the ridge-to-ridge definition of Honker Divide, and harvest within the draft HCA's proposed by the Viable Population Committee–the Honker Divide HCA (1,806 acres) and the Staney Creek HCA (318 acres). Harvest is also planned within extended rotation (337 acres) and old-growth habitat (2,718 acres) areas identified by the 1989-94 Long Term Sale Final EIS.

This alternative has the habitat capability to support an estimated 9,952 deer. It would maintain 69,365 acres of old-growth forest in 10,000-acre blocks. Alternative F3 would result in a shift of approximately 15,800 acres from Semiprimitive Non-Motorized to Roaded Modified, based upon the Recreation Opportunity Spectrum. This alternative would provide an annual average of 574 timber-related jobs over a four-year period.

Guidelines. Guidelines used in selecting units and roads which would be consistent with the emphasis of Alternative F3 include the following:

- Defer timber harvest in units scheduled for helicopter yarding.
- Confine timber harvest to units which average more than 20 MBF per acre.
- Select groups of harvest units which are planned to achieve 2.0 MMBF of yarded volume per mile of new road construction.

Alternative F4

Emphasis. The emphasis of this alternative (shown as Alternative 5 in the Draft EIS) is to meet the defined purpose and need by configuring planned harvest units throughout the Project Area to provide for economically viable timber harvest and to maintain the integrity of the HCA block within Honker Divide. This approach emphasizes a positive net economic return for the proposed harvest units, while seeking to minimize the effects of forest fragmentation. This alternative focuses on harvest of higher volume stands (within TTRA proportionality constraints) which can provide a favorable ratio of yarded volume to mile of new road construction, while deferring harvest within the largest unroaded blocks of old-growth forest. The Alternative F4 map, in the separate map packet, shows the harvest units and associated roads proposed by this alternative in relation to physical and geographic features of the Project Area.

Outputs. Alternative F4 schedules the harvest of 223 individual harvest units, totaling 258 MMBF of sawlog plus utility volume from 9,180 acres. Of this harvest, 21 units totaling 24 MMBF from 1,040 acres are planned for partial cut; the remainder are planned for clearcut harvest. Also included are approximately 3 MMBF of right-of-way volume associated with new road construction. This alternative requires the construction of 104 miles of new specified roads plus 8 miles of temporary roads. It proposes 57 MMBF scheduled for helicopter yarding and on the remaining units achieves 1.93 MMBF per mile of specified road construction. Preliminary analysis indicates a net mid-market stumpage value of $1.03 per MBF.

Consequences. Of the 9,180 acres proposed for timber harvest, some is planned within high use subsistence areas, as identified by the TRUCS (2,577 acres) and by public comment/subsistence hearings in relation to CPOW (1,901 acres). There are 414 acres of harvest within the ridge-to-ridge definition of Honker Divide and harvest within the draft HCA's proposed by the VPOP committee–the Honker Divide HCA (123 acres) and the Staney Creek HCA (422 acres). Harvest is also planned within

extended rotation (401 acres) and old-growth habitat (1,892 acres) areas identified by the 1989-94 Long Term Sale Final EIS.

This alternative has the habitat capability to support an estimated 9,942 deer. It maintains 70,148 acres of old-growth forest in 10,000-acre blocks. Alternative F4 results in a shift of approximately 16,000 acres from Semiprimitive Non-Motorized to Roaded Modified, based upon the Recreation Opportunity Spectrum. This alternative will provide an annual average of 570 timber-related jobs over a four-year period.

Guidelines. Guidelines used in selecting units and roads which would be consistent with the emphasis of Alternative F4 include the following:

- Minimize timber harvest within the HCA block within Honker Divide.
- Minimize timber harvest within the nest and post-fledging area of all known goshawk management areas.
- Confine timber harvest to units which average more than 20 MBF per acre.
- Select groups of harvest units which are planned to exceed 1.5 MMBF of yarded volume for every mile of new road construction.

Alternative F5 (Preferred Alternative)

Emphasis. This alternative is designed to meet the defined purpose and need while responding to public and subsistence user's concerns and while emphasizing ecosystem management principles. These principles include reduced use of clearcutting, establishment of an entire area (adjacent to the Sarkar Lakes Primitive Recreation Area) devoted primarily to uneven-aged management, incorporation of ecosystem management principles, and reduction of forest fragmentation by minimizing harvest in large un-fragmented old growth blocks. This approach emphasizes a positive net economic return for the proposed harvest units. The Alternative F5 map, in the separate map packet, shows the harvest units and associated roads proposed by this alternative in relation to physical and geographic features of the Project Area.

Outputs. Alternative F5 schedules the harvest of 237 individual harvest units, totaling 264 MMBF of sawlog plus utility volume from 9,836 acres. Of this harvest, 37 units totaling 30 MMBF from 1,579 acres are planned for partial cut; the remainder are planned for clearcut harvest. Also included are approximately 3 MMBF of right-of-way volume associated with new road construction. This alternative requires the construction of 100 miles of new specified roads plus 5 miles of temporary roads. It proposes 69 MMBF scheduled for helicopter yarding and on the remaining units achieves 1.95 MMBF per mile of specified road construction. Preliminary analysis indicates a net mid-market stumpage value of $3.83 per MBF.

Consequences. Of the 9,836 acres proposed for timber harvest, some is planned within high-use subsistence areas, as identified by the TRUCS (2,800 acres) and by public comment/subsistence hearings in relation to CPOW (1,519 acres). There are 436 acres of harvest within the ridge-to-ridge definition of Honker Divide, and harvest within the draft HCA's proposed by the VPOP Committee–the Honker Divide HCA (129 acres) and the Staney Creek HCA (831 acres). Harvest is also planned within extended rotation (378 acres) and old-growth habitat (1,639 acres) areas identified by the 1989-94 Long Term Sale Final EIS.

This alternative has the habitat capability to support an estimated 9,918 deer. It would maintain 70,620 acres of old-growth forest in 10,000-acre blocks. Alternative F5 would result in a shift of approximately 19,600 acres from Semiprimitive Non-Motorized to Roaded Modified, based upon the Recreation Opportunity Spectrum. This alternative would provide an annual average of 583 timber-related jobs over a four-year period.

Guidelines. Guidelines used in selecting units and roads which would be consistent with the emphasis of Alternative F5 include the following:

- Minimize timber harvest within large un-fragmented old growth blocks.
- Defer harvest in the Paul Young Creek drainage adjacent to the Karta Wilderness, and the Mabel Creek/Barnes Lake area. ADF&G identified these as some of the few remaining unroaded, un-fragmented drainages on the north half of Prince of Wales.
- Defer harvest the on west side of Neck Lake to protect significant karst resources, to contribute to achievement of proportionality, and to maintain wildlife dispersal corridor between Lab Bay and CPOW project areas.
- Reduce use of clearcut harvest.
- Design an uneven-aged management harvest area adjacent to Sarkar Lakes to maintain visual, wildlife, recreation, cultural, subsistence, and fisheries values while still providing for moderate timber production.
- Defer timber harvest within the nest and post-fledging area of all known goshawk management areas, and minimize the use use of clearcutting in the foraging areas.
- Confine timber harvest to units which average more than 20 MBF per acre.
- Select groups of harvest units which are planned to exceed 1.5 MMBF of yarded volume for every mile of new road construction.

Alternative F6

Emphasis. The emphasis of this alternative is to meet the defined purpose and need by configuring planned harvest units throughout the Project Area to respond to site-specific public concern by deferring harvest in specific areas of concern identified during public response to the Draft EIS, including subsistence testimonies. This approach emphasizes reducing harvest in areas of importance to subsistence users, sport hunters, and recreation users, while seeking to minimize the effects of forest fragmentation and harvest of areas containing karst features. The Alternative F6 map, in the separate map packet, shows the harvest units and associated roads proposed by this alternative in relation to physical and geographic features of the Project Area.

Outputs. Alternative F6 schedules the harvest of 221 individual harvest units, totaling 259 MMBF of sawlog plus utility volume from 9,345 acres. Of this harvest, 17 units totaling 19 MMBF from 861 acres are planned for partial cut; the remainder are planned for clearcut harvest. Also included are approximately 4 MMBF of right-of-way volume associated with new road construction. This alternative requires the construction of 102 miles of new specified roads plus 5 miles of temporary roads. It proposes 74 MMBF scheduled for helicopter yarding and on the remaining units

achieves 1.83 MMBF per mile of specified road construction. Preliminary analysis indicates a net mid-market stumpage value of $0.58 per MBF.

Consequences. Of the 9,345 acres proposed for timber harvest, some is planned within high-use subsistence areas, as identified by the TRUCS (2,929 acres). There is no proposed harvest within high-use subsistence areas identified by public comment/subsistence hearings in relation to CPOW. There are 801 acres of harvest within the ridge-to-ridge definition of Honker Divide, and harvest within the draft HCA's proposed by the Viable Population committee–the Honker Divide HCA (328 acres) and the Staney Creek HCA (870 acres). Harvest is also planned within extended rotation (399 acres) and old-growth habitat (1,813 acres) areas identified by the 1989-94 Long Term Sale Final EIS.

This alternative has the habitat capability to support an estimated 9,945 deer. It would maintain 69,726 acres of old-growth forest in 10,000-acre blocks. Alternative F6 would result in a shift of approximately 18,700 acres from Semiprimitive Non-Motorized to Roaded Modified, based upon the Recreation Opportunity Spectrum. This alternative would provide an annual average of 572 timber-related jobs over a four-year period.

Guidelines. Guidelines used in selecting units and roads which would be consistent with the emphasis of Alternative F6 include the following:

- The baseline used to identify proposed units for this alternative is Alternative A (maximum timber).

- Defer timber harvest in all site specific units identified as concerns as a result of public comment, including subsistence testimony but excluding units with concerns expressed by KPC representatives and ADFG, because those comments were addressed in Alternatives G and H, respectively.

- Defer harvest on west side of Neck Lake to protect significant karst resources, to contribute to achievement of proportionality, and to maintain wildlife dispersal corridor between Lab Bay and CPOW project areas.

Table 1 displays a summary comparison of the anticipated consequences of each of the alternatives including the Selected Alternative. It is presented by resource as in Chapter 3 of the Final EIS.

Table 1
Summary Comparison of Alternatives

Activity/Resource	Units	Alt F1	Alt F1A	Alt F2	Alt F3	Alt F4	Alt F5	Alt F6
Units	Number	0	0	228	241	223	237	221
Est. volume (including ROW)	MMBF	0	0	268	264	261	267	263*
Clearcut harvest	Acres	0	0	8,397	8,687	8,140	8,257	8,484
Non-clearcut harvest	Acres	0	0	976	832	1,040	1,579	861
Total harvest	Acres	0	0	9,373	9,519	9,180	9,836	9,345
Units > 100 but < 150 acres	Number	0	0	29	18	24	24	22*
Units > 150 acres (or green-up concerrn)	Number	0	0	5	5	4	8	15*
Highlead harvest	MMBF	0	0	67	88	73	72	67
Small skyline harvest	MMBF	0	0	100	134	91	85	84
Slackline harvest	MMBF	0	0	36	38	36	38	34
Helicopter harvest	MMBF	0	0	60	0	57	69	74
Right-of-Way (ROW) harvest	Acres	0	0	4	4	3	3	4
Potential shovel yarding	Acres	0	0	371	617	229	374	262
Est. mid-market stumpage	$/MBF	NA	NA	3.29	2.41	1.03	3.83	0.58
Est. current value stumpage		NA	NA	-10.38	-8.44	-13.13	-4.86	-6.46
Returns to state (based on mid-mark.)	$M	0	0	4,957	5,991	4,644	4,574	4,418
Average annual jobs over 4 years	# jobs	0	0	583	574	570	583	572
Specified road constr.	Miles	0	0	110	135	104	100	102
Temporary road constr.	Miles	0	0	4	11	8	5	5
Road reconstruction	Miles	0	0	78	70	79	78	72
High-use subsistence (TRUCS)	Acres harvested	0	0	2,830	2,726	2,577	2,853	2,929
High-use subsistence (resp. to DEIS)	Acres harvested	0	0	1,655	3,428	1,901	1,519	0
Old growth hab. (1989-94 LTS EIS)	Acres harvested	0	0	1,654	2,718	1,892	1,639	1,813
Honker Divide (ridge-to-ridge)	Acres harvested	0	0	566	1,194	414	436	801
Honker Divide HCA (VPOP Committee)	Acres harvested	0	0	79	1,806	123	129	328
Staney Crk. HCA (VPOP Committee)	Acres harvested	0	0	47	318	422	831	870
1996 MIS - deer	Habitat cap.	10,245	10,280	9,934	9,952	9,942	9,918	9,945
1996 MIS - bear	Habitat cap.	517	517	515	515	515	515	515
1996 MIS - marten	Habitat cap.	499	503	479	476	479	478	480
1996 MIS - river otter	Habitat cap.	168	168	168	168	168	168	168
1996 MIS - hairy woodpecker	Habitat cap.	3,395	3,425	3,181	3,182	3,186	3,172	3,192
1996 MIS - brown creeper	Habitat cap.	5,594	5,673	5,272	5,284	5,279	5,270	5,319
1996 MIS - Van. Canada goose	Habitat cap.	667	670	640	637	640	637	639
1996 MIS - bald eagle	Habitat cap.	375	375	374	375	374	374	374
1996 MIS - gray wolf	Habitat cap.	25	25	24	24	24	24	24
Very high mass movement (MMI 4)	Acres harvested	0	0	0	0	0	0	0
High mass movement (MMI 3)	Acres harvested	0	0	3,548	3,081	3,352	3,879	3,864
Medium mass movement (MMI 2)	Acres harvested	0	0	1,608	1,695	1,726	1,679	1,311
Low mass movement (MMI 1)	Acres harvested	0	0	2,603	2,870	2,625	2,671	2,452
Wetlands harvested/roaded	Acres	0	0	4,436	3,698	4,475	3,706	3,886
Roads crossing Cl.I,II streams	Number	0	0	54	63	47	27	49
Change in ROS: SPNM to RM	Acres	0	0	19,000	15,800	16,000	19,600	18,700
Roadless areas harvested	Acres harvested	0	0	3,584	3,458	3,137	3,664	3,596
Rec. places with some harvest	Number	0	0	14	17	15	14	10
Known karst	Acres harvested	0	0	731	959	958	838	131
Possible karst	Acres harvested	0	0	1,587	1,259	1,583	1,918	1,861
Signif. karst features (KRG survey)	# harv. units	0	0	10	16	15	12	1

* Selected Alternative harvests approximately 5.8 MMBF less than Alternative F5.
* Selected Alternative contains no units greater than 100 acres.

Environmentally Preferred Alternative

There is no single factor that can be used to determine which alternative is environmentally preferred. Maintaining the basic productivity of the land and the quality of lifestyle of the local residents are vitally important.

Based on the comparison of the alternatives shown in the Table 1 and as displayed in Chapter 3 of the Final EIS, Alternative 1a, the No-Action/No Further Harvest alternative, would cause the least environmental disturbance and is therefore the environmentally preferred alternative of all the alternatives considered in detail.

All action alternatives considered in detail have similar levels of environmental effects. Of the action alternatives, the Selected Alternative, F5, would cause the least adverse environmental effects because of the measures taken to reduce conflicts with subsistence and other users. The Selected Alternative has slight to minor effects for most resources. In addition, the Selected Alternative modified the original combination of units and roads in Alternative 5 in response to public comments and subsistence testimony on the Draft EIS. This change was made to minimize the potential negative effects on rural subsistence users likely to receive the highest priority of protection in the event of an ANILCA Section 804 "Tier II" restriction.

Administrative Record

The Administrative Record for this project includes the Draft EIS, Final EIS, Tongass Land Management Plan, Alaska Regional Guide, and all material incorporated by reference including the planning record.

Mitigation

Mitigation includes measures prescribed and taken to avoid, reduce, minimize, or eliminate the adverse affects of actions. These measures were applied in the development of the project alternatives, including the Selected Alternative, and in the design of the harvest units and roads corridors. The Mitigation Measures section of Chapter 2 of the Final EIS discusses the mitigation measures common to all alternatives.

Mitigation measures applicable to the Selected Alternative include mitigation measures contained in the standards and guidelines of the Tongass Land Management Plan of 1979 (as amended), draft Tongass Land Management Plan Revision, Alaska Regional Guide, and applicable Forest Service Manuals and Handbooks. The Final EIS includes Harvest Unit Design Cards and Road Cards (Appendix G) which incorporated site-specific mitigation. These measures are adopted as part of this decision. Integrated silvicultural prescriptions will be developed which will further specify mitigation direction for each unit.

All practical means to avoid or minimize adverse environmental effects of the Selected Alternative have been adopted. Measures have been included to protect, enhance, and restore resources affected by timber harvest and related actions. The Forest Service has the authority through the KPC Long-term Timber Sale Contract and other permit requirements or authorities, to enforce and implement adopted mitigation measures and the monitoring necessary to ensure the effectiveness of the mitigation. The

following mitigation measures are authorized for application to the Central Prince of Wales Project Area.

1. Water quality and fish production are protected through the application of Best Management Practices (BMP's) stated in the Soil and Water Conservation Handbook (FSH 2509.22) and the direction contained in the Aquatic Habitat Management Handbook (FSH 2609.24). These handbooks provide standard operating procedures for all stream classes. In addition, the Tongass Timber Reform Act (TTRA) requires a minimum 100-foot buffer for all Class I streams and Class II streams directly flowing into Class I streams. The actual width of this buffer will often be greater than 100 feet to provide a reasonably windfirm boundary, conform to topographical features, protect riparian soils, follow timber stand boundaries, and because of varying stream channel location. The buffers and other stream protection measures adopted in this decision equal or exceed all TTRA requirements.

2. BMP's applied to protect water quality and fisheries habitat will also reduce impacts on forest soils. Soils with an extreme mass-wasting hazard are to be avoided in the preparation of harvest units. Slackline or skyline logging systems with the requirement to partially or fully suspend logs during yarding will be applied to units with high hazard soils. Research and experience has shown that sensitive unit design, application of BMP's, selection of logging systems, and enforcement of specific operating requirements are effective in the mitigation of the effects of logging and road building on forest soils. Soil disturbance levels ranging from 2 to 5 percent have been observed in areas logged with skyline systems with partial or full log suspension; the use of highlead logging systems has resulted in as much as 30 percent soil disturbance with little or no ability to suspend logs during yarding.

3. To reduce adverse effects on wildlife habitat values, units were intentionally located outside of identified riparian areas and the beach and estuary fringe habitats wherever practicable. Avoidance of these key high quality habitat areas provides for important winter feeding areas, habitat diversity, and the maintenance of wildlife travel corridors within the developed area.

4. Measures individually identified for each harvest unit and road to minimize adverse effects on wildlife include post-harvest road closure or the discouragement of use, retention of snags or recruitment snags (where safe and practical to do so), retention of large down woody material, and the design of harvest activities to avoid disturbance to bald eagle nest sites. This direction is contained in the Road Management Objectives (RMOs), Harvest Unit and Road Cards. These measures have been used effectively in the past throughout southeastern Alaska. However, the retention of snags and recruitment snags is relatively new. Experience elsewhere has shown that leaving snags and green trees for future production of snags, provides for cavity-nesting bird and wildlife habitat, stand structural diversity, and a source of future large down woody material. Road closure and discouragement of use are expected to be effective in decreasing use of new and existing roads by full-size motor vehicles. Closure of roads to motorized vehicles may not be as effective for all-terrain vehicles without strong communications, local public acceptance, and rigid enforcement of closure orders. Closure and discouragement of use will not affect non-motorized vehicle use, or foot travel, at least until alder overgrows the roadways. Post-harvest road management and maintenance strategies also reduce the effects of road development and use on water quality and soils.

5. To mitigate impacts to customary and traditional subsistence harvest patterns, methods, and rural users, post-harvest road management objectives will discourage use of the road system in Wildlife Analysis Areas (WAA) 1315, 1319, 1420, 1422, 1527. The remainder of the road system in the Project Area will be managed to accept use on the collector roads and discourage use on the local roads. In this way, changes in subsistence access will be limited. The road management strategies are listed in ROD Appendix 2. Implementation of this type of mitigation measure in the CPOW area has proved effective in protecting the wildlife resources.

6. After harvest is complete, close new road construction into units 553-221 and 553-222 to reduce motorized vehicular access to adjacent Sarkar Lakes Management Area. This road closure will protect the integrity of the primitive recreation experience. This closure will be fairly successful in reducing car and truck access, but less effective for other types of vehicles.

7. There are units adjacent to the Sarkar Lakes Management Area. A boundary establishment needs to be completed prior to layout. These units are:

   Units
   571-209
   571-210
   571-214
   571-252
   588-257

8. Recreation staff will assist in the design and location of roads within recreation places.

9. Unit 581-204 B, lies above Eagle Creek at the outlet of Luck Lake. This is a highly popular fishing spot, known locally as the 'Meathole'. This unit has been redesigned to provide a 300 foot buffer above Eagle Creek and to partial cut the portion of the unit below the road in order to preserve the old-growth appearance of the hiking trail which provides fishing access.

10. There are two adjacent units, 582-214 and 582-215 which will be harvested. These two units will create a contiguous opening exceeding 100 acres, a 300 to 500 foot leave strip will be provided to keep the created opening under 100 acres. The design of this leave strip will require coordination with a landscape architect during harvest unit layout, in order to meet the VQO proposed by this project.

11. Best Management Practices. Best Management Practices (BMP's) are methods, measures or practices to prevent or reduce water pollution. Their use is required by the TTRA and the Clean Water Act. They include structural and non-structural controls, operation and maintenance procedures, and scheduling and distribution of activities. Usually, BMP's are applied as a combination of practices, rather than a single practice.

    An example of a BMP is: Practice 14.6- Timing Restrictions for Construction Activities. Section 4 states "Instream construction activities and the use of equipment within Class I streams will be restricted to the periods when eggs or aelvin are not in the gravels as established in the fish timing window."

Appendix C of the Proposed Revised Forest Plan (USDA Forest Service 1991a) includes a listing of recommended Best Management Practices as identified in the Soil and Water Conservation Handbook (FSH 2509.22).

The effectiveness of BMP's is primarily determined by the degree to which instream water quality meets state water quality standards. Although numerical standards are included in the Alaska state water quality regulations, measurements are difficult to routinely apply to the regulation of nonpoint sediment sources on road construction and timber sale sites. The Environmental Protection Agency has determined that the reasonable implementation, application, and monitoring of BMP's achieves compliance with the intent of the Clean Water Act. Water quality studies conducted in Southeast Alaska indicate that except for short-term localized deviations from numerical standards, "BMP's are effective in maintaining sediment concentrations within state standards" (Paustian 1987).

12. Design stream crossings to provide fish passage for anadromous and resident fishes. This applies to proposed new road construction or major road reconstruction crossing Class I and II streams. (See Appendix G of the Final EIS, Unit Cards.)

13. Time road construction activities within all Class I and some Class II streamcourses to protect spawning adult fish and their eggs and fry from disturbance. This means instream road construction activities must be conducted during time periods that would not cause reductions in egg or fry survival or disturb spawning adults. Generally road construction activities adjacent to streams will be restricted to the time period May 15 to August 15.

14. Where possible split yard on all identified streamcourses to maintain streambank stability and prevent stream sedimentation. Recon information has identified areas where it may not be possible to split yard on all identified streamcourses. In these instances, it will be necessary to provide full log suspension over these streams. These units include:

    Units
    550-220
    571-235
    571-267
    571-268

15. Reduce the potential for landslides by providing for full bench road construction and end haul of waste in areas with very high potential for mass movement, as well as in other areas as determined by geotechnical engineers.

16. Another means of reducing the landslide potential is to maintain partial log suspension on all slopes with high mass movement potential. Ground disturbance should not exceed 10 percent. Mitigation may be necessary on units planned for highlead logging and 75 percent or more of the area classified as high mass movement index (MMI) soils. Slopes and soil hazards should be field verified and logging systems redesigned to improve deflection, if warranted.

    Units
    577-204
    577-286
    586-201
    589-230

589-231
589-263
589-275

17. For National Forest-permitted LTF's, the grade of the working surface shall be constructed to back drain water away from the working face toward filter strips or collection/settling basins. Clean up of bark and debris will occur on a frequent basis in accordance with the neccessary EPA permits.

18. While required TTRA buffers will mitigate most temperature sensitivity concerns, there still is concern about providing topograghic shading to Class III streams that flow through harvest units. Units and groups of units that have characteristics (south aspect, lack of immediate downstream forested stream buffers, historical and continued harvest activities, etc.) that may contribute to the temperature sensitivity of nearby streams were identified by the IDT. To mitigate this possible effect, all deciduous trees and conifer trees less than 12 inches DBH within 35 feet slope distance of Class III streams, will remain standing in the following units:

Units
571-209
571-210
571-214
585-206
585-208
585-210
585-214
588-212 B
588-213 B
590-244

19. Implement reasonably windfirm, selective harvest buffers on water quality streams in the following units

Units
581-234
588-278

20. Provide for habitat requirements of cavity and snag dependent Management Indicator Species (MIS) by leaving 275 snags per 100 acres averaged over each VCU. To provide for adequate distribution of snags within VCU's which have marginal numbers of snags, the following units will have small 0.1-acre (or larger) snag patches distributed throughout the unit at a rate of 0.1 acre per 10 acres of unit. The location of these snag patches will be determined during layout or sale administration, and will be designed in such a fashion as to not impose undue safety hazards on logging contractors.

    Guidelines for placement of snag patches and old-growth islands include:

    a. Areas where wildlife use is concentrated (determined during recon).
    b. Selected areas should be at least 100 feet away from unit boundary (unless the unit boundary is an existing second-growth stand; then the patch or island can be placed along the unit boundary).
    c. Patches or islands can be placed along split yard sections of harvest units, particularly split yard streams.

d. Snag patches or old-growth islands can be incorporated into stream buffers.
e. Snag patches or old-growth islands can be placed along boundaries of muskegs.

Units which will employ these snag recruitment techniques include:

Units
579-212
579-213
579-214
579-222
579-223
583-227
585-215
587.1-208
588-327
598-245

21. Region 10 goshawk management guidelines in effect at the time of unit release will be followed. The interim guidelines issued August 18, 1992, call for no harvest within the immediate timber stand (20–30 acres) containing an identified nest tree, limited harvest (five percent per decade) within the adjacent 600 acres (post-fledging area), and mapping out approximately 6,000 acres for the foraging area.

    All known goshawk nests and any new nests discovered during field recon or unit layout will be protected from timber harvest and blowdown by a minimum 660-foot buffer around the nest tree. The following units have been surveyed for goshawk nests and none were found, although alternative nests could exist. The boundaries of these units have been carefully designed so that they avoid encroachment of post-fledging areas. These planned boundaries should be followed.

    Units
    549.2-201
    549.2-205
    549.2-206
    549.2-207
    549.2-230
    550-208
    550-211
    554.2-210
    554.2-220
    554.2-225
    557-200-B

22. Road construction and harvest activities for unit 583-258 will be limited to the time period outside the wolf mating and denning season (normally January 1 through June 30). In addition, the access road to this unit will be closed following completion of post harvest activities.

23. Road construction activities that are within a half mile of bald eagle nests will usually have blasting restricted to the period of September 1 to February 28. If the nest is unoccupied, normal blasting procedures are also permitted from June 1 to August 31 if there is no direct danger to eagles, nests, eagle nest trees, or other eagle habitat elements. Blasting within 1/2 mile of an active eagle nest is only

allowed if 1) the blasting can be accomplished in accordance with the requirements of the Bald Eagle Protection Act; 2) written coordination with the U.S. Fish and Wildlife Service has occurred; 3) the results of the interagency coordination is documented. Road construction to the following harvest units may have blasting restricted to certain time periods:

Units
581-200
581-201
581-204
581-204 B
582-211
582-218
583-229
587.1-215

24. The following standards and guidelines have been developed for application on all Forest Service permitted or approved activities and have been incorporated by reference into the CPOW Final EIS from the Supplement DEIS Tongass Land Management Plan:

    Provide for the protection and maintenance of whale habitats:
    a. Avoid intentional aircraft flights below 500 feet above ground level in the known vicinity of whales on Forest Service permitted or approved activities, when weather ceilings permit.
    b. Avoid intentional approach in a vessel of 100 feet or more in length to within 1/4 mile of whales on Forest Service permitted or approved activities, when safe passage exists.
    c. Avoid intentional approach in a vessel of less than 100 feet in length to within 100 yards of whales on Forest Service permitted or approved activities, when safe passage exists.

25. Standards and guidelines direct the Forest Service to prevent and/or reduce potential harassment of sea lions and other marine mammals due to activities carried out by or under the jurisdiction of the Forest Service, and these have been incorporated by reference into the CPOW Final EIS from the Supplement DEIS Tongass Land Management Plan. These Forest-wide standards and guidelines are as follows:

    Provide for the protection and maintenance of harbor seal, Steller sea lion, and sea otter habitats.
    a. Ensure that Forest Service permitted or approved activities are conducted in a manner consistent with the Marine Mammal Protection Act and the Endangered Species Act. 'Taking' of marine mammals is prohibited; taking includes harassment, pursuit, or attempting any such activity.
    b. Locate facilities and concentrated human activities requiring Forest Service approval as far from known marine mammal haulouts, rookeries and known concentration areas as practicable. The following distances are provided as general guidelines for maintaining habitats and reducing human disturbance:
        * Facilities, camps, LTF's, campgrounds and other developments should be located 1 mile from known haulouts, and farther if the development is large.
        * For aircraft flights on Forest Service approved projects, when weather ceilings permit, maintain a constant flight direction and airspeed and a

minimum flight elevation of 1,000 feet (305 meters) within .5 miles (800 meters) of the haulouts.

* For boat traffic on Forest Service approved projects, remain at least .5 miles (800 meters) away from hauled-out harbor seals during the pupping and rearing season (15 May–1 July). Minimize disturbance of seals with pups in the water by remaining at least 330 feet (100 meters) away from parturient seals. (*Note:* These distances are derived from a study in a park where hunting is prohibited and access is restricted and where viewing seals is encouraged. These distances may be too liberal and may need to be enlarged in situations where access and hunting are not controlled and where seals would be expected to be more reactive to boat traffic.)
* Minimize disturbance effects of boat traffic: for molting harbor seals, remain .5 miles (800 meters) away from haulouts where seals are molting; for Steller sea lions, remain at least .5 miles (800 meters) away from haulouts and rookeries; for sea otters, avoid known feeding and resting concentration areas, especially following prolonged stormy periods when sea otters have been unable to feed.
* Individuals associated with Forest Service permitted or approved activities will not intentionally approach within 100 yards, or otherwise intentionally disturb or displace any hauled-out marine mammal.

26. It is desirable to maintain the cedar component in stands where it naturally occurs. Because cedar tends to regenerate poorly following clearcut harvest in some stands, it is desirable to not harvest the mature cedar but to retain that vegetative structure for biodiversity and to establish cedar regeneration. Silvicultural methods such as seed tree or shelterwood are appropriate to meet specific resource objectives. Areas identified to be best suited for cedar regeneration include units within the cedar or mixed conifer plant association that are proposed for helicopter yarding and having either elevations over 1,200 feet (on north and east aspects) or over 1,500 feet (on south and west aspects). Specific units identified as meeting this criteria include:

Units
573-249
573-251
584-272
588-283
590-210
590-211
590-219

27. There are several units where site-specific silvicultural prescriptions have identified the need to utilize a seed tree harvest to help regenerate the stand. These units are:

Units
549.2-205
572-221
585-215

28. Based on preliminary recon there are some units which, because of their elevation, aspect, or indigenous plant association, may have problems establishing adequate natural regeneration. Supplemental hand planting will be done as necessary.

    Units
    554.2-201
    573-249
    573-251
    580-212
    584-226
    584-227
    584-252
    585-210 B
    588-300
    589-214

29. The TLMP Draft Revision Alt P has identifed a stream and lake land use designation, which prescibes an extended buffer beyond the TTRA buffer for the purpose of preserving riparian habitat. This extended buffer permits timber harvest using uneven-aged management. The following units contain riparian areas to be harvested using uneven-aged silvicultural techniques such as group selection.

    Units
    549.2-201
    554.2-225
    571-252
    577-284
    583-258
    585-201
    585-203
    585-206
    587.1-209
    588-212 B
    588-213 B
    590-231

30. Cultural Resources. During the summer of 1992, the proposed harvest units were surveyed for existence of cultural resources. Several units were found to contain significant cultural resources to the extent that the most appropriate mitigation measure available was avoidance of harvest. The locations of these units will not be disclosed to preserve the integrity of the sites. In addition, units were found to either contain or be adjacent to significant cultural resources. Where necessary, boundaries were redesigned to avoid the cultural material. Timber harvest and road location in these units must conform very closely to the planned location. Any deviation must be coordinated with cultural resource personnel. These units include:

    Units(s)
    557-200 B
    571-252
    581-204 B
    587.1-220
    587.1-221
    598-245

Contracts may be modified by the Forest Service to protect cultural resources which may be discovered during the course of the Purchaser's operations. The KPC Long-Term Contract states that "in the event that any cultural resource is identified, both parties shall be notified immediately. The Purchaser shall protect all cultural resources against destruction, obliteration, removal, or damage during the operating period."

31. The standards and guidelines for cave resource management proposed for the TLMP Draft Revision (1991a) have been formulated from field observations. Though the Federal Cave Resources Protection Act charges the Forest Service with protection only of significant caves, the Tongass National Forest is working to protect all significant karst resources. Until resource values are determined, the Ketchikan Area is considering all caves to be significant.

    During the summer of 1992, the proposed harvest units were surveyed for existence of significant karst features. Several units were found to contain significant karst resources to the extent that the most appropriate mitigation measure available was avoidance of harvest. The locations of these units will not be disclosed to preserve the integrity of the sites.

    In addition, 18 units were found to either contain or be adjacent to significant karst resources. Where necessary, boundaries, logging systems, and road locations were redesigned to avoid these resources. Timber harvest and road location in these 18 units must conform very closely to the planned location. Any deviation must be coordinated with District or Area Cave Resource Specialists. These units include:

    Units
    549.2-207
    550-208
    550-213
    554.2-220
    557-200 B
    571-235
    571-256
    571-266
    571-267
    577-214
    588-259
    588-261
    588-327

    Specific Mitigation Efforts for Caves

    a. If a previously undiscovered site is found during the course of the project, the timber sale administrator will suspend any work that might potentially damage the cave resource. Work may resume after consultation with the local cave management specialist and appropriate line officer.

    b. Timber harvest, road construction, and other related management activities in the vicinity of a cave or significant karst feature or above the course of a cave, shall be designed in a way to ensure protection of the cave resources.

    c. Surface management activities should be designed so as not to impede or divert surface and groundwater flow into a cave or significant karst feature.

d. Retention of vegetation is required in the vicinity of a cave or significant karst feature to protect the cave's microenvironment. The extent and limits of reasonably windfirm no-harvest buffers surrounding significant karst features shall be determined on a case-by-case basis. Topographic breaks and vegetation patterns should be utilized during buffer design and layout.

   In some instances, when a reasonably windfirm no-harvest buffer cannot be designed, it may be possible to leave all nonmerchantable timber and ground cover intact, removing the overstory by directionally falling trees away from the significant karst feature. There shall be no ground disturbing activities on slopes steeper than 30 degrees adjacent to cave entrances.

e. Buffers shall be maintained around all direct drainages into significant karst features. This includes dolines; cave collapse areas known to open into a cave's drainage system; and perennial, intermittent or ephemeral streams flowing into caves. The immediate area surrounding resurgence streams shall be protected to ensure stability of the cave ecosystem.

f. Where timber harvest is occurring in the vicinity of a cave, fall trees directionally away from the cave and its course. Yarding should not drag timber across and/or through significant karst features. Trees felled into or across significant karst features shall be not be removed. Any small woody debris that has found its way into significant karst features shall be hand removed within 48 hours.

g. No significant karst feature shall be used as disposal sites for slash, spoils, or other refuse.

h. Design roads and related construction to avoid altering surface drainage into significant karst features or focusing sediment from road surface and/or drainage into significant karst features. Any excavation requiring blasting in the vicinity of a cave should be carefully designed to ensure that seismic shock does not affect the fragile formations in the cave, destabilize cave passages, or alter groundwater flow into the cave. Design quarry and material sources to ensure that location and excavation in no way threaten cave resources.

i. Seasonal closures prohibiting construction activities in some areas may be required to ensure protection of roosting and hibernating bats, nesting birds, or seabird rookeries.

j. Because public use of caves may lead to the degradation of cave resources, protection measures may include maintaining confidentiality about specific site locations, limiting public access as required, and monitoring.

Monitoring and Enforcement

A monitoring program is the process by which the Forest Service can evaluate whether or not the resource management objectives of the Final EIS have been implemented as specified and whether or not the steps identified for mitigating the environmental effects were effective. Three levels of monitoring are recognized. The first two levels, implementation monitoring and effectiveness monitoring are generally feasible at the project level. The third level, validation monitoring, is conducted at the Regional or forest-wide level.

Applicable monitoring requirements are specified at the end of Chapter 2 of the Final EIS. For each monitoring item, an objective, desired result, method of measurement, and evaluation (or threshold and corrective action) are identified, along with identification of the responsible staff. Monitoring activities may reveal results that deviate from planned effects, in which case corrective actions are prescribed.

The Ketchikan Area Forest Supervisor is responsible for ensuring that project implementation, mitigation, monitoring, and enforcement is accomplished as specified.

Findings Required By Law

National Forest Management Act

The National Forest Management Act (NFMA) requires specific determinations in this Record of Decision including consistency with existing Forest Plans and Regional Guides. It also requires a determination of clearcutting as the optimal method of harvesting and specific authorization of clearcuts over 100 acres in size.

Tongass Land Management Plan and Alaska Regional Guide

This decision is consistent with the Alaska Regional Guide and the Tongass Land Management Plan of 1979 (as amended). I have reviewed the management direction, standards and guidelines, and the schedule of activities for the VCUs included in the Selected Alternative, and find the Selected Alternative to be consistent with these elements. The areas of undisturbed old-growth wildlife habitat maintained in this alternative exceed the standards for retention established in the TLMP.

Although not required, the activities authorized in this decision are consistent to the extent practicable with the proposed standards and guidelines and management prescriptions of the Supplement to the Draft EIS for the TLMP Revision.

Clearcutting as the Optimal Method of Harvesting

The Alaska Regional Guide established silvicultural and management standards for the western hemlock-Sitka spruce forest type (Alaska Regional Guide, page 3-18). Even-aged management in the form of clearcutting is, according to the Regional Guide, to be used where the management objective is to meet timber production objectives established in the Forest Plan, where there is a risk of dwarf mistletoe infestation, and where risk of windthrow is determined to be high. Although dwarf mistletoe is not a major problem in the Central Prince of Wales Project Area, all of the harvest units being proposed in the Selected Alternative are within LUD III and LUD IV lands and have a high risk of windthrow. Most units in the Selected Alternative, except those discussed in the previous Decision section, are prescribed for clearcut harvest. Clearcutting of the proposed harvest units will meet the objective of maintaining fast-growing, mistletoe-free stands of mixed species and is the optimum method of harvesting, considering the following factors referenced in the Alaska Regional Guide:

1. The thin bark and shallow roots of hemlock and spruce make them particularly susceptible to logging injury, which leads to decay. Losses from decay fungi are high, especially in the old-growth forests of Alaska. Conversion from old- to young- growth by clearcutting has the greatest potential for reducing decay.
2. Hemlock dwarf mistletoe, Arcenthobium tsugense, a common disease of western hemlock, can best be controlled by clearcutting. Elimination of residual overstory trees infected with dwarf mistletoe prevents infestation of western hemlock in the new stand.

3. Exposure to the sun raises soil temperature, which speeds decomposition, thereby improving the productivity of most sites.

4. Clearcutting favors regeneration of Sitka spruce by destroying advance hemlock regeneration and by creating more favorable conditions for post-logging reproduction of spruce.

5. Risk of blowdown in residual stands is eliminated. The chance of blowdown along cutting boundaries is increased but can be reduced through proper design of cutting units.

6. Natural seed fall is generally adequate for regeneration and most young stands are dense.

7. Logging costs are lower than with other systems.

On June 4, 1992, F. Dale Robertson, Chief of the Forest Service, issued a letter to Regional Foresters and Station Directors on the subject of Ecosystem Management of the National Forests and Grasslands. As part of this letter, an attachment was included regarding clearcutting on National Forest System lands and the use of other silvicultural systems. Specific items are listed which describe circumstances where clearcutting is appropriate. Within the Final EIS for Central Prince of Wales, a discussion of alternatives considered is displayed. Where clearcutting is specified as the preferred regeneration harvest, documentation is provided for the reasons clearcutting is appropriate, and reference is made to the appropriate items in the Chief's letter which apply. Therefore, considering the above factors, clearcutting, as applied in the Selected Alternative, is appropriate and consistent with the criteria in the Chief's letter.

Clearcuts Over 100 Acres in Size

There are a total of two units or combinations of units which exceed 100 acres. ROD Appendix 1 includes a table that displays these units or combinations of units and lists the reasons for exceeding 100 acres. These units were displayed for public review for more than 45 days after release of the Draft EIS in which the public could comment on these units over 100 acres. This 45-day public comment period meets the requirements of the Alaska Regional Guide for approval of units over 100 acres. Based on public review and the statements of reasons listed for the units greater than 100 acres in Appendix 1 of the ROD, these units are authorized for harvest as designed.

Tongass Timber Reform Act

Harvest units were designed and will be located to maintain a minimum 100-foot buffer zone for all Class I streams and Class II streams which flow directly into Class I streams as required in Section 103 of the TTRA. As discussed previously in the Mitigation section of this ROD, the actual widths of these buffer strips will often be greater than the 100-foot minimum. The design and implementation direction for the Selected Alternative incorporate BMP's for protection of all stream classes.

In accordance with Section 301(c) of TTRA, which modified the KPC Long-term Timber Sale Contract, the Central Prince of Wales Project was planned, management requirements were applied, and environmental analysis procedures were followed consistent with procedures for independent National Forest timber sales. Analysis of the proportion of Volume Classes 6 and 7 planned for harvest was also performed. It was determined that upon completion of the Selected Alternative's harvest, proportionality consistent with the requirements of the TTRA for all Management Areas within the Project Area will result although an adjustment in Management K03 will need to be made in the Lab Bay project which is currently underway. Refer to ROD Appendix 3 for the analysis of the proportion of Volume Classes 6 and 7 planned for harvest with the Selected Alternative.

Endangered Species Act

Actions authorized in the Selected Alternative are not anticipated to have a direct, indirect, or cumulative affect on any threatened, endangered or sensitive species in the Central Prince of Wales Project Area. A complete biological assessment is included in Appendix B of the Final EIS. I have determined that this action will not have any adverse impacts on any threatened or endangered species.

Bald Eagle Protection Act

Management activities within 330 feet of an eagle nest site are restricted by a Memorandum of Understanding (MOU) between the Forest Service and the U. S. Fish and Wildlife Service to facilitate compliance with the Bald Eagle Protection Act. The Selected Alternative is not anticipated to have a significant direct, indirect, or cumulative affect on any bald eagle. No variances are being requested from the Fish and Wildlife Service on any eagle nest trees.

Clean Water Act

The design of harvest units and roads for the Selected Alternative were guided by standards, guidelines, and direction contained in the current TLMP, the TLMP Draft Revision, Alaska Regional Guide, and applicable Forest Service manuals and handbooks. The Harvest Unit Design Cards and Road Design Cards (Appendix G) contain specific details on practices prescribed to prevent or reduce non-point sediment sources. Reasonable implementation with site-specific application and monitoring of approved BMP's is expected to comply with applicable State Water Quality

Standards Regulations. These regulations provide for variances from anti-degradation requirements and water quality criteria. The harvest and road-building operators will be responsible for compliance, including obtaining any variance required by the State, and will be monitored for compliance by the Forest Service. The Forest Service expects the Central Prince of Wales Project Area activities to fully qualify for any variance required by the State, according to the criteria in 18 AAC 70.015.

The Environmental Protection Agency has established normal conditions including monitoring as a part of the permitting process for log transfer facilities.

National Historic Preservation Act

Cultural resource surveys of various intensities have been conducted in the Project Area. The State Historical Preservation Officer has been consulted, and the provisions of 36 CFR part 800 are being complied with. The KPC contract contains enforceable measures for protecting any undiscovered cultural resource that might be encountered during sale operations. No ground-disturbing activities associated with this action will occur before a cultural resource clearance for that specific area has been given. I have determined, consistent with the Chiefs direction on cultural resources, that there will be no significant effects on cultural resources.

ANILCA Section 810

Subsistence Evaluation and Findings

A subsistence evaluation was conducted for the seven alternatives considered in detail for the proposed action in accordance with ANILCA Section 810. Open houses followed by ANILCA Section 810 hearings were held in Coffman Cove, Whale Pass, Ketchikan, Saxman, Klawock, Thorne Bay, Hydaburg, and Craig. The results from the subsistence hearings were incorporated into the development of the Selected Alternative.

The evaluation of comments from the public, subsistence hearing testimony, and additional analysis, indicates that the potential foreseeable effects from the action alternatives in the Central Prince of Wales Project Area do not indicate a significant possibility of a significant restriction of subsistence uses for bear, furbearers, marine mammals, waterfowl, salmon, other finfish, shellfish, and other foods such as berries and roots.

There is, however, a significant possibility of a significant restriction of subsistence use of Sitka black-tailed deer in the Project Area, regardless of which alternative is implemented, including the no-action alternatives. This possibility of restriction of subsistence use is for the communities of Whale Pass, Coffman Cove, Craig, Hollis, Hydaburg, Klawock and Thorne Bay.

Based on a review of the subsistence hearing testimony and the analysis conducted in the Final EIS, it is apparent that all of the action alternatives, and no action alternatives, involve some potential to restrict subsistence uses. There is no alternative that would meet KPC contract timber volume requirements and TLMP direction and yet avoid a significant possibility of a subsistence restriction somewhere in the Forest. Therefore, based on the analysis of the information presented in the Final EIS, it is my determination that these actions are necessary, consistent with sound management of public lands.

The amount of public land involved to implement the Selected Alternative is (considering sound multiple-use management of public lands) the minimum necessary.

Conversion of old-growth forest into second-growth forest affects habitat capability for deer and other old-growth dependent species wherever it occurs on the Tongass National Forest, and habitat is used forest-wide by such species.

The entire Tongass National Forest is used by one or more rural communities for subsistence purposes for deer hunting (TRUCS). The areas of most subsistence use are the areas adjacent to existing road systems, beaches, and the areas in close proximity to the communities. Much effort was taken to protect the highest value subsistence areas. For example, the beach fringe is one of the highest use subsistence areas, and one percent or less will be impacted by the Selected Alternative.

It is not possible to lessen harvest in one area and concentrate it in another without changing the impact on one or more rural communities' important subsistence use areas. In addition, harvestable populations of game species could not be maintained in a natural distribution across the Forest if harvest were concentrated in specific areas. A well distributed population of species is also required by Forest Service regulations implementing the National Forest Management Act. Therefore, I conclude that the acres scheduled for harvest in the Selected Alternative meet sound multiple-use management of public lands and involve the minimum amount of public land used for subsistence. Furthermore, the Selected Alternative resolves resource concerns reflected in the public issues associated with this EIS.

Impacts on subsistence have been minimized through the development of the individual harvest units and road corridors, and through the formulation of the alternatives. Mitigation measures applicable to all resources including subsistence are described in this ROD. It is my determination that reasonable measures to minimize impacts on subsistence have been adopted to the maximum extent practicable while still meeting the purpose and need for this project.

The Selected Alternative reflects special efforts by the Forest Service to minimize the effects on subsistence resources used by those rural communities that would be most likely to receive the highest priority for game in the event of an ANILCA Section 804 "Tier II" restriction.

Executive Orders

Executive Order 11988

Executive Order 11988 directs Federal agencies to take action to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains. The numerous streams in the Central Prince of Wales Project Area makes it impossible to avoid all floodplains during timber harvest and road construction. The design of the proposed developments and the application of Best Management Practices combine to minimize adverse impacts on floodplains.

Executive Order 11990

Executive Order 11990 requires Federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands. The Selected Alternative avoids most identified wetlands; however, many small wetlands or muskegs occur as inclusions within forested areas. These areas may be altered by timber harvest or road construction. Techniques and practices required by the Forest Service serve to maintain the wetland attributes. It is estimated there will be only minimal loss of wetlands with any of the alternatives. Soil moisture regimes and vegetation on some wetlands may be altered in some cases; however,

these altered acres would still be classified as wetlands and function as wetlands in the ecosystem.

Coastal Zone Management Act

The Coastal Zone Management Act of 1972 (CZMA), while specifically excluding Federal lands from the coastal zone, requires that a Federal agency's activities be consistent with a state's coastal management program to the maximum extent practicable when that agency's activities directly affect the coastal zone. Forest Service requirements for consistency are detailed in a Memorandum of Understanding between the State of Alaska and the Regional Forester, dated October 8, 1981. Standards against which the consistency evaluation take place are: Alaska Statute Title 46, Water, Air, Energy, and Environmental Conservation; Alaska Forest Practices Act of 1990; and the District Coastal Management Program.

The standards and guidelines for timber management activities in the Central Prince of Wales Project Area meet or exceed those indicated in the Alaska Forest Practices Act and the Alaska Coastal Management Program (ACMP).

I have determined that the proposed activities are consistent with the Alaska Coastal Management Program to the maximum extent practicable. In accordance with the Memorandum of Understanding and Alaska Statutes, the Office of Governmental Coordination will do a consistency review of the Selected Alternative, and will concur with, or object to, this determination.

Federal and State Permits

Federal and State permits necessary to implement the authorized activities are listed at the end of Chapter 1 of the Final EIS.

Implementation Process

Implementation of this decision may occur no sooner than 45 days after the date of publication of the Notice of Availability of the Final EIS in the *Federal Register*, or 45 days following publication of the legal notice of the decision in the *Ketchikan Daily News*, published in Ketchikan, Alaska, whichever is later.

This project will be implemented in nine or more timber offerings in accordance with Forest Service Manual and Handbook direction for Timber Sale Project Implementation in FSM 2431.3 and FSH 2409.24. This direction provides a bridge between project planning and implementation and will ensure execution of the actions, environmental standards, and mitigations approved by this decision, and compliance with the TTRA and other laws.

Implementation of all activities authorized by this Record of Decision will be monitored to ensure that they are carried out as planned and described in the Final EIS and ROD and Unit Design and Road Cards unless modified consistent with direction in the Forest Service Manual.

Appendix G of the Final EIS contains the Harvest Unit Design Cards and the Road Design Cards. These cards are an integral part of this decision because they document the specific resource concerns, management objectives, and mitigation measures to govern the layout of the harvest units and construction of roads. These cards will be used during the implementation process to assure that all aspects of the project are implemented within applicable standards and guidelines and that resource impacts will not be greater than those described in the EIS. Similar cards will be used to document any changes to the planned layout, as the actual layout and harvest of the units occurs with project implementation. The implementation record for this project will display each harvest unit, transportation facility, and other project components as actually implemented; any proposed changes to the design, location, standards, and guidelines, or other mitigation measures for the project; and the decisions on the proposed changes.

Process for Change During Implementation

Any proposed changes to the authorized project actions will be fully subject to the requirements of the National Environmental Policy Act (NEPA), the National Forest Management Act of 1976 (NFMA), Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA), the Tongass Timber Reform Act (TTRA), the Coastal Zone Management Act (CZMA), and other laws concerning proposed actions.

No changes requiring modification of the KPC Long-term Timber Sale Contract or other existing contracts or permits will be approved without the signature of the contracting or permitting officer or his/her successor or superior.

In determining whether and what kind of further NEPA action is required, the Forest Supervisor will consider the criteria for whether to supplement an existing Environmental Impact Statement (EIS) in 40 CFR 1502.9(c), and in particular, whether the proposed change is a substantial change to the Selected Alternative as planned and already approved, and whether the change is relevant to environmental concerns. The Forest Supervisor will consider whether an Environmental Assessment (EA) should be prepared to determine whether a supplement to the existing EIS is required, or whether the change is categorically excluded from preparation of an EIS or EA on the basis of the criteria in FSH 1909.15. Connected or interrelated proposed changes regarding particular areas or specific activities will be considered together in making this determination. Cumulative impacts will be considered.

Some minor changes are expected to harvest units, transportation facilities, or other project components due to unknown physical or biological conditions. Many of these minor changes may be categorically excluded from documentation in an EA or EIS and will not present sufficient potential impacts to require any specific documentation or other action to comply with other laws. Some minor changes may still require appropriate scoping, environmental analysis, documentation in a Decision Memo, and public notice to comply with FSH 1909.15.

Right To Appeal

This decision is subject to administrative appeal. Organizations or members of the general public may appeal this decision according to Title 36 Code of Federal Regulations (CFR) Part 217. The appeal must be filed within 45 days of the date that legal notification of this decision is published in the Ketchikan Daily News, the official newspaper of record. The Notice of Appeal must be filed in duplicate with:

Michael A. Barton, Regional Forester
Forest Service
U.S. Department of Agriculture
P.O. Box 21628
Juneau, Ak. 99802-1628

It is the responsibility of those who appeal a decision to provide the Regional Forester sufficient narrative evidence and argument to show why the decision by the Forest Supervisor should be changed or reversed. At a minimum, the written notice of appeal must:

1. State that the document is a Notice of Appeal filed pursuant to 36 CFR part 217;
2. List the name, address, and telephone number of appellant;
3. Identify the decision about which the requester objects;
4. Identify the document in which the decision is contained by title and subject, date of the decision, and name and title of the Deciding Officer;
5. Identify specifically that portion of the decision document to which the requester objects;
6. State the reasons for objection, including issues of fact, law, regulations, or policy and, if applicable, specifically how the decision violates the law, regulation, or policy; and
7. Identify the specific change(s) in the decision that the appellant seeks.

The first timber offering is planned to be made available as part of the current timber supply in September, 1993.

Contact Person

For additional information concerning the specific activities authorized with this decision contact the Ketchikan Area IDT Planning Staff Officer.

David Arrasmith
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Ketchikan Area, Tongass National Forest
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Ketchikan, Alaska 99901

(907) 225-3101

David D. Rittenhouse

DAVID D. RITTENHOUSE
Forest Supervisor, Ketchikan Area
Tongass National Forest

7/14/93

Date

Appendix 1

Harvest Unit Information

HARVEST UNITS SPECIFIC TO SELECTED ALTERNATIVE

Unit Number	Logging System	Silvicultural Prescription	Acres	Volume (MBF)	VC 4 Acres	VC 5 Acres	VC 6 Acres	VC 7 Acres
549.2-201	Skyline	Selective	23	300	21	0	0	0
549.2-205	Skyline	Selective	16	252	14	0	0	0
549.2-206	Skyline	Selective	27	156	26	0	0	0
549.2-207	Skyline	Clearcut	20	410	19	1	0	0
549.2-230	Skyline	Clearcut	31	209	23	8	0	0
550-208	Highlead	Clearcut	18	438	10	8	0	0
550-211	Skyline	Clearcut	44	976	28	14	0	0
550-213	Slackline	Clearcut	37	788	26	9	0	0
550-218	Skyline	Clearcut	67	1006	28	15	0	0
550-220	Skyline	Clearcut	40	914	16	20	0	0
550-221	Skyline	Clearcut	21	594	0	20	0	0
550-222	Skyline	Clearcut	11	297	0	10	0	0
554.2-200	Skyline	Selective	45	263	40	0	0	0
554.2-201	Highlead	Selective	23	112	17	0	0	0
554.2-210	Highlead	Selective	23	187	0	0	7	7
554.2-213	Highlead	Clearcut	17	116	13	2	1	0
554.2-215	Skyline	Clearcut	40	262	1	26	0	0
554.2-220	Highlead	Selective	31	365	4	0	11	14
554.2-225	Skyline	Selective	25	228	23	2	0	0
557-200 B	Skyline	Selective	46	486	0	32	15	0
571-201	Skyline	Clearcut	22	710	1	21	0	0
571-205	Skyline	Clearcut	20	394	18	0	0	0
571-209	Highlead	Clearcut	10	219	10	0	0	0
571-210	Slackline	Clearcut	49	1345	30	21	0	0
571-214	Highlead	Clearcut	34	1199	0	18	16	0
571-225	Highlead	Clearcut	11	273	9	0	2	0
571-226	Highlead	Clearcut	48	1392	34	12	0	5
571-227	Slackline	Clearcut	111	2397	108	1	0	0
571-235	Skyline	Selective	23	233	1	23	0	0
571-252	Highlead	Selective	43	1555	0	0	0	42
571-253	Skyline	Selective	72	1018	0	9	0	61
571-256	Skyline	Clearcut	39	1446	0	0	38	0
571-257	Skyline	Clearcut	55	2053	0	39	11	7
571-258	Highlead	Clearcut	45	1308	22	2	20	0
571-260	Skyline	Clearcut	51	2078	4	8	0	34
571-266	Slackline	Selective	56	838	0	0	0	55
571-267	Skyline	Selective	25	351	0	0	0	23
571-268	Skyline	Selective	19	320	0	0	0	21
572-211	Skyline	Clearcut	89	1761	55	17	0	0
572-221	Skyline	Seed tree	39	315	16	0	0	0
572-222	Skyline	Clearcut	31	924	0	22	0	4
573-203	Highlead	Clearcut	37	788	33	2	0	0
573-206	Highlead	Clearcut	53	1334	22	26	0	0
573-242	Skyline	Clearcut	42	1115	18	22	0	0
573-244	Slackline	Clearcut	71	2342	12	17	40	0
573-248	Helicopter	Clearcut	29	918	0	28	0	0
573-249	Helicopter	Shelterwood	34	643	15	18	0	0
573-250	Skyline	Clearcut	25	721	6	18	0	0

HARVEST UNITS SPECIFIC TO SELECTED ALTERNATIVE

Unit Number	Logging System	Silvicultural Prescription	Acres	Volume (MBF)	VC 4 Acres	VC 5 Acres	VC 6 Acres	VC 7 Acres
573-251	Helicopter	Shelterwood	26	490	8	16	0	0
573-260	Skyline	Clearcut	17	680	0	1	17	0
574-210	Slackline	Clearcut	40	886	24	11	0	0
574-247	Helicopter	Clearcut	71	2485	0	70	5	0
574-248	Helicopter	Clearcut	45	1572	0	41	6	0
577-200	Skyline	Clearcut	36	1070	18	9	10	0
577-201	Highlead	Clearcut	31	657	30	0	0	0
577-202	Highlead	Clearcut	21	448	13	5	0	0
577-204	Highlead	Clearcut	21	721	0	22	0	0
577-205	Skyline	Clearcut	30	624	27	1	0	0
577-205 B	Skyline	Clearcut	46	1126	26	17	0	0
577-214	Skyline	Clearcut	37	1055	0	2	26	0
577-276	Skyline	Clearcut	56	1694	13	43	0	0
577-278	Highlead	Clearcut	23	514	22	1	0	0
577-280	Skyline	Clearcut	10	230	9	1	0	0
577-281	Skyline	Clearcut	20	623	0	19	0	0
577-284	Highlead	Riparian	45	1434	0	46	0	0
577-286	Highlead	Clearcut	46	1501	0	40	5	0
577-316	Skyline	Clearcut	21	773	0	5	16	0
577-320	Skyline	Clearcut	31	918	0	28	0	0
579-201	Highlead	Clearcut	51	1073	49	0	0	0
579-203	Skyline	Clearcut	56	1585	14	39	0	0
579-205	Slackline	Clearcut	69	1848	32	35	0	0
579-208	Highlead	Clearcut	51	1160	53	0	0	0
579-209	Skyline	Clearcut	55	1226	56	0	0	0
579-212	Highlead	Clearcut	33	1038	4	29	0	0
579-213	Highlead	Clearcut	41	819	0	25	0	0
579-214	Skyline	Clearcut	45	766	35	0	0	0
579-215	Highlead	Clearcut	30	875	13	18	0	0
579-216	Highlead	Clearcut	62	1695	28	33	0	0
579-217	Highlead	Clearcut	24	602	17	7	0	0
579-218	Skyline	Clearcut	50	1410	15	33	0	0
579-219	Highlead	Clearcut	27	624	27	1	0	0
579-220	Highlead	Clearcut	46	1442	3	42	0	0
579-222	Highlead	Clearcut	37	831	23	10	0	0
579-223	Highlead	Clearcut	32	711	13	13	0	0
579-224	Highlead	Clearcut	31	656	18	8	0	0
579-229	Skyline	Clearcut	45	1620	1	0	42	0
580-201	Helicopter	Clearcut	37	744	34	0	0	0
580-202	Skyline	Clearcut	18	546	4	14	0	0
580-212	Helicopter	Clearcut	47	1421	17	32	0	0
580-213	Helicopter	Clearcut	63	2065	9	57	0	0
580-218	Helicopter	Clearcut	74	1586	56	11	0	0
580-219	Skyline	Clearcut	39	1137	19	22	0	0
580-221	Helicopter	Clearcut	61	2033	6	58	0	0
580-227	Skyline	Clearcut	56	1908	0	35	20	0
580-227 B	Skyline	Clearcut	27	1066	0	0	28	0
580-230	Skyline	Clearcut	40	842	16	15	0	0

HARVEST UNITS SPECIFIC TO SELECTED ALTERNATIVE

Unit Number	Logging System	Silvicultural Prescription	Acres	Volume (MBF)	VC 4 Acres	VC 5 Acres	VC 6 Acres	VC 7 Acres
580-239	Slackline	Clearcut	31	1082	0	33	0	0
581-200	Slackline	Clearcut	78	1607	12	41	0	0
581-201	Skyline	Clearcut	13	426	0	13	0	0
581-202	Skyline	Clearcut	12	295	6	5	0	0
581-204	Highlead	Clearcut	27	852	0	26	0	0
581-204 B	Skyline	Clearcut	35	601	0	20	1	10
581-218	Slackline	Clearcut	23	747	6	6	11	0
581-219	Helicopter	Clearcut	21	656	0	20	0	0
581-219 B	Helicopter	Clearcut	40	1268	4	36	0	0
581-231	Helicopter	Clearcut	35	1049	9	26	0	0
581-234	Helicopter	Clearcut	6	228	0	0	6	0
582-211	Skyline	Clearcut	32	1081	0	26	6	0
582-214	Skyline	Clearcut	40	1988	0	6	3	33
582-215	Skyline	Clearcut	77	3417	16	6	14	46
582-218	Helicopter	Clearcut	46	2210	0	0	10	36
583-214	Skyline	Clearcut	10	248	9	0	0	1
583-215	Helicopter	Clearcut	45	1056	39	5	1	0
583-216	Helicopter	Clearcut	77	2379	36	23	22	0
583-227	Highlead	Clearcut	29	635	29	0	0	0
583-229	Skyline	Clearcut	53	1182	48	4	0	0
583-242	Helicopter	Clearcut	62	2065	0	63	0	0
583-243	Helicopter	Clearcut	61	1695	31	31	0	0
583-256	Skyline	Clearcut	31	657	30	0	0	0
583-258	Skyline	Riparian	80	1596	23	44	0	0
584-218	Skyline	Clearcut	57	1629	22	35	0	0
584-220	Skyline	Clearcut	17	383	16	1	0	0
584-226	Slackline	Clearcut	49	1083	39	7	0	0
584-227	Slackline	Clearcut	46	941	43	0	0	0
584-245	Helicopter	Clearcut	35	1082	0	33	0	0
584-250	Skyline	Clearcut	48	1585	5	45	0	0
584-251	Highlead	Clearcut	56	1215	54	1	0	0
584-252	Highlead	Clearcut	25	787	0	24	0	0
584-254	Helicopter	Clearcut	47	1290	23	24	0	0
584-272	Helicopter	Shelterwood	132	2922	26	110	0	0
585-201	Skyline	Riparian	50	1031	11	31	0	0
585-202	Skyline	Clearcut	31	733	23	7	0	0
585-203	Skyline	Riparian	42	882	29	11	0	0
585-206	Skyline	Riparian	25	636	0	24	0	0
585-208	Highlead	Clearcut	23	558	21	3	0	0
585-210	Highlead	Clearcut	19	416	19	0	0	0
585-210 B	Skyline	Clearcut	26	525	24	0	0	0
585-214	Highlead	Clearcut	10	241	11	0	0	0
585-215	Highlead	Seed tree	31	856	0	29	0	0
585-222	Highlead	Clearcut	32	831	17	14	0	0
586-201	Highlead	Clearcut	61	1487	29	26	0	0
586-216	Highlead	Clearcut	9	295	0	9	0	0
586-217	Highlead	Clearcut	32	645	13	11	0	0
586-218	Highlead	Clearcut	20	514	7	11	0	0

HARVEST UNITS SPECIFIC TO SELECTED ALTERNATIVE

Unit Number	Logging System	Silvicultural Prescription	Acres	Volume (MBF)	VC 4 Acres	VC 5 Acres	VC 6 Acres	VC 7 Acres
586-218 B	Highlead	Clearcut	44	1115	21	20	0	0
586-219	Highlead	Clearcut	26	819	0	25	0	0
586-220	Highlead	Clearcut	50	1247	36	14	0	0
586-225	Skyline	Clearcut	52	1335	43	12	0	0
586-226	Skyline	Clearcut	58	1749	14	44	0	0
586-227	Skyline	Clearcut	63	2065	0	63	0	0
586-232	Skyline	Clearcut	55	1506	9	26	12	0
587.1-206	Highlead	Clearcut	40	1083	21	19	0	0
587.1-207	Highlead	Clearcut	12	414	2	2	8	0
587.1-208	Slackline	Clearcut	51	952	27	11	0	0
587.1-209	Highlead	Riparian	40	1024	4	17	12	4
587.1-210	Highlead	Clearcut	23	482	22	0	0	0
587.1-212	Skyline	Clearcut	36	777	31	3	0	0
587.1-212B	Skyline	Clearcut	10	306	7	0	0	3
587.1-215	Highlead	Clearcut	27	1372	0	0	0	27
587.1-220	Highlead	Clearcut	17	372	17	0	0	0
587.1-221	Skyline	Clearcut	36	1327	0	1	34	0
588-201	Skyline	Clearcut	52	1411	27	25	0	0
588-203	Skyline	Clearcut	62	1716	20	39	0	0
588-204	Slackline	Clearcut	94	2393	15	63	0	0
588-212	Highlead	Clearcut	10	349	0	6	4	0
588-212 B	Highlead	Riparian	58	1262	6	34	15	0
588-213	Highlead	Clearcut	10	381	0	0	10	0
588-213 B	Highlead	Riparian	57	1373	0	51	0	0
588-214	Highlead	Clearcut	19	940	0	0	2	17
588-215	Highlead	Clearcut	28	631	22	3	0	1
588-216	Highlead	Clearcut	42	1278	0	39	0	0
588-219	Highlead	Clearcut	21	682	0	15	5	0
588-231	Highlead	Clearcut	20	632	8	0	12	0
588-240	Highlead	Clearcut	11	241	11	0	0	0
588-241	Highlead	Clearcut	33	700	32	0	0	0
588-249	Highlead	Clearcut	52	1246	9	32	0	0
588-249 B	Skyline	Clearcut	23	612	15	4	4	0
588-257	Highlead	Clearcut	34	918	14	14	4	0
588-259	Skyline	Clearcut	47	1147	0	35	0	0
588-260	Highlead	Clearcut	9	361	0	11	0	0
588-261	Highlead	Clearcut	8	229	0	7	0	0
588-262	Highlead	Clearcut	10	328	0	10	0	0
588-263	Highlead	Clearcut	47	1338	9	29	5	0
588-269	Slackline	Clearcut	64	2247	7	0	55	0
588-270	Slackline	Clearcut	66	2201	0	30	32	0
588-276	Skyline	Clearcut	48	1610	0	41	7	0
588-277	Helicopter	Clearcut	44	1530	1	46	0	0
588-278	Helicopter	Clearcut	35	1213	0	37	0	0
588-283	Helicopter	Shelterwood	76	1713	1	74	0	0
588-285	Slackline	Clearcut	49	1410	18	31	0	0
588-286	Skyline	Clearcut	35	908	22	13	0	0
588-287	Helicopter	Clearcut	39	1137	16	24	0	0

HARVEST UNITS SPECIFIC TO SELECTED ALTERNATIVE

Unit Number	Logging System	Silvicultural Prescription	Acres	Volume (MBF)	VC 4 Acres	VC 5 Acres	VC 6 Acres	VC 7 Acres
588-300	Helicopter	Clearcut	48	1969	0	2	50	0
588-302	Slackline	Clearcut	69	2746	2	0	71	0
588-304	Slackline	Clearcut	25	887	4	0	21	0
588-306	Helicopter	Clearcut	58	2065	0	27	31	0
588-310	Slackline	Clearcut	59	2242	0	44	21	0
588-312	Skyline	Clearcut	52	2034	6	0	50	0
588-322	Highlead	Clearcut	140	4240	23	114	0	0
588-327	Helicopter	Clearcut	111	4824	0	0	72	41
589-203	Helicopter	Clearcut	45	1388	14	33	0	0
589-204	Helicopter	Clearcut	55	1596	16	38	0	0
589-205	Helicopter	Clearcut	28	842	7	21	0	0
589-214	Highlead	Clearcut	24	656	12	12	0	0
589-218	Highlead	Clearcut	31	689	30	1	0	0
589-220	Skyline	Clearcut	34	700	32	0	0	0
589-230	Highlead	Clearcut	54	1138	52	0	0	0
589-231	Highlead	Clearcut	30	635	29	0	0	0
589-232	Highlead	Clearcut	37	1028	11	24	0	0
589-233	Skyline	Clearcut	52	1400	34	20	0	0
589-236	Helicopter	Clearcut	33	929	14	19	0	0
589-237	Helicopter	Clearcut	31	907	10	21	0	0
589-238	Helicopter	Clearcut	31	885	12	19	0	0
589-263	Highlead	Clearcut	9	197	9	0	0	0
589-271	Helicopter	Clearcut	32	722	30	2	0	0
589-273	Slackline	Clearcut	77	1749	8	48	0	0
589-274	Slackline	Clearcut	73	2219	28	49	0	0
589-275	Highlead	Clearcut	20	524	0	16	0	0
590-201	Helicopter	Clearcut	49	1617	0	47	2	0
590-210	Helicopter	Shelterwood	69	1538	21	53	0	0
590-211	Helicopter	Shelterwood	37	845	5	30	3	0
590-217	Slackline	Clearcut	81	2760	3	52	26	0
590-219	Helicopter	Shelterwood	36	769	5	29	1	0
590-229	Helicopter	Clearcut	62	1776	0	24	26	0
590-230	Helicopter	Clearcut	45	1259	0	21	15	0
590-231	Helicopter	Riparian	82	2333	3	46	33	0
590-243	Helicopter	Clearcut	98	3206	14	78	9	0
590-244	Helicopter	Clearcut	86	2459	27	57	0	0
590-246	Skyline	Clearcut	56	1430	5	31	8	0
590-276	Skyline	Clearcut	72	1989	22	46	0	0
598-218	Highlead	Clearcut	41	897	26	10	0	0
598-220	Highlead	Clearcut	89	1955	58	0	18	0
598-222	Highlead	Clearcut	31	950	0	22	6	0
598-237	Skyline	Clearcut	84	1357	62	0	0	0
598-238	Highlead	Clearcut	31	657	30	0	0	0
598-242	Highlead	Clearcut	62	1389	29	23	0	0
598-245	Highlead	Clearcut	29	591	27	0	0	0

Summary of Projects for Inclusion in the Sale Area Improvement Plan

Preliminary analysis of the CPOW project area was conducted by the Thorne Bay District SAI IDT during early June, 1993. The following is a general summary of potential projects which may occur within the CPOW project area. Not all projects are KV eligible nor will all potential projects be implemented. A preliminary determination of KV eligibility appears at the end of each project description in parenthesis, actual eligibility will be determined at a later date.

1) Harvest Evaluation Surveys There will be harvest evaluation surveys for each harvest unit implemented under the CPOW decision. These surveys will assess adherence to harvest prescription specifications, serve to confirm anticipated reforestation treatment needs and identify any unanticipated reforestation needs. Harvest evaluation surveys are especially important for harvest units employing special resource protection measures such as buffers, boundary feathering, leave strips, cave resource protection and for harvest units employing alternative harvest methods (other than clear cut). (KV)

2) Natural Regeneration Surveys There will be natural regeneration surveys conducted for all harvest units prescribed for natural regeneration. These surveys will be conducted after the third full growing season and will serve as a basis for reforestation stocking certification and to identify/confirm any artificial reforestation needs. (KV)

3) Natural Regeneration Monitoring There will be natural regeneration monitoring in the form of annual surveys for harvest units with identified potential reforestation problems. These surveys may be intensive or extensive and will occur each year after harvest. The first year harvest evaluation survey may double as the initial monitoring survey and the third growing season natural regeneration survey may serve as the last monitoring survey after which, if artificial reforestation is confirmed as a need, artificial reforestation processes would be initiated and the SAI Plan updated to include planting. Units currently identified as potentially needing artificial reforestation include (KV)

552-215	554.2-201	573-249	580-212
581-241	584-226	584-227	585-210B
584-252	588-300	588-301	589-214
588-305			

The success of seed tree and shelterwood systems and the effect of alternative (other than clear cut) harvest methods or systems employed to meet resource objectives on expected natural regeneration patterns in South East Alaska is as yet unproven. There is an opportunity to monitor natural regeneration progress with annual surveys in units where timber harvest was

accomplished with methods or systems other than clear cut. Units employing harvest methods or systems other than clear cut include (KV)

549.2-201	549.2-205	553-219	553-228	553-239
554.2-225	571-252	572-221	573-239	573-241
573-249	573-251	573-297	573-314	574-228
574-238	574-239	577-284	580-200	581-204 B
583-233	583-258	584-272	585-201	585-203
585-204	585-206	585-215	587.1-209	588-212 B
588-213 B	588-215 B	588-283	590-210	590-211
590-219	590-231			

Natural regeneration on McGilvery soils will be monitored through harvest evaluation surveys conducted directly after harvest and natural regeneration surveys conducted at three and five years after harvest. Harvested areas on McGilvery soils will either be certified as stocked, scheduled for a fifth year stocking certification survey or scheduled for planting by the third year regeneration survey. (KV)

4) Precommercial Thinning Precommercial tree thinning to improve timber production and assist in the attainment of the desired future condition for specific areas is planned for existing young growth sites within the project area. Among the areas to be thinned specifically for non-timber objectives are young growth stands located along the Sandy Beach Road (FDR 30) where precommercial tree thinning is planned to enhance visual opportunities along the travel route between Coffman Cove and Thorne Bay. Other non-timber resource objectives for precommercial thinning include accelerated growth in previously harvested TTRA buffers, variable spaced thinning for ecosystems management objectives, thinning to increase plant species diversity and thinning to increase spacial diversity among stands (diversity of density) and within stands (diversity of individual tree spacing along with vertical diversity of vegetative height). There is an opportunity to fund precommercial thinning activities for all resource objectives with sale area improvement funds where timing and location of proposed projects allow inclusion in SAI Plans. Precommercial thinning is also projected for most of the units harvested as a result of this decision. These areas will be investigated for thinning between 12 to 18 years after harvest and will be well outside the KV expenditure window. (KV eligibility is stated in narrative)

5) Hemlock Infection There may be opportunities to remove hemlock canker infected trees along major travel corridors and reestablish vegetative visual quality along affected routes. The Forest Service will be exploring the potential for a cooperative effort in dealing with areas heavily affected by hemlock canker. (Likely not KV)

6) Roadside Resting Areas Opportunities exist to install roadside resting areas along main travel routes which will add to Forest Visitor comfort and assist in reducing the potential for visitor-logging traffic conflicts. (Likely not KV)

7) Forest Interpretation There are opportunities to provide interpretation of forest management activities and forest values along main travel routes and at specific sites where past cultural treatments of young growth timber have occurred.

8) Wildlife Viewing There is potential for installing wildlife and marine life viewing facilities, observation decks and interpretation at the Thorne River grass flats (VCU 586) and along the Sandy Beach road (FDR 30) from Thorne Bay to Coffman Cove (VCUs 583 and 584) including facilities at Big and Little Ratz harbor areas. (Not KV)

9) Interpretive Trail Signing Big Lake holds potential opportunities for fisheries and wildlife interpretive signing and trails which may include handicap access and safety barriers at the fish pass site. (Construction likely not KV, KV to interpret KV projects is OK)

10) Interpretive Kiosk An opportunity exists to install interpretive signing at the Sarkar Lakes Kiosk (VCU 554.2) and install an interpretive kiosk at Neck Lake (VCU 550) for interpretation of wildlife and fisheries values and activities. (Not KV)

11) Seeding and Planting Unforseen erosion from landslides, soil disturbances and exposed mineral soil will be corrected by establishing ground cover through seeding or planting and, where feasible, construction of structural erosion control measures such as check dams, rock walls and sediment ponds. Should be Contractor responsibility but could end up being eligible KV project)

12) Wildlife Habitat Improvement Opportunities exist to improve or rehabilitate wildlife habitat by seeding or planting of native plants on roads and disturbed sites. Snag recruitment/creation within snag deficit areas and harvest units containing wildlife biodiversity islands, riparian areas and within harvest units which have employed harvest methods other than clear cut are also have potential as useful projects. (KV)

13) Waterfowl Habitat Improvement Waterfowl nesting habitat could be improved or rehabilitated through vegetative treatments and nest site construction. (Potential KV)

14) Cave Rehabilitation There is an opportunity to mitigate logging impacts at Conflict Cave in VCU 550. (Potential KV)

15) Karst Study An opportunity exists to initiate an administrative study to establish a baseline of information for comparison of logging impacts on

karst ecosystem and associated wildlife values at an undisturbed site in VCU 550. (potential KV)

16) Selective Harvest Monitoring Effectiveness monitoring is planned specifically for the ecosystem management units in the Sarkar area (VCUs 549.2, 554.2, 557 and 571). (Potential KV - ONLY for reforestation concerns)

17) Law Enforcement Law enforcement activities could be funded to enforce road closures and monitor trail use and subsistence issues. (Not KV)

18) Soil and Watershed Rehabilitation There is an opportunity to mitigate impacts to soil and watershed resources being created by subsistence, personal use and sport fishing at the Hatchery Creek trail. Mitigation of impacts may provide access to this important subsistence fishery without substantial resource degradation which is currently occurring. (Likely not KV)

19) Trail Development Some roads or road segments which are closed could be brushed, signed and used as trails either temporarily or permanently. (Likely not KV)

20) Fishery Enhancement Opportunities

Culverts

Culverts which are barriers to anadromous fish may be modified or replaced. (Potential KV)

Fish Passes

Fish pass facilities in the form of fish ladders, jump pools, and resting pools could be constructed along specific creeks. These enhancements would make available additional habitat for pink and/or coho salmon. Implementation Monitoring of facilities constructed would also be included. (Potential KV)

Creek	VCU #
Shaheen	589
Vodatre	587
N. Staney	588

Stream/Basin Rehabilitation Opportunities

Specific streams/basins have historically been affected by land management activities. Rehabilitation would involve large organic debris placement, riparian planting, riparian thinning, and erosion control measures. (Potential KV)

Creek	VCU #
Slide	585
Sal	584

Ratz	583
Staney	588
Yatuk	571
Gutchi	571

Stream rehabilitation opportunities may exist due to land management activities that occur as a result of CPOW. These opportunities could include large woody debris placement, riparian planting, riparian thinning, and erosion control measures. (KV)

21) Watershed Protection

Disturbed slopes, slides, cutbanks, or streambanks which may cause stream sedimentation will have grasses, forbs, or trees planted on them. (Mostly Contractor responsibility but there is potential for KV eligibility if not a Contractor responsibility)

Roads and landings which may cause stream sedimentation will be seeded with grass prior to unit acceptance. (Contractor responsibility)

Some roads could be closed and obliterated. Culverts would be removed and roads could be out-sloped to contour to protect the integrity of the watershed. (Contractor responsibility - see access management plan)

22) Fishery Interpretation To interpret fishery projects, or otherwise encourage Forest visitors to understand the fishery resources on the Thorne Bay Ranger District.

Projects may include fisheries interpretation signs, fish viewing platforms, fishpass viewing platforms, and access trails leading to fish streams. (Construction not KV. Interpretation of KV funded projects is OK. Interpretation of natural systems or resource values is NOT KV eligible.)

Harvest Units and Combinations of Harvest Units Over 100 Acres

ROD Appendix Table 1-2 displays harvest units and combinations of harvest units that would result in an opening greater than 100 acres which are included in the Selected Alternative. The factors used in designing each opening are displayed.

Table 1-2
Harvest Units and Combinations of Harvest Units Over 100 Acres

Harvest Unit(s)	Total Acres	Factors Considered
586-232, 598-242	117	Transpotation and harvest system requiremnts
588-310, 588-312	111	Transpotation and harvest system requiremnts

Appendix 2

Road Management Objectives

CPOW R.O.D. ACCESS MANAGEMENT
SUMMARY OF ROAD MANAGEMENT OBJECTIVES(RMO)

Road Number	Access Management Class	Road Management Objectives	Existing or New Road	Post Sale Maintenance Level	Method of Closure	Remarks/Concern for RMO
2000000	2	Open	E	4		Access to points North POW
2000530	3	Close	C	1	Barrier	Wildlife & Economic concerns
2000565	3	Close	C	1	Barrier	Wildlife & Economic concerns
2000560	3	Close	E	1	Barrier	Wildlife & Economic concerns
2000561	3	Close	E	1	Barrier	Wildlife & Economic concerns
2000610	2	Close	E/C	1	Barrier	Wildlife & Economic concerns
2000640	2	Open	E/C	1		Rec Access-close at pulled bridge.
2000630	2	Close	E	1	Barrier	Wildlife concerns
2000641	2	Close	E	1	Barrier	Wildlife concerns
2000642	2	Close	E	1	Barrier	Wildlife concerns
2000643	2	Close	E	1	Barrier	Wildlife concerns
2000644	2	Close	E	1	Barrier	Wildlife concerns
2000645	2	Close	E	1	Bridge	Pulled bridge rd. 2000640
2000649	2	Close	E/C	1	barrier	Wildlife concerns.
2000695	3	Close	C	1	Barrier	Wl/Econ, cllse after CPOW harvest
2000689	3	Close	E	1	Barrier	Wildlife, close ASAP after harvest
2000688	3	Close	E	1	Barrier	Wildlife, close ASAP after harvest
2000687	3	Close	C	1	Barrier	Wildlife, close after CPOW harvest
2000685	3	Close	C	1	Barrier	Wildlife, close after CPOW harvest
2000684	3	Close	C	1	Barrier	Wildlife, close after CPOW harvest
2000680	3	Close	E	1	Barrier	Wildlife Concerns
2000676	3	Close	C	1	Barrier	Wildlife, close after CPOW harvest
2000674	3	Close	E/C	1	Barrier	Wildlife, close after CPOW harvest
2000700	3	Close	E	1	Veg	Economics, no maintenance
2000750	3	Close	E	1	Barrier	Wildlife & Economic concerns
2000751	3	Close	E/C	1	barrier	Tributary to 2000750
2000741	3	Close	E	1	Barrier	Wildlife & Rec concerns
2000744	3	Close	E	1	Barrier	Wildlife & Economic Concerns
2000740	3	Close	E	1	Veg	Economics, no maintenance
2000730	3	Close	E	1	Barrier	Wildlife concerns
2000518	2	Close	C	1	Barrier	Wildlife & Economic concerns
2030795	3	Close	E	1	Barrier	Wildlife & Cultural Concerns
2030798	3	Close	E	1	Barrier	Wildlife
2030000	2	Open	E	3		Open to existing gate
2030790	2/3	Open	E	2		Open to jct 2030798 close beyond
2030962	3	Close	E	1		Presently closed by pulled bridge
2030950	3	Close	E/C	1		Wildlife concerns - Econ
2030953	3	Close	C	1		Tributary to 2030950
2030952	3	Close	C	1		Tributary to 2030950
2030800	3	Close	E	1		Wildlife concerns - Econ
2030820	3	Close	C	1		Tributary to 2030800
2030780	3	Close	C	1		Wildlife concerns - Econ
2030720	3	Close	E	1		Close w/existing gate @2030000
2050000	2	Open/Close	E	3	Barrier	Close@ 2050860, 11/15-2/15 marten
2050050	2	Open	E	2		Rec Access
2050052	2	Open	E	2		Rec Access
2050060	2	Open	E/C	1		Rec Access
2050064	2	Open	C	1		Rec Access
2050100	2	Open	E	1		Rec Access
2050130	3	Close	C	1	Barrier	Wildlife concerns
2050140	2	Open	E	2		Rec Access
2050170	2	Open	E	1		Rec Access
2050200	2	Open	E	2		Rec Access
2050211	2	Open	E	1		Rec Access

CPOW R.O.D. ACCESS MANAGEMENT
SUMMARY OF ROAD MANAGEMENT OBJECTIVES(RMO)

Road Number	Access Management Class	Road Management Objectives	Existing or New Road	Post Sale Maintenance Level	Method of Closure	Remarks/Concern for RMO
2050215	2	Open	E	1		Rec Access
2050220	2	Open	E	2		Rec Access
2050230	2	Open	E	2		Rec Access
2050231	2	Open	E	2		Rec Access
2050237	2	Open	E	2		Rec Access
2050239	2	Close	C	1	Barrier	Economics
2050300	2	Open	E	1		Rec Access
2050305	2	Close	C	1	Barrier	Wildlife & Economic concerns
2050311	2	Open	E	1		Rec Access
2050312	2	Open	E	1		Rec Access
2050320	2	Open	E	1		Rec Access
2050330	4	Open/Close	E/C	1	Barrier	Rec Open, W1/Econ, close new co
2050332	4	Close	C	1	Barrier	Wildlife & Economic concerns
2050390	4	Close	C	1	Barrier	Wildlife concerns
2050400	2/4	Open/Close	E	2		Rec Access, close new constructi
2050402	2	Open	E/C	2		Rec Access
2050403	2	Close	C	1	Barrier	Economic concerns
2050405	2	Open	E	2		Rec Access
2050420	4	Close	C	1	Barrier	Wildlife concerns
2050510	2	Open/Close	E/C	1	Barrier	Rec Access, close new constructi
2050590	2	Open	E	2		Rec Access
2050592	2	Close	C	1	Barrier	Economica
2050600	2	Open	E	1		Rec Access
2050605	2	Open	E	1		Rec Access
2050610	2	Close	C	1	Barrier	Economic concerns
2050611	2	Close	C	1	Barrier	Tributary to 2050610
2050601	2	Close	C	1	Barrier	Economic concerns
2050650	3	Close	E	1	Barrier	Wildlife & Economic concerns
2050700	3	Open	E	2		Rec Access
2050710	3	Close	E	1	Barrier	Wildlife & Economic concerns
2050705	3	Close	E	1	Barrier	Wildlife & Economic concerns
2050740	3	Close	E	1	Barrier	Wildlife & Economic concerns
2050745	3	Close	E	1	Barrier	Wildlife & Economic concerns
2050750	3	Close	E	1	Barrier	Wildlife & Economic concerns
2050760	3	Open	E	2		Rec Access, Winter Harbor
2050800	3	Close	E	1	Barrier	Wildlife & Economic concerns
2050860	3	Open	E	2		Rec Access
2050861	3	Close	E	1	Barrier	Wildlife, close after CPOW harve
2052000	3	SC	E	1	Gate	Marten 11/15-2/15, past FHA pit
2052010	3	SC	E/C	1	Gate	Marten, 11/15-2/15
2052012	3	Close	C	1	Gate	Tributary to 2052010
2052014	3	Close	C	1	Gate	Tributary to 2052010
2052040	3	SC	C	1	Gate	Marten, 11/15-2/15
2052050	3	SC	E	1	Gate	Marten, 11/15-2/15
2052051	3	SC	E/C	1	Gate	Marten, 11/15-2/15
2052105	3	SC	E	1	Gate	Marten, 11/15-2/15
2054000	2	Open	E	3		Rec Access
2054100	3	Close	E	1	Gate	W1, gate both ends of road
2054150	3	Close	C	1		Tributary to 2054100
2054155	3	Close	C	1		Tributary to 2054100
2054120	3	Close	C	1		Tributary to 2054100
2054160	3	Close	C	1		Tributary to 2054100
2054170	3	Close	C	1		Tributary to 2054100
2054180	3	Close	C	1		Tributary to 2054100

CPOW R.O.D. ACCESS MANAGEMENT
SUMMARY OF ROAD MANAGEMENT OBJECTIVES(RMO)

Road Number	Ackess Management Class	Road Management Objectives	Existing or New Road	Post Sale Maintenance Level	Method of Closure	Remarks/Concern for RMO
2054181	3	Close	C	1		Tributary to 2054100
2054183	3	Close	C	1	Barrier	Wildlife & Economic concerns
2054200	3	Open	E	2		Rec Access
2054210	3	Close	E/C	1	Barrier	Wildlife & Economic concerns
2054300	2	Open	E	2		Rec Access to Staney Ck Cabin
2054305	2	Open	E	2		Rec Access to Horseshoe Hole Cmpgd
2054306	3	Close	E	1	Barrier	Wildlife & Economic concerns
2054310	3	Close	C	1	Barrier	Wildlife & Economic concerns
2054320	3	Close	C	1	Barrier	Wildlife & Economic concerns
2054330	3	Close	E	1	Barrier	Wildlife & Economic concerns
2054340	3	Close	C	1	Barrier	Wildlife & Economic concerns
2054345	3	Close	C	1	Barrier	Wildlife
2054350	3	Close	C	1	Barrier	Wildlife
2056000	2	Open	E	2		Rec Access
2056100	2	Close	E	1	Barrier	Wildlife concerns
2056170	2	Close	E	1	Barrier	Wildlife concerns
2056200	2	Close	E	1	Barrier	Wildlife concerns
2056300	3	Close	E	1	Barrier	Wildlife & Economic concerns
2057000	2	Open	E	2		Rec Access
2057200	2	Close	E	1	Barrier	Wildlife concerns
2057220	2	Close	E	1	Barrier	Wildlife concerns
2057240	2	Close	E	1	Barrier	Wildlife concerns
2057300	2	Close	E	1		Wildlife concerns
2057315	2	Close	C	1		Tributary to 2057300
2057310	2	Close	C	1		Tributary to 2057300
2058000	2	Open	E	3		Rec Access
2058150	3	Close	E	1	Barrier	Wildlife & Economic concerns
2058400	3	Close	E/C	1	Barrier	Wildlife & Econmic concerns
2059000	2	Open	E	2		Rec Access
2059300	2	Close	E	1	Barrier	Wildlife concerns
2059400	2	Close	E	1	Barrier	Wildlife concerns
2060000	2	Open	E	3		Access to Naukati
2060100	3	SC	E	1,2	Gate	Season Closure, marten, 11/15-2/15
2060200	3	Close	E	1	Barrier	Wildlife, close at NF boundary
2060210	3	Close	E	1	Barrier	Wildlife, close at NF boundary
2060212	3	Close	E	1	Barrier	Wildlife, close at NF boundary
2060300	3	Open	E	1		Open to access State land
2075000	3	Close	E	1	Barrier	Wildlife & Economic Concerns
2075100	3	Close	E	1	Barrier	Tributary to 2075
2075200	3	Close	E	1	Barrier	Tributary to 2075000
2075280	3	Close	E	1	Barrier	Tributary to 2075000
2075400	3	Close	E	1	Barrier	Tributary to 2075000
2076000	3	Close	E	1	Barrier	Wildlife concerns
2076100	3	Close	E	1	Barrier	Tributary to 2076000
2076160	3	Close	E	1	Barrier	Tributary to 2076000
2076170	3	Close	E	1	Barrier	Tributary to 2076000
2300000	2	Open	E	4		Access to Coffman Cove
2360000	2	Open	E	2		Rec Access
2360200	2	Close	C	1	Veg	Economics, vegetative closure
2360300	2	Close	C	1	Veg	Economics, vegetative closure
2360400	2	Close	C	1	Veg	Economics, vegetative closure
2300500	3	Close	E	1	Barrier	Wildlife Concerns
2500100	3	Close	E	1	Barrier	Economics, close after harvest
2505000	2	Open	E	1	Barrier	Rec Access at jct of 2505100

CPOW R.O.D. ACCESS MANAGEMENT
SUMMARY OF ROAD MANAGEMENT OBJECTIVES(RMO)

Road Number	Access Management Class	Road Management Objectives	Existing or New Road	Post Sale Maintenance Level	Method of Closure	Remarks/Concern for RMO
2505100	3	Close	E/C	1	Barrier	Economics, close after harvest
2505200	3	Close	E/C	1	Barrier	Wl/Econ Concerns, trib to 2505
3000000	2	Open	E	3		Access to Thorne Bay etc.
3000000 WP So.	3	Opene	C	1	Barrier	Rec Access
3000100	3	Close	E/C	1		Wildlife concerns
3000110	3	Close	E/C	1		Wildlife concerns
3000120	3	Close	E/C	1		W.L., close after wood waste are
3000125	3	Close	E/C	1		Tributary to 3000120
3000160	3	Close	E	1		Wildlife concerns - Econ
3000153	3	Close	E	1		Wildlife concerns - Econ
3000170	3	Close	E	1		Wildlife concerns - Econ
3000190	3	Close	E	1		Wildlife concerns - Econ
3000191	3	Close	E	1		Tributary to 3000190
3000192	3	Close	E	1		Tributary to 3000190
3000200	3	Close	E	1		Wildlife concerns - Econ
3000210	3	Close	E	1		Tributary to 3000200
3000215	3	Close	C	1		Tributary to 3000200
3000230	3	Close	E	1		Tributary to 3000200
3000260	3	Close	E	1		Wildlife concerns - Econ
3000270	4	Close	E	1		Wildlife concerns
3000271	4	Close	E	1		Wildlife concerns
3000272	4	Close	E	1		Wildlife concerns
3000280	3	Close	E	1		Wildlife concerns
3000295	3	Close	E	1		Wildlife concerns
3000300	3	Close	E	1		Wildlife concerns presently clos
3000303	3	Close	C	1	Barrier	Wildlife concerns
3000304	3	Close	C	1	Barrier	Wildlife, trib to 3000303
3000302	3	SC	E	1,2	Gate	Wl & fish pass, Close June-Octob
3000306	3	Close	E/C	1	Barrier	Wildlife concerns
3000340	3	Open	E	2		Open for Rec Use, No Maintenance
3000342	3	Close	E	1	Veg	Economics, no maintenance
3000343	3	Open	E	1	Veg	Economics, no maintenance
3000347	3	Close	E	1	Barrier	Wildlife concerns
3000346	3	Close	E	1	Barrier	Wildlife, Close past sandpit
3000348	3	Close	E	1	Barrier	Wildlife concerns
3000361	3	Close	E	1	Barrier	Wildlife concerns
3000360	3	Close	E	1	Barrier	Wildlife concerns
3000375	3	Close	E	1	Barrier	Wl & Econ, close after harves
3000380	3	Open	E	2		Rec Access
3000382	3	Close	C	1	Barrier	Wildlife concerns
3000385	3	Close	C	1	Barrier	Wildlife concerns
3000398	3	Close	E	1	Barrier	Wildlife concerns
3000400	3	Close	E	1	Barrier	Wildlife concerns
3000420	3	Close	E	1	Barrier	Wildlife concerns
3000401	3	Close	E	1	Barrier	Tributary to 3000400
3015000	2	Open	E	2		Rec Access to N. Thorne Falls
3015050	3	Close	E	1		Wildlife concerns - Econ
3015100	3	Close	E/C	1		Wildlife concerns - Econ
3015105	3	Close	E	1		Tributary to 3015100
3015108	3	Close	E	1		Tributary to 3015100
3015110	3	Close	C	1		Tributary to 3015100
3015200	3	Close	E	1		Wildlife concerns - Econ
3015230	3	Close	E	1		Tributary to 3015200
3015255	3	Close	E	1	Wildlife concerns	

CPOW R.O.D. ACCESS MANAGEMENT
SUMMARY OF ROAD MANAGEMENT OBJECTIVES(RMO)

Road Number	Access Management Class	Road Management Objectives	Existing or New Road	Post Sale Maintenance Level	Method of Closure	Remarks/Concern for RMO
3015600	3	Close	E	1	Barrier	Wildlife concerns
3015630	3	Close	E	1	Barrier	Tributary to 3015600
3015635	3	Close	C	1	Barrier	Tributary to 3015600
3015637	3	Close	C	1	Barrier	Tributary to 3015600
3015639	3	Close	C	1	Barrier	Tributary to 3015600
3015640	3	Close	E	1	Barrier	Tributary to 3015600
3015700	3	Close	E	1	Slide	W1/Econ, closed at slide
3015770	3	Close	C	1	Bridge	Tributary to 3015
3016000	2	Open/Close	E	2	Gate	Open to existing gate, pull bridge
3016010	3	Close	E/C	1		Tributary to 3016
3016015	3	Close	C	1		Tributary to 3016
3017000	3	Close	E	1		W.L., Rec., bike trail
3017100	3	Close	E	1		Tributary to 3017
3017110	3	Close	E	1		Tributary to 3017
3017160	3	Close	E	1		Tributary to 3017
3017162	3	Close	E	1		Tributary to 3017
3017164	3	Close	E	1		Tributary to 3017
3017200	3	Close	E/C	1		Tributary to 3017
3017210	3	Close	E	1		Tributary to 3017
3017300	3	Close	E	1		Tributary to 3017
3017400	3	Close	E	1		Tributary to 3017
3017500	3	Close	E	1		Tributary to 3017
3018000	2	Open	E	2		Close road @w/Bridge Removal on Slide Creek, M.P. 5.0.
3018050	3	Close	C	1		Wildlife concerns
3018100	3	Close	E	1		Wildlife concerns
3018110	3	Close	E	1		Tributary to 3018100
3018111	3	Close	E	1		Tributary to 3018100
3018112	3	Close	E	1		Tributary to 3018100
3018113	3	Close	E	1		Tributary to 3018100
3018114	3	Close	E	1		Tributary to 3018100
3018115	3	Close	E	1		Tributary to 3018100
3018116	3	Close	E	1		Tributary to 3018100
3018122	3	Close	E	1		Tributary to 3018100
3018125	3	Close	E	1		Wildlife concerns
3018130	3	Close	E	1		Wildlife concerns
3018200	3	Close	E	1		W.L., Close @M.P. +-1.00 Pull bridge after harvest
3018470	3	Close	C	1		Tributary to 3018000
3018474	3	Close	C	1		Tributary to 3018000
3020000	3	Close	E	1	Gate	Wildlife concerns
3020100	3	Close	C	1		Wildlife concerns - Econ
3020110	3	Close	C	1		Wildlife concerns - Econ
3023000	3	Close	E	1		Wildlife concerns
3023100	3	Close	E	1		Wildlife concerns
3024000	3	Close	E/C	1	Gate	W1 concerns
3024100	3	Close	E	1	Gate	W1 & tributary to 3024000
3024200	3	Close	C	1	Gate	W1 & tributary to 3024000
3024400	3	Close	C	1	Gate	Wildlife, close after harvest
3025000	3	Close	E	1	Gate	Rec Access trail after harvest
3025100	3	Close	E	1	Bridge	Trib to 3025, close after harvest
3025105	3	Close	E	1	Barrier	Trib to 3025000
3025301	3	Close	C	1	Barrier	Wildlife concerns
3026000	3	Close	E	1	Gate	Close w/ existing gate ASAP

CPOW R.O.D. ACCESS MANAGEMENT
SUMMARY OF ROAD MANAGEMENT OBJECTIVES(RMO)

Road Number	Access Management Class	Road Management Objectives	Existing or New Road	Post Sale Maintenance Level	Method of Closure	Remarks/Concern for RMO
3026100	3	Close	E	1	Gate	Tributary to 3026000
3030000	2	Open	E	1		Access to Coffman Cove etc.
3030300	2	Open	E	2	Slide	Closed at natural slide, economic
3030320	2	Open	E	2	Veg	Wl & Economics, no maintenance
3030350	2	Close	E	2	Veg	Wl & Economics, no maintenance
3030400	2	Open	E	2		Rec Access
3030420	2	Open	E	2		Rec Access
3030421	2	Close	E	1	Barrier	Economic concerns
3030423	2	Close	E	1	Barrier	Economic concerns
3030425	2	Close	C	1	Barrier	WL & Economic, close after harves
3030426	2	Close	C	1	Barrier	Wl & Economic, close after harves
3030430	2	Close	E	1	Barrier	Wildlife & Economic concerns
3030431	2	Close	E	1	Barrier	Wildlife & Economic concerns
3030440	2	Close	E	1	Barrier	Wildlife & Economic concerns
3030500	3	Open	E	2		Rec, Special Use & private land
3030503	3	Open	E	1		Rec Access
3030505	3	Open	E	1		Rec Access
3030519	3	Open	E	1		Rec Access
3030530	3	Open	E	1		Rec Access
3030620	2	Close	E/C	1	Barrier	Close after CPOW harvest, economi
3030621	2	Open	E	2		Rec Access
3030622	2	Open	E	2		Rec Access
3030600	2	Open	E	2		Rec Access
3030630	2	Close	E	1	Barrier	Wildlife & Economic concerns
3030635	2	Close	E	1	Veg	Economics, no maintenance
3030640	2	Open	E	2		Rec Access
3030650	2	Open	E	2		Rec Access
3030700	2	Open	E	2		Rec Access
3030710	3	Open	E	2		Rec Access
3030711	3	Open	E	2		Rec Access
3030715	2	Close	C	1	Barrier	Economics & Wildlife
3030720	2	Close	E	1	Bridges	(Wildlife Concerns, 2 bridges
3030721	2	Close	E	1	Bridges	(removed effectively closing
3030723	2	Close	E	1	Bridges	(all 3 roads.)
3030725	2	Close	E	1	Bridges	Same as above road
3030730	2	Close	E	1	Barrier	Wildlife Concerns
3030740	2	Open	E	2		Rec Access
3030750	2	Open	E	2		Rec Access
3030860	3	Open	E	2		Rec Access
3035000	2	Close	E	2	Barrier	Wl & Econ, 89-94 new construction
3035050	2	Open	E	1	Veg	Rec Access, no maintenance
3035100	2	Open	E	1	Veg	Rec Access, no maintenance
3035113	2	Close	E	1	Barrier	Wildlife & Economic concerns
3035115	2	Close	C	1	Barrier	Wildlife & Economic concerns
3035117	2	Close	C	1	Barrier	Wildlife & Economic concerns
3035122	2	Close	E	1	Barrier	Wildlife & Economic concerns
3035190	2	Open	E	2		Rec Access
3035191	2	Close	E	1	Barrier	WL/Econ (close at 190 jct)
3035194	2	Close	E	1	Barrier	Tributary to 191
3035200	2	Close	E	1	Barrier	Econ, close at lake access
3035201	2	Close	E	1	Barrier	Tributary to 3035200
3035240	2	Close	E	1	Barrier	Wildlife & Economic concerns
3035245	2	Close	E	1	Barrier	Wildlife & Economic concerns
3035250	2	Close	E	1	Barrier	Tributary to 3035000

CPOW R.O.D. ACCESS MANAGEMENT
SUMMARY OF ROAD MANAGEMENT OBJECTIVES(RMO)

Road Number	Access Management Class	Road Management Objectives	Existing or New Road	Post Sale Maintenance Level	Method of Closure	Remarks/Concern for RMO
3035350	3	Close	E	1	Barrier	Tributary to 3035000
3035355	3	Close	E	1	Barrier	Tributary to 3035000
3035400	3	Close	E	1	Barrier	Tributary to 3035500
3036382	3	Close	C	1	Barrier	W1 & Econ, close after harvest
3036000	3	Open	E	2		Rec Access
3060000	3	Close	E	1	Bridge	Close at MP 0.5, pull bridge

ROAD MAINTENANCE LEVELS

Road maintenance includes any expenditure in the repair or upkeep of a road necessary to retain the road's approved traffic service level. Work items may include surface rock replacement, seal coats and asphalt overlays, bridge replacement, slide removal, and other items that contribute to the preservation of the existing road. Road maintenance is not intended to substantially improve conditions above those originally constructed; however, there may be a need for adding to or modifying the original conditions without increasing the traffic service level. Typical examples of these activities include installing additional minor culverts and traffic control devices, implementing traffic management strategies, placing small quantities of spot surfacing, and revegetating cut and fill slopes.

Some roads may be allowed to disinvest to allow uncompensated deterioration of assets gradually over time. For example, a road may need to be operated and maintained at a higher level during periods of commercial use than is required at other times.

Other situations may require that the road be stabilized to preserve the road structure and/or to reduce erosion and then closed (maintenance level 1) between use cycles. Some maintenance work activities may be deferred while the road is in a planned disinvestment or a closure cycle. This work may be accomplished at some future date through maintenance or reconstruction, depending on complexity and extent. Opening a closed road is normally considered maintenance. Work performed to raise its traffic service level above that originally constructed is considered to be road reconstruction and should be financed accordingly. Obliterating and/or returning a road to resource production is not considered maintenance. Funding for this work is a resource program responsibility.

LEVEL 1. Assigned to intermittent service roads during the time they are closed to vehicular traffic. The closure period must exceed 1 year. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level and to perpetuate the road to facilitate future management activities. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Appropriate traffic management strategies are "prohibit" and "eliminate."

Roads receiving level 1 maintenance may be of any type, class, or construction standard, and may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at level 1, they are closed to vehicular traffic, but may be open and suitable for nonmotorized uses.

LEVEL 2 . Assigned to roads open for use by high clearance vehicles. Passenger car traffic is not a consideration. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level. Appropriate traffic management strategies are either to (1) discourage or prohibit passenger cars or (2) accept or discourage high clearance vehicles.

LEVEL 3. Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities.

Roads in this maintenance level are typically low speed, single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material. Appropriate traffic management strategies are either "encourage" or "accept." "Discourage" or "prohibit" strategies may be employed for certain classes of vehicles or users.

LEVEL 4. Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated. The most appropriate traffic management strategy is "encourage." However, the "prohibit" strategy may apply to specific classes of vehicles or users at certain times.

LEVEL 5 Assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate surfaced and dust abated. The appropriate traffic management strategy is "encourage."

Roads assigned to maintenance levels 2-5 are either:

1. Constant service roads, or

2. Intermittent service roads during the time they are open to traffic.

Appendix 3

Proportionality

Proportion of Volume Class 6 and 7 Proposed for Harvest}

The Tongass Timber Reform Act of 1990 modified the Long-Term Contract to:

> "Eliminate the practice of harvesting a disproportionate amount of old-growth timber by limiting the volume harvested over the rotation in Volume Classes 6 and 7, as defined in TLMP and supporting documents, so that the proportion of volume harvested in these classes within a contiguous management area does not exceed the proportion of volume currently represented by these classes within the management area."

Forest Service Handbook 2409.18, Supplement 92-5, contains the procedure to follow for calculating proportionality. The baseline for proportionality was established with the signing of TTRA into law (November 1990). Volume class determination for proportionality is based on net sawlog inventory volume class, as determined from the Ketchikan Area's GIS timber type map, per Forest Service Handbook direction. It is important to note that the TTRA proportionality requirement is based upon volume actually harvested, as opposed to volume scheduled or planned for harvest. Consequently the measure of compliance will occur after the timber harvest for a given management area is actually completed and based upon the timber type map. The Forest Service Handbook provides the flexibility for temporary departures in proportionality of up to -0.5 percent, if the following conditions are met: (1) there is sufficient volume for a subsequent entry in the Management Area, (2) the future offering is economically feasible, (3) the future offering can meet the original proportionality standard, and (4) allowances are made for salvage harvest due to catastrophic conditions.

For the purpose of this analysis, proportionality calculations considered all long-term harvest which occurred from the TTRA date (11/90) until the date the database was frozen (April 19, 1993) plus all harvest proposed for this project.

There are some changed conditions which should be noted. First, the proportionality percentages published in the Forest Service Handbook (FSH) were based upon the Management Areas as depicted in the TLMP Draft Revision (1991). It has been determined that the intent of TTRA was to use the Management Areas as depicted in the existing TLMP (1979). The proportionality base percentages have been adjusted in this analysis to reflect this change, as an Interim Directive to the FSH.

Second, the updated second-growth layer developed for the 1989-94 'as-built' appraisal was used to best determine the volume class composition of the 1989-94 units in their as-harvested configuration. Based on this analysis, one of the Management Areas in the CPOW Project Area (K03) temporarily exceeds the -0.5 percent proportionality departure allowed in the FSH.

Third, although approximately 22,000 acres of K03 are within the CPOW Project Area, the bulk of this Management Area lies in the Lab Bay Project Area which is currently in progress.. It has been determined that the Lab Bay project is the most logical choice to meet FSH proportionality percentages in K03. Consequently, it has been determined that a temporary departure from FSH proportionality percent is acceptable in K03 for the CPOW project.

ROD Table 4-1 displays the proportionality for the Selected Alternative for all the management areas (MA's) within the CPOW Project Area.

Table 4-1
Proportionality Table

MA	Acres VC 4-5	Acres VC 6-7	FSH Baseline%	New Baseline%	After %	Diff.*
K03	321	0	0.1895	0.1840	0.1788	-0.005
K07	3,144	1,174	0.3183	0.2899	0.2911	0.001
K08	1,067	129	0.2148	0.2438	0.2501	0.006
K09	2,739	299	0.1906	0.1770	0.1816	0.005
K10	723	36	0.2108	0.2145	0.2324	0.018

The Selected Alternatives is projected to result in proportionality consistent with the FSH direction for proportionality in management areas (MA) K07, K08, K09, and K10. In these management areas, the proportion of volume class 6 and 7 is improved over what existed prior to TTRA. The Selected Alternative (and all others including the no action) shows a temporary departure in proportionality in MA K03 that is beyond the tolerance specified in the Forest Service Handbook. This temporary departure will be remedied in the Lab Bay project, which contains the bulk of MA K03. The Selected Alternative will harvest no volume class 6 or 7 in MA K03.

The Selected Alternative has been determined to be viable in terms of compliance with the proportionality provisions of the TTRA based on the analysis specified in FSH 2409.18, Supplement 92-5. This analysis shows that there is sufficient timber base available for one or more additional entries prior to the end of the rotation. This analysis concludes that opportunities exist for achieving proportionality under the terms of the Long-Term Contract prior to its scheduled expiration in 2004. This analysis also concludes that the potential future offering would be economical based upon mid-market values and costs as of the NEPA start date for this analysis (09-07-91, the date the Notice of Intent was filed). The next entry would propose to harvest a total of approximately 12,500 acres, 2,500 of which would be classified as Volume Class 6 or 7 by the GIS area timber type map. The projected proportionality after this next entry would be .1840 for MA K03.

Appendix 4

ROD Unit Cards

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 571-226
Planned acres 48
Estimated volume (mbf) 1392
Logging system Highlead
Silvicultural system Clearcut
Forest type Cedar

Alternatives considered F5
Quad CRGD4NES
Mgmt Area K07
WAA 1422
Photo 1190113
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 34 acres VC5 12 acres VC6 0 acres VC7 5 acres
Elevation breakdown: 0-800 ft. 49 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 3 acres Medium 0 acres High 5 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 40 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Provide a gap between 571-226 and 571-227 to maintain a 300 to 500 ft distance. Also provide a gap between units 571-226 and 571-260 to maintain a 300 to 500 ft distance.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

Maintain diversity within unit by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging system and safe working conditions.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

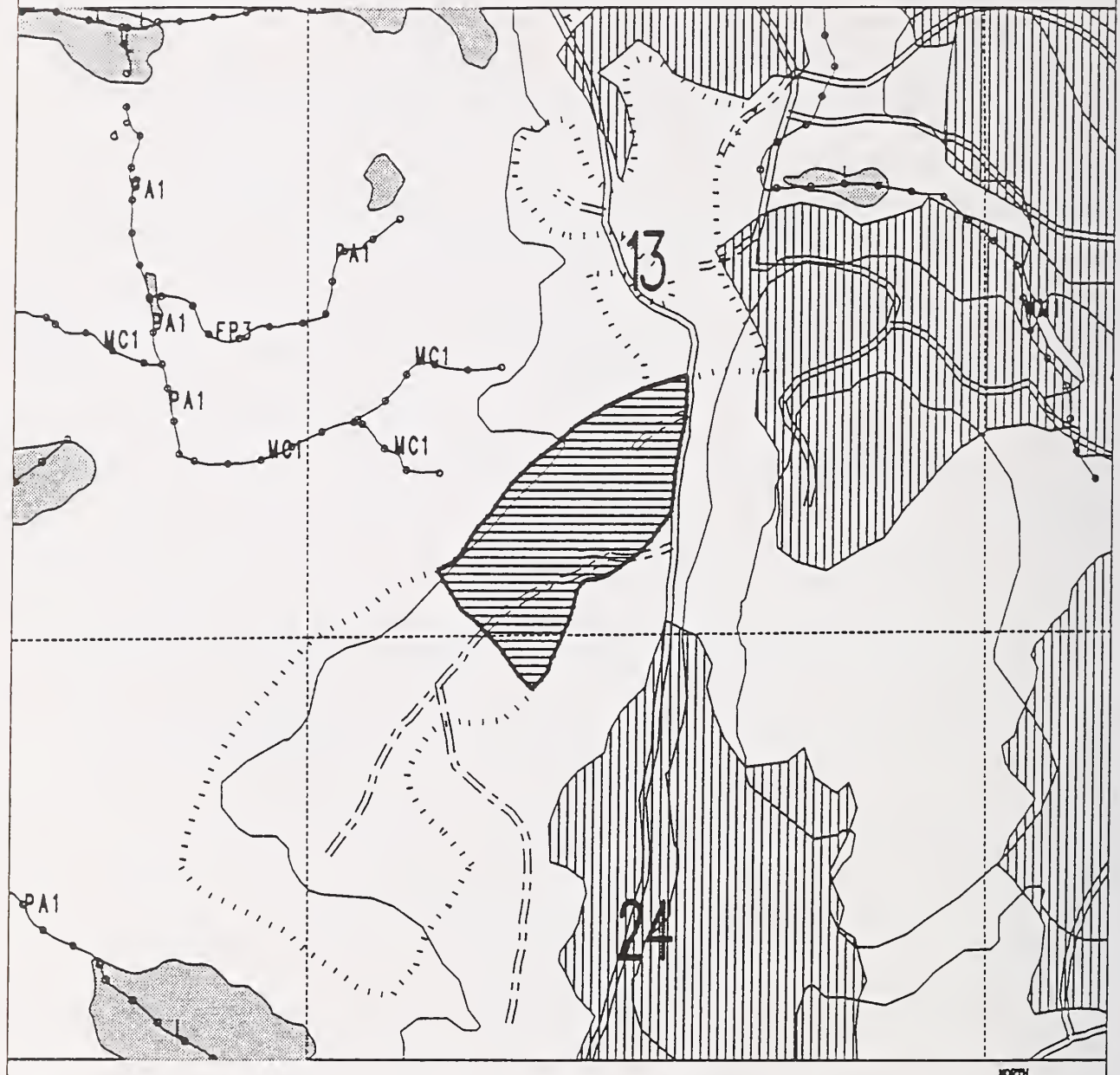
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 571-226

June 10, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 5840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 571-227
Planned acres 111
Estimated volume (mbf) 2397
Logging system Slackline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD4NES
Mgmt Area K07
WAA 1422
Photo 1190114
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 108 acres VC5 1 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 109 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 66 acres Medium 3 acres High 0 acres Very High 0 acres

---

SOILS

This unit contains 72 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Potential for shovel logging on 96 acres, if soil and water quality protected (BMP13.7)
Provide a gap between 571-226 and 571-227 to maintain a 300 to 500 ft distance. Also provide a gap between units 571-226 and 571-260 to maintain a 300 to 500 ft distance.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

Maintain diversity within unit by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging system and safe working conditions.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

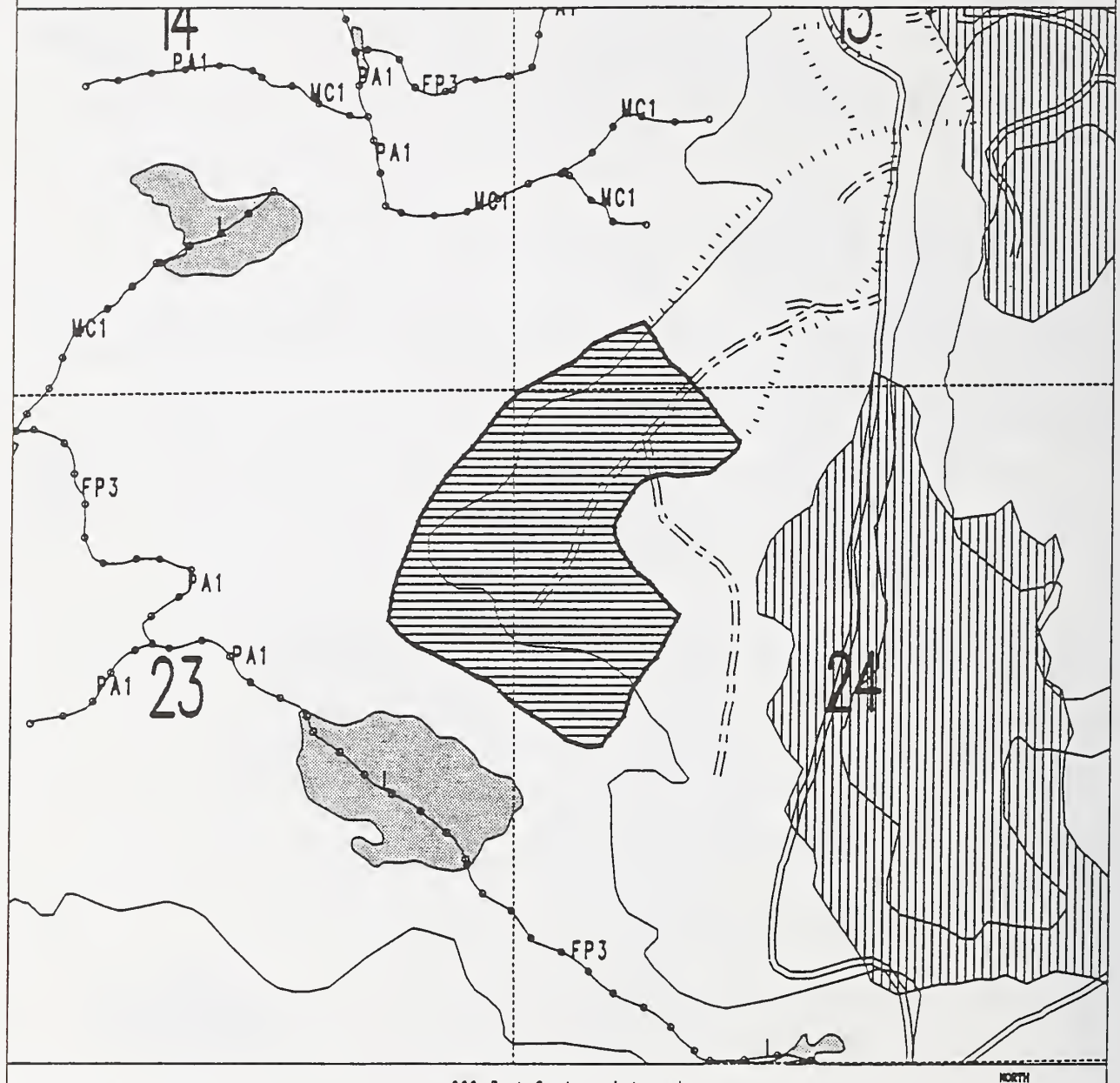
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 571-227

June 10, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 571-253
Planned acres 72
Estimated volume (mbf) 3395
Logging system Skyline
Silvicultural system Clearcut
Forest type Mixed conifer

Alternatives considered F5
Quad CRGD4NES
Mgmt Area K07
WAA 1422
Photo 1290038
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 9 acres VC6 0 acres VC7 61 acres
Elevation breakdown: 0-800 ft. 69 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 9 acres Medium 26 acres High 36 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 35 acres of slopes > 75%.

TIMBER

Provide a 300 to 500 ft leave strip between the unit and the adjacent second growth stand.

ENGINEERING

Very difficult road construction due to unstable, slope > 75% or extended steep grades.
May need to revise logging system to helicopter.
High mass movement index soils. Road construction must minimize landslide potential (BMP14).
Slopes greater than 75% may require full bench construction and endhaul of waste (BMP14.7).

FISH/WATERSHED

Potential for additional Class I/II streams within unit. May be necessary to place additional buffers within unit in accordance with AHMU Handbook.
Potential impact on significant fishery habitat. May be necessary to expand planned buffer in accordance with AHMU Handbook.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

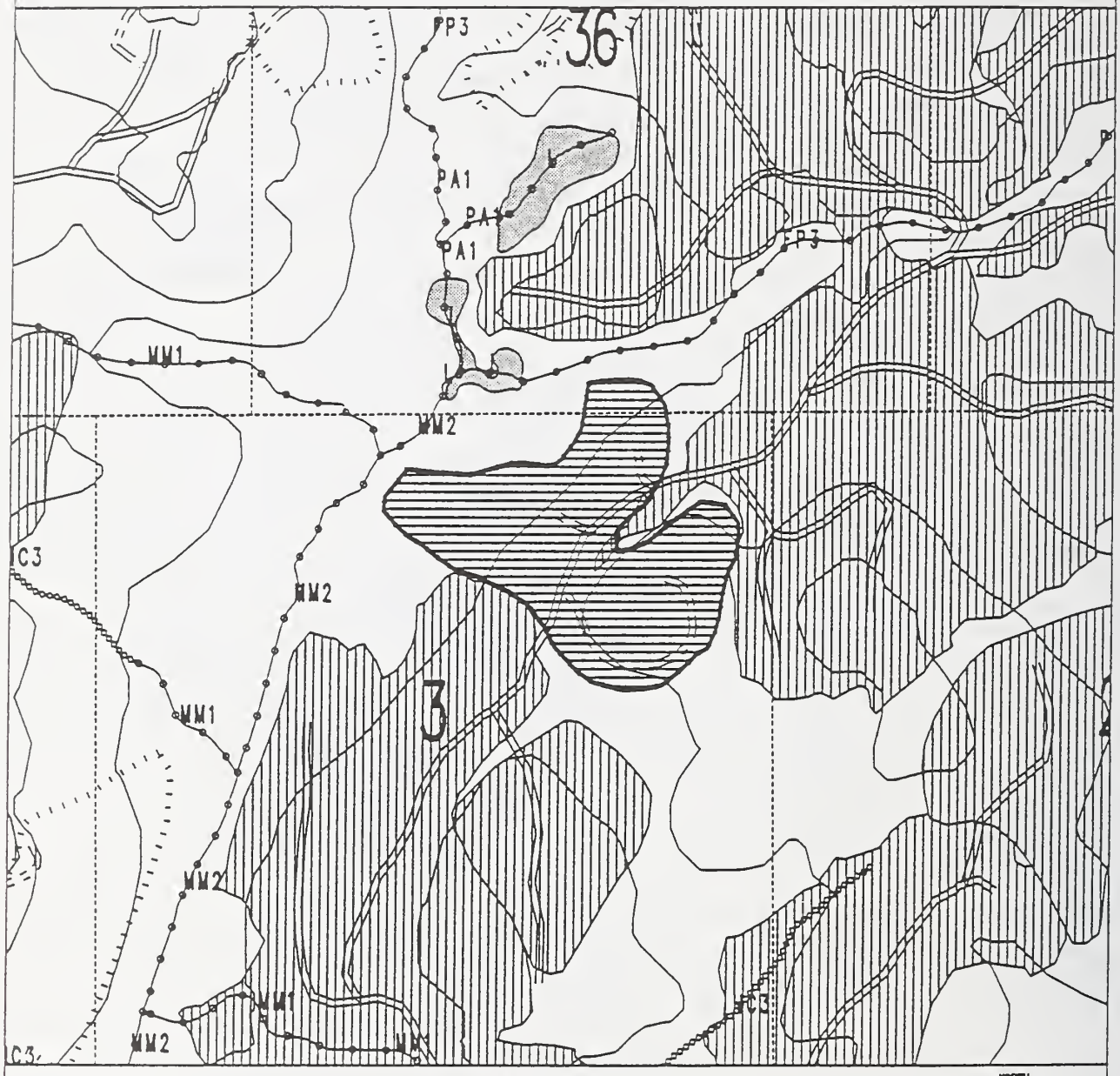
GEOLOGY

This unit is underlain with karst, although no significant features have yet been identified.

CPOW Unit Card

Unit Number: 571-253

June 10, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree

Previous Harvest Area

Saltwater and Lakes

Private

Beach/Estuary

Clearcut

Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 571-257
Planned acres 55
Estimated volume (mbf) 2053
Logging system Skyline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD4NES
Mgmt Area K07
WAA 1422
Photo 1190112
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 39 acres VC6 11 acres VC7 7 acres
Elevation breakdown: 0-800 ft. 45 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 1 acres Medium 22 acres High 14 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit has a slight possibility to be reclassified as MMI = 4.
This unit has < 40% McGilvery soils. Partial suspension required (BMP13.9) to ensure reforestation (BMP13.19).
This unit contains 24 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Expand buffer to a total width of 300 to 500 ft on Naukati Creek between units 571-257 and 571-258.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).
The road into this unit crosses a C1 channel. Meet stream and lake protection prescription requirements in TLMP Draft Revision (1991a) for this process group.

FISH/WATERSHED

This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

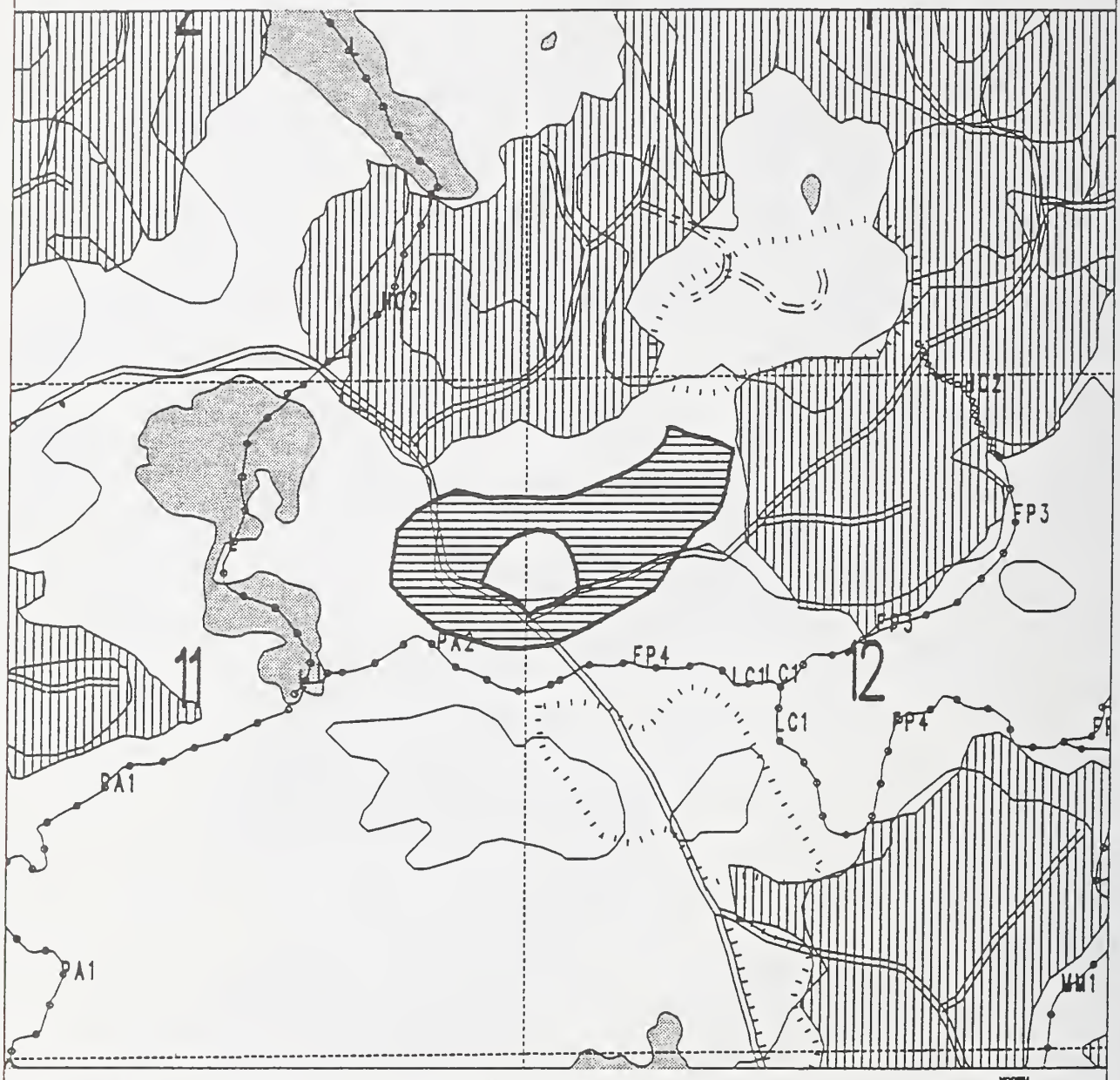
GEOLOGY

This unit is underlain with karst, although no significant features have yet been identified.

CPOV Unit Card

Unit Number: 571-257

June 10, 1993



Unit Boundary

Other Proposed Units

Contour Lines

Proposed Road

Existing road

Class I Stream

Class II Stream

Class III Stream

Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree

Previous Harvest Area

Saltwater and Lakes

Private

Beach/Estuary

Clearcut

Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 571-258
Planned acres 45
Estimated volume (mbf) 1308
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD4NES
Mgmt Area K07
WAA 1422
Photo 1190112
Aspect North

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 22 acres VC5 2 acres VC6 20 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 43 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 9 acres Medium 0 acres High 19 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 27 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Expand buffer to a total width of 300 to 500 ft on Naukati Creek between units 571-257 and 571-258.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).
The road into this unit crosses a C1 channel. Meet stream and lake protection prescription requirements in TLMP Draft Revision (1991a) for this process group.

FISH/WATERSHED

Potential for additional Class I/II streams within unit. May be necessary to place additional buffers within unit in accordance with AHMU Handbook.
Potential impact on significant fishery habitat. May be necessary to expand planned buffer in accordance with AHMU Handbook.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

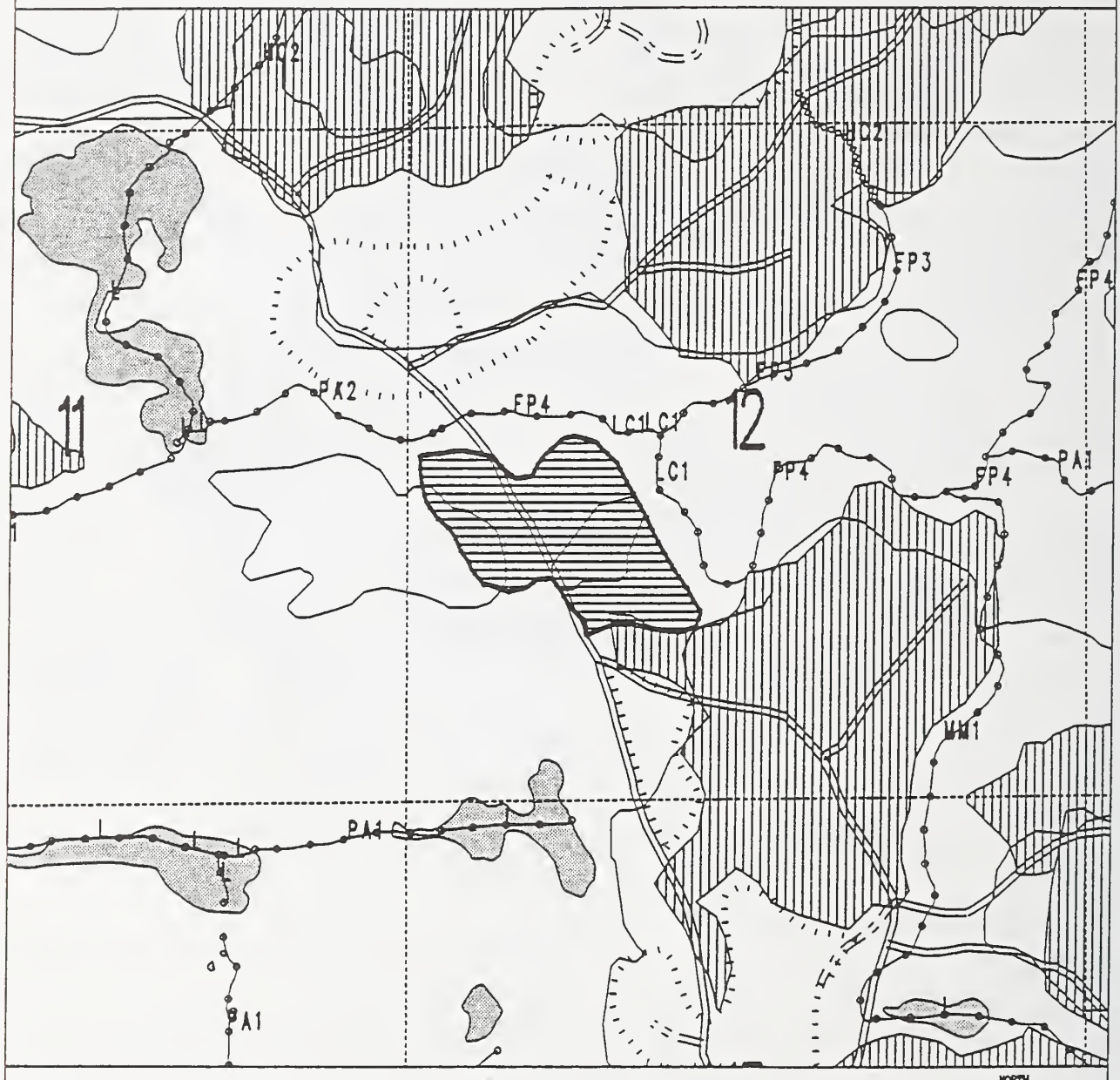
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOV Unit Card

Unit Number: 571-258

June 10, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 571-260
Planned acres 51
Estimated volume (mbf) 2078
Logging system Skyline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD4NES
Mgmt Area K07
WAA 1422
Photo 1190113
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 4 acres VC5 8 acres VC6 0 acres VC7 34 acres
Elevation breakdown: 0-800 ft. 49 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 8 acres Medium 1 acres High 26 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 14 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 15 acres of slopes > 75%.

TIMBER

Potential for shovel logging on 45 acres, if soil and water quality protected (BMP13.7)
Provide a gap between 571-226 and 571-227 to maintain a 300 to 500 ft distance. Also provide a gap between units 571-226 and 571-260 to maintain a 300 to 500 ft distance.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).
Slopes greater than 75% may require full bench construction and endhaul of waste (BMP14.7).

FISH/WATERSHED

Potential for additional Class I/II streams within unit. May be necessary to place additional buffers within unit in accordance with AHMU Handbook.
Potential impact on significant fishery habitat. May be necessary to expand planned buffer in accordance with AHMU Handbook.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 571-260

June 10, 1993

Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 572-211
Planned acres 86
Estimated volume (mbf) 1702
Logging system Skyline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD3NWN
Mgmt Area K09
WAA 1420
Photo 690156
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 55 acres VC5 17 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 88 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 37 acres Medium 0 acres High 31 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 63 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Incorporate 300 to 500 ft leave strip between 572-211 and 572-222 to connect the riparian corridors on the north and south ends of unit 572-222.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

This unit adjacent to other ownership. Boundary establishment required prior to layout.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

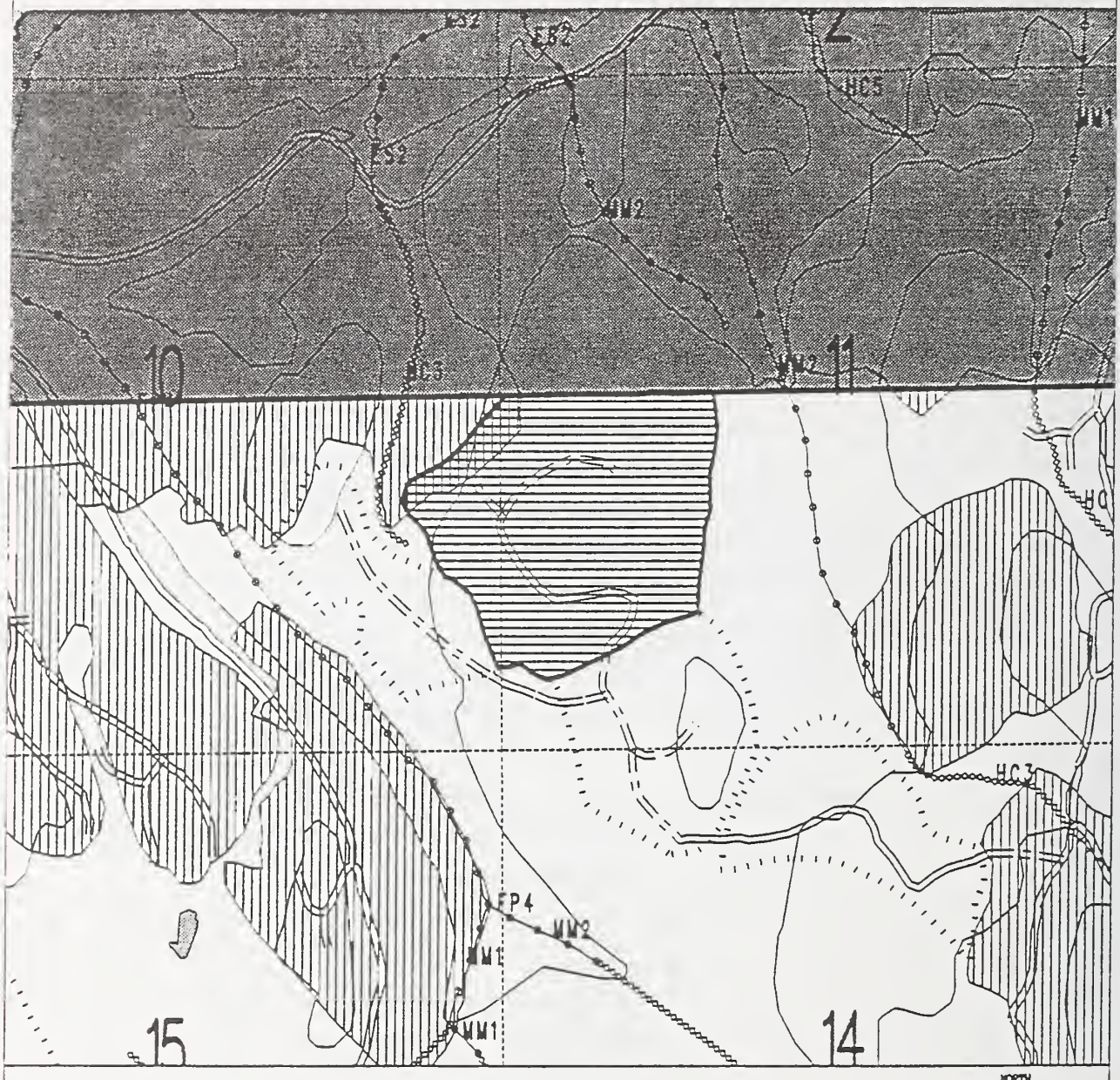
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 572-211

June 10, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 572-222
Planned acres 28
Estimated volume (mbf) 835
Logging system Skyline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD3NWN
Mgmt Area K09
WAA 1420
Photo 690156
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 22 acres VC6 0 acres VC7 4 acres
Elevation breakdown: 0-800 ft. 30 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 26 acres Medium 0 acres High 3 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)

TIMBER

Incorporate 300 to 500 ft leave strip between 572-211 and 572-222 to connect the riparian corridors on the north and south ends of unit 572-222.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

Potential for additional Class I/II streams within unit. May be necessary to place additional buffers within unit in accordance with AHMU Handbook.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

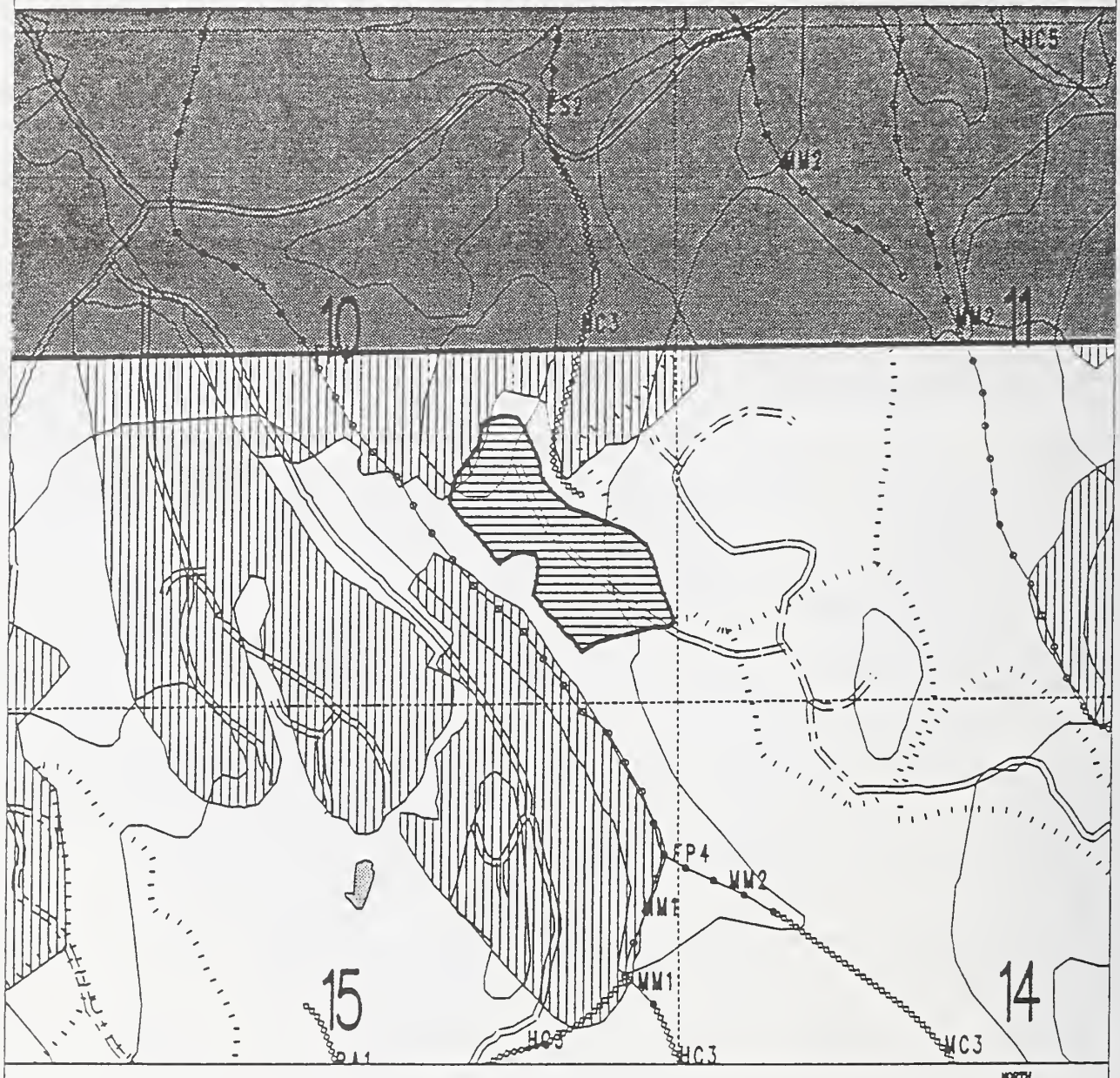
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOV Unit Card

Unit Number: 572-222

June 10, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 5840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 574-247
Planned acres 60
Estimated volume (mbf) 2100
Logging system Helicopter
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD3NES
Mgmt Area K08
WAA 1421
Photo 690163
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 70 acres VC6 5 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 6 acres 1200-1500 ft. 5 acres over 1500 ft. 37 acres
Mass movement index: Low 75 acres Medium 0 acres High 0 acres Very High 0 acres

---

SOILS

This unit will be monitored for effects of harvest/roading on steep slopes.

TIMBER

Provide wildlife leave islands in patches at least 5 acres, and totalling at least 17 acres to ensure the total opening created by units 574-247 and 574-248 does not exceed 100 acres.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

Maintain diversity within unit by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging system and safe working conditions.

RECREATION / VISUALS

The unit has a proposed VQO of M within the viewshed of Hatchery Lake as viewed from from centerline of lake.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

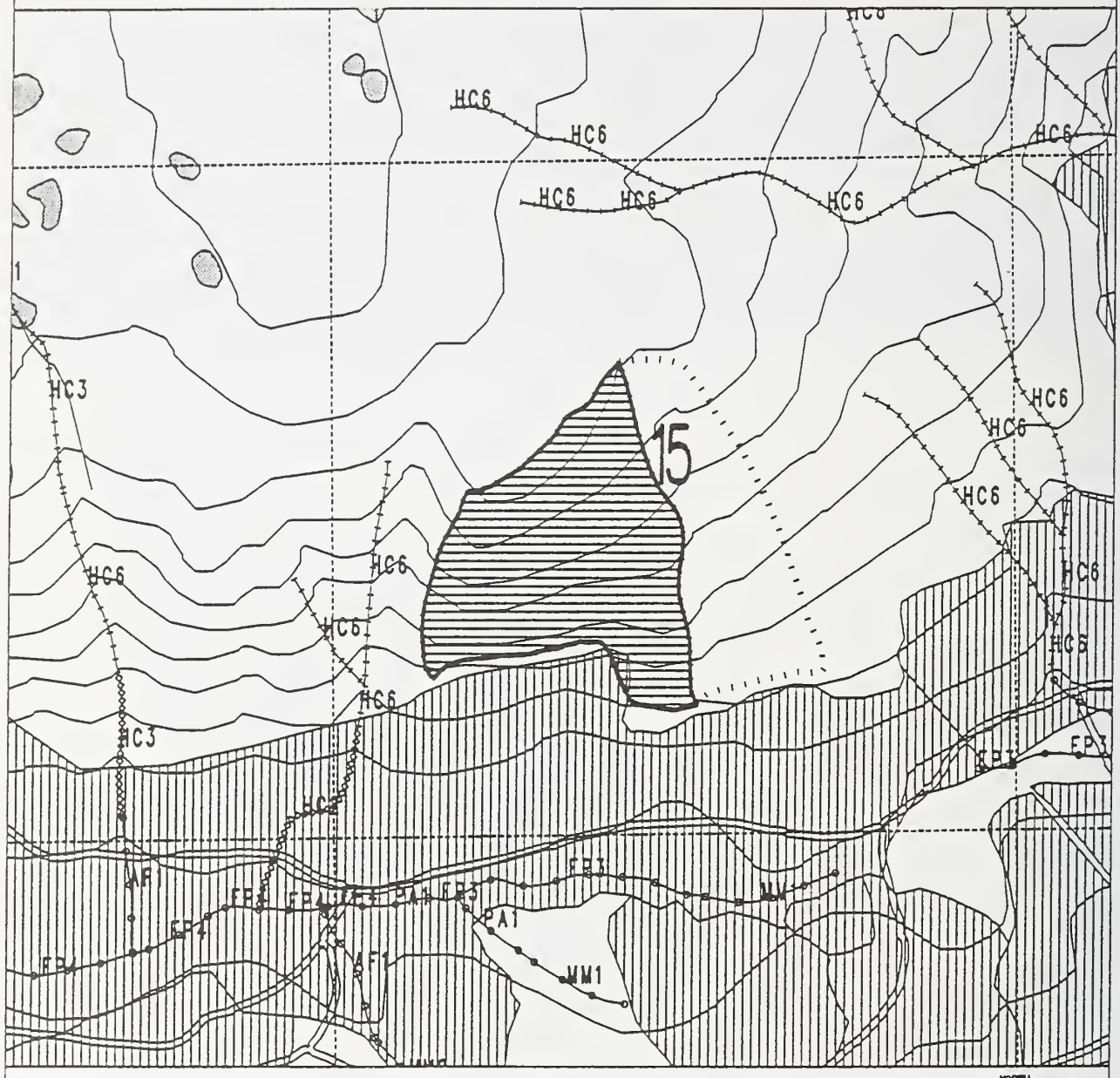
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOV Unit Card

Unit Number: 574-247

June 11, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 574-248
Planned acres 39
Estimated volume (mbf) 1362
Logging system Helicopter
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD3NES
Mgmt Area K08
WAA 1421
Photo 1090207
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 41 acres VC6 6 acres VC7 0 acres

Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 12 acres 1200-1500 ft. 4 acres over 1500 ft. 14 acres

Mass movement index: Low 46 acres Medium 0 acres High 0 acres Very High 0 acres

---

SOILS

This unit will be monitored for effects of harvest/roading on steep slopes.

TIMBER

Provide wildlife leave islands in patches at least 5 acres, and totalling at least 17 acres to ensure the total opening created by units 574-247 and 574-248 does not exceed 100 acres.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

Maintain diversity within unit by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging system and safe working conditions.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

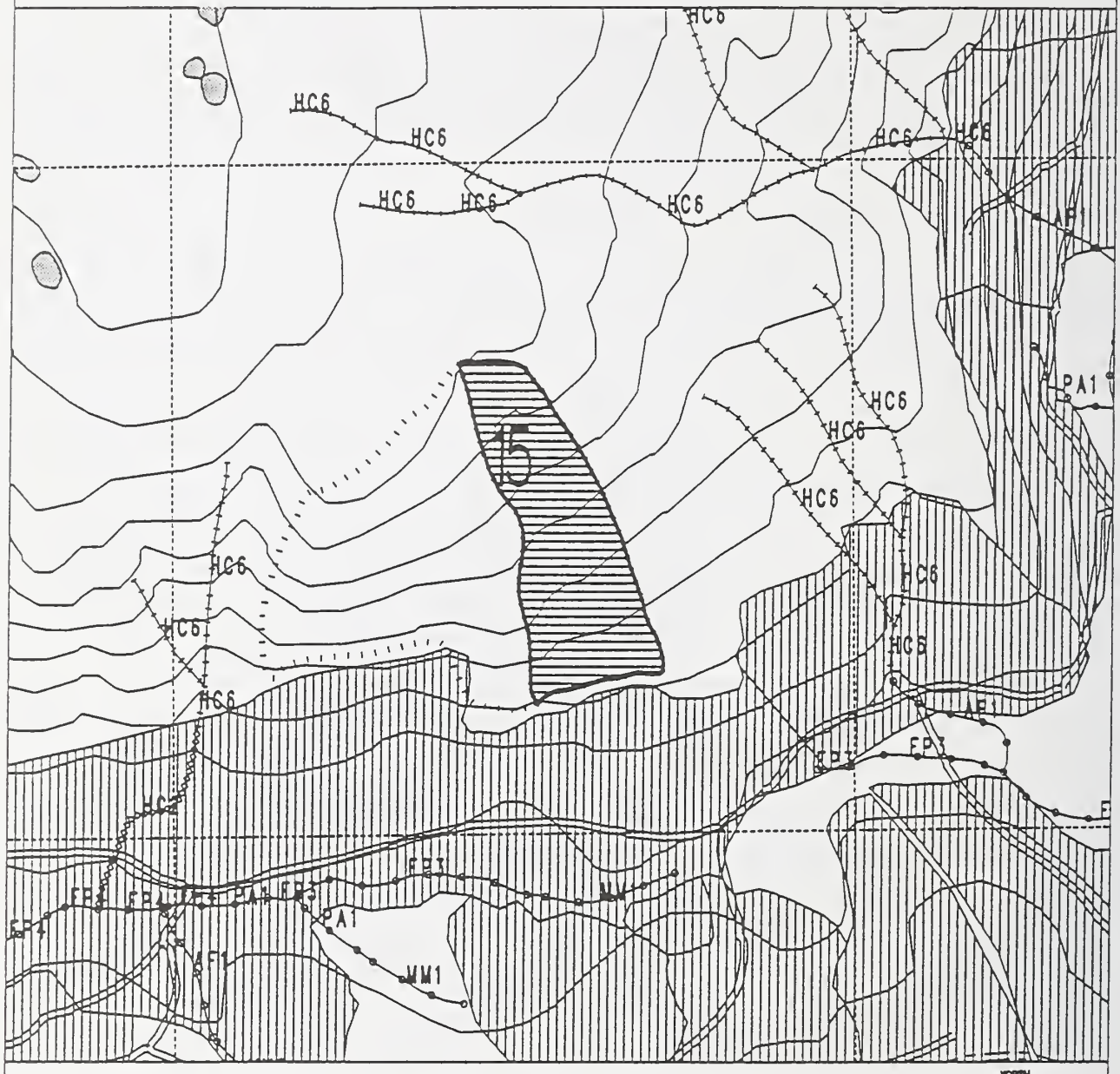
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 574-248

June 11, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 579-203
Planned acres 56
Estimated volume (mbf) 1585
Logging system Skyline
Silvicultural system Clearcut
Forest type Mixed conifer

Alternatives considered F5
Quad CRGD2SWS
Mgmt Area K09
WAA 1319
Photo 690041
Aspect North

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 14 acres VC5 39 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 0 acres 1200-1500 ft. 4 acres over 1500 ft. 1 acres
Mass movement index: Low 5 acres Medium 14 acres High 35 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 31 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 23 acres of slopes > 75%.
This unit will be monitored for effects of harvest/roading on landslide-prone slopes.

TIMBER

Expand buffer to a total width of 300 to 500 ft on the Class 3 stream separating units 579-203 and 580-202.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).
Slopes greater than 75% may require full bench construction and endhaul of waste (BMP14.7).

FISH/WATERSHED

This unit contains a A4 class 3 stream. No specific buffer required, but full suspension, if yarding across.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

The unit has a proposed VQO of MM within the viewshed of Sal Creek as viewed from ferry/cruise ship route (2-4 miles off shore).

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

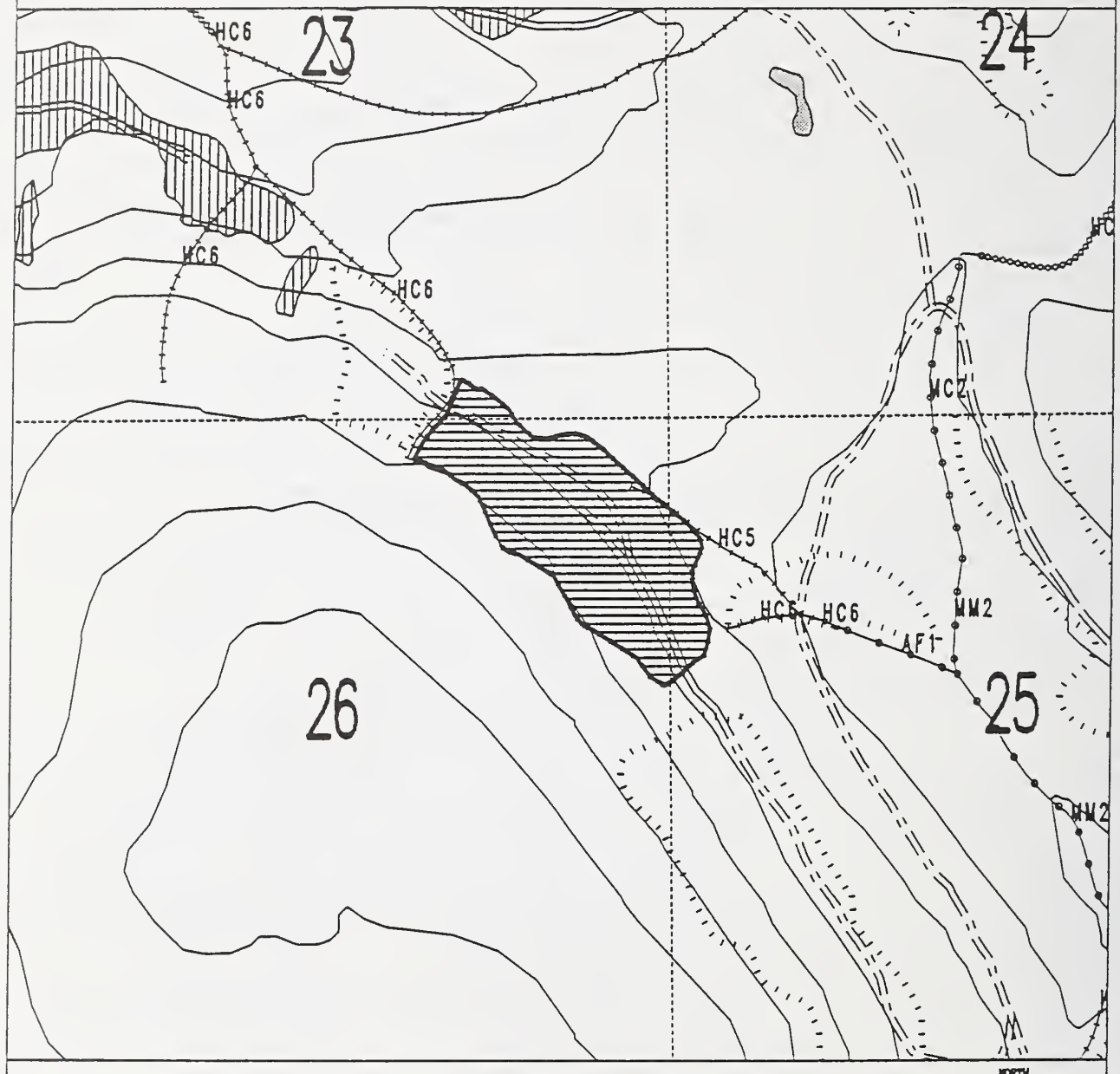
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 579-203

June 11, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 579-215
Planned acres 27
Estimated volume (mbf) 788
Logging system Highlead
Silvicultural system Clearcut
Forest type Mixed conifer

Alternatives considered F5
Quad CRGC2NWN
Mgmt Area K09
WAA 1319
Photo 1090082
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 13 acres VC5 18 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 0 acres 1200-1500 ft. 4 acres over 1500 ft. 1 acres
Mass movement index: Low 5 acres Medium 25 acres High 1 acres Very High 0 acres

---

SOILS

There are no soils mitigation measures anticipated for this unit.

TIMBER

Provide a gap between 579-215 and 579-216 to maintain a 300 to 500 ft distance. Also provide a gap between units 579-216 and 579-217/579-218 to maintain a 300 to 500 ft distance.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

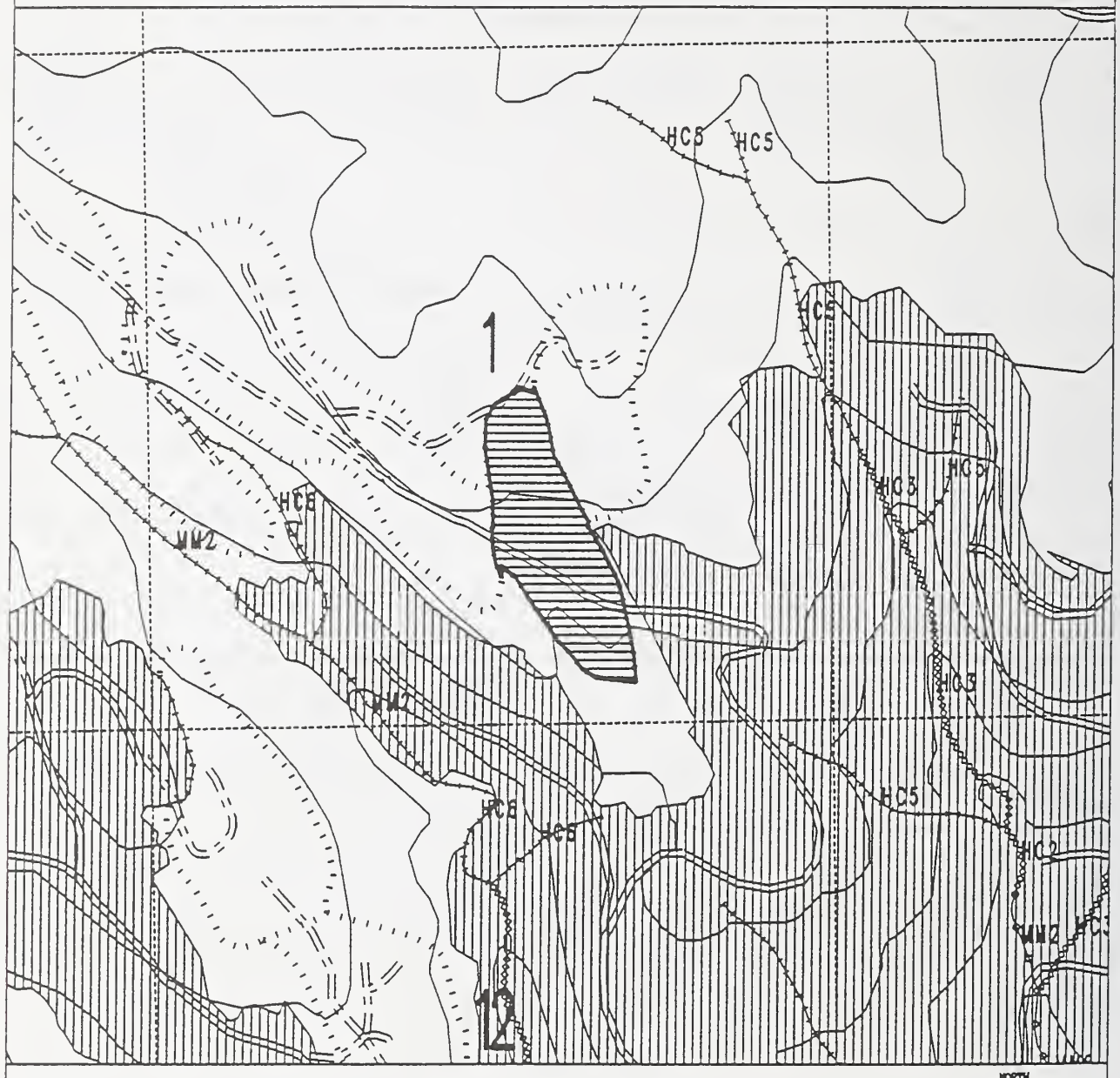
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOV Unit Card

Unit Number: 579-215

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 579-216
Planned acres 58
Estimated volume (mbf) 1586
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC2NWN
Mgmt Area K09
WAA 1319
Photo 690039
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 28 acres VC5 33 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 12 acres
Mass movement index: Low 5 acres Medium 16 acres High 43 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)

TIMBER

Provide a gap between 579-215 and 579-216 to maintain a 300 to 500 ft distance. Also provide a gap between units 579-216 and 579-217/579-218 to maintain a 300 to 500 ft distance.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

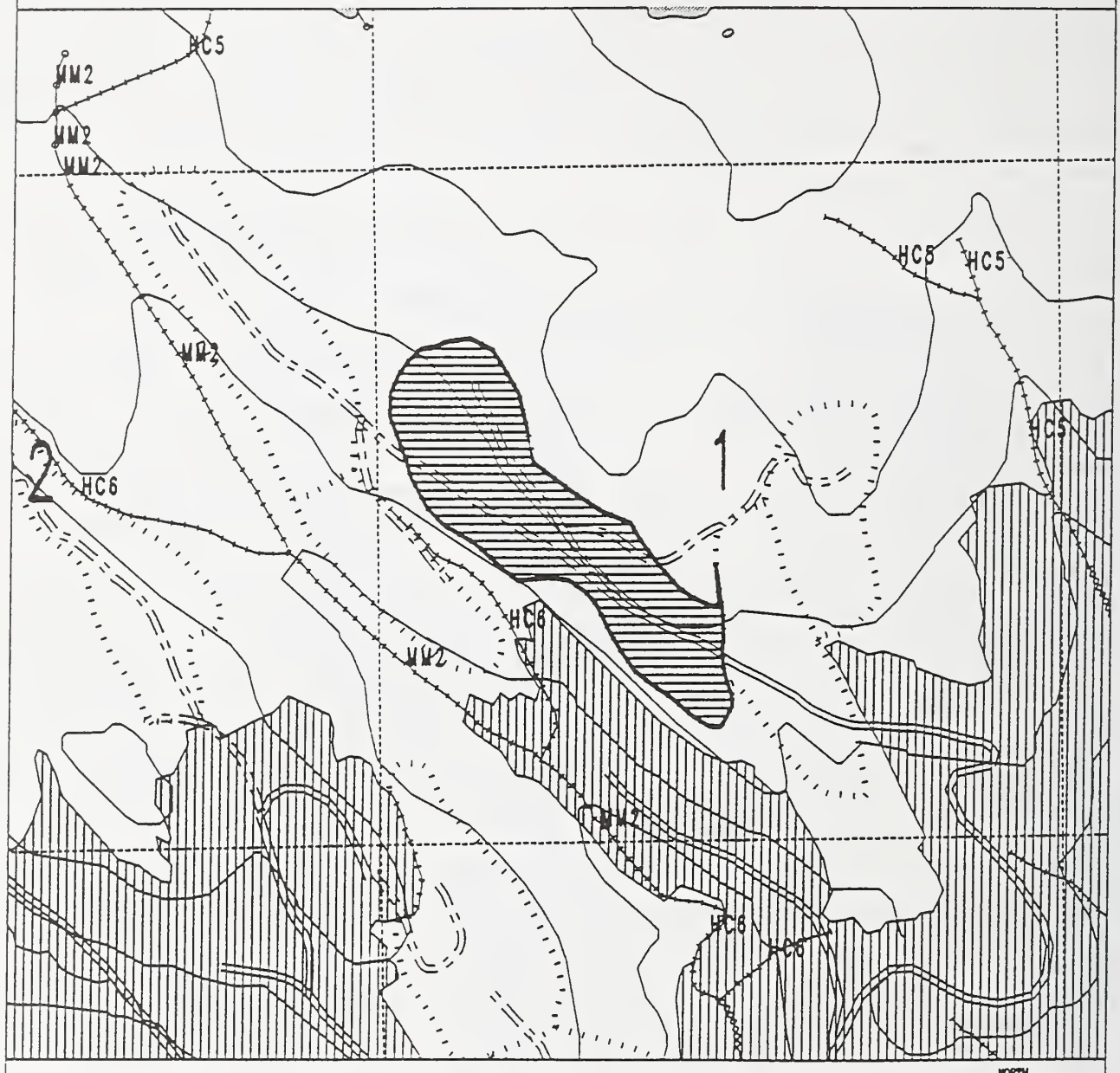
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOV Unit Card

Unit Number: 579-216

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 579-217
Planned acres 24
Estimated volume (mbf) 602
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F2 F5 F6
Quad CRGC2NWN
Mgmt Area K09
WAA 1319
Photo 690039
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 17 acres VC5 7 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 2 acres 1200-1500 ft. 19 acres over 1500 ft. 0 acres
Mass movement index: Low 0 acres Medium 14 acres High 9 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 14 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Provide a gap between 579-215 and 579-216 to maintain a 300 to 500 ft distance. Also provide a gap between units 579-216 and 579-217/579-218 to maintain a 300 to 500 ft distance.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

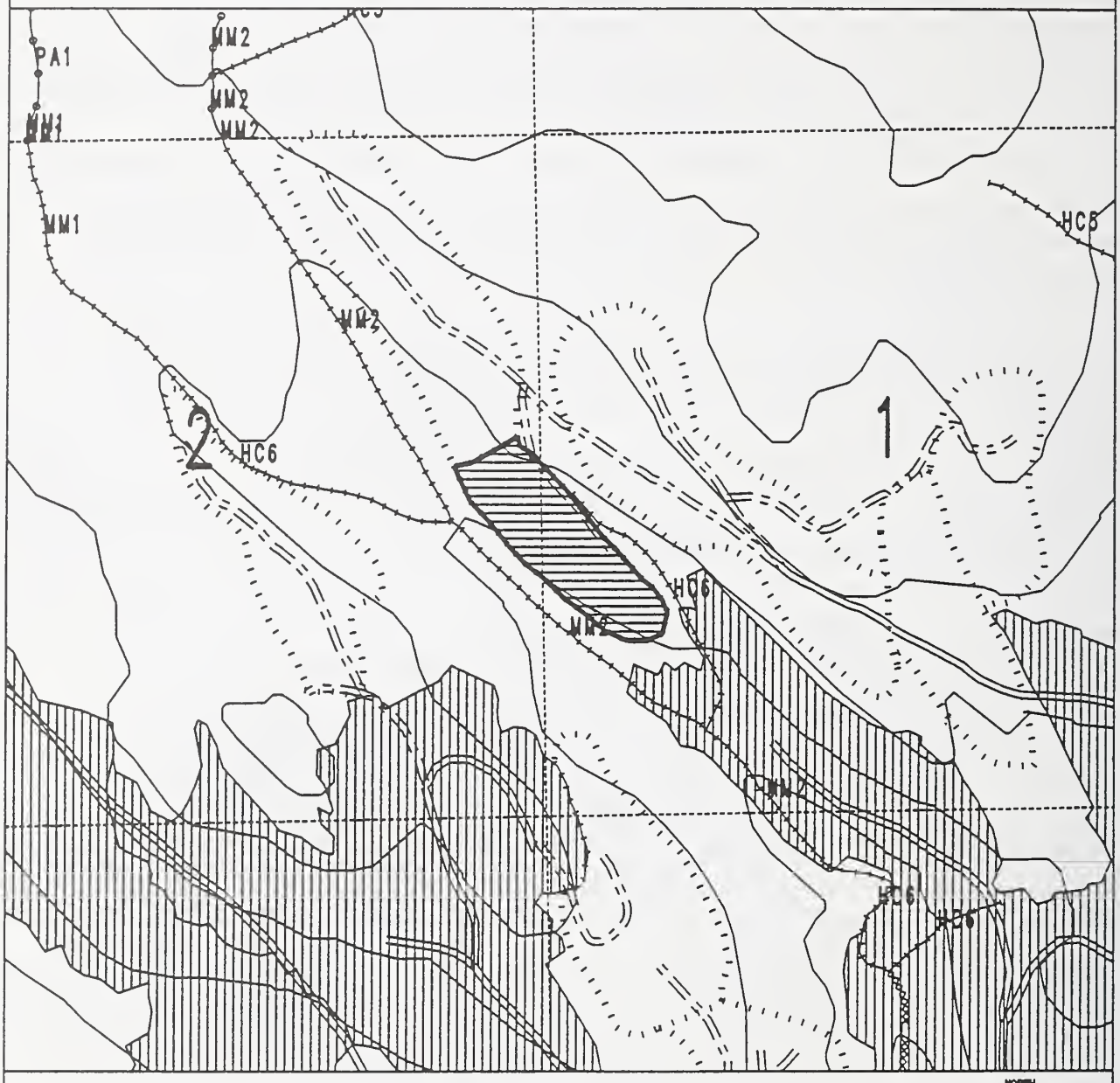
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 579-217

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 579-218
Planned acres 50
Estimated volume (mbf) 1410
Logging system Skyline
Silvicultural system Clearcut
Forest type Mixed conifer

Alternatives considered F2 F5 F6
Quad CRGD2SWS
Mgmt Area K09
WAA 1319
Photo 690039
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 15 acres VC5 33 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 0 acres 1200-1500 ft. 3 acres over 1500 ft. 1 acres
Mass movement index: Low 6 acres Medium 19 acres High 23 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 19 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Provide a gap between 579-215 and 579-216 to maintain a 300 to 500 ft distance. Also provide a gap between units 579-216 and 579-217/579-218 to maintain a 300 to 500 ft distance.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

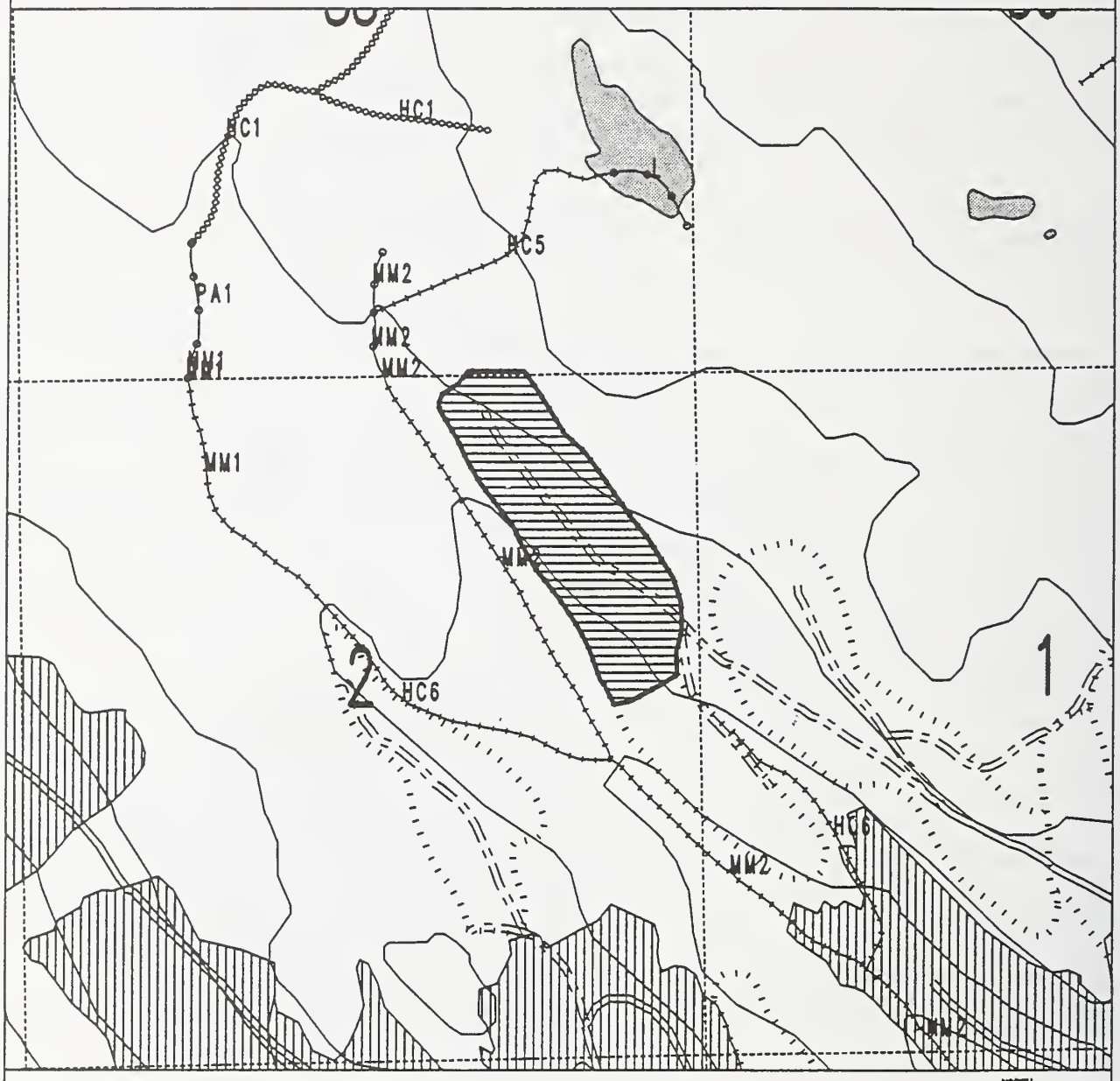
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 579-218

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 579-219
Planned acres 27
Estimated volume (mbf) 624
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC2NWN
Mgmt Area K09
WAA 1319
Photo 1090082
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 27 acres VC5 1 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 18 acres
Mass movement index: Low 0 acres Medium 27 acres High 0 acres Very High 0 acres

---

SOILS

There are no soils mitigation measures anticipated for this unit.

TIMBER

Provide a gap between 579-215 and 579-216 to maintain a 300 to 500 ft distance. Also provide a gap between units 579-216 and 579-217/579-218 to maintain a 300 to 500 ft distance.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

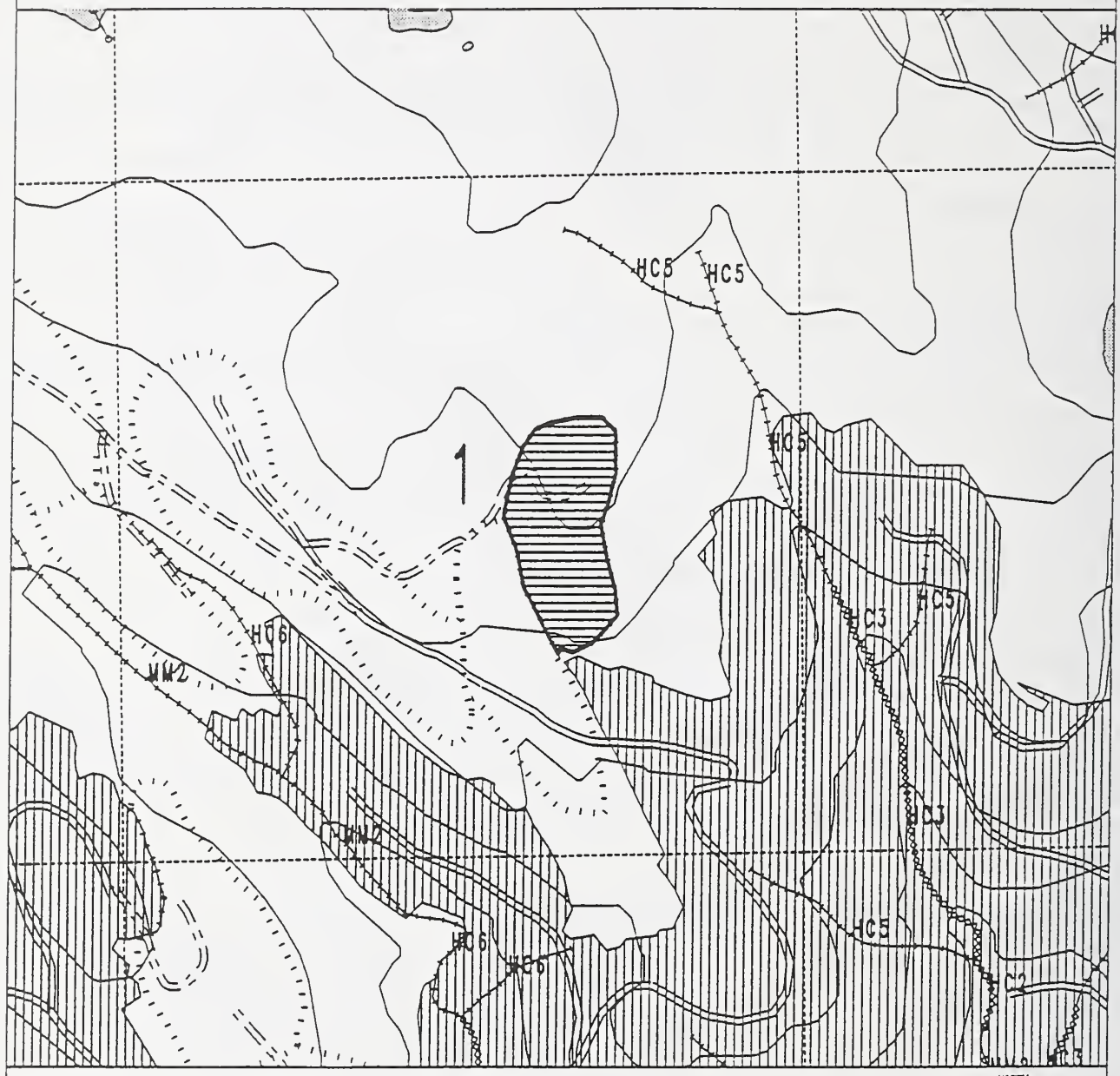
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CP0W Unit Card

Unit Number: 579-219

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 580-202
Planned acres 18
Estimated volume (mbf) 546
Logging system Skyline
Silvicultural system Clearcut
Forest type Mixed conifer

Alternatives considered F5
Quad CRGD2SWS
Mgmt Area K09
WAA 1319
Photo 690041
Aspect North

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 4 acres VC5 14 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 3 acres 1200-1500 ft. 3 acres over 1500 ft. 0 acres
Mass movement index: Low 0 acres Medium 0 acres High 17 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit will be monitored for effects of harvest/roading on landslide-prone slopes.

TIMBER

Expand buffer to a total width of 300 to 500 ft on the Class 3 stream separating units 579-203 and 580-202.

ENGINEERING

Very difficult road construction due to unstable, slope > 75% or extended steep grades.
May need to revise logging system to helicopter.
High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

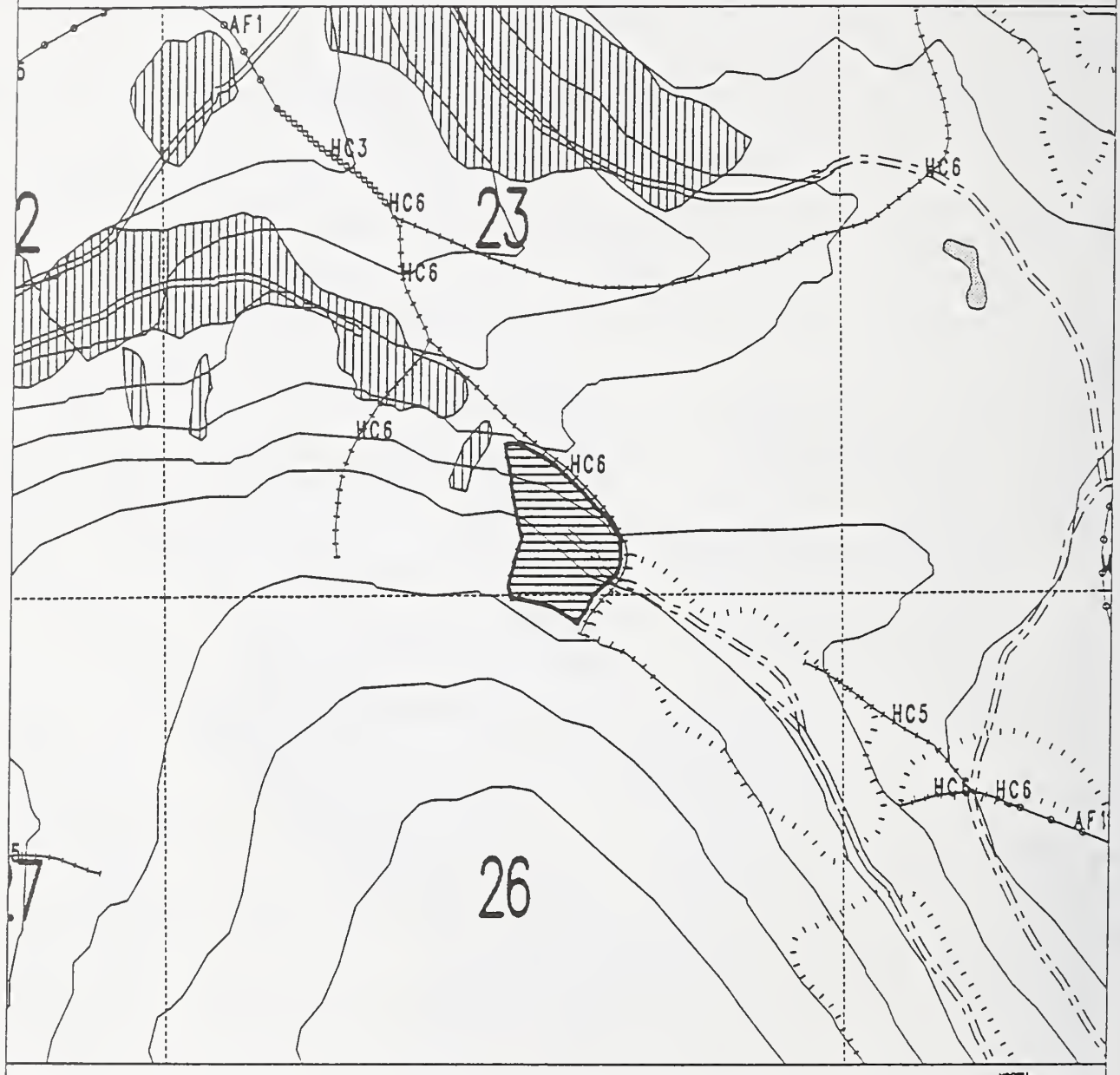
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 580-202

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 580-212
Planned acres 45
Estimated volume (mbf) 1361
Logging system Helicopter
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD3SEN
Mgmt Area K09
WAA 1319
Photo 1090013
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 17 acres VC5 32 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 0 acres 1200-1500 ft. 6 acres over 1500 ft. 17 acres
Mass movement index: Low 0 acres Medium 0 acres High 48 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 27 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 48 acres of slopes > 75%.

TIMBER

Potential regeneration problem. May need to consider other silvicultural prescriptions (or hand plant) to meet BMP13.19.
Expand the gap between units 580-212 and 580-213 to provide a 300 to 500 ft distance.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

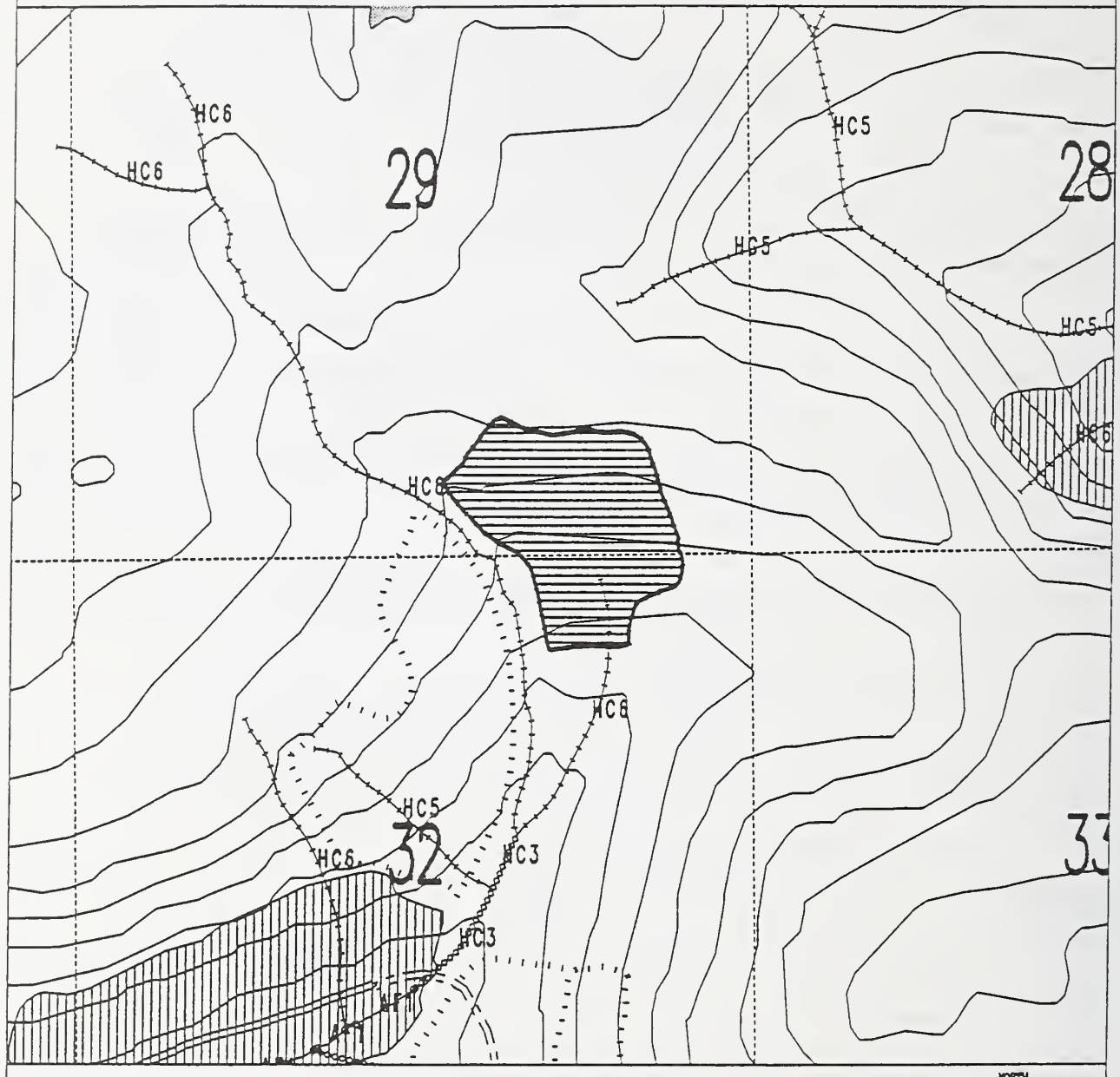
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 580-212

June 11, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 580-213
Planned acres 63
Estimated volume (mbf) 2065
Logging system Helicopter
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD3SEN
Mgmt Area K09
WAA 1319
Photo 1090013
Aspect East

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 9 acres VC5 57 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 7 acres 800-1200 ft. 12 acres 1200-1500 ft. 2 acres over 1500 ft. 4 acres
Mass movement index: Low 2 acres Medium 0 acres High 64 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 17 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 32 acres of slopes > 75%.

TIMBER

Expand the gap between units 580-212 and 580-213 to provide a 300 to 500 ft distance.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

This unit contains a A4 class 3 stream. No specific buffer required, but full suspension, if yarding across.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

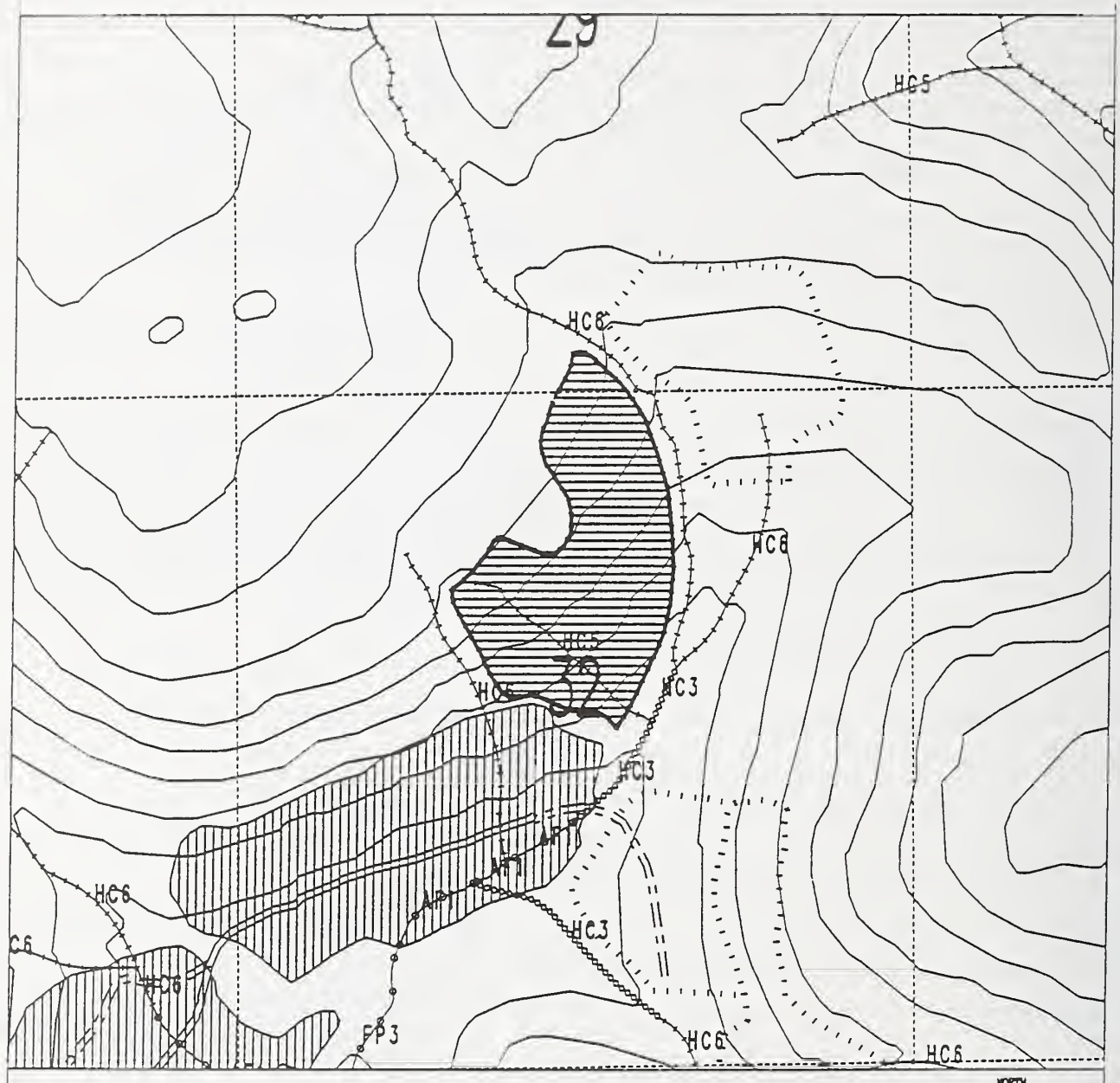
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 580-213

June 11, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 580-218
Planned acres 65
Estimated volume (mbf) 1393
Logging system Helicopter
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD3SEN
Mgmt Area K09
WAA 1319
Photo 1090114
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 56 acres VC5 11 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 17 acres 1200-1500 ft. 16 acres over 1500 ft. 1 acres
Mass movement index: Low 22 acres Medium 3 acres High 42 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 42 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 28 acres of slopes > 75%.
This unit will be monitored for effects of harvest/roading on landslide-prone slopes.

TIMBER

Provide wildlife leave islands in patches at least 5 acres, and totalling at least 14 acres to ensure the total opening created by units 580-218 and 580-219 does not exceed 100 acres.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

This unit contains a A2 class 2 stream. Allow no harvest within 100 feet and full suspension, if yarding across.

WILDLIFE

Maintain diversity within unit by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging system and safe working conditions.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

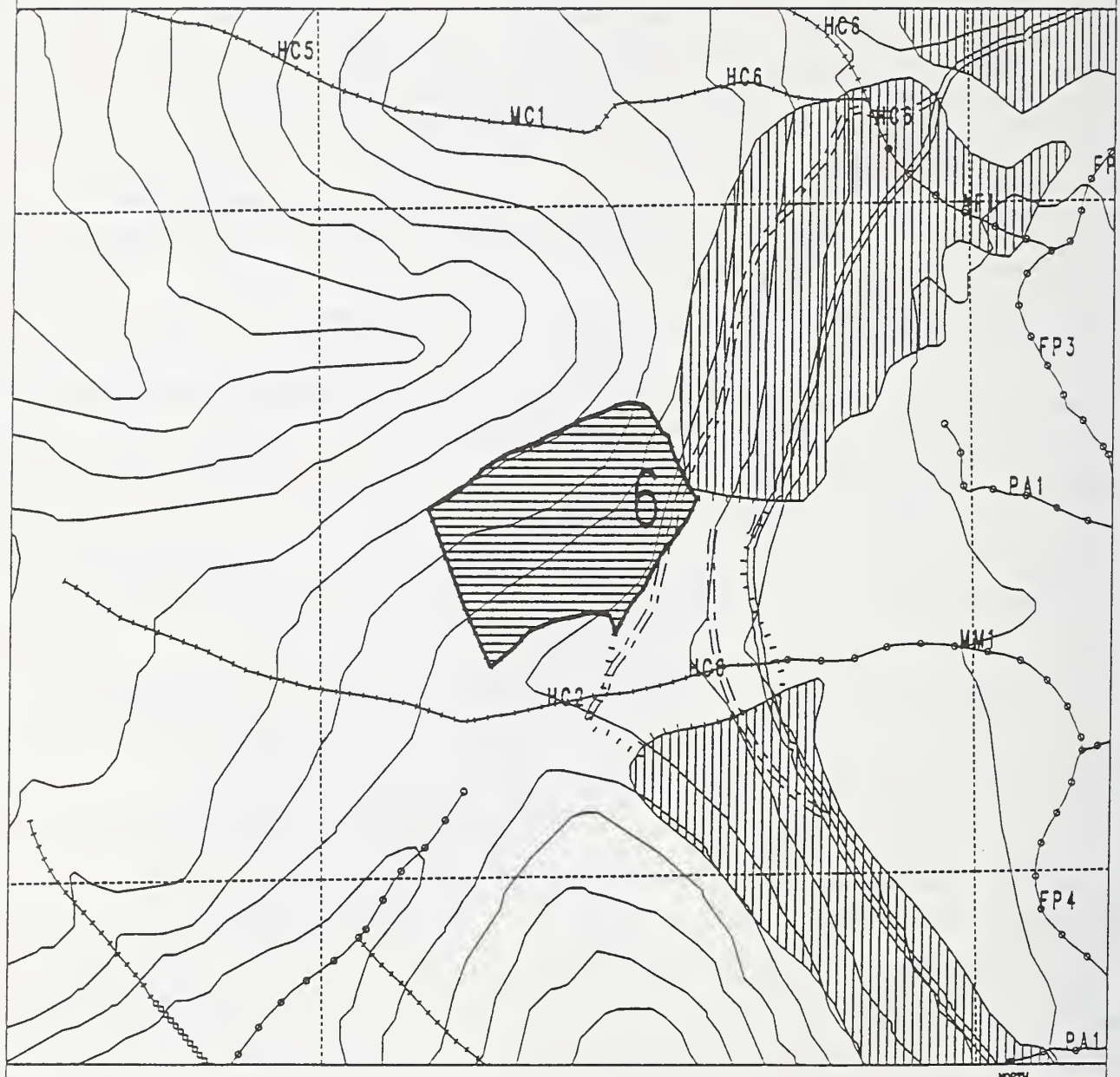
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOV Unit Card

Unit Number: 580-218

June 11, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 580-219
Planned acres 34
Estimated volume (mbf) 991
Logging system Skyline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD3SEN
Mgmt Area K09
WAA 1319
Photo 1090114
Aspect East

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 19 acres VC5 22 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 21 acres 800-1200 ft. 15 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 0 acres Medium 26 acres High 6 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 34 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Provide wildlife leave islands in patches at least 5 acres, and totalling at least 14 acres to ensure the total opening created by units 580-218 and 580-219 does not exceed 100 acres.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

This unit contains a A1 class 3 stream. No specific buffer required, but full suspension, if yarding across.

WILDLIFE

Maintain diversity within unit by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging system and safe working conditions.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

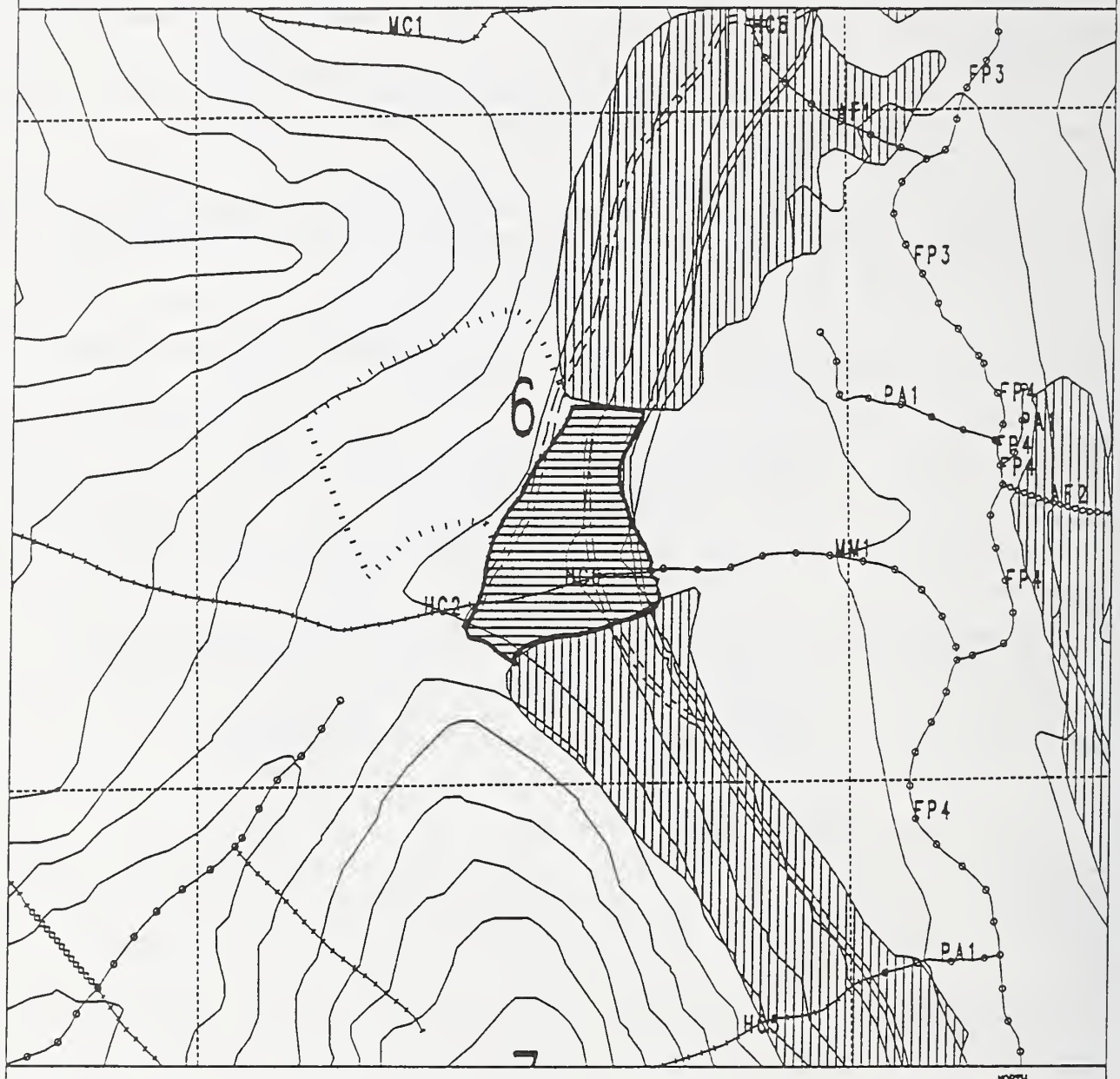
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 580-219

June 11, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 580-227
Planned acres 55
Estimated volume (mbf) 1874
Logging system Skyline
Silvicultural system Clearcut
Forest type Mixed conifer

Alternatives considered F5
Quad CRGD3SES
Mgmt Area K09
WAA 1319
Photo 1090018
Aspect East

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 35 acres VC6 20 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 53 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 0 acres Medium 34 acres High 17 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit has a significant possibility to have areas reclassified as MMI = 4.
This unit contains 42 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 14 acres of slopes > 75%.

TIMBER

Potential for shovel logging on 15 acres, if soil and water quality protected (BMP13.7)
Expand the gap between units 580-227 and 580-230 to provide a 300 to 500 ft distance.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).
Slopes greater than 75% may require full bench construction and endhaul of waste (BMP14.7).

FISH/WATERSHED

Potential for additional Class I/II streams within unit. May be necessary to place additional buffers within unit in accordance with AHMU Handbook.
This unit contains a A4 class 3 stream. No specific buffer required, but full suspension, if yarding across.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

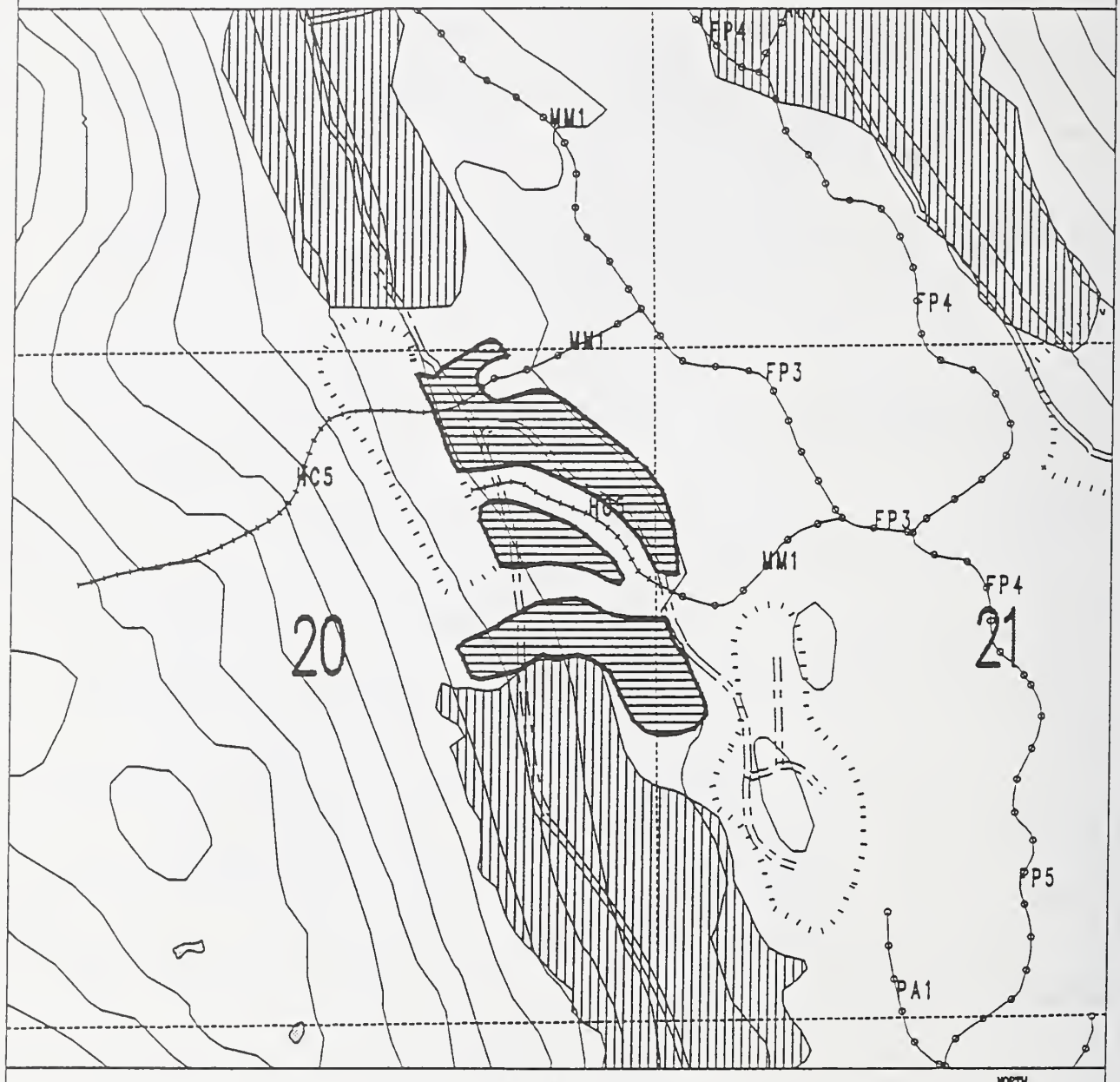
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 580-227

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 580-230
Planned acres 40
Estimated volume (mbf) 842
Logging system Skyline
Silvicultural system Clearcut
Forest type Mixed conifer

Alternatives considered F5
Quad CRGD3SES
Mgmt Area K09
WAA 1319
Photo 990172
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 16 acres VC5 15 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 39 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 0 acres Medium 26 acres High 0 acres Very High 0 acres

---

SOILS

This unit contains 40 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Expand the gap between units 580-227 and 580-230 to provide a 300 to 500 ft distance.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

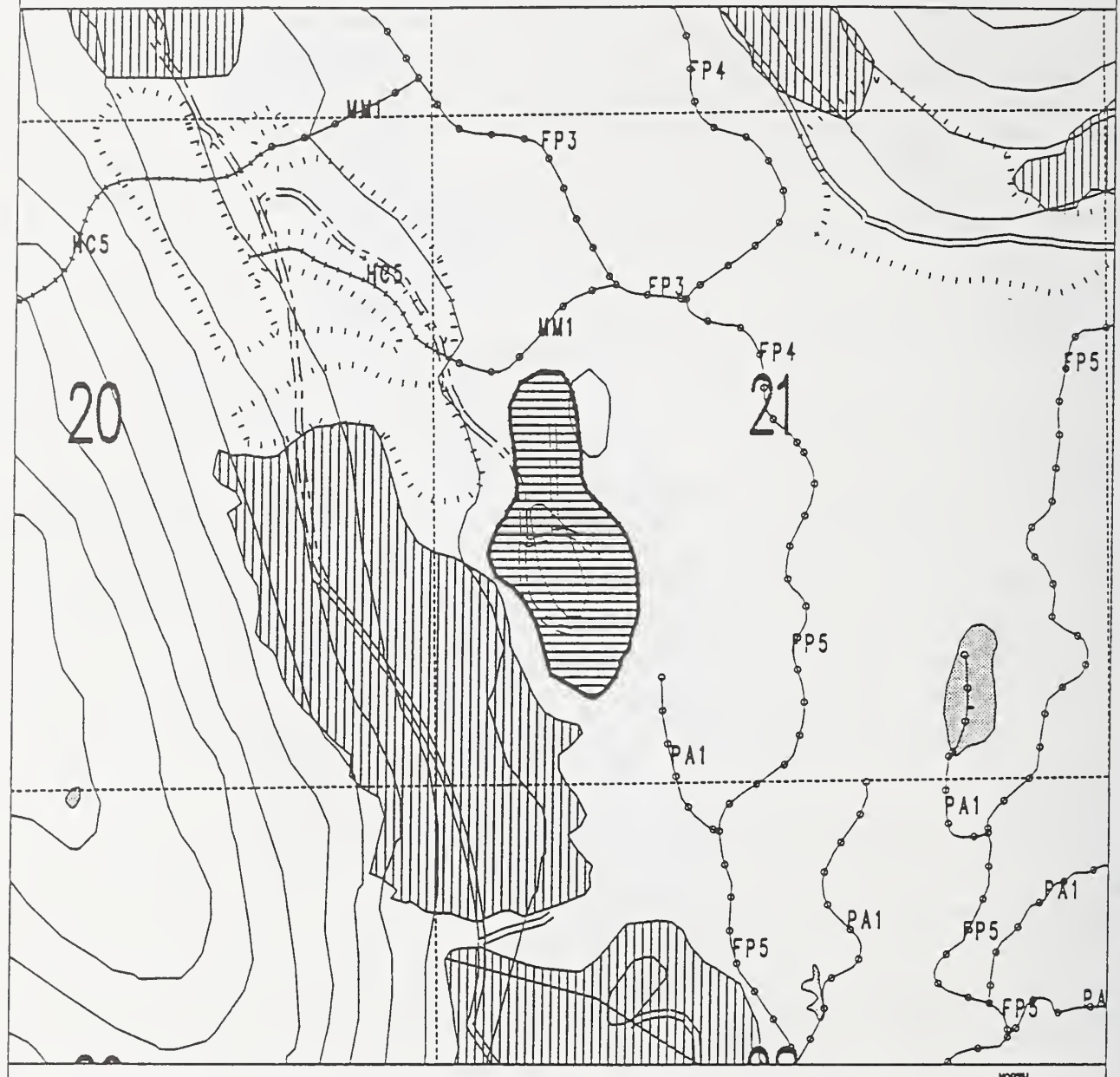
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOF Unit Card

Unit Number: 580-230

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 582-214
Planned acres 36
Estimated volume (mbf) 1789
Logging system Skyline
Silvicultural system Clearcut
Forest type Mixed conifer

Alternatives considered F5
Quad CRGD2NWS
Mgmt Area K09
WAA 1420
Photo 690056
Aspect North

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 6 acres VC6 3 acres VC7 33 acres
Elevation breakdown: 0-800 ft. 36 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 0 acres Medium 33 acres High 6 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 35 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Incorporate a buffer with a total width of 300 to 500 ft on the Class 3 stream separating units 582-214 and 582-215.

ENGINEERING

Very difficult road construction due to unstable, slope > 75% or extended steep grades.
May need to revise logging system to helicopter.
High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

Potential for additional Class I/II streams within unit. May be necessary to place additional buffers within unit in accordance with AHMU Handbook.
This unit contains a A1 class 3 stream. No specific buffer required, but full suspension, if yarding across.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

The unit has a proposed VQO of M within the viewshed of Baird Peak as viewed from ferry/cruise ship route (2-4 miles off shore).
Design of leave strip necessary to reduce opening size < 100 acres shall be coordinated with a Landscape Architect.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

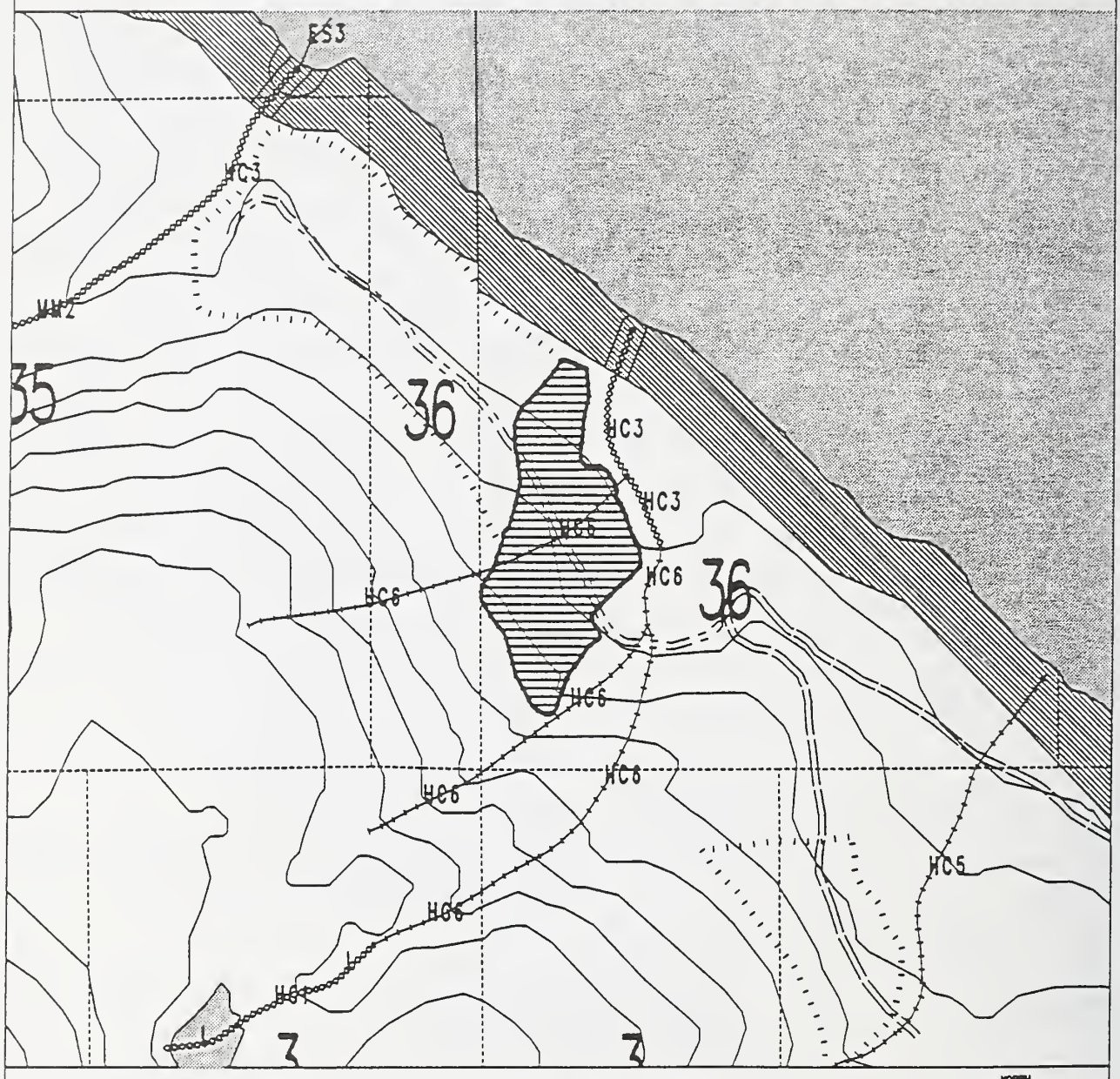
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 582-214

June 14, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 582-215
Planned acres 66
Estimated volume (mbf) 2929
Logging system Skyline
Silvicultural system Clearcut
Forest type Mixed conifer

Alternatives considered F5
Quad CRGD3NES
Mgmt Area K09
WAA 1420
Photo 990185
Aspect North

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 16 acres VC5 6 acres VC6 14 acres VC7 46 acres
Elevation breakdown: 0-800 ft. 72 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 0 acres Medium 17 acres High 48 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 30 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Incorporate a buffer with a total width of 300 to 500 ft on the Class 3 stream separating units 582-214 and 582-215.

ENGINEERING

Very difficult road construction due to unstable, slope > 75% or extended steep grades.
May need to revise logging system to helicopter.
High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

The unit has a proposed VQO of M within the viewshed of Baird Peak
as viewed from ferry/cruise ship route (2-4 miles off shore).
Design of leave strip necessary to reduce opening size < 100 acres shall be coordinated with a Landscape Architect.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

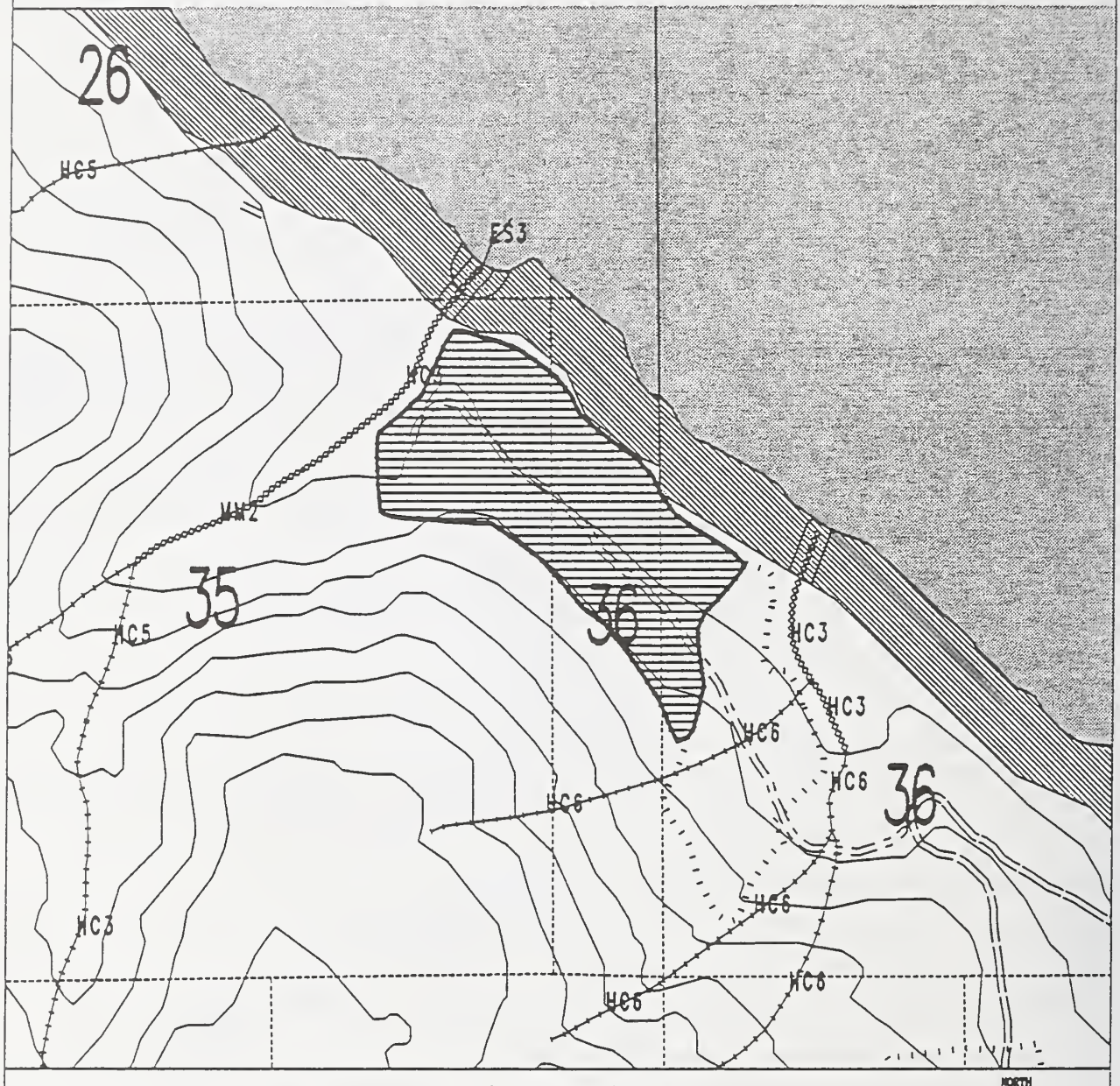
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 582-215

June 14, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree

Previous Harvest Area

Saltwater and Lakes

Private

Beach/Estuary

Clearcut

Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 583-215
Planned acres 33
Estimated volume (mbf) 774
Logging system Helicopter
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD2SWN
Mgmt Area K09
WAA 1420
Photo 690048
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 39 acres VC5 5 acres VC6 1 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 26 acres 800-1200 ft. 7 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 2 acres Medium 27 acres High 6 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 9 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Expand the buffer on the Class II/III stream on the NE side of the units to ensure the total opening is < 100 ac.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

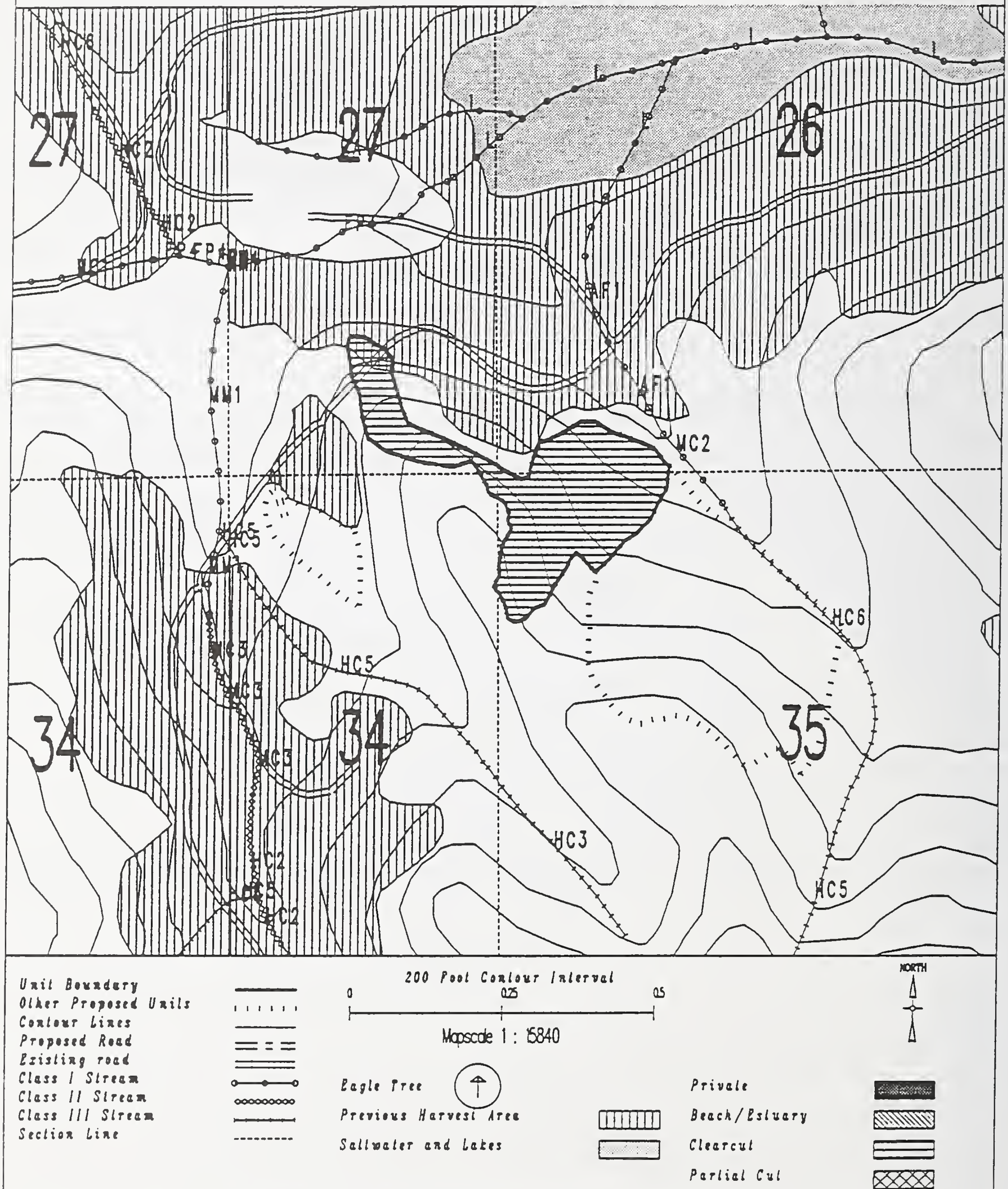
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 583-215

June 11, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 583-216
Planned acres 76
Estimated volume (mbf) 2348
Logging system Helicopter
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD2SWN
Mgmt Area K09
WAA 1420
Photo 690048
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 36 acres VC5 23 acres VC6 22 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 28 acres 800-1200 ft. 33 acres 1200-1500 ft. 4 acres over 1500 ft. 0 acres
Mass movement index: Low 16 acres Medium 32 acres High 1 acres Very High 0 acres

---

SOILS

This unit contains 34 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 1 acres of slopes > 75%.

TIMBER

Expand the buffer on the Class II/III stream on the NE side of the units to ensure the total opening is < 100 ac.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

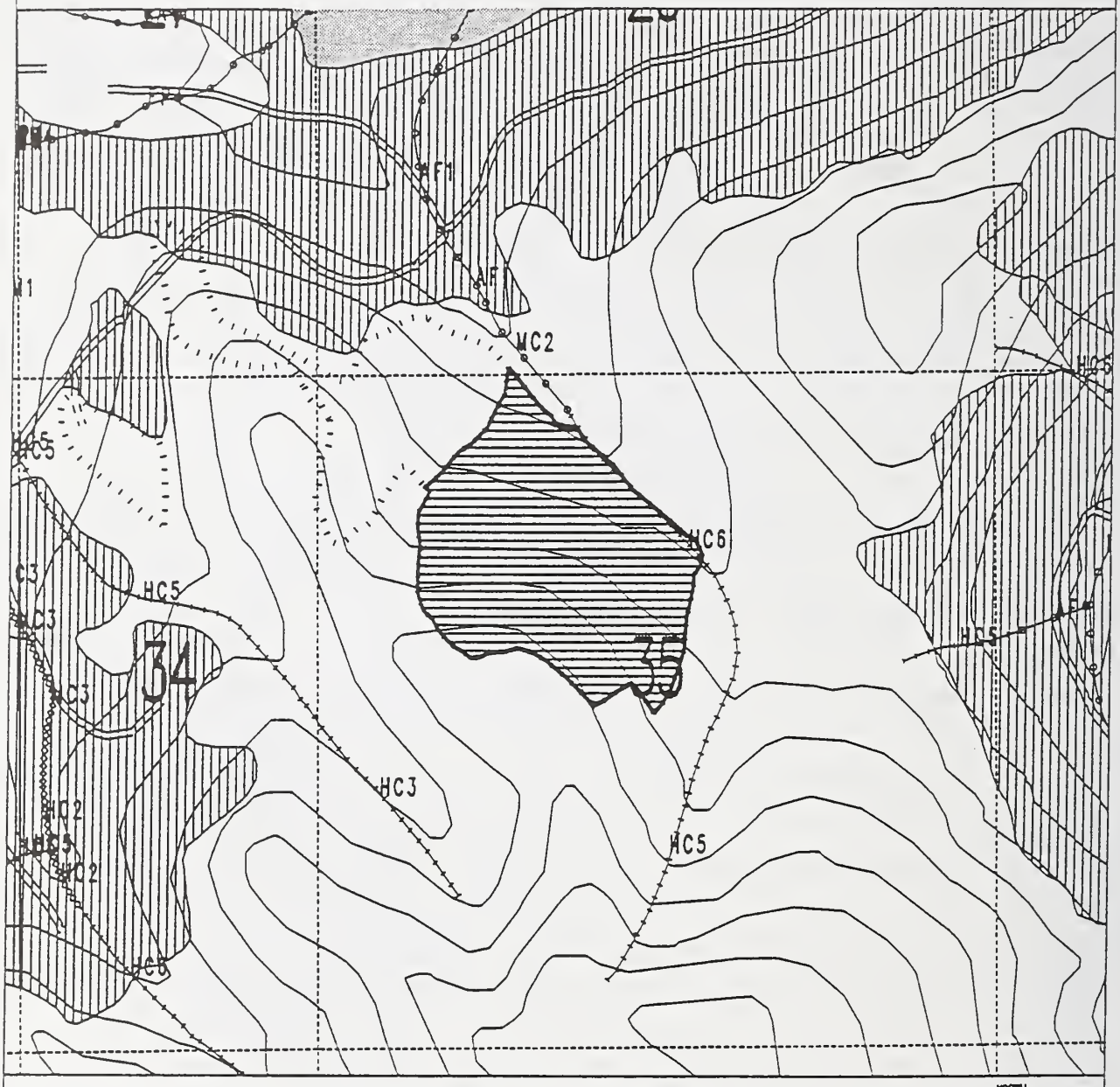
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOV Unit Card

Unit Number: 583-216

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree

Previous Harvest Area

Saltwater and Lakes

Private

Beach/Estuary

Clearcut

Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 583-242
Planned acres 62
Estimated volume (mbf) 2065
Logging system Helicopter
Silvicultural system Clearcut
Forest type Mixed conifer

Alternatives considered F5
Quad CRGD3SEN
Mgmt Area K09
WAA 1420
Photo 990179
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 63 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 1 acres 1200-1500 ft. 4 acres over 1500 ft. 27 acres
Mass movement index: Low 3 acres Medium 0 acres High 61 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit has > 40% McGilvery soils. Partial suspension required (BMP13.9)
to ensure reforestation (BMP13.19).
This unit contains 25 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 45 acres of slopes > 75%.

TIMBER

Incorporate a buffer with a total width of 300 to 500 ft on the Class 3 stream separating units 583-242 and 583-243.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

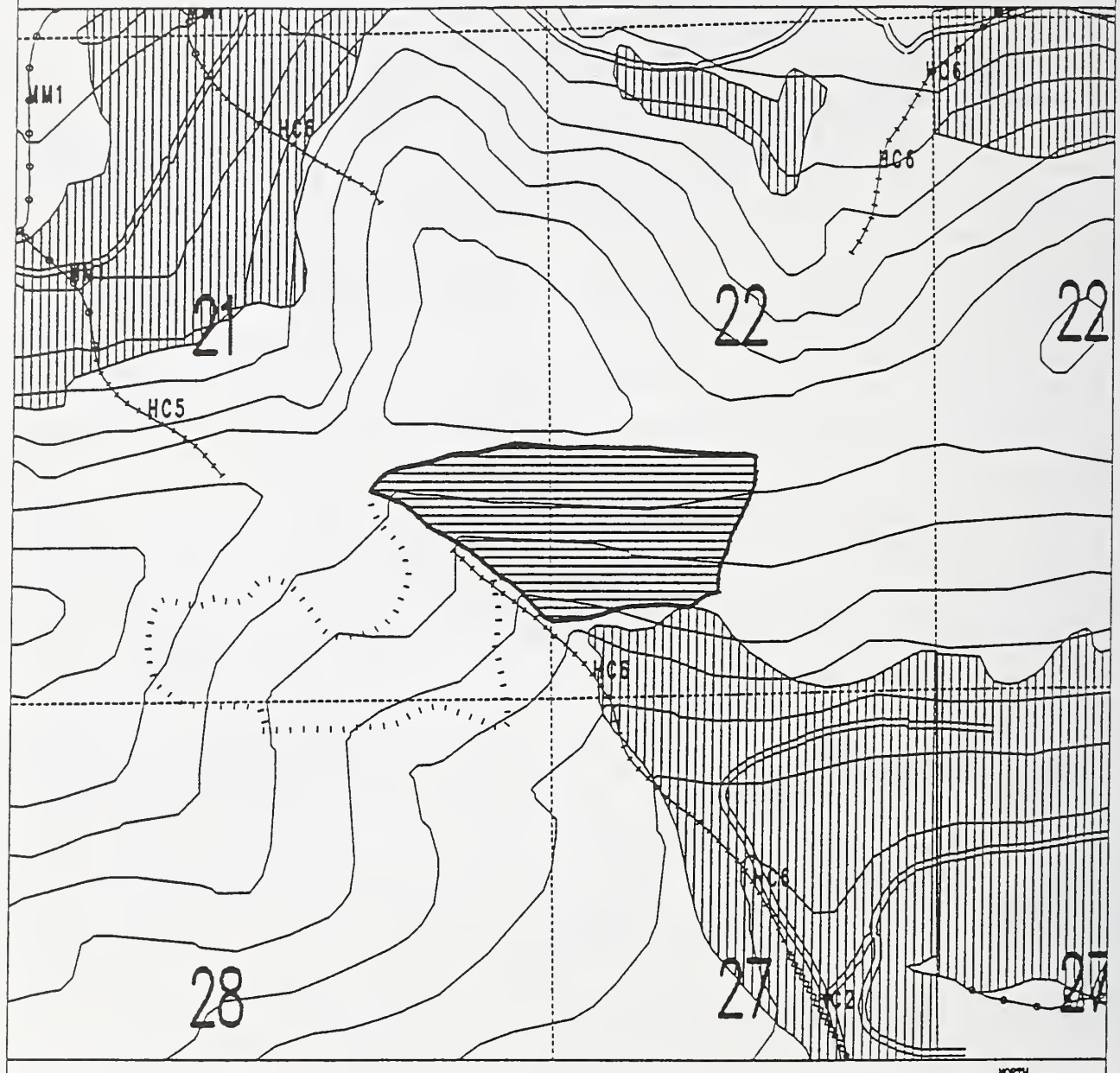
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 583-242

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 583-243
Planned acres 50
Estimated volume (mbf) 1389
Logging system Helicopter
Silvicultural system Clearcut
Forest type Mixed conifer

Alternatives considered F5
Quad CRGD3SEN
Mgmt Area K09
WAA 1420
Photo 990179
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 31 acres VC5 31 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 5 acres 1200-1500 ft. 7 acres over 1500 ft. 12 acres
Mass movement index: Low 19 acres Medium 0 acres High 44 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 35 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 25 acres of slopes > 75%.

TIMBER

Incorporate a buffer with a total width of 300 to 500 ft on the Class 3 stream separating units 583-242 and 583-243.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

This unit contains a A1 class 3 stream. No specific buffer required, but full suspension, if yarding across.
This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

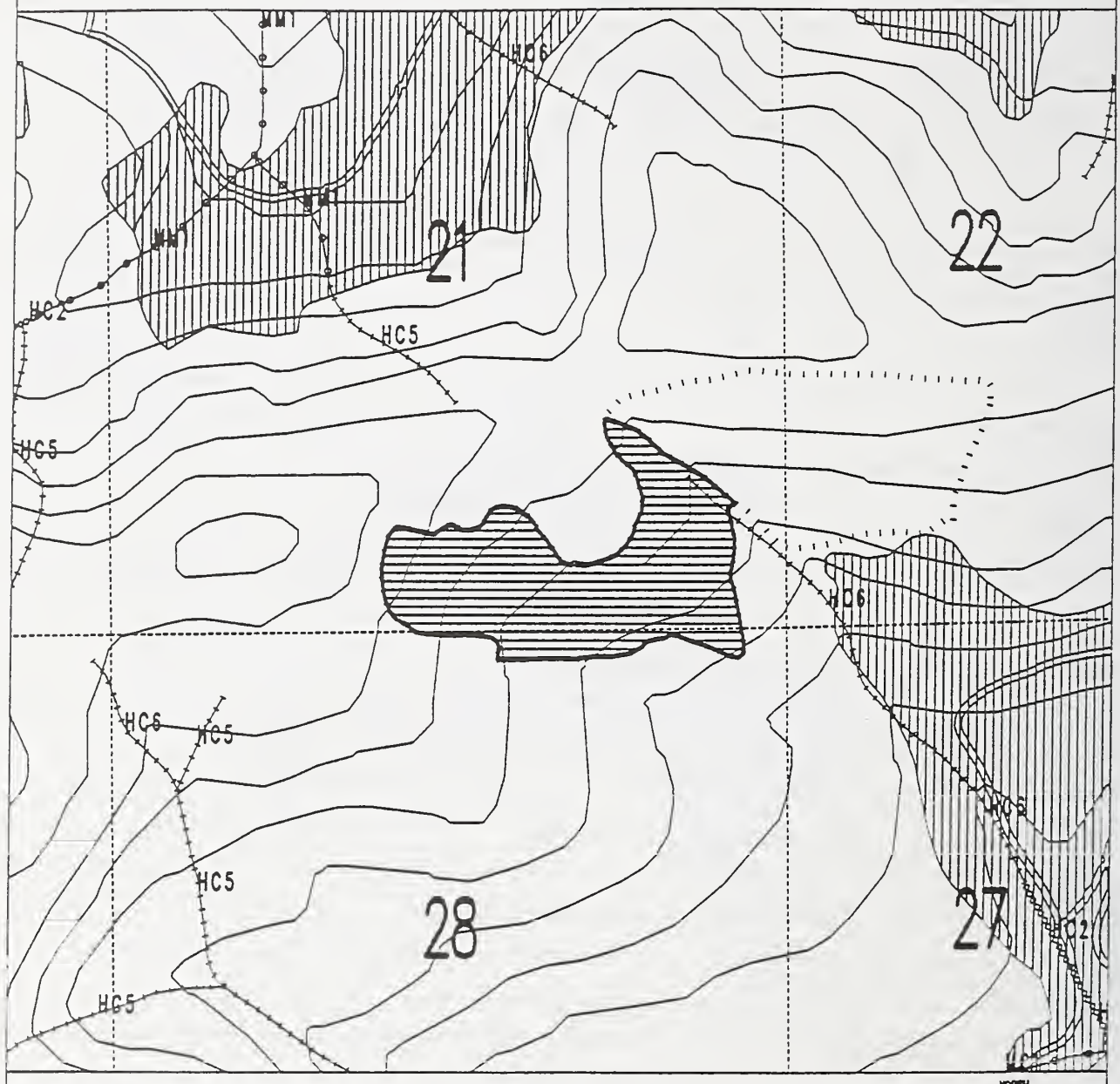
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 583-243

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 584-218
Planned acres 57
Estimated volume (mbf) 1629
Logging system Skyline
Silvicultural system Clearcut
Forest type Mixed conifer

Alternatives considered F5
Quad CRGD2SWS
Mgmt Area K09
WAA 1315
Photo 990196
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 22 acres VC5 35 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 9 acres 800-1200 ft. 34 acres 1200-1500 ft. 4 acres over 1500 ft. 0 acres
Mass movement index: Low 23 acres Medium 8 acres High 11 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit has a significant possibility to have areas reclassified as MMI = 4.
This unit contains 24 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 19 acres of slopes > 75%.

TIMBER

Provide a 300 to 500 ft leave strip between the unit and the adjacent second growth stand.

ENGINEERING

Very difficult road construction due to unstable, slope > 75% or extended steep grades. May need to revise logging system to helicopter.
High mass movement index soils. Road construction must minimize landslide potential (BMP14).
Slopes greater than 75% may require full bench construction and endhaul of waste (BMP14.7).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

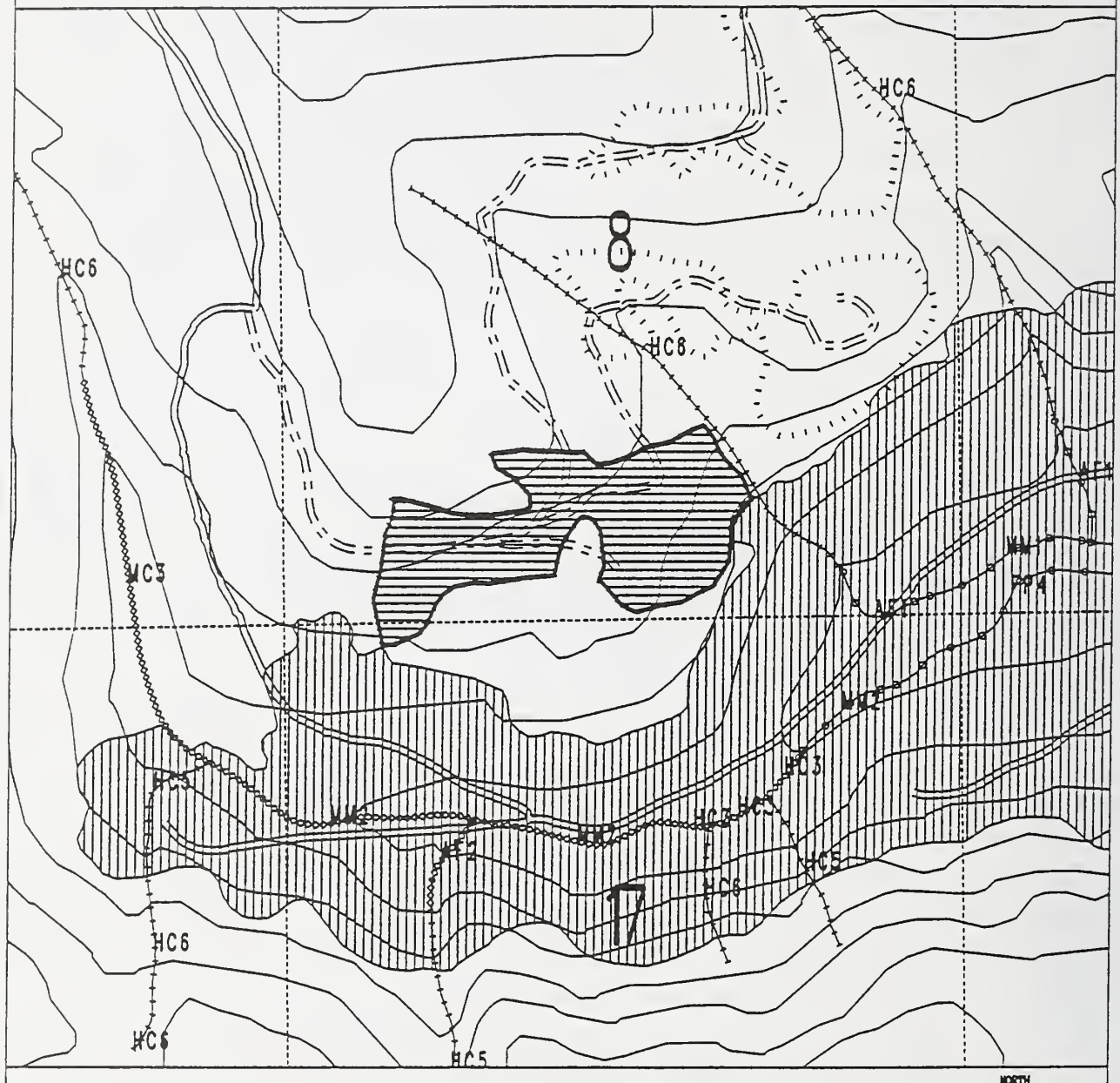
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 584-218

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 584-250
Planned acres 44
Estimated volume (mbf) 1453
Logging system Skyline
Silvicultural system Clearcut
Forest type Mixed conifer

Alternatives considered F5
Quad CRGD2SWN
Mgmt Area K09
WAA 1315
Photo 990192
Aspect East

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 5 acres VC5 45 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 48 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 21 acres Medium 10 acres High 17 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 33 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Expand buffer on Little Ratz Creek by 5 acres to ensure the total opening does not exceed 100 acres.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

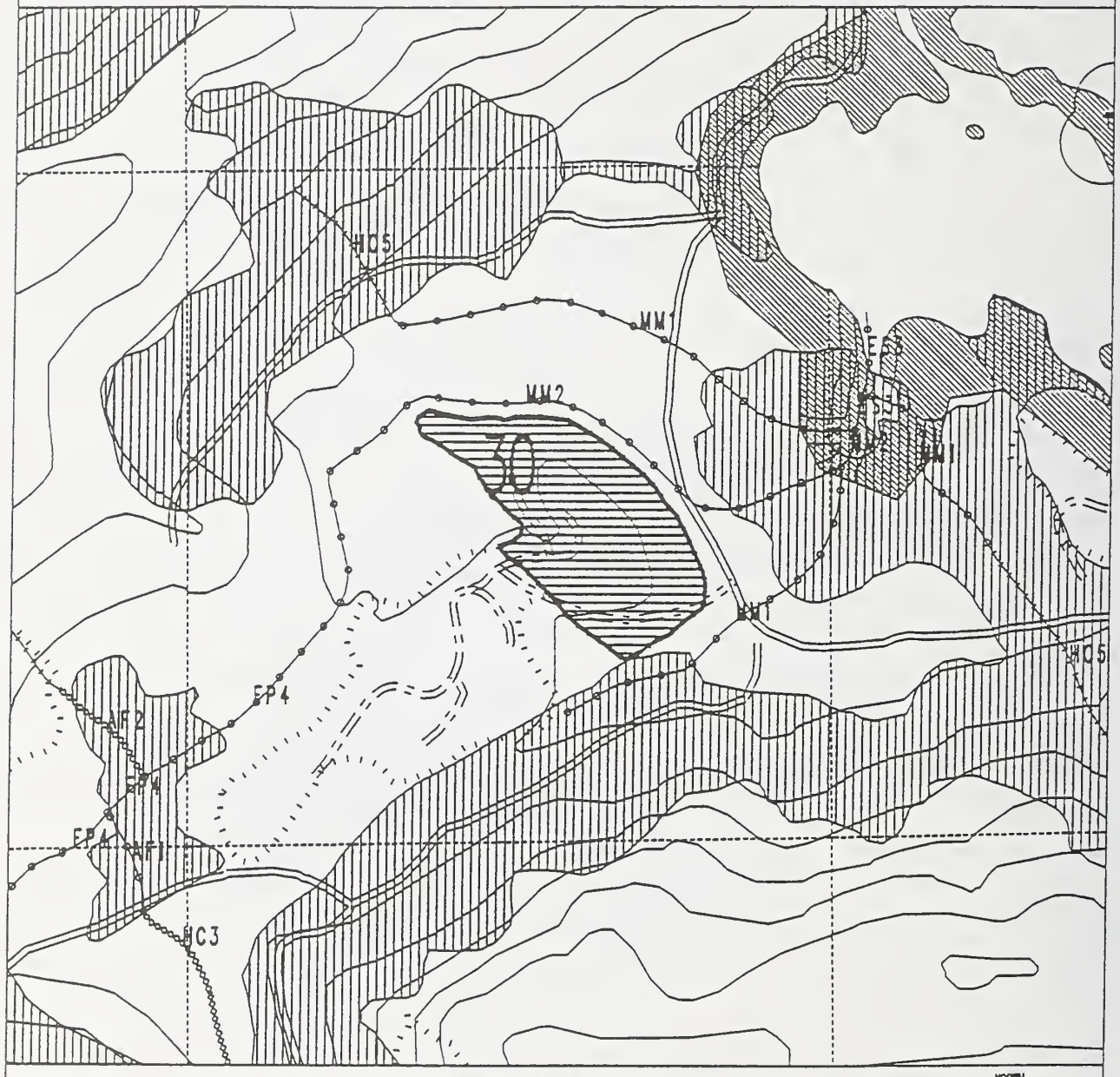
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 584-250

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 584-251
Planned acres 56
Estimated volume (mbf) 1215
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD2SWN
Mgmt Area K09
WAA 1315
Photo 1090092
Aspect East

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 54 acres VC5 1 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 57 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 30 acres Medium 0 acres High 28 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 43 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 1 acres of slopes > 75%.

TIMBER

Expand buffer on Little Ratz Creek by 5 acres to ensure the total opening does not exceed 100 acres.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

Potential for additional Class I/II streams within unit. May be necessary to place additional buffers within unit in accordance with AHMU Handbook.
This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

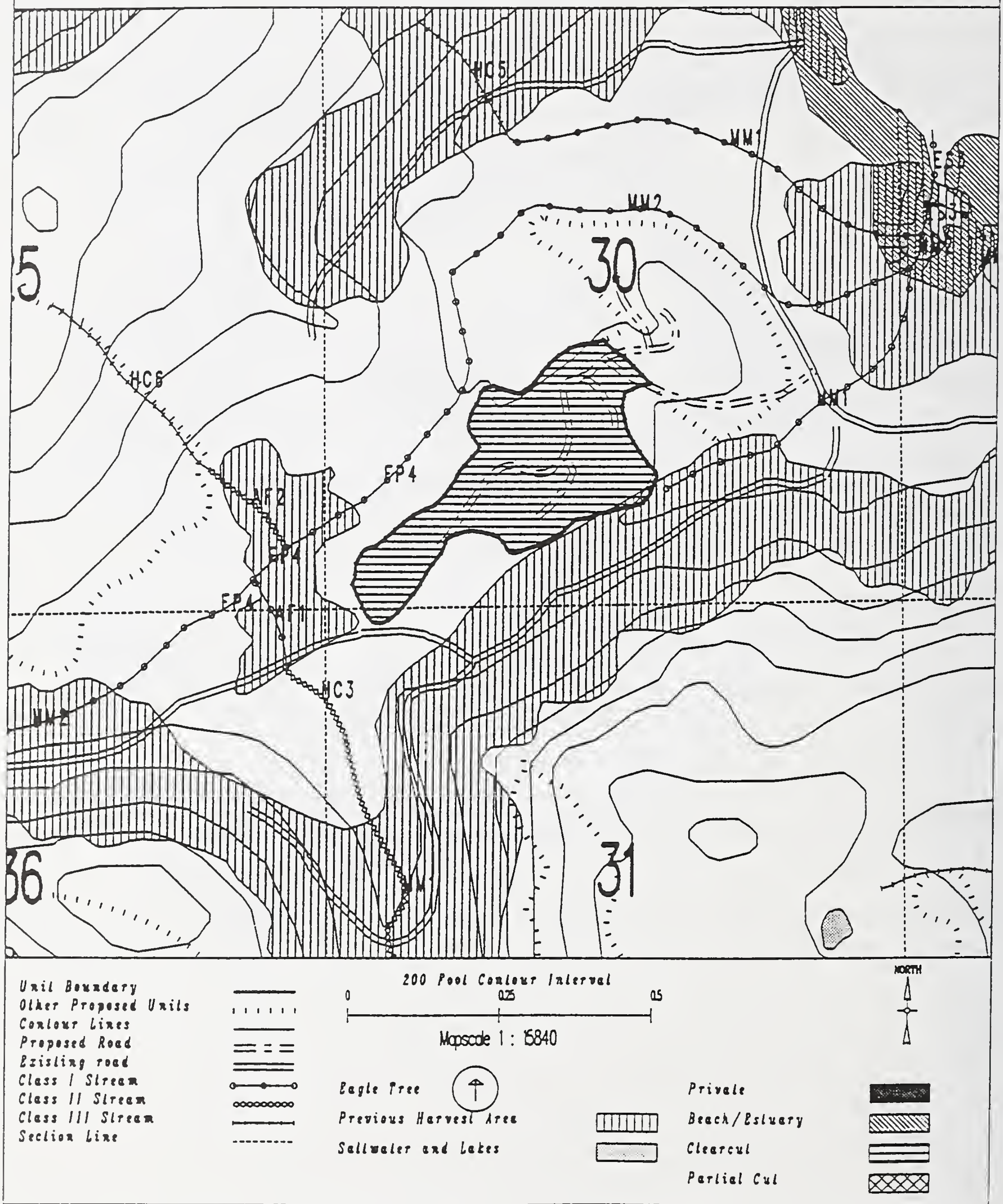
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 584-251

June 11, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 584-272
Planned acres 100
Estimated volume (mbf) 2214
Logging system Helicopter
Silvicultural system Shelterwood
Forest type Hemlock

Alternatives considered F5
Quad CRGD2SWN
Mgmt Area K09
WAA 1315
Photo 1090092
Aspect East

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 26 acres VC5 110 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 71 acres 800-1200 ft. 31 acres 1200-1500 ft. 14 acres over 1500 ft. 0 acres
Mass movement index: Low 12 acres Medium 21 acres High 64 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 75 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 26 acres of slopes > 75%.

TIMBER

Shelterwood harvest. Cedar will not be harvested.
Provide wildlife leave islands in patches at least 5 acres, and totalling at least 32 acres to ensure the total opening does not exceed 100 acres.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

The unit has a proposed VQO of M within the viewshed of Ratz harbors as viewed from

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LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

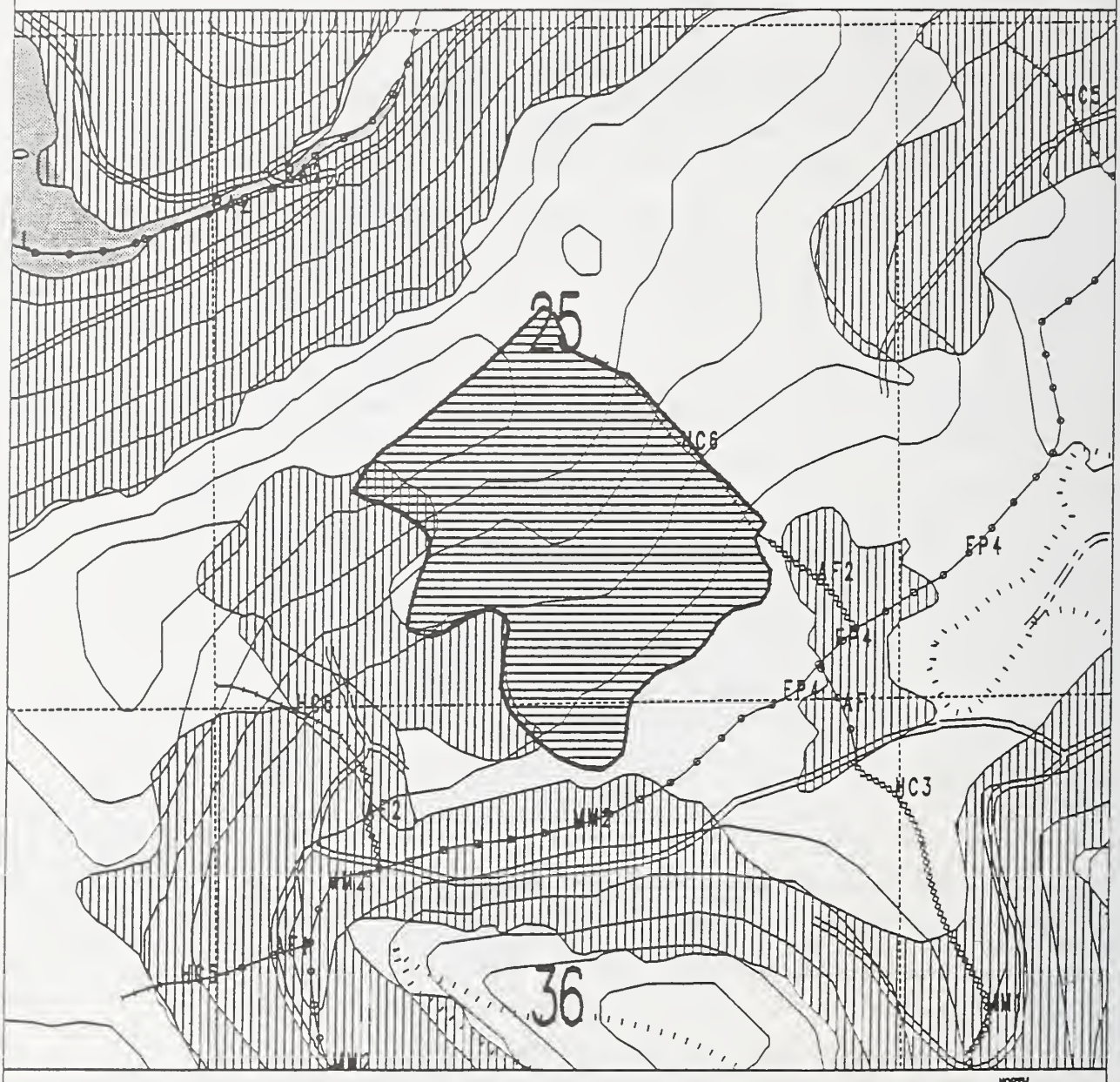
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 584-272

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 585-201
Planned acres 50
Estimated volume (mbf) 1031
Logging system Skyline
Silvicultural system Riparian
Forest type Hemlock

Alternatives considered F5
Quad CRGD2SWS
Mgmt Area K09
WAA 1315
Photo 290125
Aspect North

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 11 acres VC5 31 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 46 acres 800-1200 ft. 1 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 26 acres Medium 15 acres High 1 acres Very High 0 acres

---

SOILS

This unit contains 17 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Uneven-aged harvest for riparian management on an estimated 15 acres.
Potential for shovel logging on 17 acres, if soil and water quality protected (BMP13.7)
Expand the gap between units 585-201 and 585-202 to provide a 300 to 500 ft distance.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

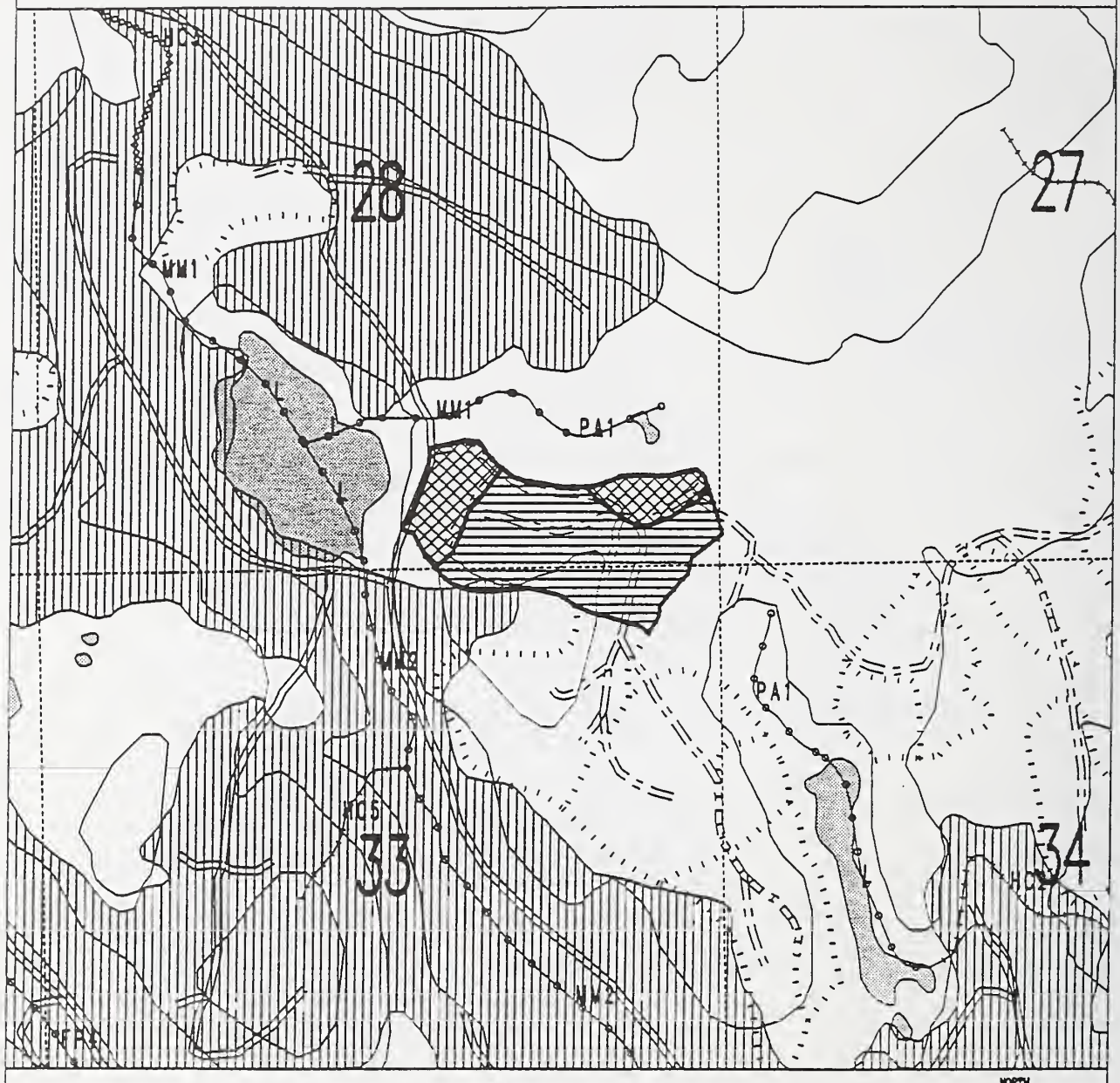
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 585-201

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 585-202
Planned acres 26
Estimated volume (mbf) 615
Logging system Skyline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD2SWS
Mgmt Area K09
WAA 1315
Photo
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 23 acres VC5 7 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 22 acres 800-1200 ft. 8 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 5 acres Medium 19 acres High 0 acres Very High 0 acres

---

SOILS

This unit contains 29 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Expand the gap between units 585-201 and 585-202 to provide a 300 to 500 ft distance.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

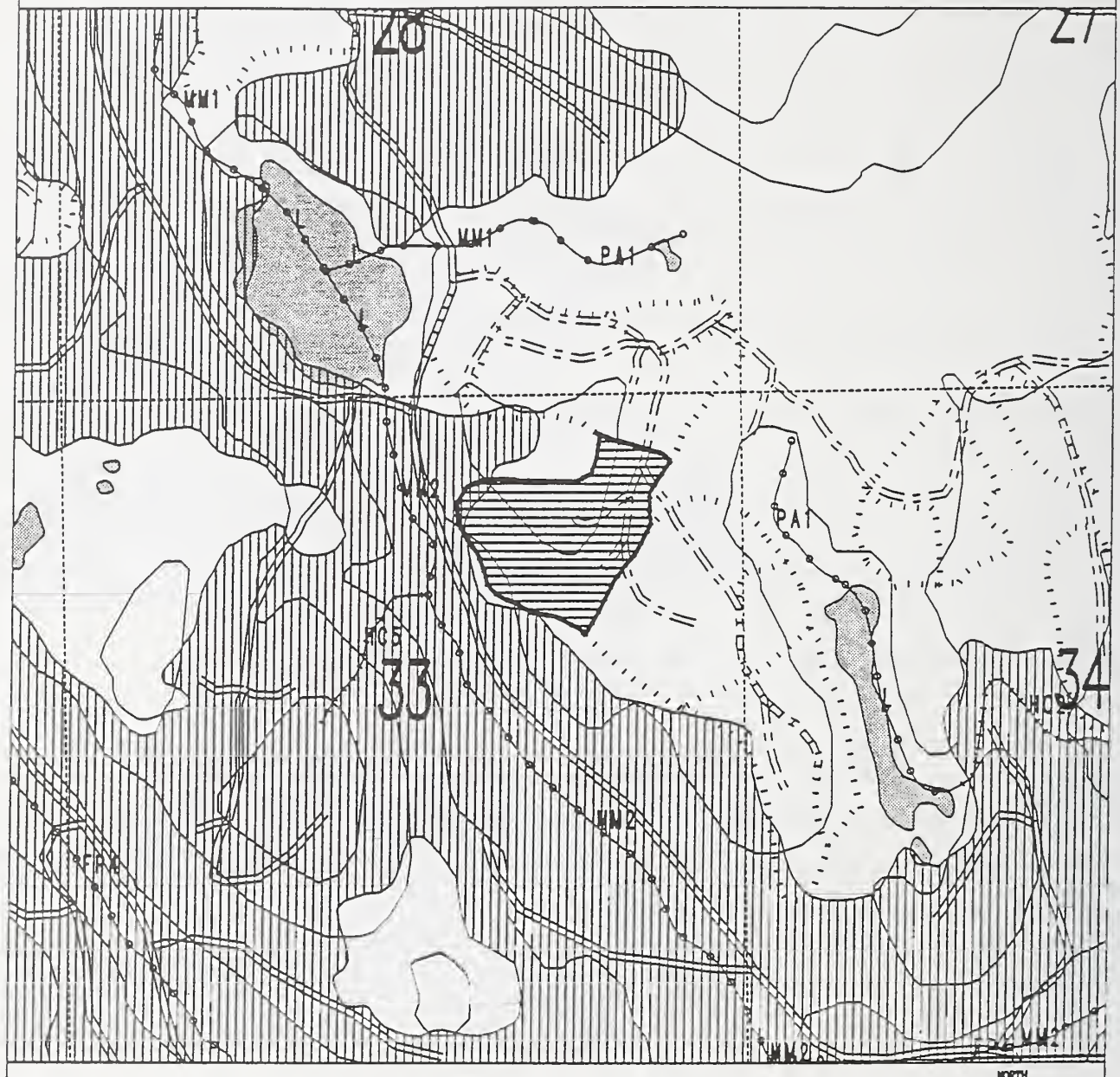
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 585-202

June 11, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 586-217
Planned acres 32
Estimated volume (mbf) 645
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC2NWS
Mgmt Area K10
WAA 1315
Photo 290115
Aspect East

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 13 acres VC5 11 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 30 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 32 acres Medium 0 acres High 0 acres Very High 0 acres

---

SOILS

This unit has > 40% McGilvery soils. Partial suspension required (BMP13.9)
to ensure reforestation (BMP13.19).

TIMBER

Expand buffer to a total width of 300 to 500 ft. on the Class 3 stream between units 586-218 and 586-218B.
Also expand the gap to a total width of 300 to 500 ft between units 586-217 and 586-218.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

This unit adjacent to other ownership. Boundary establishment required prior to layout.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 586-217

June 15, 1993

Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 586-218
Planned acres 20
Estimated volume (mbf) 514
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC2NWS
Mgmt Area K10
WAA 1315
Photo 290116
Aspect East

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 7 acres VC5 11 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 18 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 14 acres Medium 0 acres High 4 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit has > 40% McGilvery soils. Partial suspension required (BMP13.9)
to ensure reforestation (BMP13.19).

TIMBER

Expand buffer to a total width of 300 to 500 ft. on the Class 3 stream between units 586-218 and 586-218B.
Also expand the gap to a total width of 300 to 500 ft between units 586-217 and 586-218.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

This unit adjacent to other ownership. Boundary establishment required prior to layout.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOV Unit Card

Unit Number: 586-218

June 12, 1993

Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree

Previous Harvest Area

Saltwater and Lakes

Private

Beach/Estuary

Clearcut

Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 586-218 B
Planned acres 44
Estimated volume (mbf) 1115
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC2NWS
Mgmt Area K10
WAA 1315
Photo
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 21 acres VC5 20 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 41 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 7 acres Medium 34 acres High 2 acres Very High 0 acres

---

SOILS

This unit has a significant possibility to have areas reclassified as MMI = 4.

TIMBER

Expand buffer to a total width of 300 to 500 ft. on the Class 3 stream between units 586-218 and 586-218B. Also expand the gap to a total width of 300 to 500 ft between units 586-217 and 586-218.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

Potential for additional Class I/II streams within unit. May be necessary to place additional buffers within unit in accordance with AHMU Handbook.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

This unit adjacent to other ownership. Boundary establishment required prior to layout.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 586-218 B

June 09, 1993

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 586-227
Planned acres 57
Estimated volume (mbf) 1868
Logging system Skyline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC2NWN
Mgmt Area K10
WAA 1315
Photo 290121
Aspect East

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 63 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 60 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 0 acres Medium 56 acres High 7 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit has a slight possibility to be reclassified as MMI = 4.
This unit contains 46 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Incorporate a buffer with a total width of 300 to 500 ft on the Class 3 stream in unit 586-227.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

This unit contains a A4 class 3 stream. No specific buffer required, but full suspension, if yarding across.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

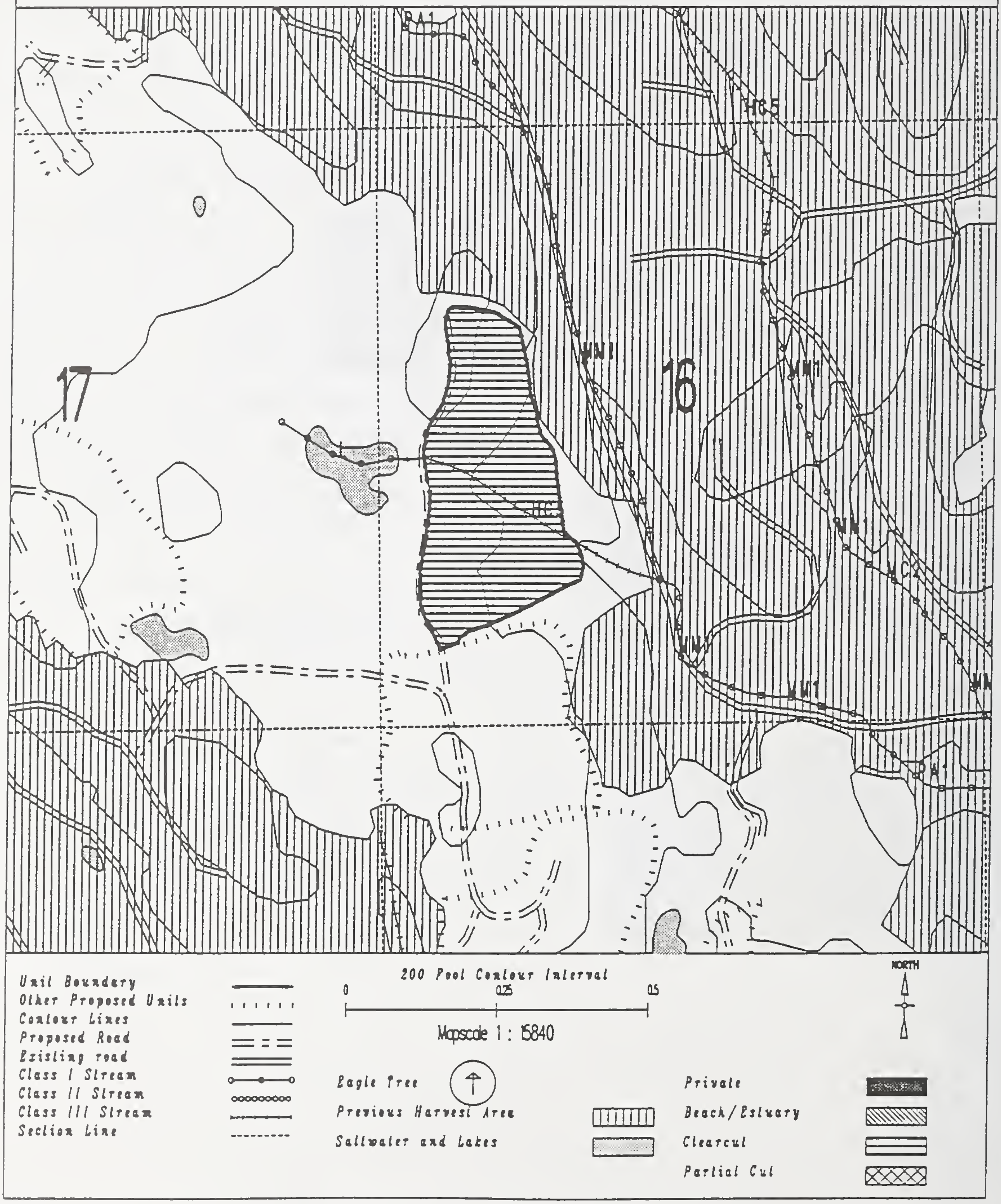
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 586-227

June 12, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 586-232
Planned acres 54
Estimated volume (mbf) 1479
Logging system Skyline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC2NWS
Mgmt Area K10
WAA 1315
Photo 690141
Aspect North

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 9 acres VC5 26 acres VC6 12 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 18 acres 800-1200 ft. 28 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 29 acres Medium 24 acres High 0 acres Very High 0 acres

---

SOILS

There are no soils mitigation measures anticipated for this unit.

TIMBER

Expand the gap between units 586-232 and 598-242 to provide a 300 to 500 ft distance.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

This unit adjacent to other ownership. Boundary establishment required prior to layout.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

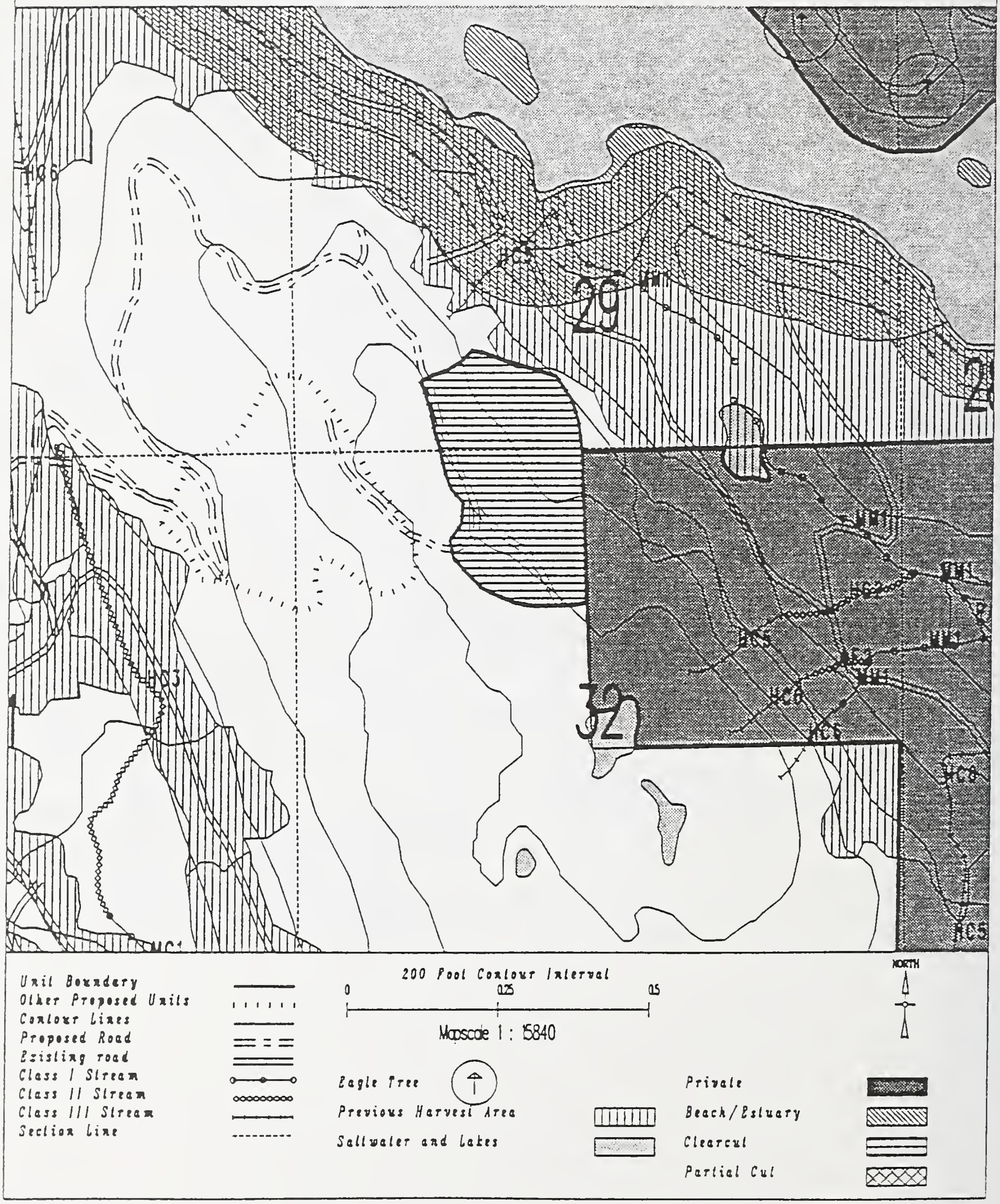
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 586-232

June 12, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 588-212 B
Planned acres 58
Estimated volume (mbf) 1262
Logging system Highlead
Silvicultural system Riparian
Forest type Hemlock

Alternatives considered F5
Quad CRGD4SES
Mgmt Area K07
WAA 1422
Photo
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 6 acres VC5 34 acres VC6 15 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 57 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 11 acres Medium 0 acres High 28 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 38 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 7 acres of slopes > 75%.

TIMBER

Uneven-aged harvest for riparian management on an estimated 29 acres.
Expand buffer to a total width of 300 to 500 ft on fork of Staney Creek between units 588-212B and 588-213B.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).
The road into this unit crosses a B1 channel. Meet stream and lake protection prescription requirements in TLMP Draft Revision (1991a) for this process group.
Slopes greater than 75% may require full bench construction and endhaul of waste (BMP14.7).

FISH/WATERSHED

Potential for additional Class I/II streams within unit. May be necessary to place additional buffers within unit in accordance with AHMU Handbook.
Potential impact on significant fishery habitat. May be necessary to expand planned buffer in accordance with AHMU Handbook.
Leave all deciduous and conifer trees (< 12" dbh) in 35 ft buffer adjacent to Class III streams to provide shade.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

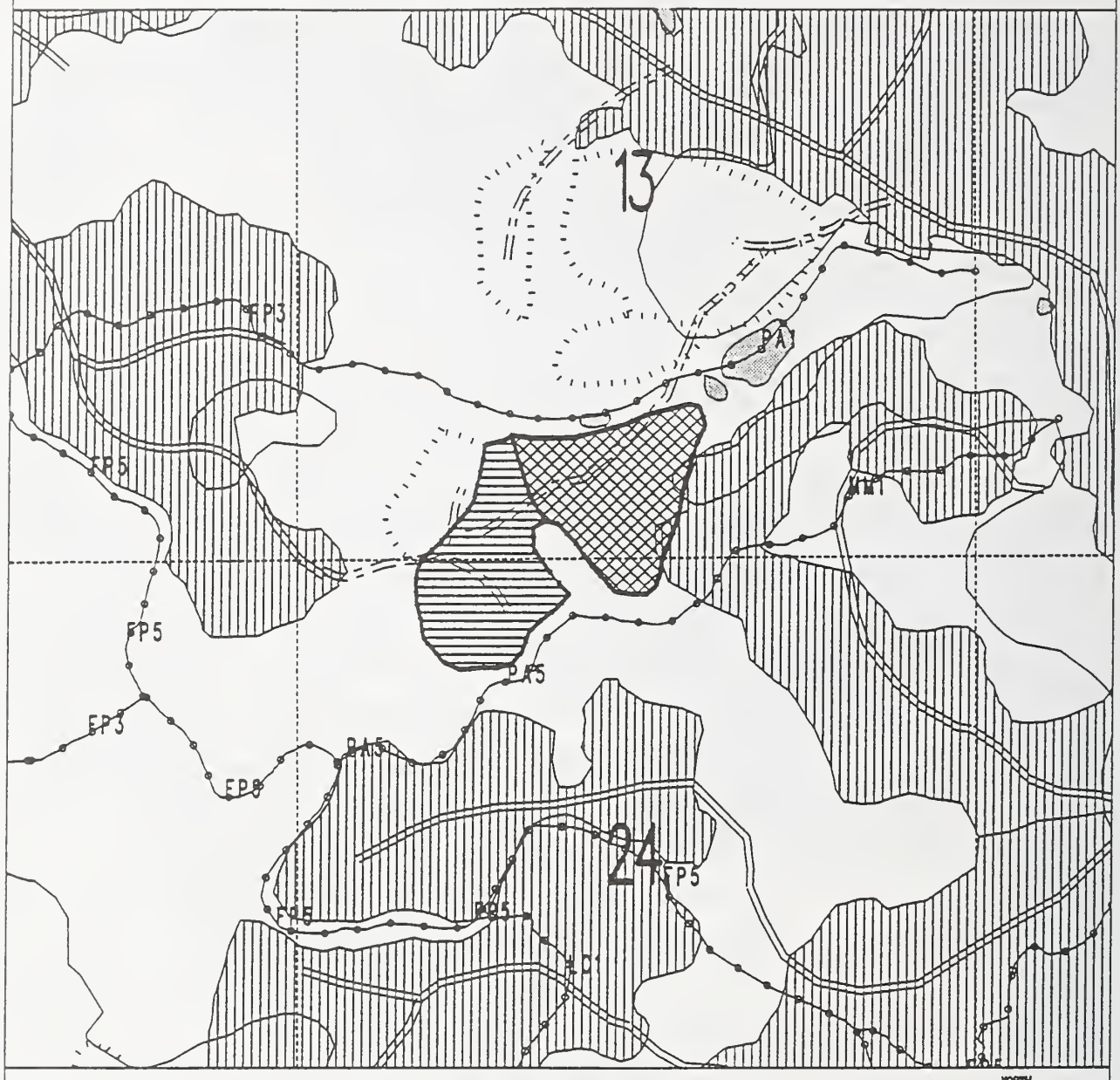
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 588-212 B

June 09, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 588-213 B
Planned acres 57
Estimated volume (mbf) 1373
Logging system Highlead
Silvicultural system Riparian
Forest type Hemlock

Alternatives considered F5
Quad CRGD4SES
Mgmt Area K07
WAA 1422
Photo
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 51 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 57 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 4 acres Medium 0 acres High 5 acres Very High 0 acres

---

SOILS

This unit contains 45 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Uneven-aged harvest for riparian management on an estimated 17 acres.
Expand buffer to a total width of 300 to 500 ft on fork of Staney Creek between units 588-2128 and 588-2138.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

Potential for additional Class I/II streams within unit. May be necessary to place additional buffers within unit in accordance with AHMU Handbook.
Potential impact on significant fishery habitat. May be necessary to expand planned buffer in accordance with AHMU Handbook.
Leave all deciduous and conifer trees (< 12" dbh) in 35 ft buffer adjacent to Class III streams to provide shade.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

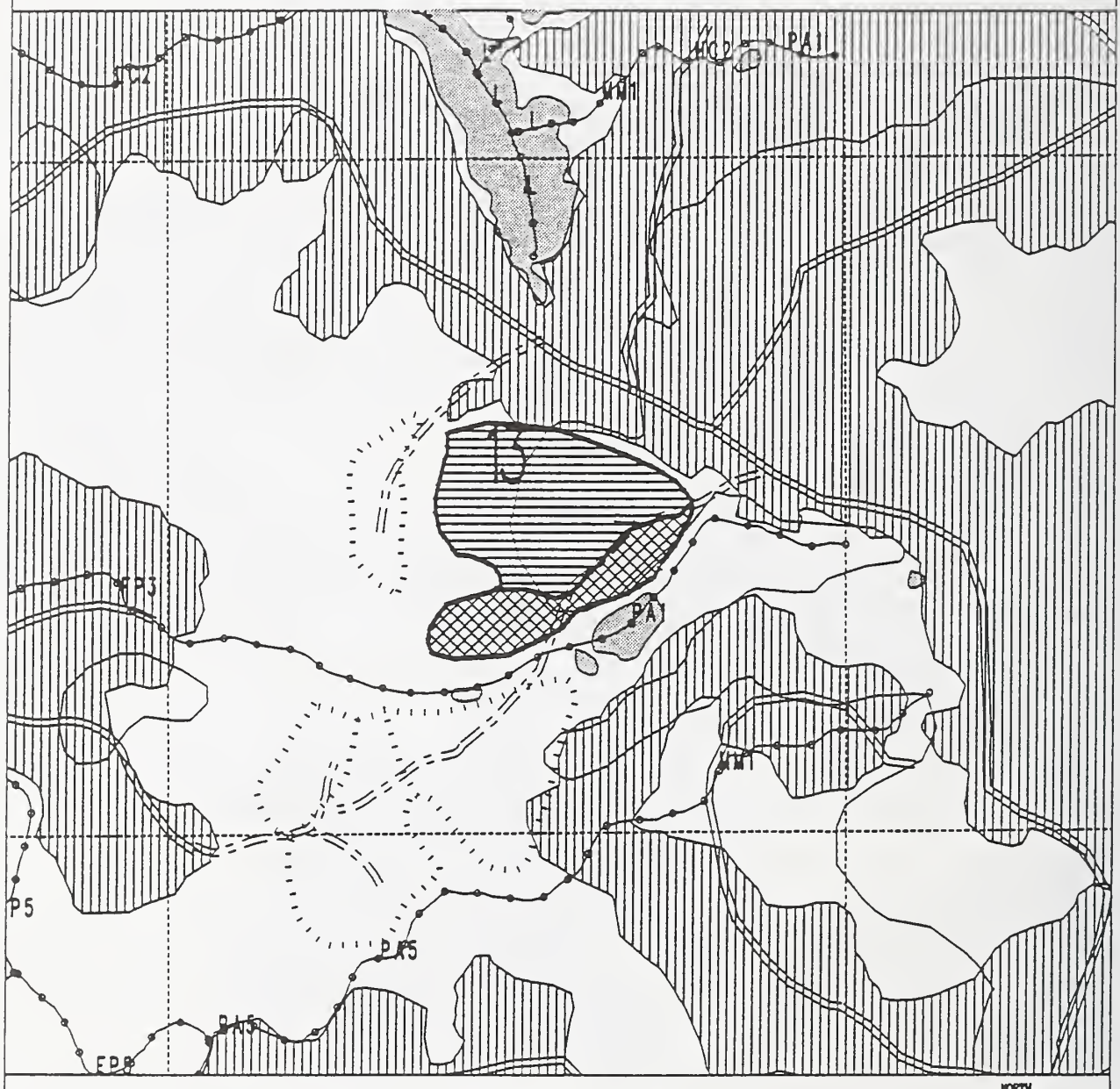
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOV Unit Card

Unit Number: 588-213 B

June 09, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 588-259
Planned acres 47
Estimated volume (mbf) 1147
Logging system Skyline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD4SES
Mgmt Area K08
WAA 1422
Photo 1190054
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 35 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 44 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 16 acres Medium 0 acres High 12 acres Very High 0 acres

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 18 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Expand the Class II buffer between 588-259 and 588-260 to provide a 300 to 500 ft distance.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

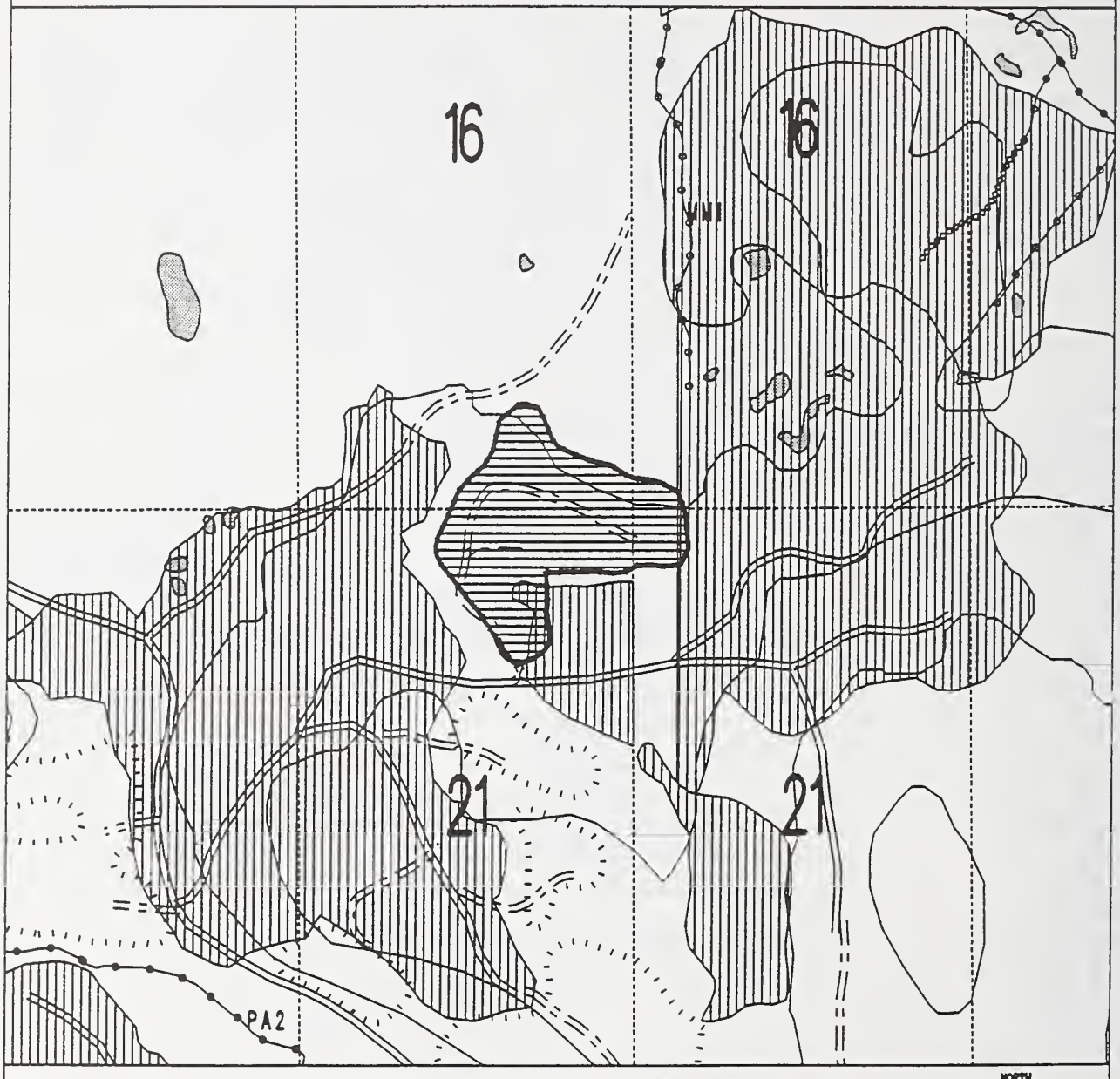
GEOLOGY

Planned unit boundary/road location/logging system are designed to avoid damage to significant karst features. Mitigation measures may apply. Unit layout/changes must be coordinated with Cave Resource Specialists.

CPOW Unit Card

Unit Number: 588-259

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 588-260
Planned acres 9
Estimated volume (mbf) 361
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD4SES
Mgmt Area K07
WAA 1422
Photo 1190054
Aspect North

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 11 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 9 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 4 acres Medium 0 acres High 1 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)

TIMBER

Expand the Class II buffer between 588-259 and 588-260 to provide a 300 to 500 ft distance.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

Potential for additional Class I/II streams within unit. May be necessary to place additional buffers within unit in accordance with AHMU Handbook.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

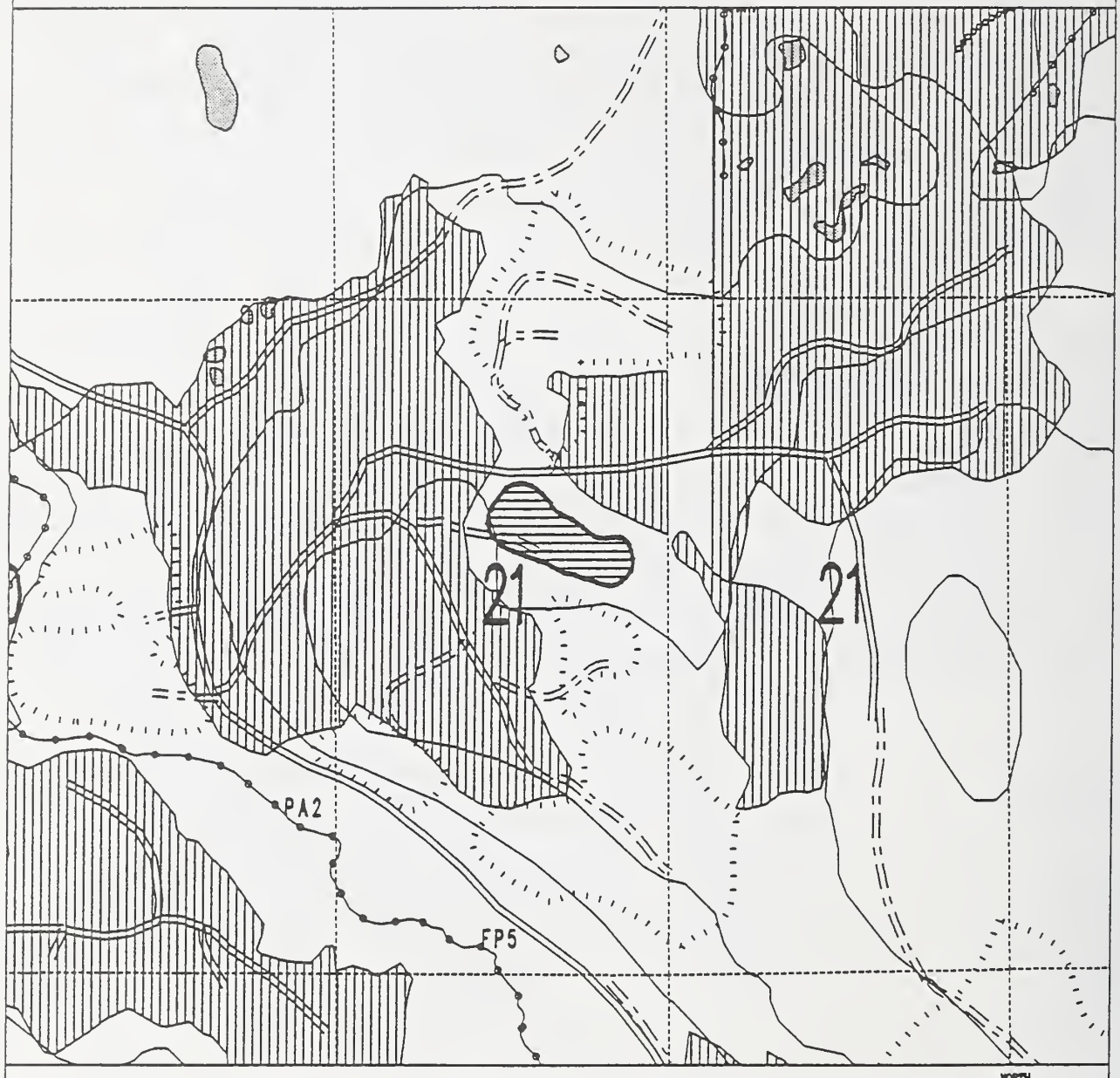
GEOLOGY

This unit is underlain with karst, although no significant features have yet been identified.

CPOW Unit Card

Unit Number: 588-260

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 588-269
Planned acres 49
Estimated volume (mbf) 1720
Logging system Slackline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD4SES
Mgmt Area K07
WAA 1422
Photo 1190052
Aspect East

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 7 acres VC5 0 acres VC6 55 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 2 acres 800-1200 ft. 1 acres 1200-1500 ft. 3 acres over 1500 ft. 26 acres
Mass movement index: Low 13 acres Medium 0 acres High 53 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 48 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 26 acres of slopes > 75%.

TIMBER

Provide wildlife leave islands in patches at least 5 acres, and totalling at least 30 acres to ensure the total opening created by units 588-269 and 588-270 does not exceed 100 acres.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).
Slopes greater than 75% may require full bench construction and endhaul of waste (BMP14.7).

FISH/WATERSHED

This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

Maintain diversity within unit by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging system and safe working conditions.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

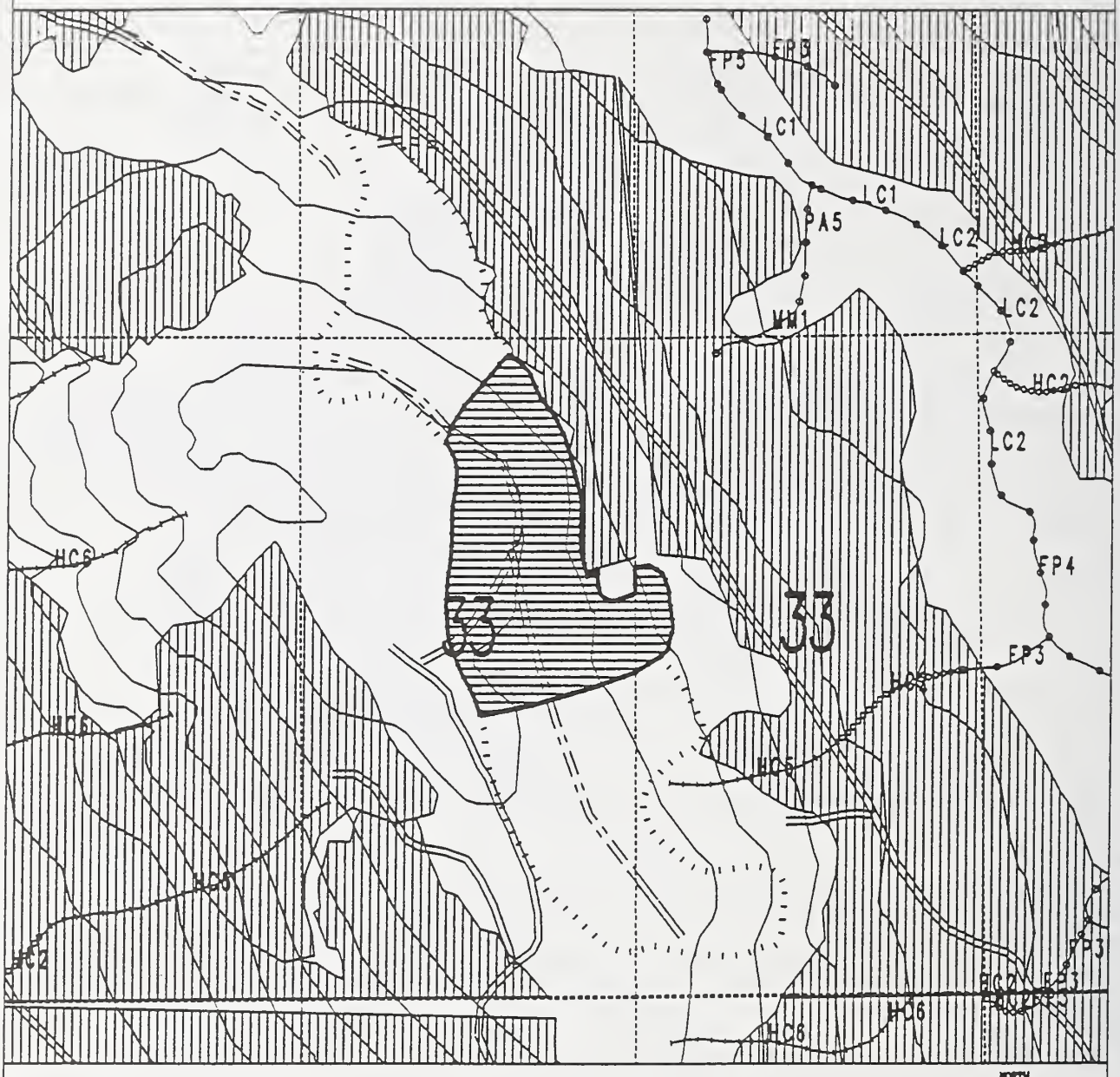
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 588-269

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 588-270
Planned acres 51
Estimated volume (mbf) 1701
Logging system Slackline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD3SWS
Mgmt Area K07
WAA 1422
Photo 1190052
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 30 acres VC6 32 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 6 acres 800-1200 ft. 1 acres 1200-1500 ft. 6 acres over 1500 ft. 21 acres
Mass movement index: Low 24 acres Medium 0 acres High 44 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 56 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 13 acres of slopes > 75%.

TIMBER

Provide wildlife leave islands in patches at least 5 acres, and totalling at least 30 acres to ensure the total opening created by units 588-269 and 588-270 does not exceed 100 acres.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).
Slopes greater than 75% may require full bench construction and endhaul of waste (BMP14.7).

FISH/WATERSHED

This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

Maintain diversity within unit by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging system and safe working conditions.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

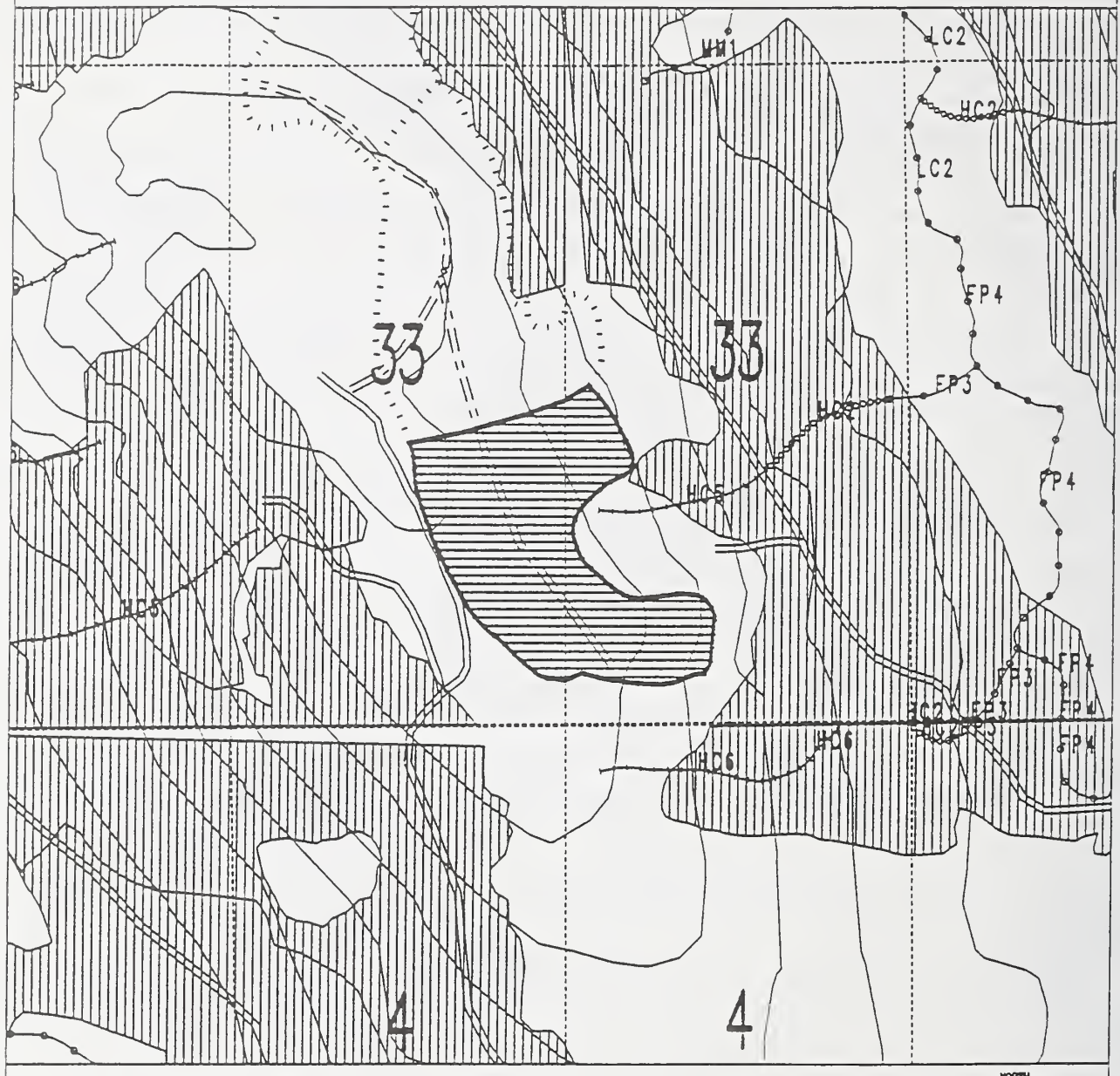
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 588-270

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 588-283
Planned acres 76
Estimated volume (mbf) 1713
Logging system Helicopter
Silvicultural system Shelterwood
Forest type Mixed conifer

Alternatives considered F5
Quad CRGC4NEN
Mgmt Area K07
WAA 1422
Photo 1290022
Aspect East

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 1 acres VC5 74 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 1 acres 1200-1500 ft. 2 acres over 1500 ft. 25 acres
Mass movement index: Low 0 acres Medium 0 acres High 52 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 47 acres of slopes > 75%.

TIMBER

Shelterwood harvest. Cedar will not be harvested.
Expand buffer to a total width of 300 to 500 ft. on the Class 3 stream between units 588-285 and 588-286.
Also expand buffer to a total width of 300 to 500 ft. on the Class 3 stream between units 588-283 and 588-285.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

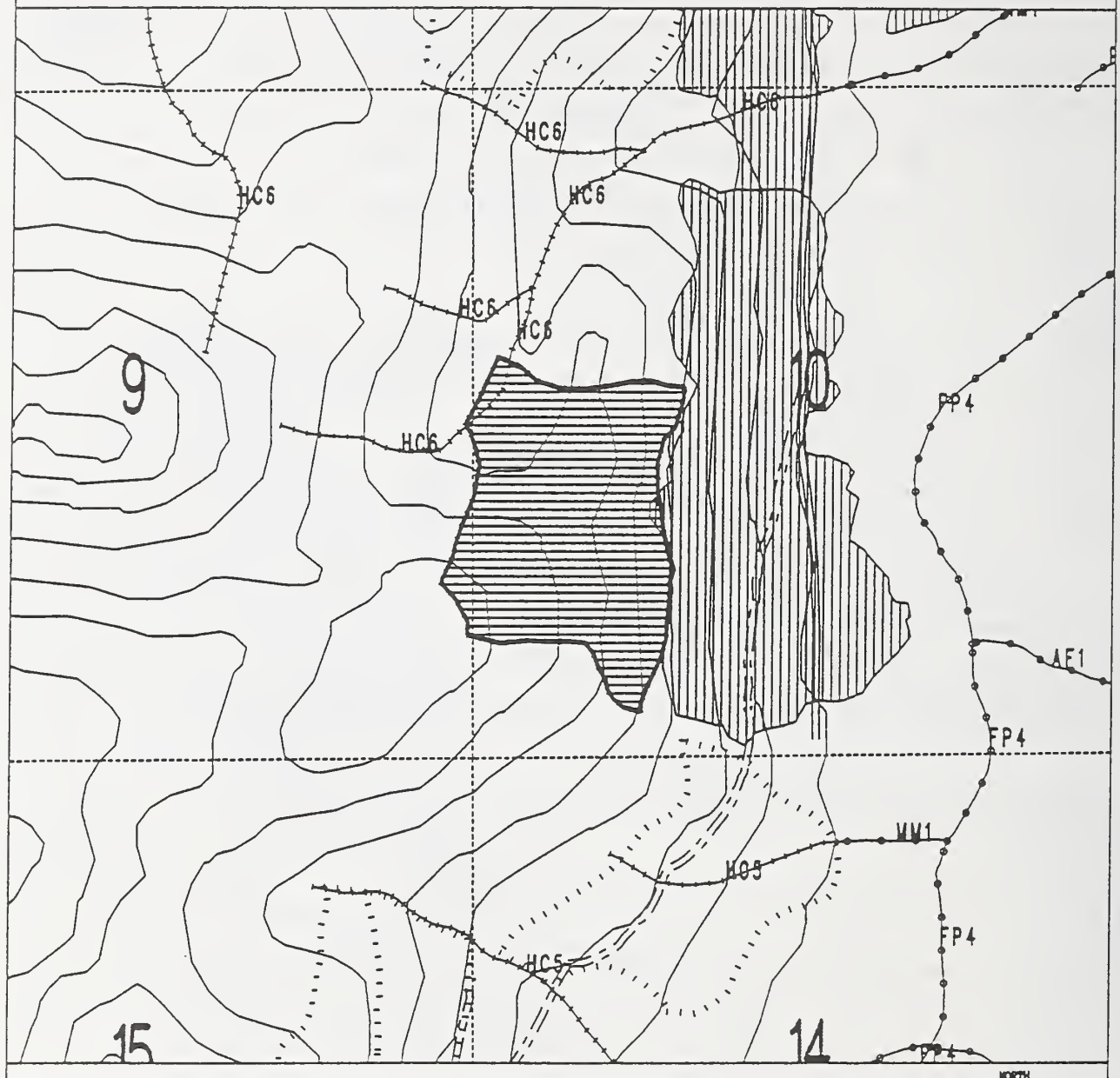
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 588-283

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 588-285
Planned acres 49
Estimated volume (mbf) 1410
Logging system Slackline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC4NEN
Mgmt Area K07
WAA 1422
Photo 1290022
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 18 acres VC5 31 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 27 acres 800-1200 ft. 12 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 1 acres Medium 38 acres High 9 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 24 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Expand buffer to a total width of 300 to 500 ft. on the Class 3 stream between units 588-285 and 588-286.
Also expand buffer to a total width of 300 to 500 ft. on the Class 3 stream between units 588-283 and 588-285.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

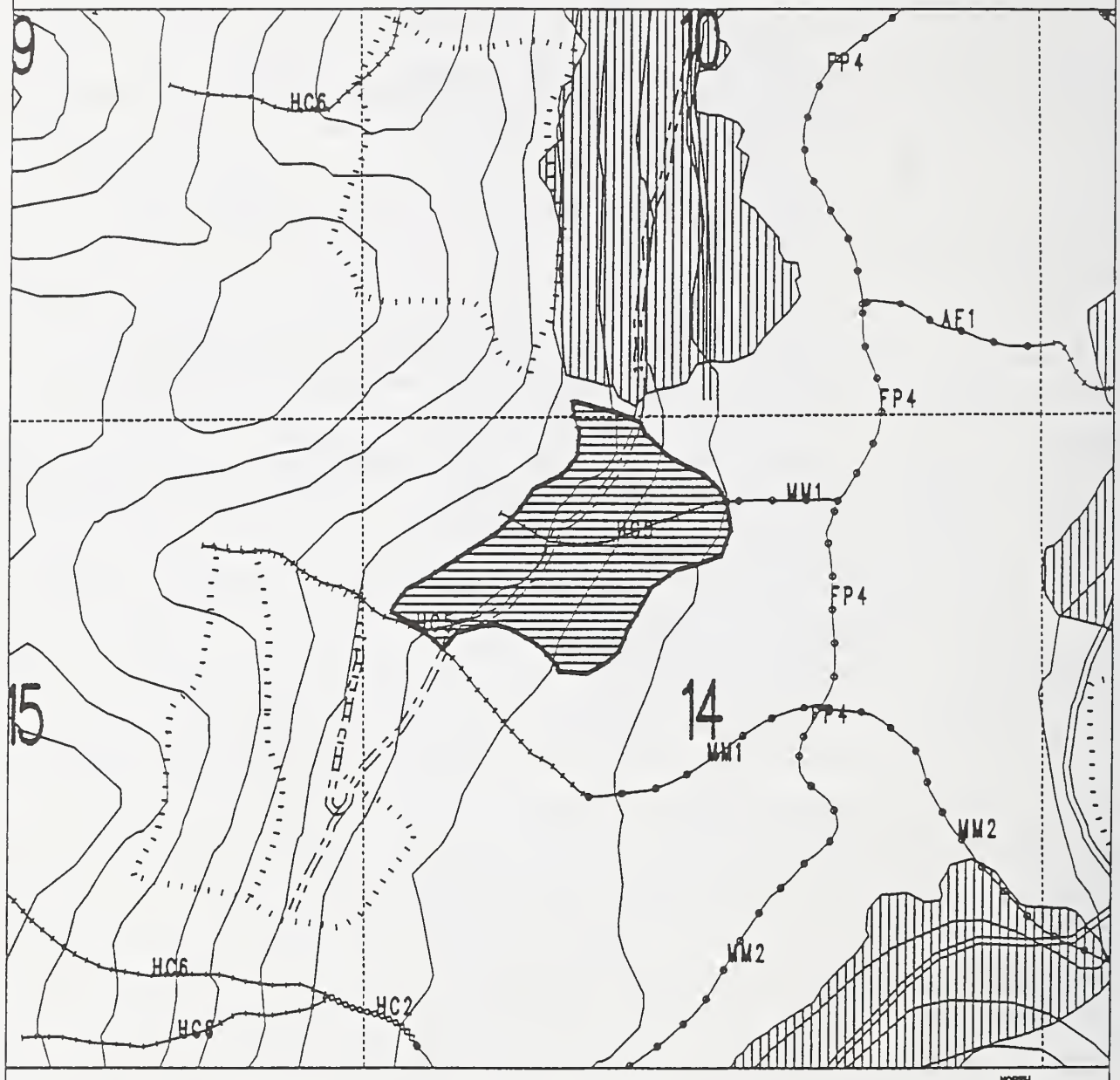
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 588-285

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 588-286
Planned acres 35
Estimated volume (mbf) 908
Logging system Skyline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC4NEN
Mgmt Area K07
WAA 1422
Photo 1290021
Aspect East

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 22 acres VC5 13 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 1 acres 800-1200 ft. 5 acres 1200-1500 ft. 6 acres over 1500 ft. 0 acres
Mass movement index: Low 0 acres Medium 9 acres High 22 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 9 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 5 acres of slopes > 75%.

TIMBER

Expand buffer to a total width of 300 to 500 ft. on the Class 3 stream between units 588-285 and 588-286. Also expand buffer to a total width of 300 to 500 ft. on the Class 3 stream between units 588-283 and 588-285.

ENGINEERING

Very difficult road construction due to unstable, slope > 75% or extended steep grades. May need to revise logging system to helicopter.
High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

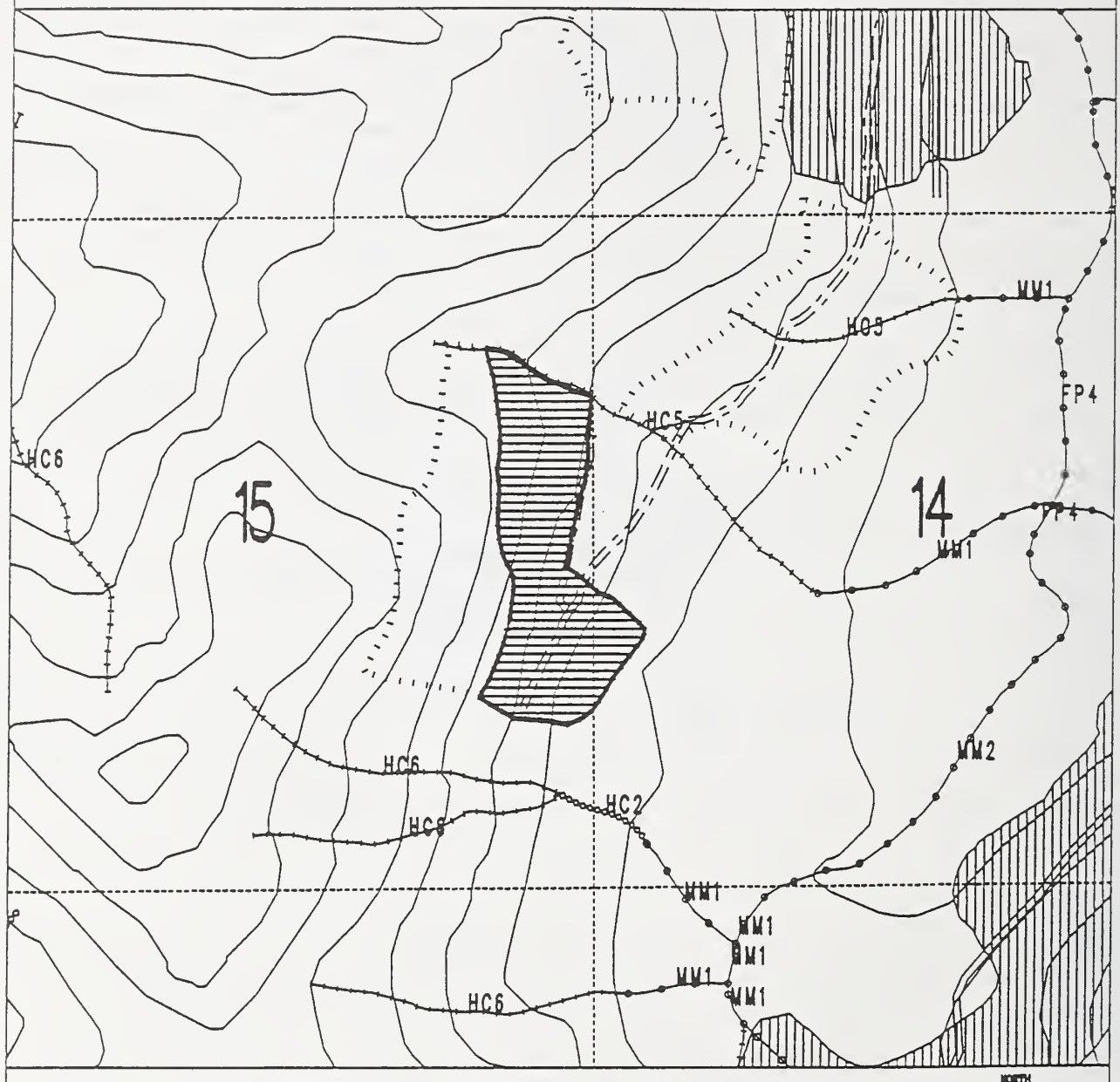
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 588-286

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 588-310
Planned acres 51
Estimated volume (mbf) 1938
Logging system Slackline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC4NEN
Mgmt Area K07
WAA 1422
Photo 1290023
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 44 acres VC6 21 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 1 acres 800-1200 ft. 17 acres 1200-1500 ft. 6 acres over 1500 ft. 9 acres
Mass movement index: Low 3 acres Medium 0 acres High 30 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit has > 40% McGilvery soils. Partial suspension required (BMP13.9)
to ensure reforestation (BMP13.19).
This unit contains 59 acres of slopes > 75%.

TIMBER

Provide a buffer of 12 acres along the Class 3 stream in units 588-310 and 588-312.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).
Slopes greater than 75% may require full bench construction and endhaul of waste (BMP14.7).

FISH/WATERSHED

This unit contains a A4 class 3 stream. No specific buffer required, but full suspension, if yarding across.
This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

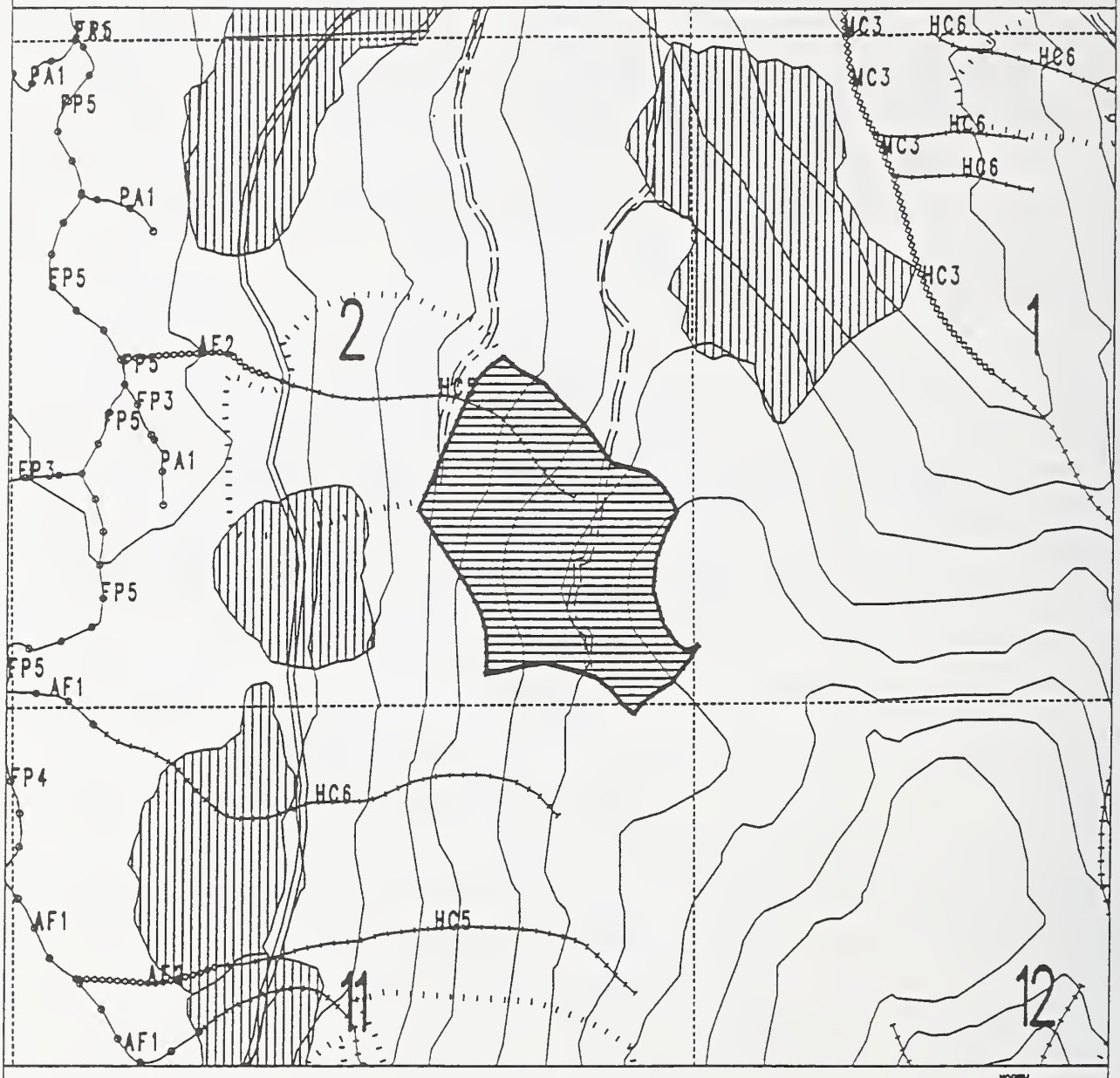
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 588-310

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 588-312
Planned acres 48
Estimated volume (mbf) 1878
Logging system Skyline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC4NEN
Mgmt Area K07
WAA 1422
Photo 1290023
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 6 acres VC5 0 acres VC6 50 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 47 acres 800-1200 ft. 2 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 0 acres Medium 0 acres High 51 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 6 acres of slopes > 75%.
This unit will be monitored for effects of harvest/roading on steep slopes.

TIMBER

Provide a buffer of 12 acres along the Class 3 stream in units 588-310 and 588-312.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).
Slopes greater than 75% may require full bench construction and endhaul of waste (BMP14.7).

FISH/WATERSHED

This unit contains a A4 class 3 stream. No specific buffer required, but full suspension, if yarding across.
This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

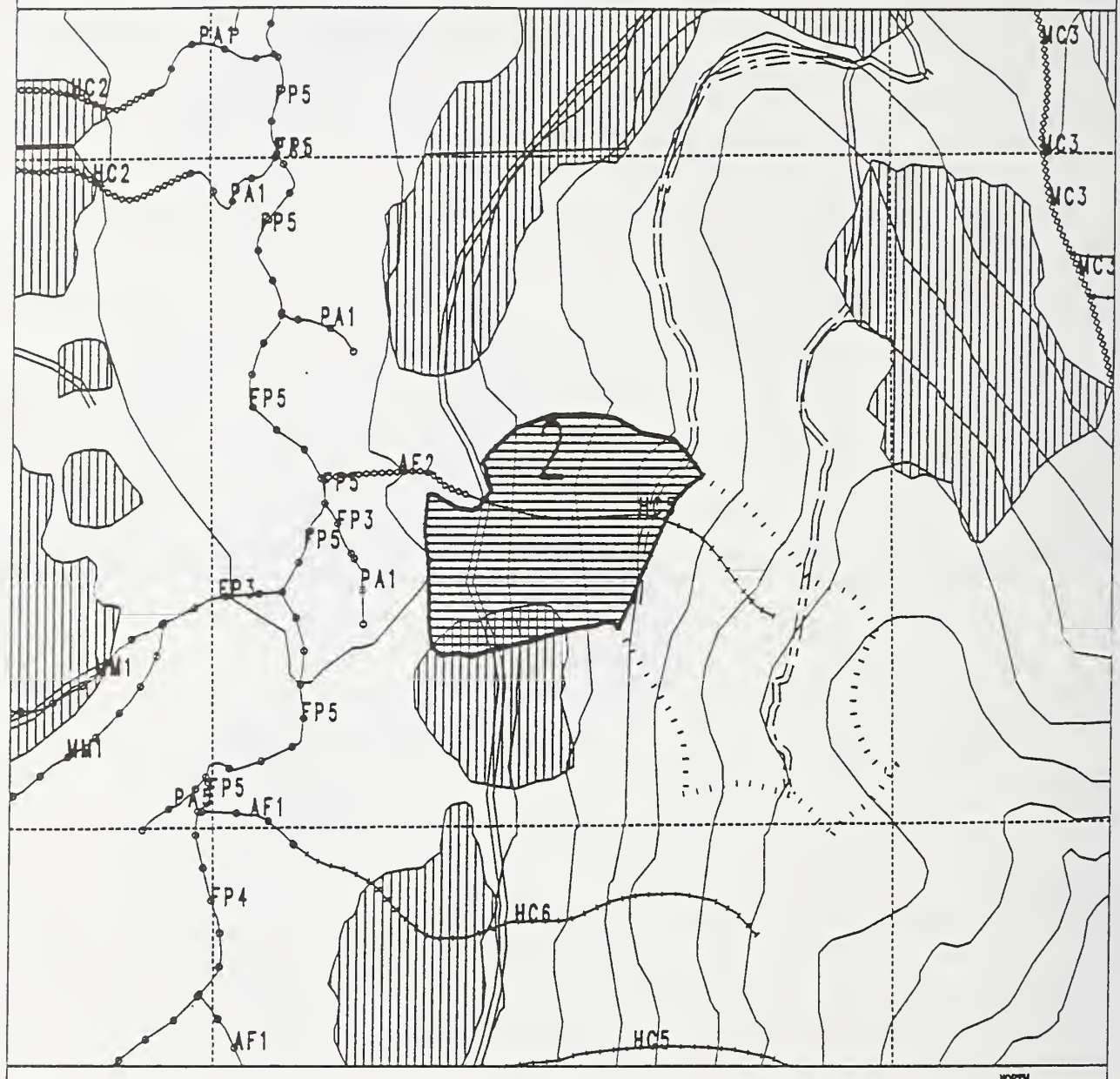
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 588-312

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 588-322
Planned acres 125
Estimated volume (mbf) 3786
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD4SEN
Mgmt Area K07
WAA 1422
Photo 1190118
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 23 acres VC5 114 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 137 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 75 acres Medium 50 acres High 6 acres Very High 0 acres

---

SOILS

This unit contains 93 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 1 acres of slopes > 75%.

TIMBER

Provide a 300 to 500 ft leave strip to connect the riparian corridors on the northwest/southeast ends of the unit.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

The unit has a proposed VQO of MM within the viewshed of Staney Creek as viewed from 1 mile from west coast of Prince of Wales.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

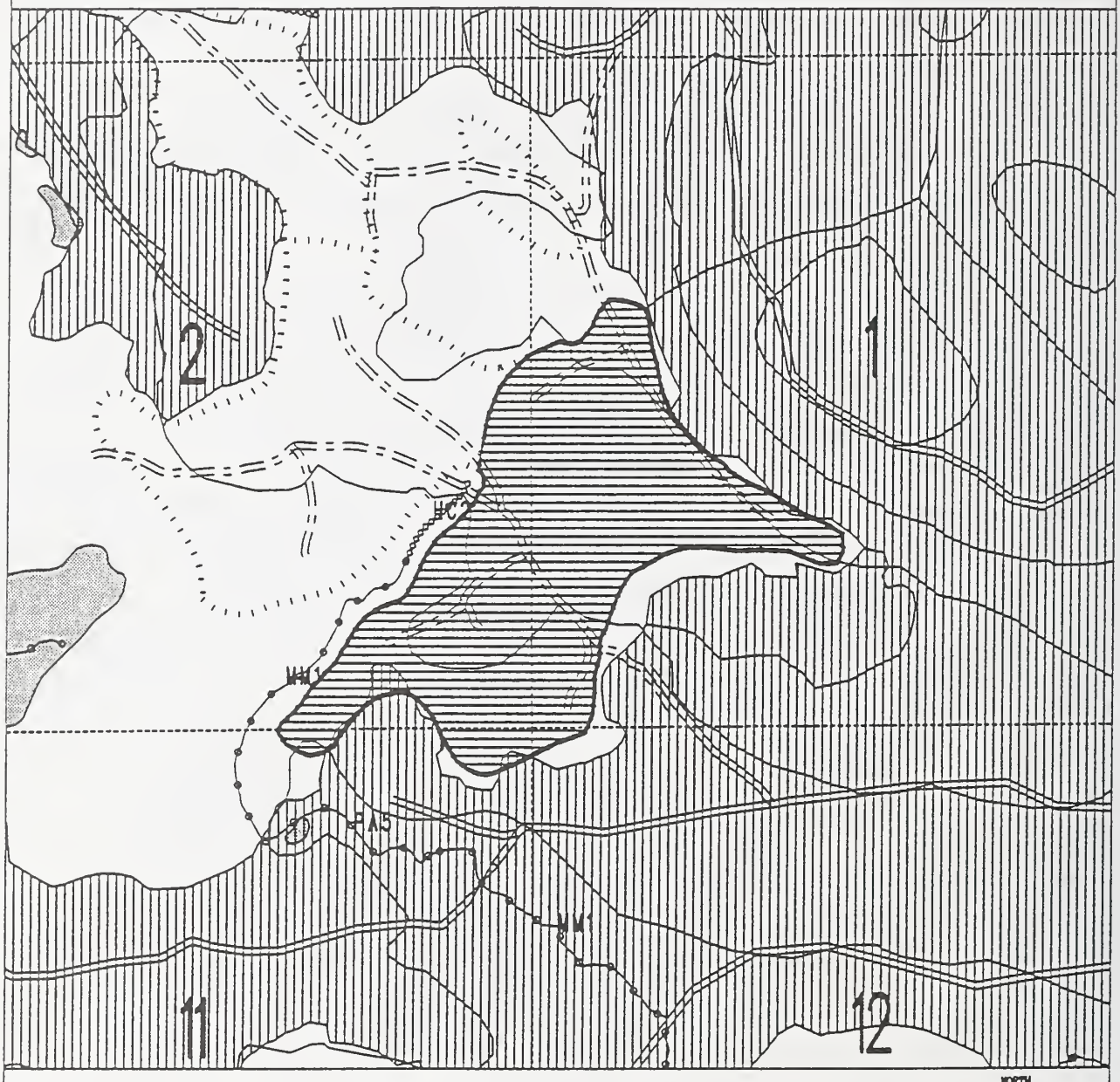
GEOLOGY

This unit is underlain with karst, although no significant features have yet been identified.

CPOW Unit Card

Unit Number: 588-322

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 588-327
Planned acres 99
Estimated volume (mbf) 4302
Logging system Helicopter
Silvicultural system Clearcut
Forest type Mixed conifer

Alternatives considered F5
Quad CRGD4SEN
Mgmt Area K07
WAA 1422
Photo
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 0 acres VC6 72 acres VC7 41 acres
Elevation breakdown: 0-800 ft. 20 acres 800-1200 ft. 94 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 0 acres Medium 117 acres High 0 acres Very High 0 acres

---

SOILS

There are no soils mitigation measures anticipated for this unit.

TIMBER

Provide wildlife leave islands in patches at least 5 acres, and totalling at least 11 acres to ensure the total opening does not exceed 100 acres.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

Maintain adequate distribution of snags by leaving 0.1 acre-sized patches of green trees within the unit for every 10 acres harvested. Snag patches must be compatible with logging system and safe working conditions.

Maintain diversity within unit by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging system and safe working conditions.

RECREATION / VISUALS

The unit has a proposed VQO of MM within the viewshed of Kussan Point as viewed from 1 mile from west coast of Prince of Wales.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

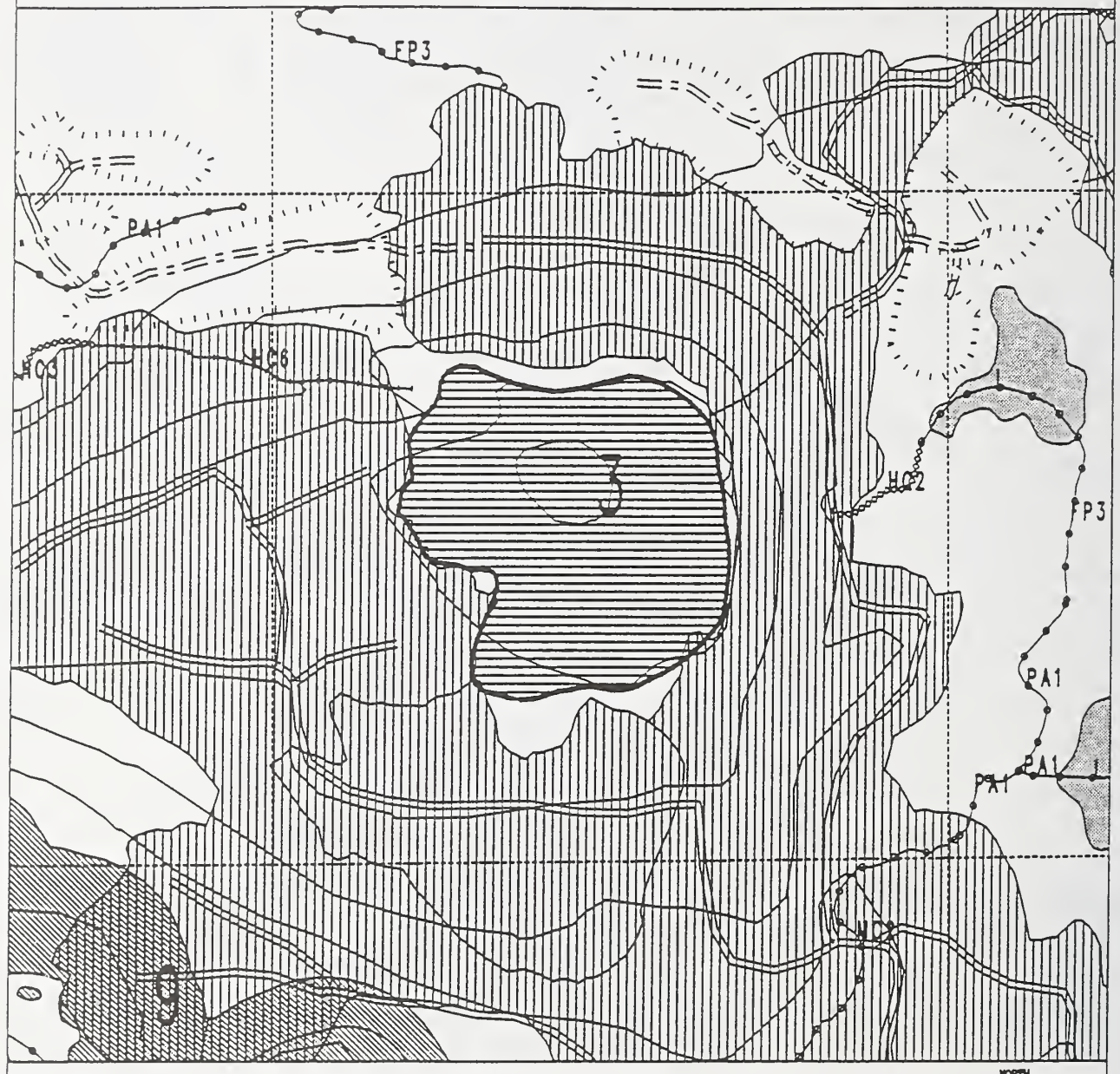
GEOLOGY

Planned unit boundary/road location/logging system are designed to avoid damage to significant karst features. Mitigation measures may apply. Unit layout/changes must be coordinated with Cave Resource Specialists.

CPOW Unit Card

Unit Number: 588-327

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 589-203
Planned acres 45
Estimated volume (mbf) 1388
Logging system Helicopter
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD4SES
Mgmt Area K07
WAA 1422
Photo
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 14 acres VC5 33 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 39 acres
Mass movement index: Low 4 acres Medium 0 acres High 42 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 45 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Expand buffer to a total width of 300 to 500 ft on the Class 3 stream between units 589-203 and 589-204.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

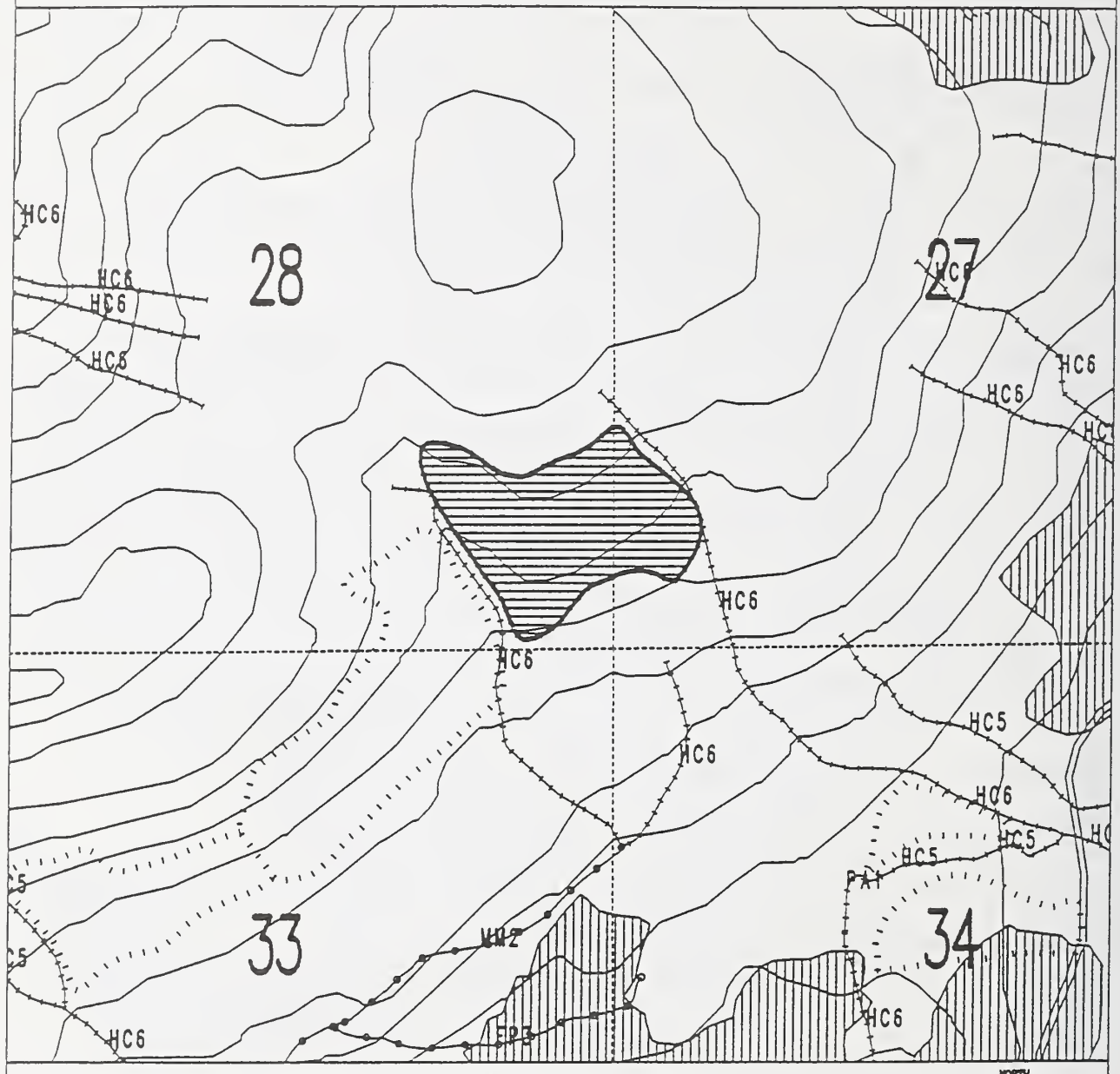
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOV Unit Card

Unit Number: 589-203

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 589-204
Planned acres 49
Estimated volume (mbf) 1422
Logging system Helicopter
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGD4SES
Mgmt Area K07
WAA 1422
Photo 1490115
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 16 acres VC5 38 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 20 acres
Mass movement index: Low 21 acres Medium 0 acres High 36 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 37 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).
This unit contains 24 acres of slopes > 75%.

TIMBER

Expand buffer to a total width of 300 to 500 ft on the Class 3 stream between units 589-203 and 589-204.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

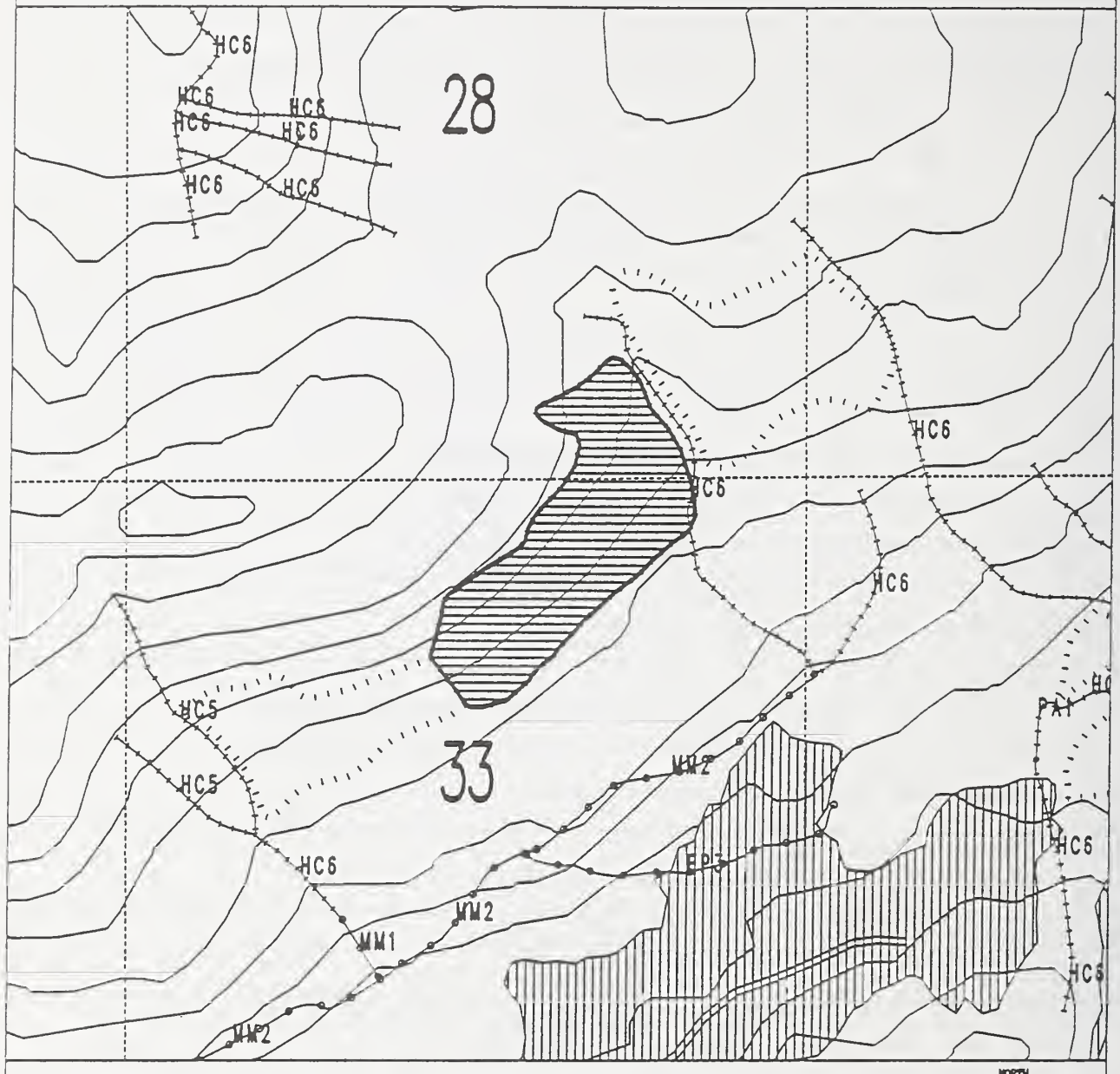
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 589-204

June 12, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 589-230
Planned acres 54
Estimated volume (mbf) 1138
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC4NWS
Mgmt Area K07
WAA 1422
Photo 1990055
Aspect East

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 52 acres VC5 0 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 49 acres 800-1200 ft. 2 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 5 acres Medium 0 acres High 48 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit has a slight possibility to be reclassified as MMI = 4.

TIMBER

Expand the gap to a total width of 300 to 500 ft. between units 589-230 and 589-231.
Also expand the gap to a total width of 300 to 500 ft between units 589-230 and 589-232.

ENGINEERING

Very difficult road construction due to unstable, slope > 75% or extended steep grades.
May need to revise logging system to helicopter.
High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

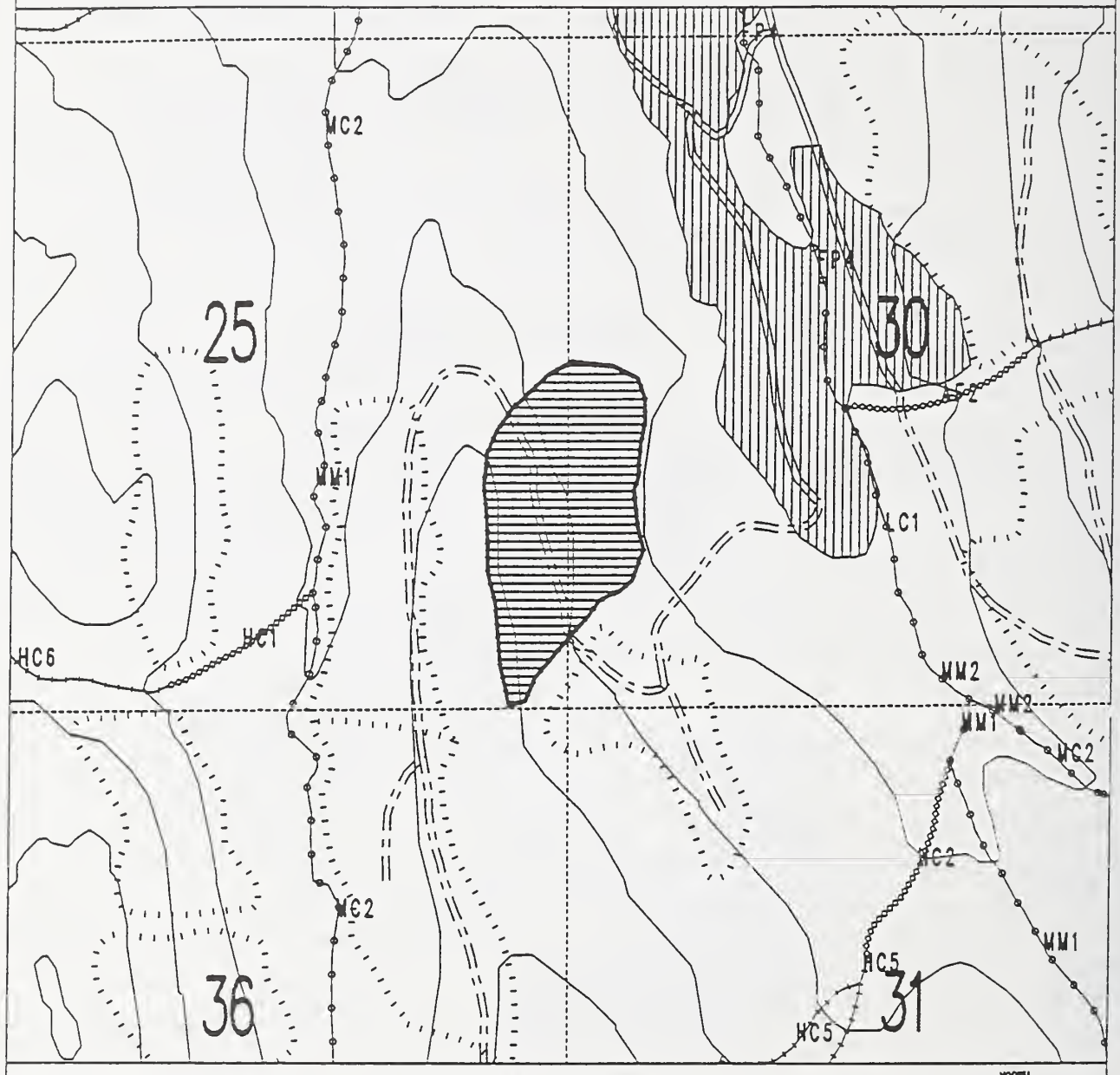
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 589-230

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 589-231
Planned acres 30
Estimated volume (mbf) 635
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC4NWS
Mgmt Area K07
WAA 1422
Photo 1990055
Aspect East

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 29 acres VC5 0 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 26 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 6 acres Medium 0 acres High 23 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 6 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Expand the gap to a total width of 300 to 500 ft. between units 589-230 and 589-231.
Also expand the gap to a total width of 300 to 500 ft between units 589-230 and 589-232.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

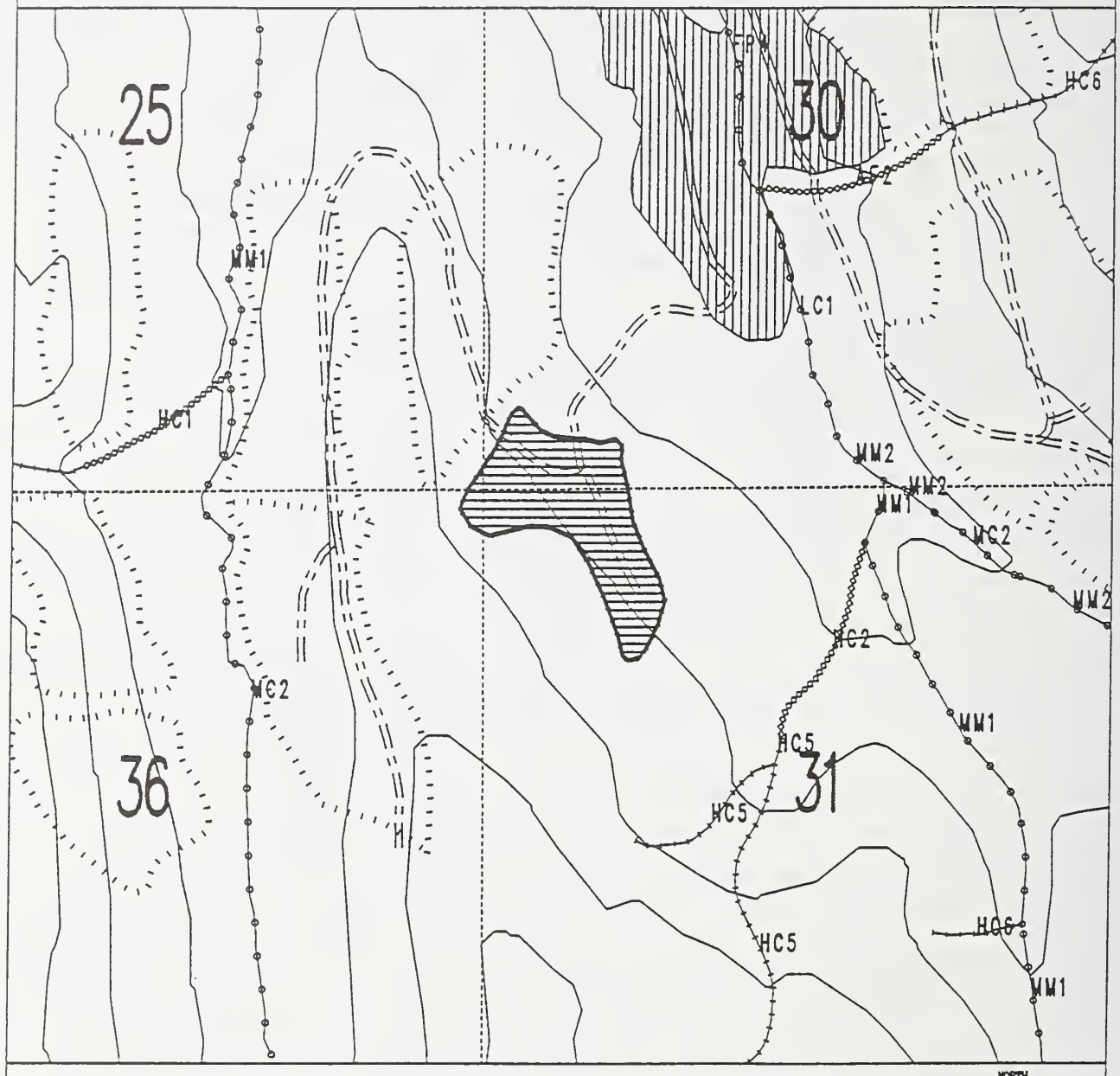
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 589-231

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 589-232
Planned acres 37
Estimated volume (mbf) 1028
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC4NWS
Mgmt Area K07
WAA 1422
Photo 1990055
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 11 acres VC5 24 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 35 acres 800-1200 ft. 1 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 14 acres Medium 0 acres High 24 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)

TIMBER

Expand the gap to a total width of 300 to 500 ft. between units 589-230 and 589-231.
Also expand the gap to a total width of 300 to 500 ft between units 589-230 and 589-232.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

Maintain diversity within unit by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging system and safe working conditions.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

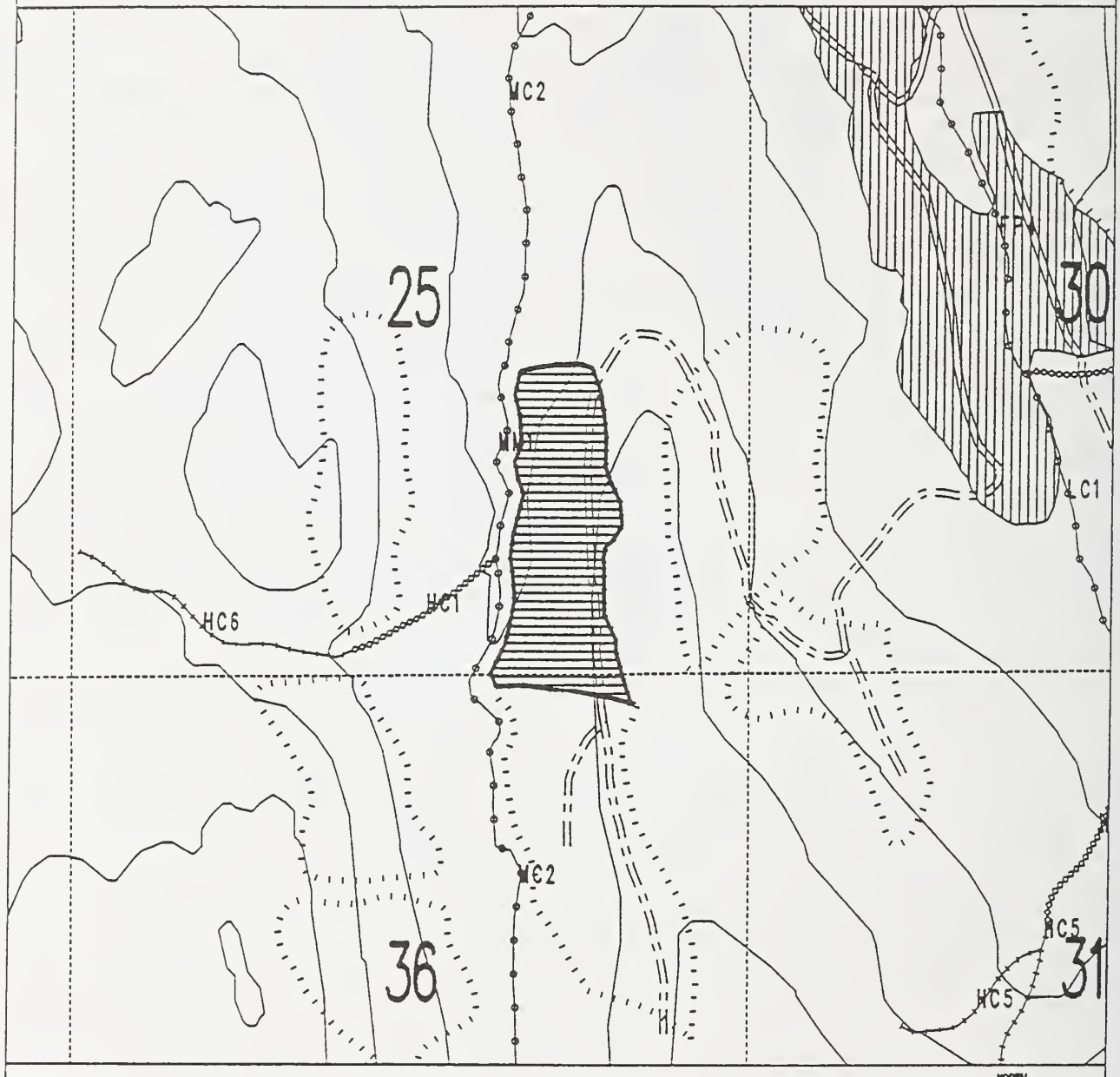
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOV Unit Card

Unit Number: 589-232

June 12, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 590-210
Planned acres 62
Estimated volume (mbf) 1382
Logging system Helicopter
Silvicultural system Shelterwood
Forest type Mixed conifer

Alternatives considered F5
Quad CRGC4NEN
Mgmt Area K07
WAA 1422
Photo
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 21 acres VC5 53 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 5 acres 1200-1500 ft. 4 acres over 1500 ft. 40 acres
Mass movement index: Low 0 acres Medium 0 acres High 44 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit has a significant possibility to have areas reclassified as MMI = 4.
This unit has > 40% McGilvery soils. Partial suspension required (BMP13.9)
to ensure reforestation (BMP13.19).
This unit contains 56 acres of slopes > 75%.

TIMBER

Shelterwood harvest. Cedar will not be harvested.
Provide wildlife leave islands in patches at least 5 acres, and totalling at least 7 acres to ensure the total opening created by units 590-210 and 590-211 does not exceed 100 acres.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

Maintain diversity within unit by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging system and safe working conditions.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

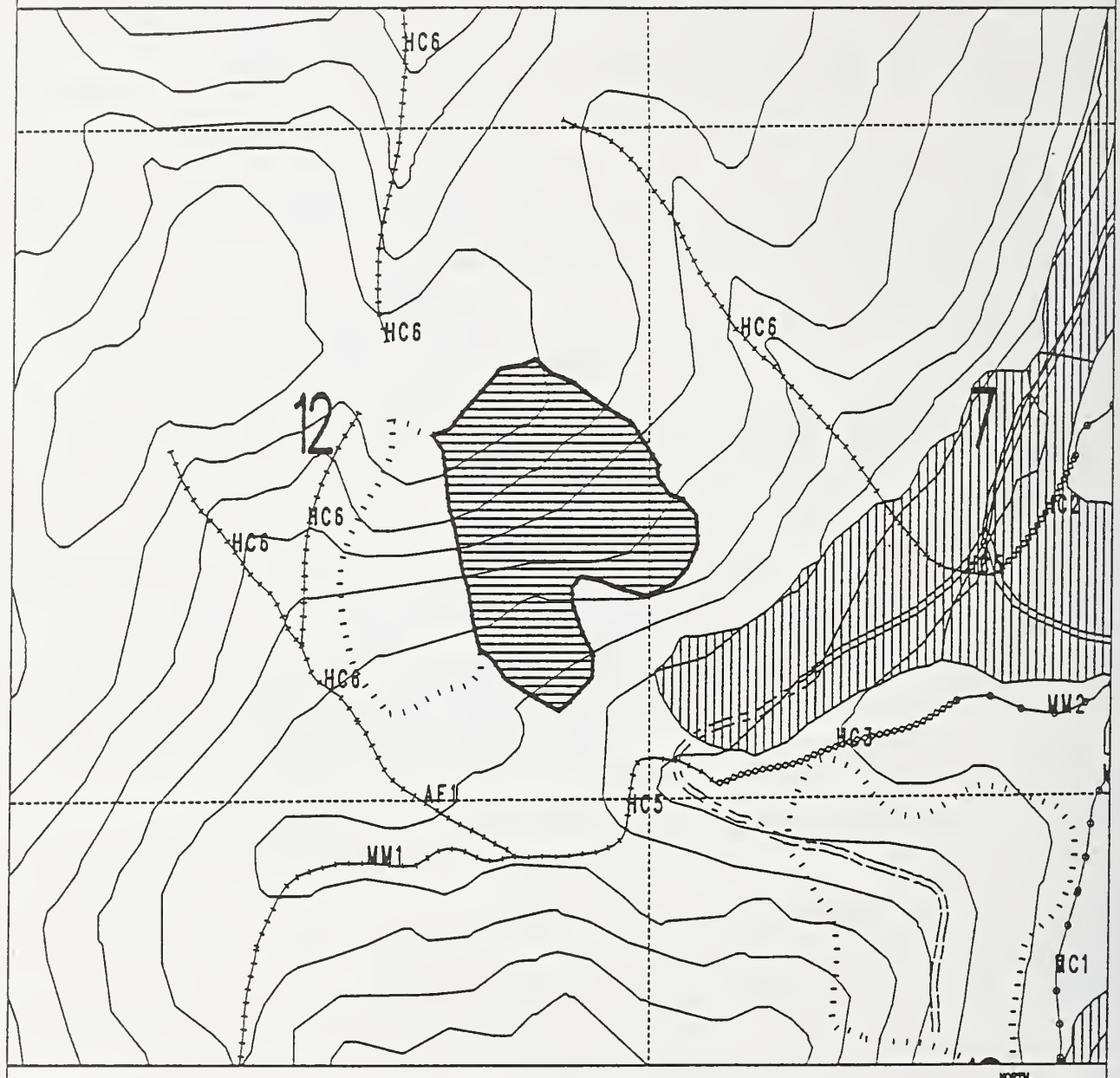
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOV Unit Card

Unit Number: 590-210

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 590-211
Planned acres 37
Estimated volume (mbf) 845
Logging system Helicopter
Silvicultural system Shelterwood
Forest type Hemlock

Alternatives considered F5
Quad CRGC4NEN
Mgmt Area K07
WAA 1422
Photo NONE
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 5 acres VC5 30 acres VC6 3 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 0 acres 800-1200 ft. 0 acres 1200-1500 ft. 6 acres over 1500 ft. 17 acres
Mass movement index: Low 6 acres Medium 0 acres High 21 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 19 acres of slopes > 75%.

TIMBER

Shelterwood harvest. Cedar will not be harvested.
Provide wildlife leave islands in patches at least 5 acres, and totalling at least 7 acres to ensure the total opening created by units 590-210 and 590-211 does not exceed 100 acres.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

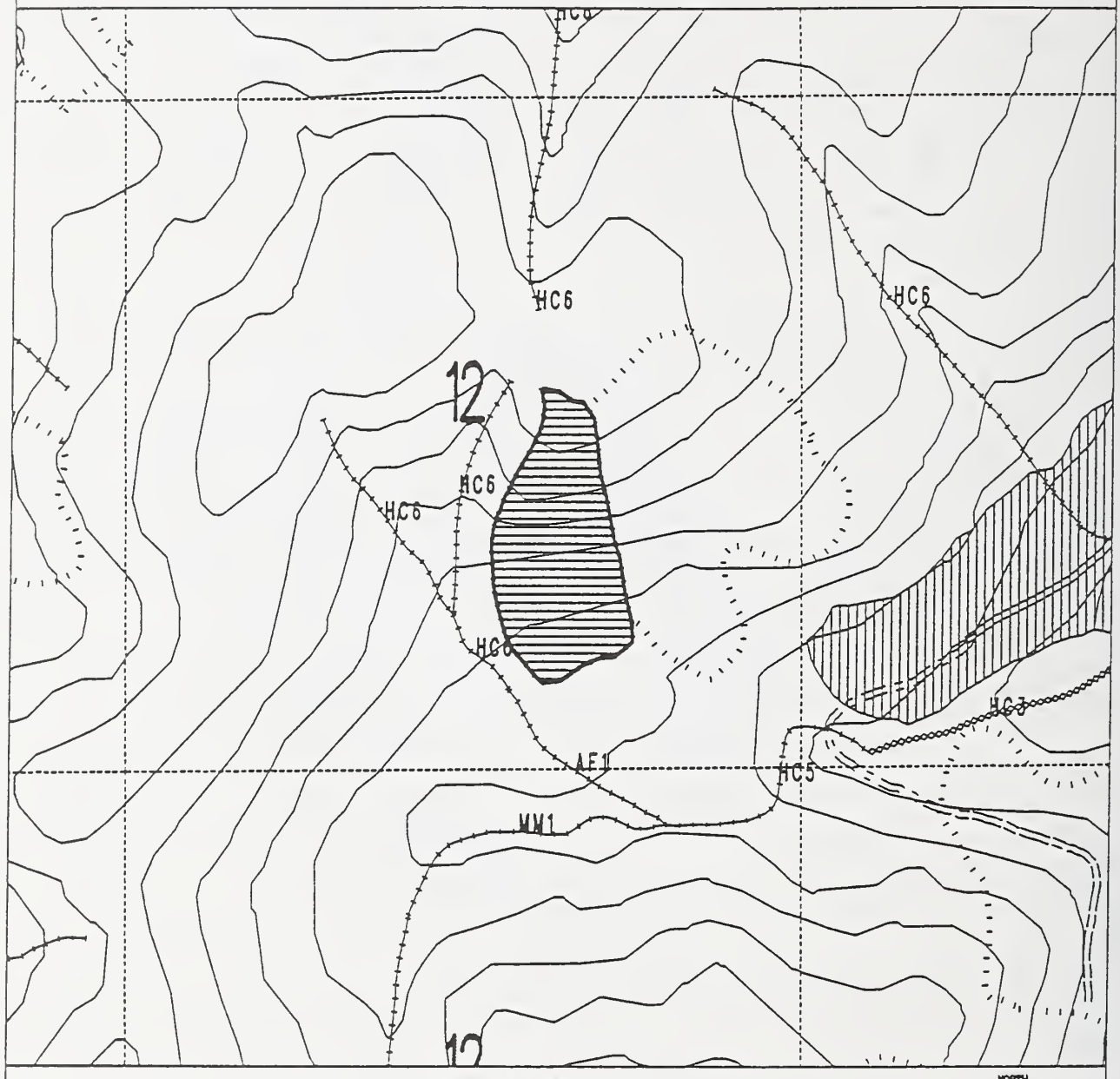
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 590-211

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 590-229
Planned acres 62
Estimated volume (mbf) 1776
Logging system Helicopter
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F2 F4 F5 F6
Quad CRGC4NEN
Mgmt Area K07
WAA 1422
Photo 1190049
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 24 acres VC6 26 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 17 acres 800-1200 ft. 39 acres 1200-1500 ft. 3 acres over 1500 ft. 0 acres
Mass movement index: Low 0 acres Medium 0 acres High 52 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 25 acres of slopes > 75%.

TIMBER

Provide wildlife leave islands totalling at least 7 acres, to ensure the total opening does not exceed 100 acres.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

Maintain diversity within unit by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging system and safe working conditions.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

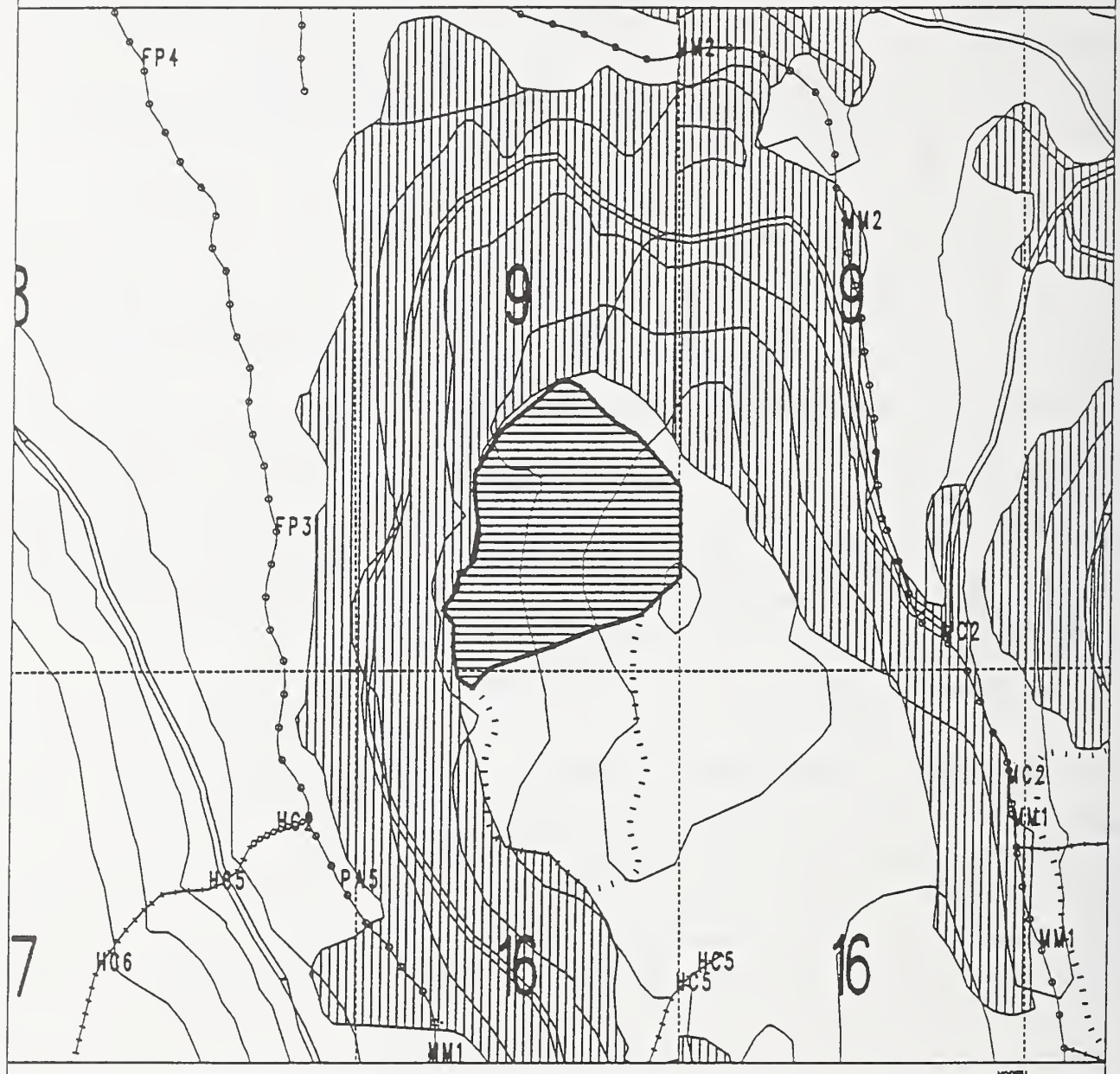
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 590-229

June 12, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 590-230
Planned acres 45
Estimated volume (mbf) 1259
Logging system Helicopter
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F2 F4 F5 F6
Quad CRGC4NEN
Mgmt Area K07
WAA 1422
Photo 1190049
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 21 acres VC6 15 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 11 acres 800-1200 ft. 32 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 0 acres Medium 0 acres High 32 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 29 acres of slopes > 75%.

TIMBER

Provide wildlife leave islands totalling at least 7 acres, to ensure the total opening does not exceed 100 acres.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

Maintain diversity within unit by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging system and safe working conditions.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

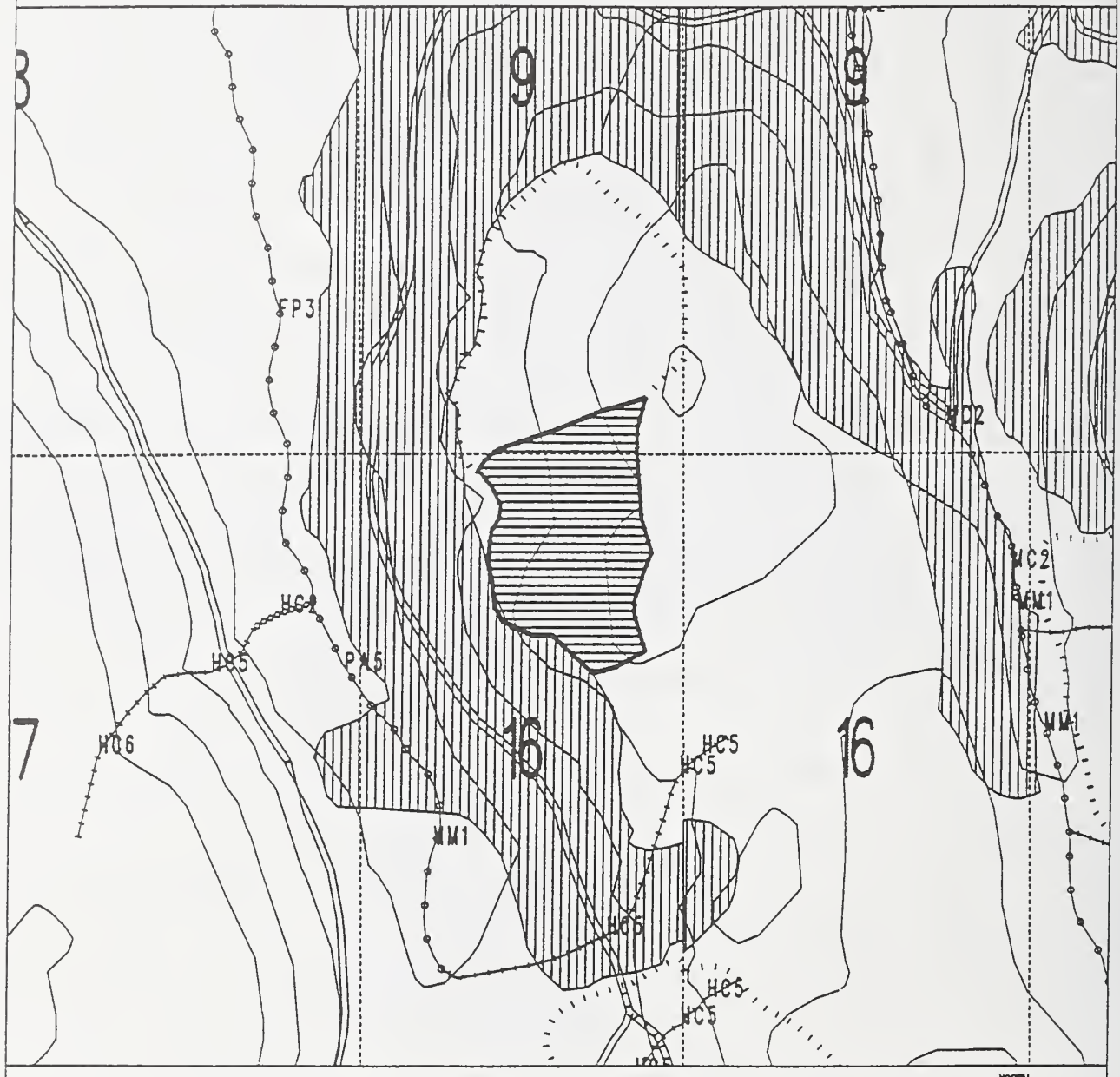
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOV Unit Card

Unit Number: 590-230

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 598-220
Planned acres 89
Estimated volume (mbf) 1955
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC2NWS
Mgmt Area K10
WAA 1315
Photo 1090076
Aspect North

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 58 acres VC5 0 acres VC6 18 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 88 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 17 acres Medium 16 acres High 55 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)
This unit contains 13 acres of forested wetlands. Site specific BMPs will be designed for selected approved logging system and road construction practices. (BMPs 12.5, 13.9, 13.15).

TIMBER

Provide a 300 to 500 ft leave strip between the units and the adjacent second growth stand that is not 5 ft tall.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

Maintain diversity within unit by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging system and safe working conditions.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

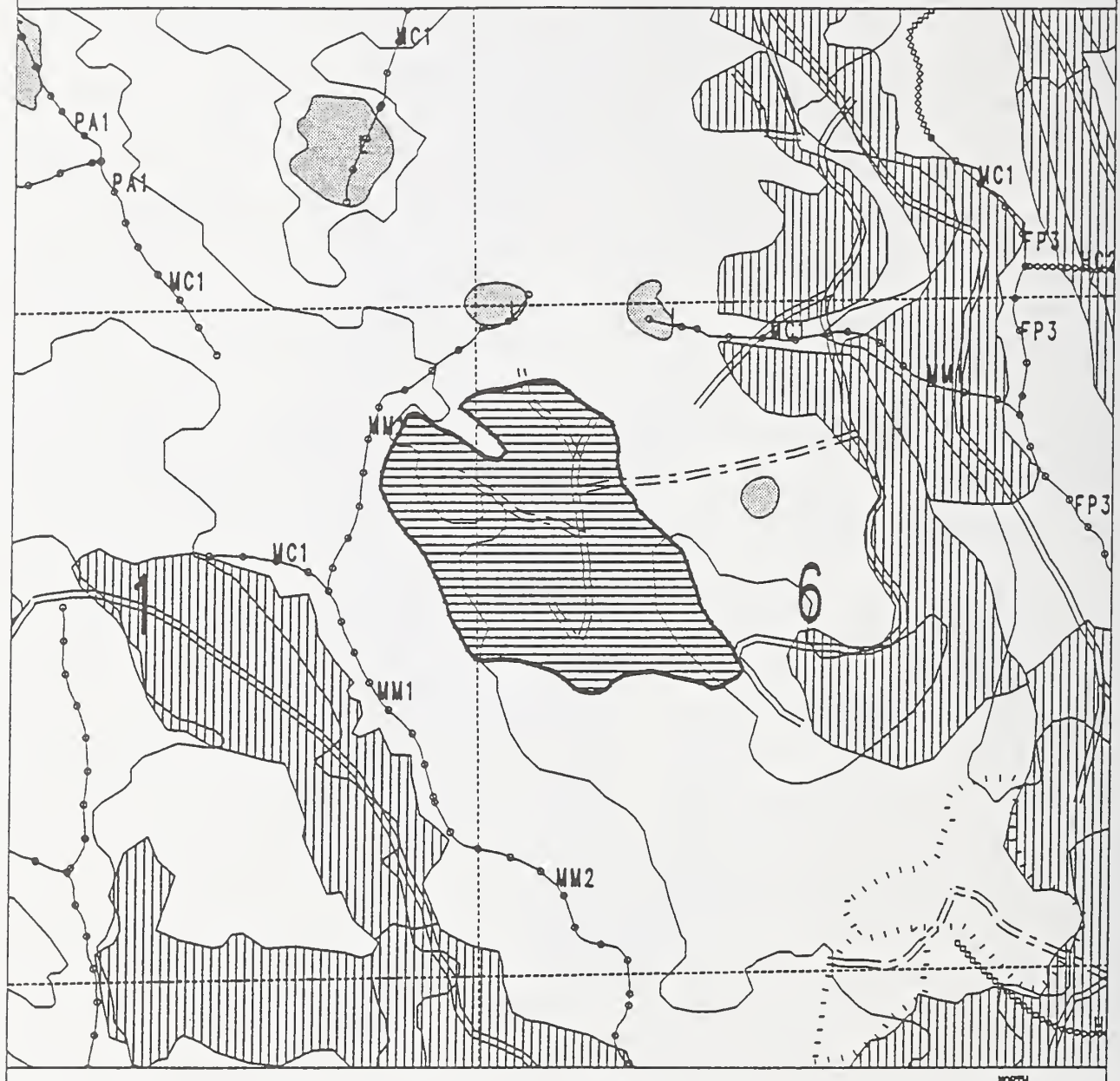
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 598-220

June 12, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 598-222
Planned acres 31
Estimated volume (mbf) 950
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC2NWS
Mgmt Area K10
WAA 1315
Photo 1090075
Aspect North

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 22 acres VC6 6 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 30 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 11 acres Medium 0 acres High 20 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)

TIMBER

Potential for shovel logging on 16 acres, if soil and water quality protected (BMP13.7)
Provide a 300 to 500 ft leave strip between the units and the adjacent second growth stand that is not 5 ft tall.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

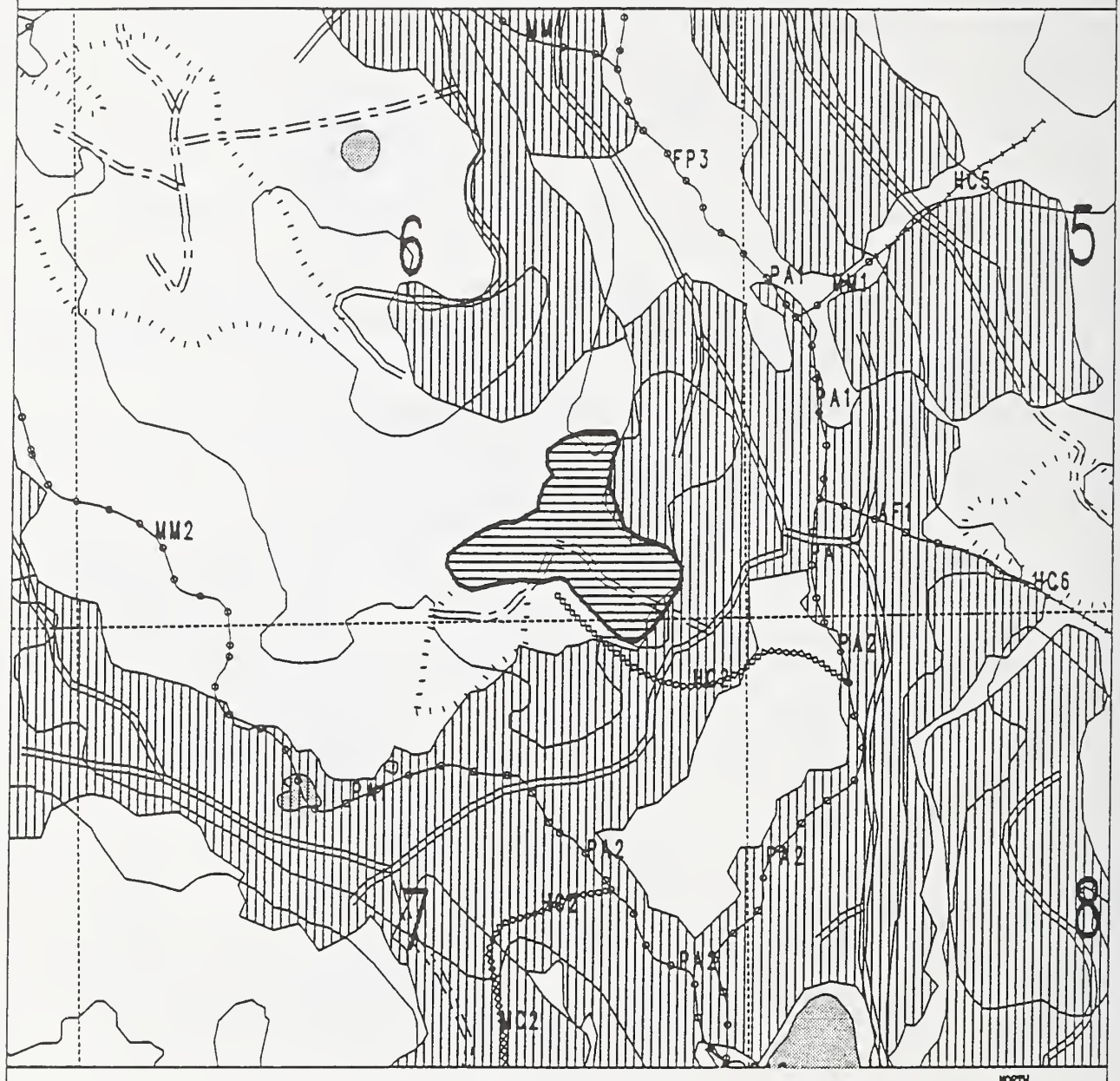
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 598-222

June 12, 1993



UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 598-222 B
Planned acres 11
Estimated volume (mbf) 437
Logging system Skyline
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F2 F3 F4 F6
Quad CRGC2NWS
Mgmt Area K10
WAA 1315
Photo
Aspect South

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 0 acres VC5 11 acres VC6 2 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 11 acres 800-1200 ft. 0 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 0 acres Medium 0 acres High 11 acres Very High 0 acres

---

SOILS

This unit has high mass movement index soils. Partial log suspension required over these areas.(BMP13.9)

TIMBER

Provide a 300 to 500 ft leave strip between the units and the adjacent second growth stand that is not 5 ft tall.

ENGINEERING

High mass movement index soils. Road construction must minimize landslide potential (BMP14).

FISH/WATERSHED

There are no fishery mitigation measures anticipated for this unit.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

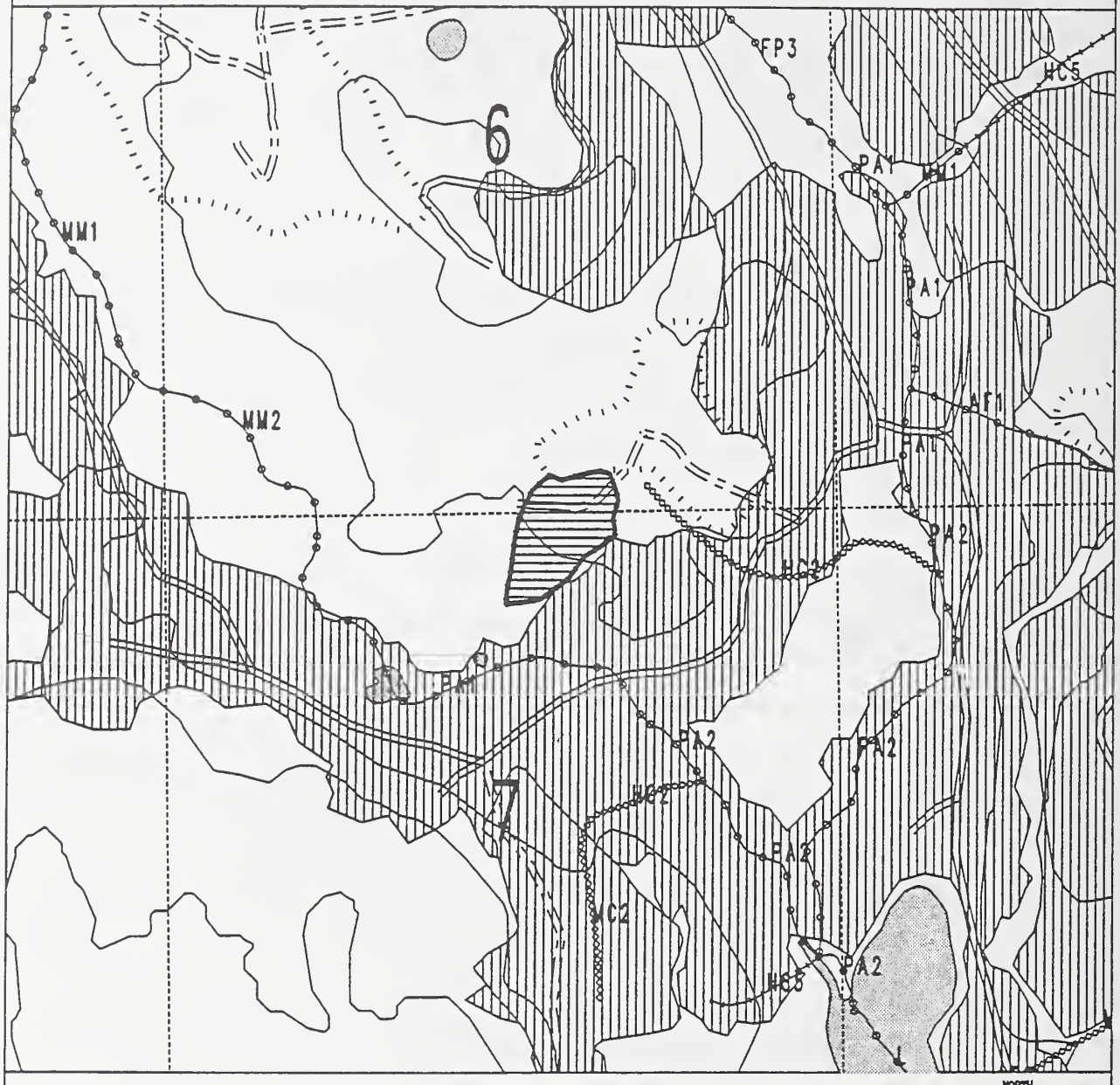
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 598-222 B

June 10, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

UNIT PLAN/LAYOUT/SALE ADMINISTRATION CARD FOR CPOW FEIS

Unit 598-242
Planned acres 62
Estimated volume (mbf) 1389
Logging system Highlead
Silvicultural system Clearcut
Forest type Hemlock

Alternatives considered F5
Quad CRGC2NWS
Mgmt Area K10
WAA 1315
Photo 690141
Aspect West

PHYSICAL DESCRIPTION

Volume class breakdown: VC4 29 acres VC5 23 acres VC6 0 acres VC7 0 acres
Elevation breakdown: 0-800 ft. 27 acres 800-1200 ft. 32 acres 1200-1500 ft. 0 acres over 1500 ft. 0 acres
Mass movement index: Low 32 acres Medium 29 acres High 0 acres Very High 0 acres

---

SOILS

There are no soils mitigation measures anticipated for this unit.

TIMBER

Expand the gap between units 586-232 and 598-242 to provide a 300 to 500 ft distance.

ENGINEERING

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED

This unit contains streams which have recently been classified/channel typed but require field verification.

WILDLIFE

There are no wildlife mitigation measures anticipated for this unit.

RECREATION / VISUALS

This unit has a proposed VQO of MM and is not seen from any viewpoint identified by this project.

LANDS

There are no lands mitigation measures anticipated for this unit.

CULTURAL RESOURCES

There are no cultural resource mitigation measures anticipated for this unit.

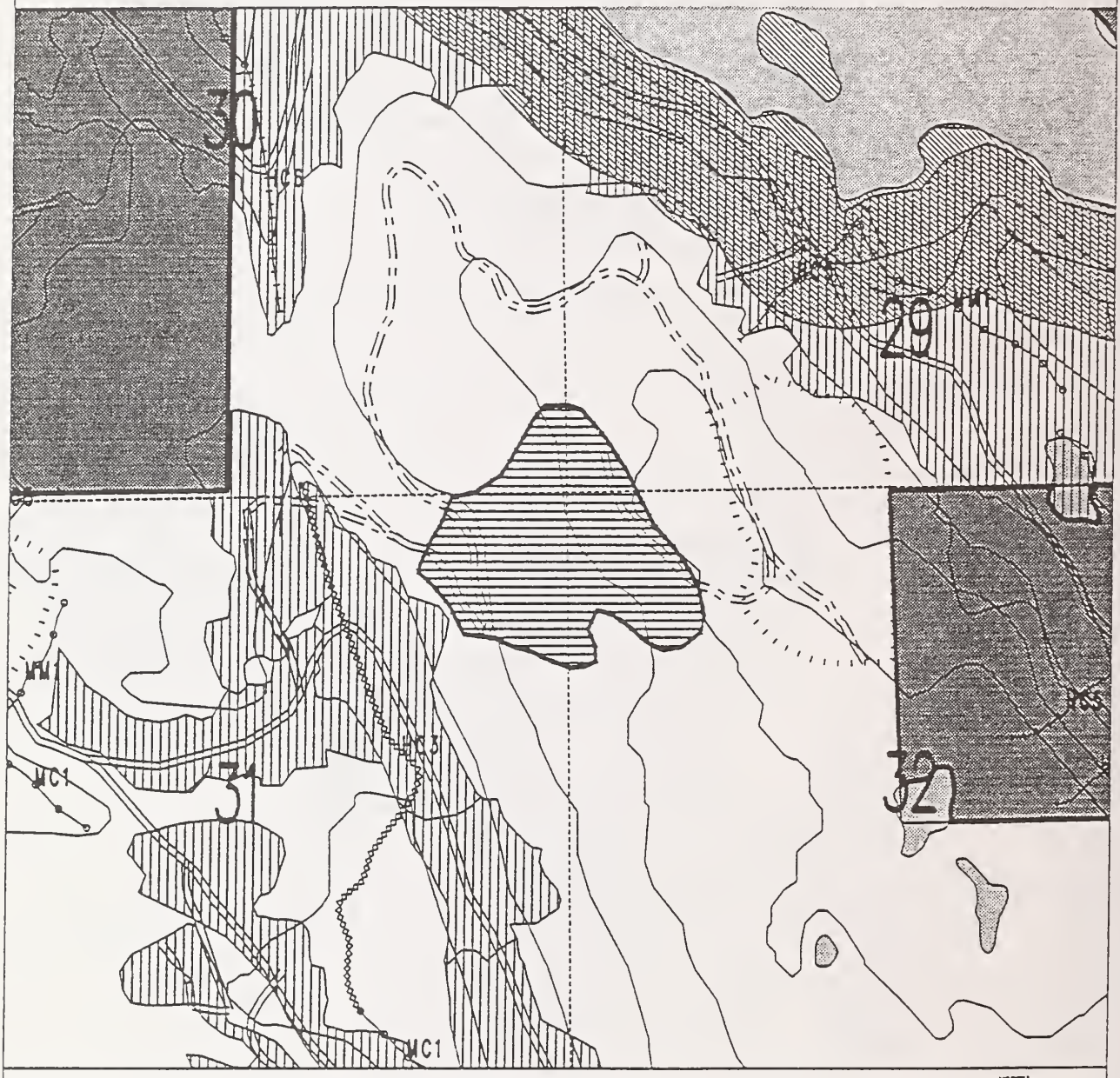
GEOLOGY

There are no karst mitigation measures anticipated for this unit.

CPOW Unit Card

Unit Number: 598-242

June 12, 1993



Unit Boundary
Other Proposed Units
Contour Lines
Proposed Road
Existing road
Class I Stream
Class II Stream
Class III Stream
Section Line

200 Foot Contour Interval

0 0.25 0.5

Mapscale 1 : 15840

NORTH

Eagle Tree
Previous Harvest Area
Saltwater and Lakes

Private
Beach/Estuary
Clearcut
Partial Cut

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