ATTACHMENT 3

MINUTES

Lane County Planning Commission
Harris Hall - Lane County Courthouse

August 1, 2006
5:30 p.m.Work Session
7:00 p.m. Public Hearing

PRESENT: Ed Becker, Vice Chair; Lisa Arkin, Stephen Dignam, Todd Johnston, Nancy Nichols, Jozef Zdzienicki, Commissioners; Kent Howe, Thom Lanfear, Staff

ABSENT: James Carmichael, Chair; Juanita Kirkham, John Sullivan

WORK SESSION 5:30 pm

I. Training Session on the application of statewide planning goals, statutes, administrative rules, and Lane Code

Commission members participated in a training work session on the topics listed above.

PUBLIC HEARING 7:00 pm

I. Request for Rural Comprehensive Plan (RCP) Diagram Amendment from Forest to Non Resource, and a zoning map amendment from Impacted Forest Lands (F-2) to Rural Residential (RR-5) for a 52.17 acre site located west of Highway 101 and north of the City of Florence, pursuant to Lane Code (LC) 16.252 and LC 16.400. Map 18-12-02-20 Tax Lot 1900; Location: 88420 Highway 101 N; Applicant: Roy Carver III; Owner: Julia Carver

Commission Co-Chair Ed Becker convened the meeting at 7 pm. He called for public comment on items not related to the items on the evening's agenda. Seeing no one wishing to speak he moved on to the first agenda item. He called for declarations of *ex parte* contacts or conflicts of interest from the commissioners.

Commission member Todd Johnston recused himself from the hearing due to a conflict of interest.

Associate Planner Thom Lanfear provided the staff report. He said the potential result of the request could be up to ten individual residential parcels. He said the burden on the applicant was to demonstrate that the land could not qualify as agricultural land and also was not considered to be forest lands. He said the meeting packet contained reports from a forester, agricultural expert and a soil scientist which addressed the capability of the land for forest use. He noted that there was also a letter submitted by DLCD that did not raise any objections to the proposal. He said the main point of contention was the soils mapping which had identified a different type of soil map unit on the property and changed the percentages of soils that fell in class five and above. He said the Yaquina Loamy Fine Soil shown on the Lane County Regional Lane Information Database and NRCS soil survey had made up sixty nine percent of the parcel. He said the Soil Scientist had refined the mapping of the soil units to identify 19 acres of

Netarts Soils (Class 6) on the property. He said the Soil Scientist for the applicant had concluded that there was substantially less of the Yaquina Soil map unit on the property (only 24.93 percent).

In response to a question from Commission member Lisa Arkin regarding whether it was normal to have a letter from DLCD in the meeting packet, Mr. Lanfear said any time a letter was received it was included in the meeting packet. He noted that the current letter was the first letter from DLCD he had seen before a Planning Commission Hearing.

In response to a question from Ms. Arkin regarding how the letter was solicited, Mr. Lanfear said all plan amendment applications were required to be referred to DLCD 45 days before the first hearing so there was time for the agency to comment. He said, in the current case, DLCD had been better able to respond in the given time period than in other applications.

Mr. Becker opened the public hearing.

Steve Cornacchia, 180 East 11th, spoke as the applicant's representative. He said the staff report and the application were enough to show that the criteria for approval had been met. He noted that staff concurred with the applicant's data. He reiterated that DLCD had not raised any objection to the application.

In response to a question from Commission member Nancy Nichols regarding why marginal lands criteria did not apply, Mr. Cornachhia said the Marginal Lands criteria were different from a Non-Resource Rezone. He said the end result was that the property could be developed at a higher density if the land was zoned Non-Resource. He said the difference between the two regarding soil productivity was that marginal lands tests were set by state statute while non-resource had planning goals, administrative rules and statutes that implemented the planning goals to protect forest land. He said the applicant's responsibility was to show that the land did not fit the definition of forest land.

Ms. Nichols questioned how close the urban growth boundary of the City of Florence was to the land in question.

Mr. Cornacchia noted that this was not part of the approval criteria but said the land was four miles from the urban growth boundary of Florence.

Mr. Lanfear added that part of the determination before the commission was whether to allow five or ten acre parcels. He called attention to page five of the staff report. He said the applicant had made the case that five acre parcels were suitable and had addressed the required issues.

In response to a question from Mr. Becker regarding if staff concurred with the five acre decision, Mr. Lanfear confirmed that staff did concur with the applicant.

Commission member Steve Dignam called attention to the staff report which stated that the application for land division was not part of the action presently before the planning commission. He questioned whether the commission was determining between five or ten acre parcels.

Mr. Lanfear said the commission would determine whether the zoning would be RR-5 or RR-10. He said the land division process would come after that decision and would apply the minimum land division size based on the zoning that was decided upon. He reiterated that the applicant was requesting RR-5 zoning.

In response to a question from Mr. Dignam regarding whether the planning commission was allowed to use other data than the NRCS soil survey when making a decision if there was more specific evidence from the site, Soil Scientist for the applicant Brian Rabe, (Cascade Earth Sciences), said there were a number of factors to evaluate a site. He said the soil survey was a good guide to start with but noted that there was higher resolution data available that might not have been available when the survey had been done. He said, in the current case, there was a recent aerial photograph and a topographic survey that provided a base map of much higher quality that he was able to use in the field. He said slope was an important factor in determining map units. He said both the Netart Soil and the Waldport Soil each had two separate slope phases defined in the soil survey. He stressed that he used existing map units in the soil survey as well as the data that was observed onsite to determine an appropriate map unit at any given point. He noted that the mapping in the Lane County Soil Survey used units no smaller than three acres and stressed that within that amount of land there were smaller areas that could be identified as separate soil types. He added that drainage and a combination of test holes were also factors in making a determination on map units.

In response to a question from Mr. Dignam regarding how 18 bore samples had been determined as the right number of samples for the land in question, Mr. Rabe said it was a matter of using the aerial photo and topographic information as a base to start from. He said the topographic information alone proved that some of the land had been mapped incorrectly. He said some locations would require more or less bore samples and added that it depended on the level of information available at the start. He said the land in question had a lot of good baseline information to start with because of the recent aerial photos showing vegetation and the topographic information that had been superimposed over the aerial photo.

In response to a question from Mr. Becker regarding whether the NRCS soil mapping information showed that the soils were classed in such a way as to preclude a determination of non-resource land, Mr. Rabe confirmed that the NRCS soil mapping information showed different soil mapping units than those shown by the applicant.

Mr. Cornacchia said it was an obvious choice to use a soil scientist to do an onsite survey if the NRCS data did not support the application to rezone to non-resource lands. He stressed that Mr. Rabe's survey had shown that the NRCS data was inaccurate.

Mr. Becker noted that by the calculations of the applicant there was a three percent margin of error between meeting the criteria for non-resource land and not meeting the criteria.

In response to a question from Mr. Becker regarding how the test pit locations were chosen, Mr. Rabe said some test pits had been located by him and some test pits already existed. He said the holes that already existed were dug while he was on his way to the site and were dug specifically for his visit. He said he had used the aerial photography to pre-select test pit locations. He added that he filled in gaps in the survey by personally digging in areas that could not be accessed by a machine.

Ms. Nichols commented that she had compared the NRCS soil survey with the data supplied by the applicant and had determined that one third of the soils were the same, one third were different and one third were not tested. She questioned whether the data from the untested soils could tip the determination for non-resource land either way.

Mr. Rabe said the soil that had been untested was impossible to survey because they were wasabi beds that were lined and filled with gravel. He said it would be very destructive to the beds themselves to try and

look beneath them. He added that the data from the soils underneath the beds would be skewed since grading and leveling had occurred before the liners for the beds were installed.

In response to a question from Commission member Jozef Zdzienicki regarding whether Mr. Rabe had walked the entire site, Mr. Rabe confirmed that he had to the best of his ability.

In response to a question from Mr. Zdzienicki regarding the percentage of 131(e) and 94(e) that he considered over 25 percent slope, Mr. Rabe said he relied upon the topographic interpretations where he did not make specific measurements. He noted that he had made some clinometer measurements which were included in the tables presented in the applicant's report.

Mr. Zdzienicki said Lane Code 16. 243(8) (f) prohibited building on slopes over 25 percent.

In response to a question from Mr. Dignam regarding Cascade Earth Sciences and his experience with similar projects, Mr. Rabe said Cascade Earth Science had been founded in 1976. He said he started in 1987 and one of his first projects had been in Lane County. He said Kathy Weiderhold of LCOG had used the data from his first case to demonstrate what a soils report should look like in the land use planning process. He said he had been doing similar work at Cascade Earth Sciences for 19 years and had worked at DEQ prior to that time.

Ms. Arkin noted that the western portion of the property showed sandy soils and a great deal of erosion. She expressed curiosity about changing soil types in the area.

Mr. Rabe stressed that soil was not static. He said wind and streams all contributed to soil movement. He stressed the small size of the parcel on the NRCS map and emphasized the difficulty of producing a map, such as he had shown, at that scale.

In response to a question from Ms. Arkin regarding whether dunes were encroaching on the property, Mr. Rabe said the property in question was an exposed cemented layer. He said upland side slope soils had vegetation and some degree of cementation. He said iron, roots and other compounds worked together to stabilize dunes.

Mr. Becker noted that iron cementation was a result of precipitation of iron from acid soils due to pine trees growing on those soils. He questioned whether the iron precipitate had been caused because the area had been covered with shore pine.

Mr. Rabe said the iron precipitate could also have been caused by shrub species.

Mr. Becker commented that parabola dunes could, depending on the predominate winds, cover a forest. He raised concern over sand migration across the nearby highway. He questioned whether there had been any analysis of dune or sand migration that could threaten the highway.

Mr. Rabe said that had not been part of his examination.

In response to a question from Mr. Becker regarding whether the test holes in his report were all actually holes, Mr. Rabe said they were observation points, test holes, cut banks and auger holes.

In response to a question from Mr. Becker regarding how a soil depth of 44 inches could be determined by using a spade, Mr. Rabe said where he had cited specific soil depths he had personally observed that depth with a spade, auger, or test pit.

In response to a question from Mr. Becker regarding whether he was confident that his test data was enough to uphold a non-resource designation for the site, Mr. Rabe confirmed that he was confident in his determination of the soil data to show that the site was non-resource land.

Mr. Zdzienicki commented that some holes were on two adjoining soil types. He questioned whether the holes moving a short distance one way or another would change the soil determination.

Mr. Rabe said in almost every case the actual soil boundaries were a combination of direct observation and baseline information such as vegetative patterns and topographic information. He said there was no crisp line between soil types. He said his data was a representation of his best professional judgment as to where the boundaries should be placed.

In response to a question from Mr. Dignam regarding the amount of trees shown on the map of the site, Mr. Setchko said there was some Shore Pine and a lot of brush growing on the site.

In response to a question from Mr. Dignam regarding whether Shore Pine could grow sufficiently to be of commercial use on the property, Mr. Setchko said shore pine grew extremely slowly due to environmental factors and poor soils. He acknowledged that shore pine was a hardy species but stressed that a tree could be eighty years old and be only twenty feet tall. He added that Shore Pine was not a sought after species in the lumber industry.

In response to a question from Ms. Arkin regarding why the land had been originally designated as forest land, Mr. Setchko guessed that the land had been logged in the past. He said the designations for forest land and agricultural land were arbitrary. He noted that he had been on farm lands with two oak trees that were designated for forestry.

Mr. Lanfear added that when the County designated zoning for the Rural Comprehensive Plan the prime designations county-wide were farm or forest lands unless the land was residential. He said the zoning was done on a broad scale and very quickly. He said aerial photos had been used to determine farm or forest land. He said the site in question had shown green in the aerial photo so it was zoned for forest land.

In response to a question from Mr. Zdzienicki regarding the land to the north zoned F-2, Mr. Setchko said that land had stunted Hemlock and Shore Pine with a very few Douglas Fir.

In response to a question from Mr. Becker regarding page one of his report regarding the property abutting an unstable area with high winds, Mr. Setchko said most of the dunes along the Oregon Coast were unstable unless beach grass was planted.

Mr. Becker raised concern over the proximity of the parcel to open areas of sand to the west and northwest. He said the property was between two areas of unstable sand dunes and noted that there was a northwest pattern of high wind. He said the parcel would be cleared with houses being constructed. He questioned whether there had been any analysis to show that shifting sands would not impact nearby Highway 101.

Mr. Cornacchia said there was nothing in the record to show that the land would be cleared and added that Mr. Becker was talking about the development of the property. He said the issues Mr. Becker was bringing up would be addressed at the time of development. He said the issue being raised by Mr. Becker was not a part of the criteria for the particular application before the commission that evening. He stressed that the applicant had not made any assertion that all vegetation would be cleared from the site and reiterated that the issues raised by Mr. Becker would be addressed at the time of development.

Mr. Cornacchia stressed there was a regulatory process that dealt with the issue of migrating sand dunes that was not part of the evening's proceeding.

Mr. Becker commented that the City of Florence had spent many years trying to stop the migration of sand dunes across Highway 101.

In response to a question from Ms. Arkin regarding the required analysis of impact on natural resources to the west as well as animal habitat, Mr. Lanfear said there was a designation for the North Florence Dunal Aquifer that limited the density of development that could occur to protect ground water resources. He said the maximum density allowed was three units per acre. He stressed that nothing in the current application came close to the maximum density.

Mr. Cornacchia said the three part test in determining forest land required an evaluation of impacts on natural resources and animal habitat. He said all were evaluated and were part of the application.

Mr. Lanfear added that there were no identified natural resource impacts adjacent to the site. He said there were no Goal 5 issues.

Mr. Becker called for testimony from others in support. Seeing none he called for testimony in opposition to the application.

Darald Heer, 88380 Highway 101, said he had owned his property for four years. He said his property abutted the back portion of the site in question. He said his abutting property had trees 2-3 feet in diameter. He said the soil was not deep but could support trees. He raised concern over the profit to be realized by the applicant when the land was developed. He also raised concerns over traffic issues if development were to occur. He added his opinion that there was plenty of residential property available already and maintained that the zone change was contrary to the public interest. He remarked that he could not pay increased assessed taxes. He added that there was a lot of erosion on the property. He said he had marketable timber on his property.

In response to a question from Mr. Dignam regarding whether his property was immediately adjacent to the land in question, Mr. Heer confirmed that he owned .75 acres abutting the rear portion of the property in question.

Jim Just, Goal One Coalition, 642 Charnelton, Eugene, submitted written testimony and aerial photos into the record. He requested that the hearing be continued for 30 days to give him time to prepare his materials. He said the subject property was part of a larger area of forested dune land that extended north and south. He remarked that if the subject property was not forest land then none of the nearby land was forest land.

Mr. Just said that Lane County had not adopted a productivity policy of fifty feet per acre per year. He said it adopted as part of an inventory process but did not have the force of law. He said ODOF had since lowered that standard to 20 feet per acre per year. He said Goal 4 policy 7(a) specifically recognized that lands with capability of 20 feet per acre per year could be forest lands protected by Goal 4. He said the evaluation in the case complied with administrative rule requirements regarding soil mapping. He said OAR 660.0010 required a mapping of forest site class. He said the applicant had only provided a generalized average productivity. He said forest land included adjacent or nearby lands that were needed to enable forest operations on abutting land. He added that the land might not be productive for growing trees but remarked that there were soils that could make good farm land. He said a farm unit remains a farm unit even though farming had stopped.

Mr. Just said forest lands also included lands that maintained soil, air, water, fish, and wildlife resources. He said the land in question was forest land which stabilized the dunal aquifer and air quality. He said climate change and global warming were huge issues.

Mr. Becker called for applicant rebuttal.

Mr. Cornacchia said the applicant had very adequately demonstrated in the application that the fifty feet per acre per year figure was law acknowledged by LCDC. He added that this determination was supported by Lane County staff. He said the 20 cubic feet per acre per year figure referred to by Mr. Just was the Department of Forestry's figure for productive forest land requiring reforestation and was not the basis for determining resource or non resource lands. He added that Mr. Just's letter said that the land in question had to remain zoned forest land because nearby lands were susceptible to high winds and erosion. He said he was not aware of any law that stated such a requirement.

Mr. Cornacchia objected to a 30 day continuance of the public hearing. He said the application had been filed a year previously and Mr. Just had more than adequate time to prepare for the hearing. He said Goal One was aware of every application filed in Lane County and said he found it disingenuous that Mr. Just had just found out about the application one week previously. He said Goal One would have more than enough time to prepare testimony for the public hearing before the Board of County Commissioners. He said there were no issues in the letter submitted by Mr. Just that would require a month of work to prepare. He reiterated that the application had been filed a year previously.

Ms. Arkin, seconded by Mr. Zdzienicki, moved to leave the record open for two weeks.

Mr. Dignam questioned whether the added time would include an additional week for applicant rebuttal.

Mr. Cornacchia said he did not anticipate any need for rebuttal testimony.

The motion passed unanimously.

The meeting adjourned at 8:40 pm.
(Recorded by Joe Sams)

ATTACHMENT 4

LANE COUNTY PLANNING COMMISSION

STAFF REPORT

HEARING DATE: August 1, 2006 **FILE No. PA 05-6249**

REPORT DATE: July 25, 2006

LAND MANAGEMENT DIVISION
http://www.LaneCounty.org/PW_LMD/

I. APPLICATION DESCRIPTION

A. Owner / Applicant
Julia Carver
c/o Roy Carver
P.O. Box 51505
Eugene, OR 97405

Agent
P. Steve Cornacchia
Hershner Hunter, LLP
180 East 11th Avenue
Eugene, OR 97401

B. Proposal

Request for a Rural Comprehensive Plan (RCP) diagram amendment from "Forest" to "NonResource," and a zoning map amendment from Impacted Forest Lands (F-2) to Rural Residential (RR-5) for a 52.17 acre site located west of Hwy 101 and north of the City of Florence, pursuant to Lane Code (LC) 16.252 and LC 16.400. Approval as proposed would enable the applicant to apply for a land division for up to 10 lots. The land division application is not part of the action presently before the Planning Commission.

II. RECOMMENDATION

A positive recommendation to the Board of Commissioners appears to be warranted based upon the information contained in the file record at the time of the writing of this report.

III. SITE AND PLANNING PROFILE

A. Subject Property

Map 18-12-02-20 tax lot 1900. The parcel has been determined to be a legal lot under PA 2964-92.

B. Zoning

Located on Plot 021. Zoned F-2/BD/RCP; Impacted Forest Land, with a Beaches & Dunes Overlay. The property is within the Rural Comprehensive Plan Area (outside any UGB).

C. Site Characteristics

The site is located on the west side of Hwy 101 north of Florence. It is currently developed with the remnants of a seven-acre hydroponics system for the artificial production of wasabi. The system is no longer in operation. Wetland areas have been identified on the subject property by the Florence Local Wetlands Inventory. The site is relatively flat, but includes areas of gently undulating terrace, variably sized stabilized dunes and a small portion of a large active dune in its extreme northwest corner.

D. Surrounding Area

The property is bounded on the north by a 29.34 acre parcel zoned F-2. Property to the west is a 200-acre parcel owned by the BLM zoned Natural Resource. Parcels to the south are zoned Rural Residential (RR-1). Smaller parcels to the east between the subject property and Highway 101 are zoned Rural Residential (RR-1).

E. Services

Fire: Siuslaw RFPD #1
Police: County, State
Water: Heceta Water District
Sewer: Proposed on-site.
School: Siuslaw School Dist. #97J.
Telephone: QWest
Power: Central Lincoln PUD
Access: Hwy. 101

F. Referral Comments Received:

The Department of Land Conservation and Development submitted a letter dated July 10, 2006. The letter is attached to this report. T the time of the writing of this report, no comments had been received from any neighboring property owners or the following agencies:

- Siuslaw RFPD #1
- City of Florence
- Heceta Water District
- State Fish & Wildlife
- ODOT.

IV. APPROVAL CRITERIA & ANALYSES

A. Approval Criteria

Applicable criteria for all RCP amendments and rezonings are found in Lane Code 16.400(6) and L.C. 16.252. They are recited in the applicant's statement and so are not repeated in this staff report. The NonResource designation is a unique designation which must meet a special set of evaluation criteria, fundamentally proving that the land involved in the proposal has no significant resource value within the definitions of the statewide planning goals.

These criteria, which are not in Lane Code but are found in the County's Marginal Lands Working Paper, require showings of limited or no resource value including such elements as watershed protection and wildlife habitat needs. Information on these criteria is discussed in the applicant's statement. It can be added that the NonResource designation does not require adoption of a typical exception to statewide planning goals, since by its nature it obviates goal mandates.

B. Evaluation

This application proposes to change a 52.17-acre parcel of Impacted Forest Land property to a zoning density which potentially could result in 10 residentially-developed

lots. (A land division is **not** proposed as part of this application.) In justifying the proposal, the applicant has addressed Plan and zoning criteria including RCP policies and NonResource approval standards. Those criteria are not repeated in this Staff Report; please refer to the applicants' statement (attached) for both criteria and the applicants' responses to them. Staff comments are limited to the soil capabilities component of the requirements.

A key test for NonResource designations is soils productivity for farming and forestry. To demonstrate that the property is not Agricultural Land, the applicant must demonstrate that the property does not consist of predominately Class I – IV soils. To demonstrate that the property is not Forest Land, the applicant must demonstrate that the land is not suitable for the production of 50 cu. ft. / acre / year of wood fiber.

Agricultural Soils

Based upon the existing soil mapping by the NRCS and calculations performed by the Lane County Regional Land Information Database, the following soils are present on the subject property.

44	Dune Land	2%	Class VIII
131C	Waldport Fine Sand	26%	Class VI
131E	Waldport Fine Sand	4%	Class VII
140	Yaquina Loamy Fine Sand	69%	Class IV

The presence of 69% of the soils on the property in capability class IV would preclude the approval of the Plan designation change to NonResource Lands. The applicant has submitted a report by a soils scientist that refines the boundaries of the soils map units on the property. The report concludes that there is substantially less of the Yaquina Soil map unit on the property (only 24.93%) and proceeds to identify 19.89 acres of Netarts soils (Class VI) on the property. The refinement of the soils map units in this manner reduces the amount of soils in Classes I – IV to 47.8% and allows consideration of the property as NonResource Land.

Forest Soils

The applicant has submitted a report by a Consulting Forester that concludes that the property is capable of producing 37.32 cf. /ac. /yr. of merchantable timber. Page 7 of the report contains a table that identifies a maximum productivity of 48.89 cf. /ac. /yr. when using the most optimistic productivity figures possible, still below the 50 cf. /ac. /yr. threshold that allows the consideration of the property as NonResource Lands.

V. CONCLUDING COMMENTS

A. Summary Remarks

Staff concurs with the applicant's arguments with respect to the NonResource designation and RR-5 zoning district. DLCD has submitted a review of the application that is generally favorable to the reclassification to NonResource Lands

B. Attachments to Staff Report

1. Zoning plot map 021
2. Plan plot map 021
3. Applicant's statement with exhibits -- NOTE: provided to Planning Commissioners only, and can be made available to other interested persons.
4. Letter from Department of Land Conservation and Development

ATTACHMENT 5

HERSHNER HUNTER LLP

STEVE CORNACCHIA
scornacchia@hershnerhunter.com

October 31, 2006

HAND DELIVERED

Thom Lanfear
Lane County Land Management Division
125 E. 8th Avenue
Eugene, OR 97401

Re: PA 056249 (Carver)
Our File No.: 30517.30006

Dear Thom:

Please place the enclosed aerial photographs into the record of the above-mentioned proceeding. They relate to the testimony contained in the Westbrook Enterprise LLC correspondence to Roy Carver III, dated September 8, 2006, and placed in the record on September 27, 2006.

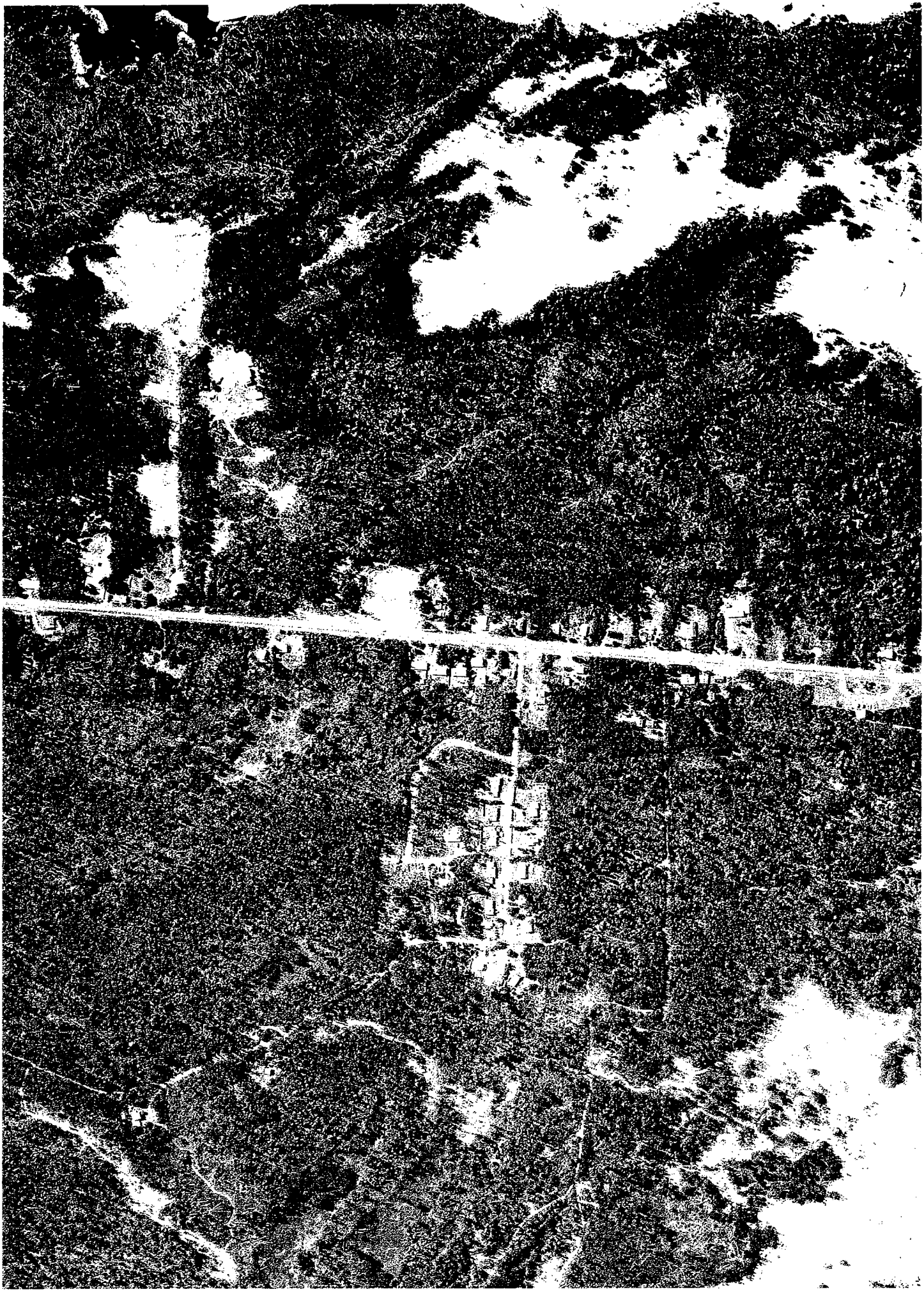
If you have any questions or comments regarding the evidence please contact me.

Best regards,

STEVE CORNACCHIA

PSC:ss
Enclosures

R 1976



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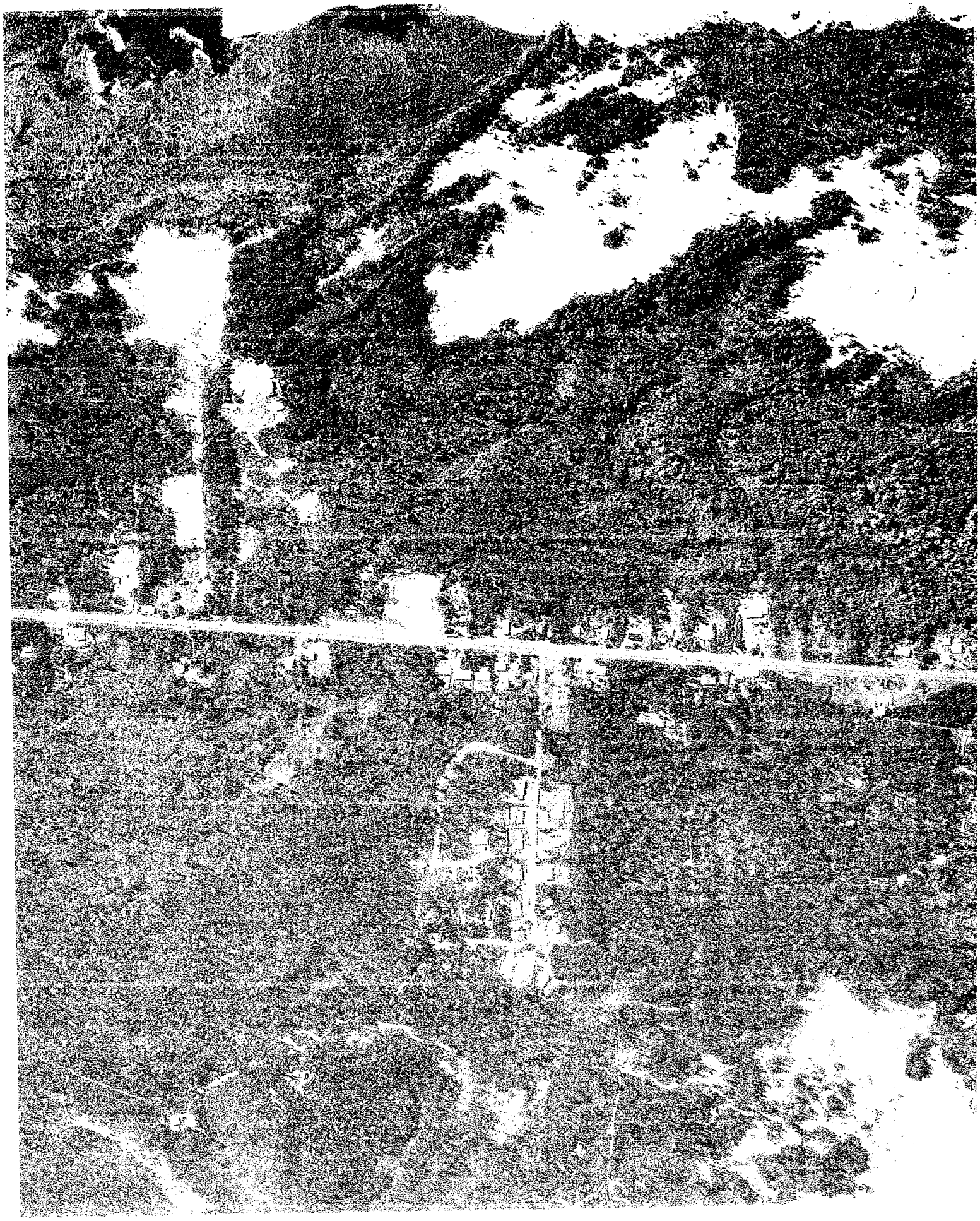

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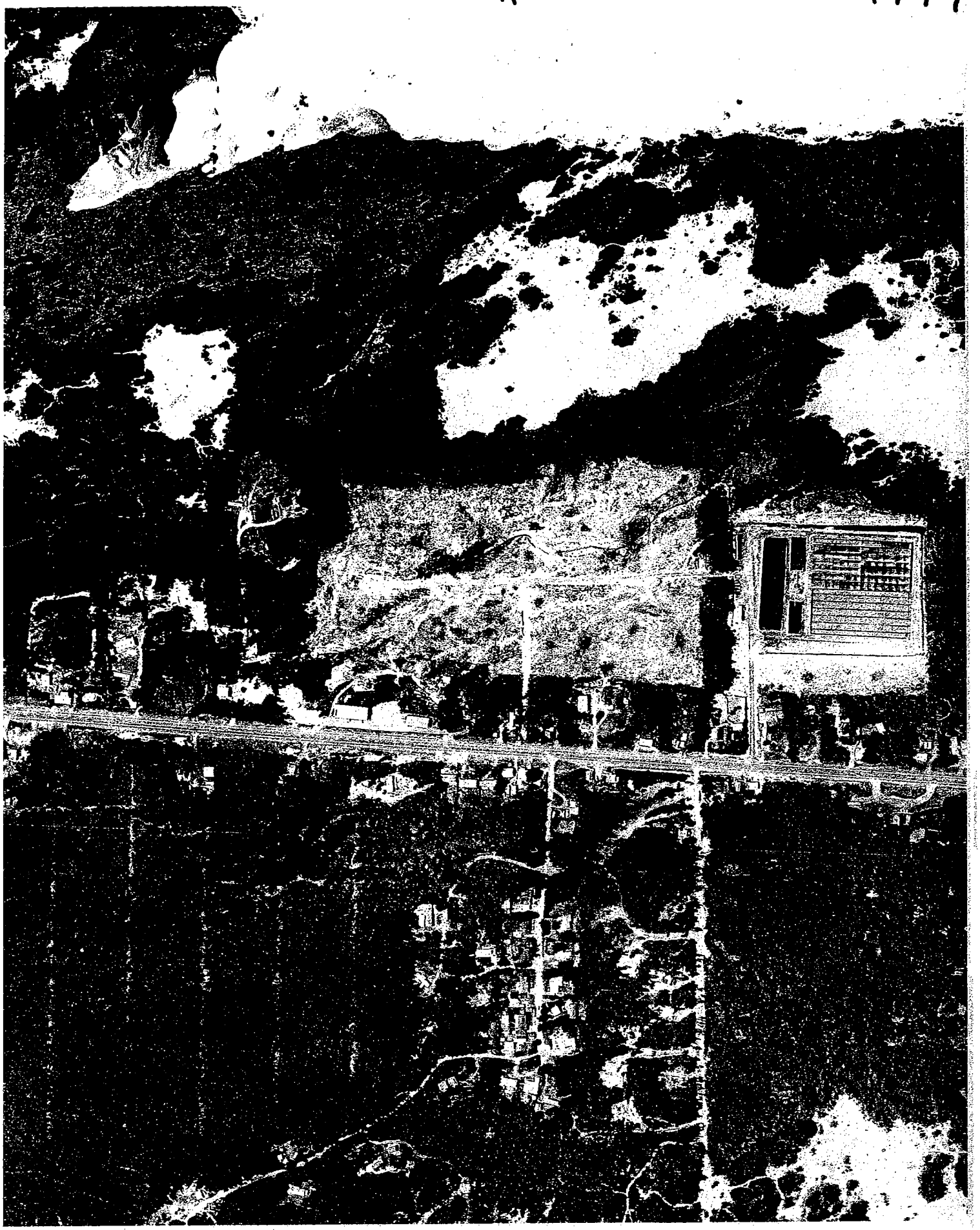

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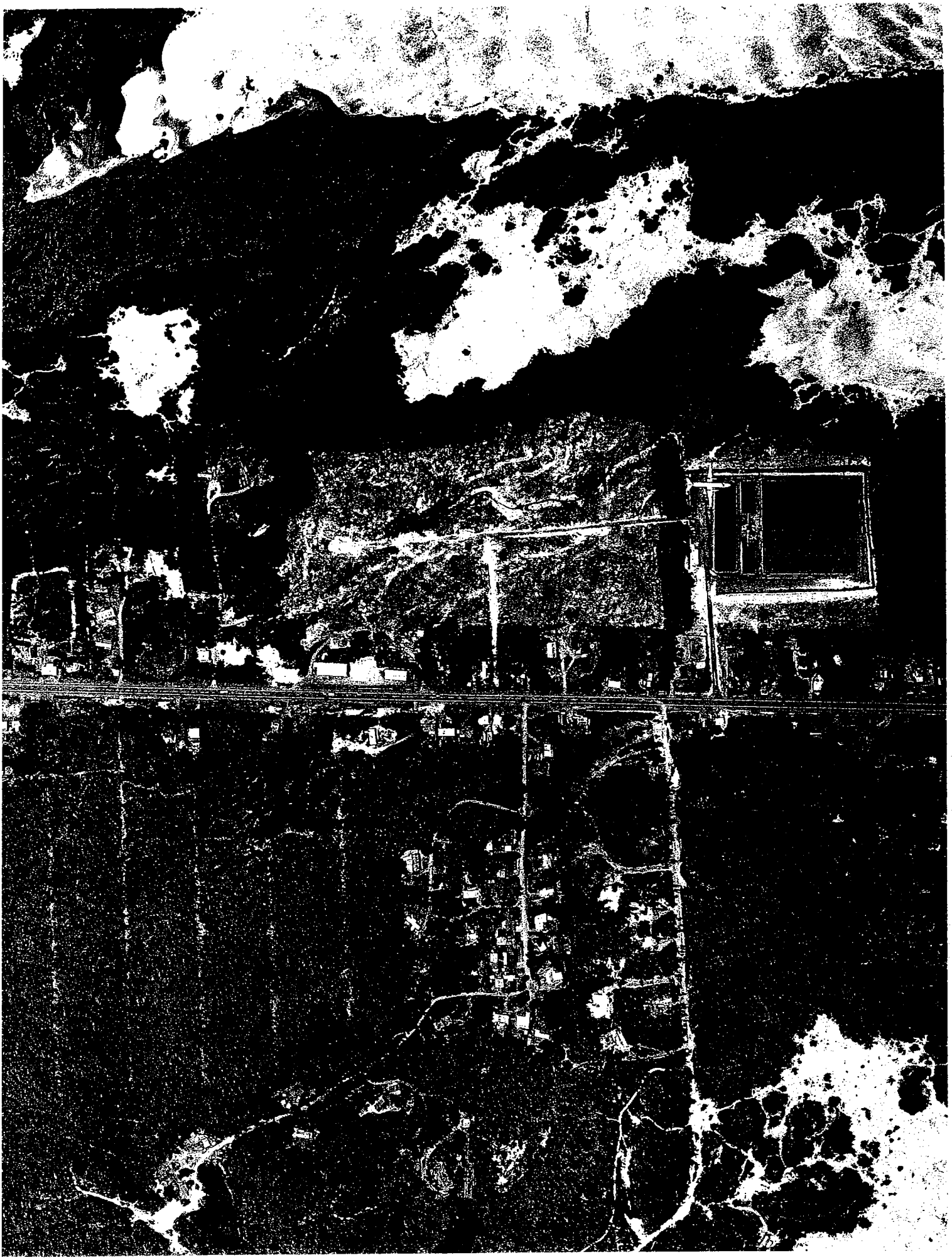

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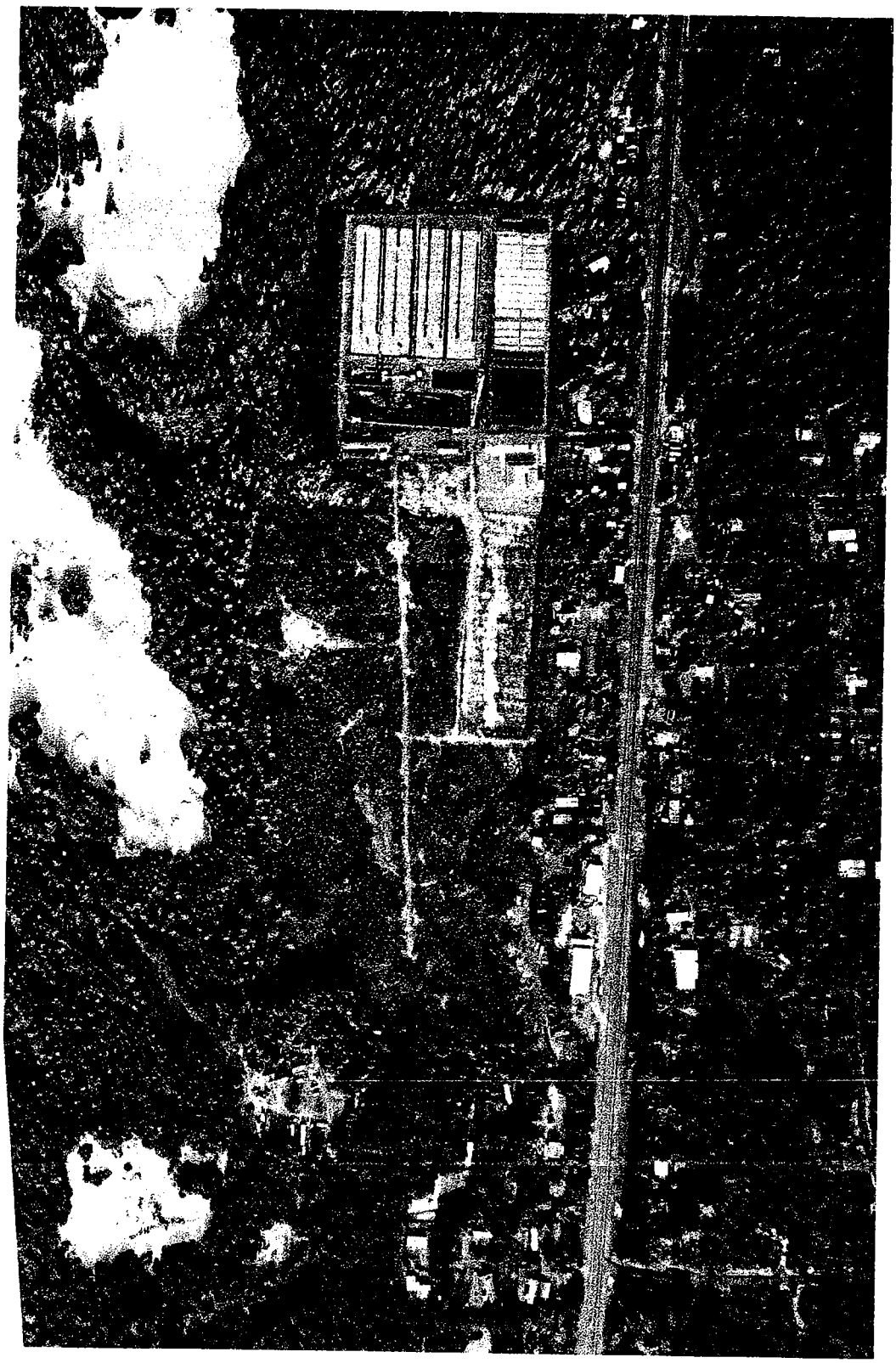

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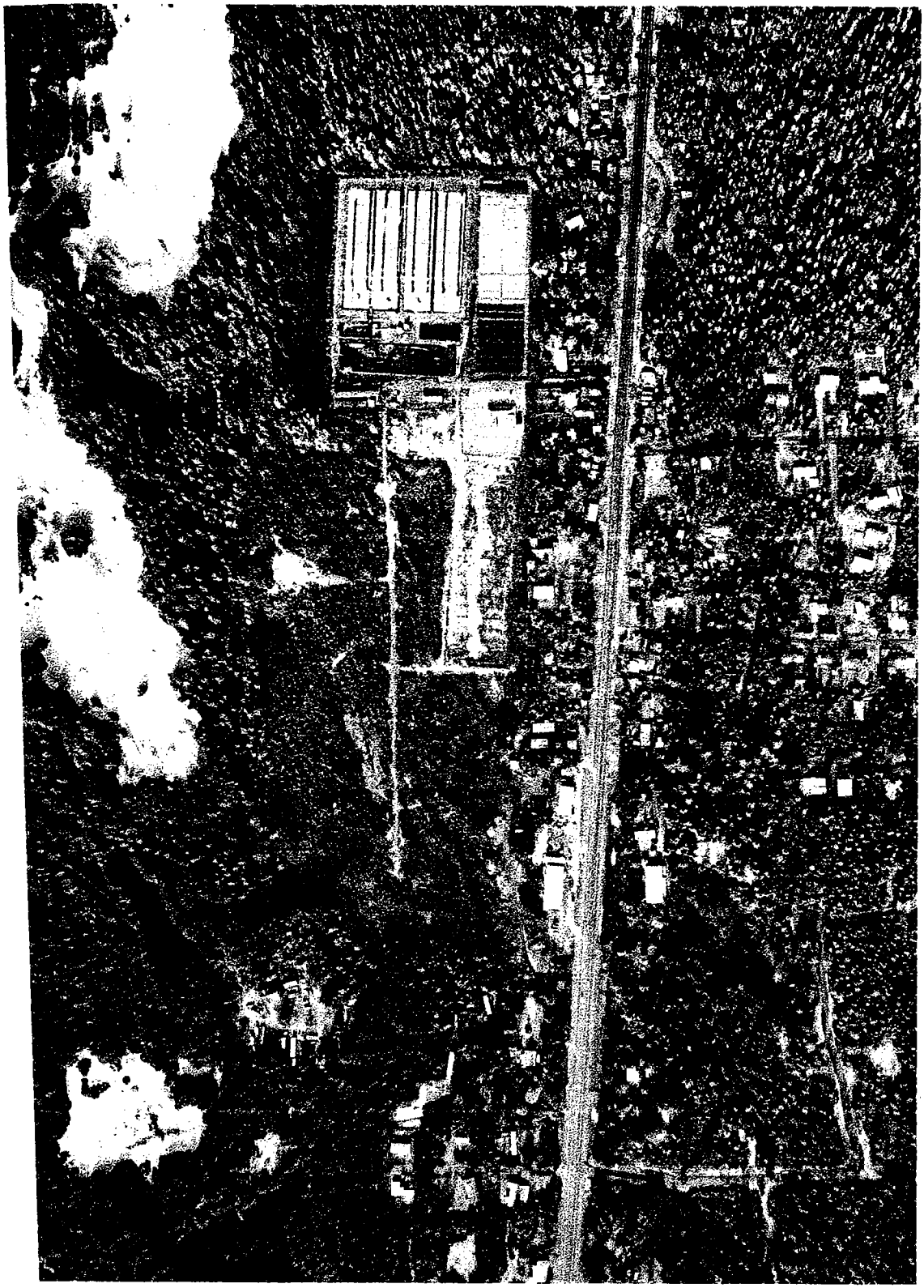

HERSHNER HUNTER
LLP

STEVE CORNACCHIA
scornacchia@hershnerhunter.com

September 27, 2006

Thom Lanfear
Lane County Land Management Division
125 E. 8th Avenue
Eugene, OR 97401

Re: PA 056249 (Carver)
Our File No.: 30517.30006

Dear Thom:

Enclosed are the following documents and materials that we request you include in the record of this proceeding. All of the enclosures constitute evidence in support of approval of the application. The documents and materials are as follows:

- Marc Setchko Forest Productivity Analysis of Florence Parcel, dated September, 2006, with exhibits, including correspondence for the Oregon Department of Forestry;
- Westbrook Enterprise LLC correspondence to Roy Carver III, dated September 8, 2006;
- CES correspondence to Roy Carver III, dated August 28, 2006, September 8, 2006, and September 8, 2006;
- EGR & Associates, Inc. correspondence to Julia Carver, dated August 25, 2006.

Please contact me if you have any questions regarding the placement of the aforementioned enclosures in the record of this proceeding.

Best regards,

STEVE CORNACCHIA

PSC:ss
Enclosures
cc: Client (with enclosures)
Goal One Coalition (with enclosures/By Certified Mail-Return Receipt Requested)

Marc E. Setchko
CONSULTING FORESTER

870 Fox Glenn Avenue
Eugene, Oregon 97405
Phone: (541) 344-0473
FAX: (541) 344-7791

September, 2006

FOREST PRODUCTIVITY ANALYSIS OF FLORENCE PARCEL

T18S, R12W, Section 2, TL #1900, ±52.17 acres

I. SUMMARY

An evaluation of the site, from a timber productivity standpoint is reviewed in this analysis, in order to determine if the parcel meets the criteria for nonresource lands designation. The analysis shows that the subject property is capable of producing only 9.28 cf/ac/yr.

II. SITE INFORMATION

Cascade Earth Sciences (CES) conducted an assessment of the soils, on the above mentioned parcel, in order to verify and refine the boundaries of the different types of soils underlying the parcel. This assessment shows six soil map units. The five soils underlying the property are Netarts fine sand (94C &E), Waldport fine sand (131C & E), Waldport-Urban land complex (133C), Yaquina loamy fine sand (140), Yaquina-Urban land complex (141) and dune land (44). The dune land will not grow trees, the Netarts fine sand and Waldport fine sand are poor to marginal tree growing soils and the Yaquina loamy fine sand has an extremely high water table which makes it difficult for most tree species to survive, if they can even become established.

Aerial photography of the site, and on site observation of current tree growth, shows that shore pine is the dominant tree species on the property. Shore pine is the dominant species on adjacent and nearby lands including all lands between this property and the ocean, including all lands west of 101 and north of this property for at least several miles, east of 101 to the foothills of the coast range, both north and south of this property for at least several miles and all lands west of Highway 101 and south of the property for at least several miles. These trees, along with rhododendron, salal and huckleberry, comprise the majority of the vegetation on this property and the adjacent and nearby lands. There are also a few scattered Douglas-fir, hemlock and red cedar trees on this property.

The above subject parcel abuts the sand dunes along the Oregon Coast. The northwest portion is actually a small sliver of the dunes. The interface between the sand on the coast and the forested ground inland is a narrow band of land that is a particularly harsh growing environment for trees. The constant high winds and the brine contained in the salt air off the ocean is extremely harsh on trees; trees do not grow well in this zone. Therefore a soil type which will support a commercially viable forest just a mile or so inland will barely grow trees within this interface. The seasonal high winds blowing across this parcel leave few protected areas to establish trees. Where natural or artificial reforestation, of species other than shore pine, is attempted, seedling mortality is high. For trees that are established, the windthrow hazard is high due to the extremely thin soil layer on top of the sand.

SHORE PINE

Shore pine will and does grow on the site. It is the dominant tree species currently growing on the site at the present time. It is one of the few trees which will grow in the Yaquina fine sandy loam soil (Type 140) (see Exhibit 1).

Shore pine is a variety of lodgepole pine which grows in coastal areas; lodgepole pine grows inland, most commonly in mountainous areas (see Exhibit 2). It is a small scrubby tree which is short and does not obtain large diameters (see Exhibit 3). Whereas inland lodgepole pine will grow to 45-50m in height, shore pine will only grow to 10m in height (see Exhibit 4). Due to its shallow root system shore pine is extremely susceptible to windthrow. Shore pine is very limby and often deformed.

No site index tables or yield tables exist for shore pine. The USFS, NRCS and ODF were contacted in an extensive search for any such tables; not one of these agencies had any knowledge of shore pine tables. Searches of other libraries and the internet turned up a registry of every known site index table; shore pine is not on the list. Therefore, an alternative method for calculating productivity was used. I applied to the ODF for approval of an alternative methodology; a copy of the alternative methodology and ODF approval of the methodology is included (see Exhibits 5&6).

III. RESULTS OF PRODUCTIVITY CALCULATIONS (based upon approved alternate methodology)

1) Provide substantial evidence that shore pine is the dominant species on the site.

From stereo pairs of aerial photos taken in 1991, prior to the timber harvest, it can be seen that shore pine was the dominant tree species growing on the site. There were a few scattered hemlock, Douglas-fir, red cedar and spruce. These tree species were a minor component of the stand. After logging activities were completed in 1993, natural shore pine regeneration began coming back in. Current observation of the site shows it is currently fully stocked with a 5-13 year old stand of shore pine. Aerial photos taken before the 1993 timber harvest and observation of existing conditions today both provide substantial evidence that the dominant tree species on the site is shore pine.

2) Provide substantial evidence that a fully stocked even aged stand of shore pine existed on the site at the time of commencement of the timber harvest.

Stereo pairs of aerial photos taken in 1991, prior to the timber harvest, show that an even-aged, fully stocked stand of shore pine existed on the site. The aerial photos clearly show crown closure across the entire property, except for a few small wetland areas. The Westbrook tree height measurements show a tree height variance, across the test plots, of less than 15%. The uniform height of the trees in the stand indicate an even-aged stand exists. This is substantial evidence that a fully stocked, even-aged stand of shore pine existed on the site at the time of the 1993 harvest.

3) Provide substantial evidence of the age of the stand.

In the portion of the stand remaining after the 1993 timber harvest, ages were obtained by boring sample trees. The age of these trees in 2006 ranged from 110 to 130 years old. The range at harvest would have been 97 to 117 years; the average age was 104 years at time of harvest. This is substantial evidence that the average age of the stand was 104 years at the time of harvest.

4) Provide substantial evidence that the harvest was a clearcut.

Aerial photos taken in 1994 clearly show all the standing trees were removed within the harvested area, i.e., clearcut. The 1994 aerial photo is substantial evidence that the timber harvest was a clearcut.

5) Provide substantial evidence of the total acres clearcut.

Attached is a letter from Chip Westbrook, an Oregon Professional Photogrammetrist (Certification #42601RRPP and Certified Photogrammetrist (Certification #291). Using the 1994 aerial photography, Mr. Westbrook has measured the clearcut area and determined it to be 43.5 acres. This is substantial evidence of the total acres clearcut was 43.5.

6) Provide substantial evidence of the total number of board feet removed.

Attached is a copy of the 1993 Timber Tax Return (see Exhibit 7), for the subject property, filed after the clearcut was completed. The Timber Tax Return shows that 123 thousand board feet were removed. This is substantial evidence that 123 thousand board feet were removed.

7) Convert board feet removed to cubic feet removed.

The Land Use Notes Number 3 X 1998, published by Oregon Department of Forestry, provide guidance on page 3 on converting board feet to cubic feet:

> *Because board foot volume is determined by a rule, one cubic foot of wood from a log with a scaling diameter (small end diameter) of 6 inches contains 3.32 board feet, while one cubic foot of wood from a log with a scaling diameter (small end diameter) of 30 inches contains 6.86 board feet.*

From this explanation, as quoted from the ODF Land Use Notes, it can be seen that a larger log (i.e., larger scaling diameter), has fewer cubic feet per board foot than a small log. Example: 10,000 board feet of logs with an average scaling diameter of 6" is equal to 3,012 cubic feet (10,000÷3.32= 3,012). 10,000 board feet of logs with an average scaling diameter of 30" is equal to 1,458 cubic feet (10,000÷6.86 = 1,458). The reason for this is: the larger a log is, the closer the board foot measurement is to the cubic foot measurement. Taking this one step further: a 4" scaling diameter log would have more cubic feet per board foot than a 6" scaling diameter log.

The other factor entering into this equation is the number of logs in an individual tree, because of the natural taper which exists in trees. What this means is that the individual logs cut from a whole tree will have different scaling diameters. The butt log (the bottom log in the tree) will be the largest, the top log will be the smallest. In other words: the butt log will have a larger scaling diameter than the top log. An example would be a tree with a 10" scaling diameter in the butt and a 6" scaling diameter in the top log (this is an example of a two log tree, trees can grow many logs taller than two). From the example shown above, it can be seen that if the total cubic foot volume for the two logs is calculated using the total board feet scaled from 6" and 10" scaling diameter logs, the total cubic foot volume of these logs would be less than the total cubic foot volume calculated from the board feet contained in two logs having a 6" scaling diameter.

Finally, the shorter the logs used to calculate the cubic foot volume, the higher the cubic foot volume from each tree will be. From log scaling tables it can be seen that the shorter the logs are cut (i.e., more short logs can be cut from a tree than long logs), the more scaled board feet the tree has. This is why scaling trees in 16' logs shows more volume than scaling trees in 32' logs. The same is true for cubic foot volume in a tree.

The shore pine harvested from this property was sold by the ton. Therefore, there is no record of scaled logs. The logger simply cuts logs from the butt of the tree up to a 4" diameter scaling end. The tops have too much bark and too many slivers to be utilized as chip wood, therefore they are not delivered to the mill. The average scaling diameter is higher than 4" because there were many butts logs with larger diameters. However, since there is no record of scaled logs I have used an average of 16' logs with 4" scaling diameters. Calculating the cubic foot volume in this fashion will show the highest possible cubic foot volume, thereby erroring on the high side.

CALCULATIONS:

Using the figure of 123 MBF (from the tax return), a cubic foot volume can then be calculated by using the conversion factor for 4" scaling diameter 16' logs (see Exhibit 8).

123,000 board feet ÷ 2.93 board feet per cubic feet for logs with a scaling diameter (small end diameter) of 4 inches = 41,980 cubic feet.

This is substantial evidence that 41,980 cubic feet were removed from the property.

8) Calculate the cubic feet per acre removed by dividing cubic feet removed by total acres clearcut.

Total Cubic Feet Per Acre = 41,980 cubic feet ÷ 43.5 acres = 965.05 cf/ac

This is substantial evidence that 965.05 cubic feet per acre were removed from the property.

9) Calculate cubic feet per acre per year by dividing cubic feet per acre removed by the age of the stand.

Total Cubic Feet Per Acre Per Year = 965.05 cu. ft. ÷ 104 years = 9.28 cf/ac/yr

This is substantial evidence that the productivity capability of the site is 9.28 cubic feet per acre per year. Furthermore, the tree height and tree density analysis by Chip Westbrook show little difference in average height and density of the trees across the three soil types. This is substantial evidence that the average productivity capabiltiy of 9.28 cf/ac/yr would apply to each of the soil map units.

IV. TREE SPECIES OTHER THAN SHORE PINE

CONIFER TREE SPECIES	Does This Tree Produce Merchantable Products	Will This Species Grow On This Site
Douglas-fir	Yes	Yes
Valley Ponderosa Pine	Yes	NO
Jeffrey Pine	Yes	NO
Lodgepole Pine	Yes	NO
Western White Pine	Yes	NO
Limber Pine	NO	NO
Whitebark Pine	NO	NO
Sugar Pine	Yes	NO
Western Red Cedar	Yes	Yes
Incense Cedar	Yes	NO
Port Orford Cedar	Yes	NO
Alaska Yellow Cedar	Yes	NO
Knobcone Pine	NO	NO
Grand/White Fir	Yes	NO
Noble Fir	Yes	NO
Shasta Red Fir	Yes	NO
Pacific Silver Fir	Yes	NO
Subapline Fir	NO	NO
Sitka Spruce	Yes	Yes
Engelmann Spruce	Yes	NO
Brewer Spruce	NO	NO
Western Larch	Yes	NO
Western Juniper	Yes	NO
Western Hemlock	Yes	Yes
Mountain Hemlock	Yes	NO
KMX	NO	NO
Pacific Yew	Yes	NO
Redwood	Yes	NO
Sequoia	Yes	NO

Constraints to growth for conifer species which will not grow on this site:

Valley Ponderosa Pine - Site is out of its' geographic range.
Jeffrey Pine - Site is out of its' geographic range, this tree is almost identical to ponderosa pine, it just grows in other areas, primarily northern California.
Lodgepole pine - Site is out of its' geographic range, it is an eastern Oregon tree.
Western White Pine - White pine grows scattered throughout other trees, it does not grow in pure stands and is extremely susceptible to blister rust (which kills the tree), therefore it is not planted.
Limber and Whitebark Pine - High elevation, bush-like trees.
Sugar Pine - Site is out of its' geographic range, grows scattered among other trees, it does not grow in pure stands.
Incense Cedar - Too much moisture on this site, does not grow in pure stands, out of its' geographical range.
Port Orford Cedar - Site is out of its' geographic range, grows scattered among other trees, it does not grow in pure stands. Currently a root rot is killing this tree throughout its' range.
Alaska Yellow Cedar - Site is out of its' geographic range, grows scattered among other trees, it does not grow in pure stands.
Knobcone Pine - Extremely slow growing, scarce bush-like tree, which grows on harsh sites (primarily high elevation ridges) by coming in after a fire; it is not a commercial speces.
Grand/White Fir - Seldom grows in pure stands, soils too poor on this site to support growth.
Noble, Shasta Red, Pacific Silver Fir - Site is out of its' geographic range, these are high elevation trees.
Subalpine Fir - Noncommercial, high elevation tree, site is out of its' geographic range.
Engelmann Spruce - Site is out of its' geographic range, high elevation tree.
Brewer Spruce - Noncommercial, high elevation tree, site is out of its' geographic range.
Western Larch - Site is out of its' geographic range, it is an eastern Oregon tree.
Western Juniper - Site is out of its' geographic range, it is an eastern Oregon tree.
Mountain Hemlock - Site is out of its' geographic range, high elevation tree.
KMX - Noncommercial, bush-like tree.
Pacific Yew - Not enough moisture on this site, slow growing, scarce tree grows scattered underneath larger canopy of trees.
Redwood - Site is out of its' geographic range, this tree only grows near Brookings, Oregon and south into California.
Sequoia - Site is out of its' geographic range, this tree grows primarily in the Sierra Nevada Mountains in California. It also does better on drier sites.

V. DISCUSSION OF PRODUCTIVITY FOR CONIFERS OTHER THAN SHORE PINE

A few western red cedar trees are scattered about on this property. Red cedar is very slow growing and seldom grows in pure stands; even then the stands will only cover small areas. It is normally a small component of mixed stands. Establishing a pure stand of red cedar would be extremely difficult, if possible at all.

Hemlock and spruce could grow in these soil types if the conditions were conducive to their growth. Currently these trees do not exist on the subject parcel, although there are a few hemlocks on adjoining properties. Environmental conditions (discussed above) are not conducive for hemlock and spruce growth. As such it is not possible to establish a fully stocked stand of either tree. Growing conditions on this site are so poor that these species are easily outcompeted by shore pine, which is the primary species growing on the parcel today.

VI. DISCUSSION OF PRODUCTIVITY FOR HARDWOODS

HARDWOOD TREE SPECIES	Does This Tree Produce Merchantable Products	Will This Species Grow On This Site
Red Alder	Yes	NO
Bigleaf Maple	Yes	NO
White Oak	Yes	NO
Oregon Ash	NO	NO
Cottonwood	NO	NO
Hybrid Poplar	Yes	NO

Constraints to Growth: All of the hardwood species listed above are not capable of growing on this site. These trees prefer deeper, alluvial type soils, except for white oak which prefers much drier sites and will not grow along the coast.

VII. CONCLUSION

The analysis presented shows conclusively that shore pine is the dominant species and the only species capable of developing a fully stocked stand of trees on this site.

The subject property is capable of producing 9.28 cu.ft./ac./yr. of timber volume; well below the 50 cubic feet per year that has been determined by Lane County to be the measuring parameter for nonresource soils and is also well below the 20 cf/ac/yr others have advocated.

This property is not suitable for commercial forest uses.

Sincerely,

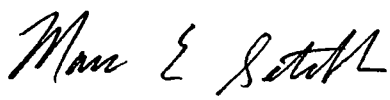

EXHIBIT 1

when wet. Buildings and roads should be designed to offset the limited ability of the soil in this unit to support a load. Wetness can be reduced by installing drain tile around footings.

Septic tank absorption fields on this unit may not function properly during rainy periods because of wetness and slow permeability.

This map unit is in capability subclass IIw.

140—Yaquina loamy fine sand. This deep, somewhat poorly drained soil is in low, interdune positions in coastal dune areas. It formed in eolian sand of mixed origin. Slope is 0 to 3 percent. Areas are irregular in shape and are 3 to 100 acres or more in size. The native vegetation is mainly shore pine, scattered Sitka spruce, Pacific rhododendron, salal, and evergreen huckleberry. Elevation is 20 to 130 feet. The average annual precipitation is 70 to 80 inches, the average annual air temperature is 50 to 52 degrees F, and the average frost-free period is 180 to 210 days.

Typically, the surface is covered with a mat of needles, twigs, sedges, and grass about 0.5 inch thick. The surface layer is very dark gray loamy fine sand about 2 inches thick. The subsurface layer is light gray fine sand about 6 inches thick. The next layer is grayish brown fine sand about 5 inches thick. The subsoil is light brownish gray, mottled fine sand about 16 inches thick. The substratum to a depth of 60 inches or more is yellowish brown, pale brown, and grayish brown fine sand. In some areas the soils are poorly drained and have a darker colored surface layer. In some areas organic material and finer textured soil material are below a depth of 40 inches.

Included in this unit are small areas of Bandon, Netarts, and Waldport soils. Included areas make up about 15 percent of the total acreage.

Permeability of this Yaquina soil is moderately rapid. Available water capacity is about 3.5 to 5.0 inches. Water supplying capacity is 20 to 24 inches. Effective rooting depth is limited by a high water table that is 2 feet above the surface to 2 feet below the surface from November to April. Runoff is slow to ponded, and the hazard of water erosion is moderate. The hazard of soil blowing is high if the plant cover is removed.

Most areas of this unit are used for wildlife habitat. A few areas are used for pasture and as homesites.

If this unit is used for pasture, the main limitations are the hazard of soil blowing and wetness. The soil should not be cultivated during dry periods because of the hazard of soil blowing. Wetness limits the choice of plants and the period of cutting or grazing and increases the risk of winterkill. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition and to protect the soil from erosion. Annual applications of lime and mixed fertilizer are needed to maintain production of high-quality irrigated pasture.

This unit is suited to wildlife habitat in areas that are under natural vegetation. Soil blowing is a hazard in areas where the soil is barren.

If this unit is used for recreational development, the main limitations are wetness and the sandy texture of the soil. Drainage is needed if roads and building foundations are constructed. Areas used for recreation can be protected from soil blowing and dustiness by maintaining plant cover. Plant cover can be maintained by limiting traffic. Only trees and shrubs that tolerate wetness should be planted.

If this unit is used for homesite development, the main limitations are wetness and corrosivity to steel and concrete. Building materials should be carefully selected to overcome the corrosivity of the soil. Drainage is needed if roads and building foundations are constructed.

Revegetating disturbed areas around construction sites as soon as possible helps to control soil blowing. Plans for homesite development should provide for the preservation of as many trees as possible. Mulch, fertilizer, and irrigation are needed to establish lawn grasses and other small-seeded plants. Drainage is also needed for best results with most lawn grasses, shade trees, ornamental trees, shrubs, vines, and vegetable gardens.

This map unit is in capability subclass IVw.

141—Yaquina-Urban land complex. This map unit is in low interdune positions in coastal dune areas. Slope is 0 to 3 percent. Areas are irregular in shape and are 3 to 100 acres or more in size. The native vegetation is mainly shore pine, scattered Sitka spruce, Pacific rhododendron, salal, and evergreen huckleberry. Elevation is 20 to 130 feet. The average annual precipitation is 70 to 80 inches, the average annual air temperature is 50 to 52 degrees F, and the average frost-free period is 180 to 210 days.

This unit is 45 percent relatively undisturbed Yaquina loamy fine sand, 5 percent disturbed Yaquina loamy fine sand, and 40 percent Urban land. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included in this unit are small areas of Bandon, Netarts, and Waldport soils. Included areas make up about 10 percent of the total acreage.

The relatively undisturbed Yaquina soil is deep and somewhat poorly drained. It formed in eolian sand of mixed origin. Typically, the surface is covered with a mat of needles, leaves, sedges, and grasses about 0.5 inch thick. The surface layer is very dark gray loamy fine sand about 2 inches thick. The subsurface layer is light gray fine sand about 6 inches thick. The next layer is grayish brown fine sand about 5 inches thick. The subsoil is light brownish gray, mottled fine sand about 16 inches thick. The substratum to a depth of 60 inches or more is

Pinus contorta Dougl. ex. Loud.

Lodgepole Pine

Pinaceae -- Pine family

James E. Lotan and William B. Critchfield

* * *

Lodgepole pine *(Pinus contorta)* is a two-needled pine of the subgenus *Pinus*. The species has been divided geographically into four varieties: *P. contorta* var. *contorta*, the coastal form known as shore pine, coast pine, or beach pine; *P. contorta* var. *bolanderi*, a Mendocino County White Plains form in California called Bolander pine; *P. contorta* var. *murrayana* in the Sierra Nevada, called Sierra lodgepole pine or tamarack pine; and *P. contorta* var. *latifolia*, the inland form often referred to as Rocky Mountain lodgepole pine or black pine. Although the coastal form grows mainly between sea level and 610 m (2,000 ft), the inland form is found from 490 to 3660 m (1,600 to 12,000 ft).

Habitat

* * *

Native Range

Lodgepole pine is an ubiquitous species with a wide ecological amplitude. It grows throughout the Rocky Mountain and Pacific coast regions, extending north to about latitude 64° N. in the Yukon Territory and south to about latitude 31° N. in Baja California, and west to east from the Pacific Ocean to the Black Hills of South Dakota. Forests dominated by lodgepole pine cover some 6 million ha (15 million acres) in the Western United States and some 20 million ha (50 million acres) in Canada.

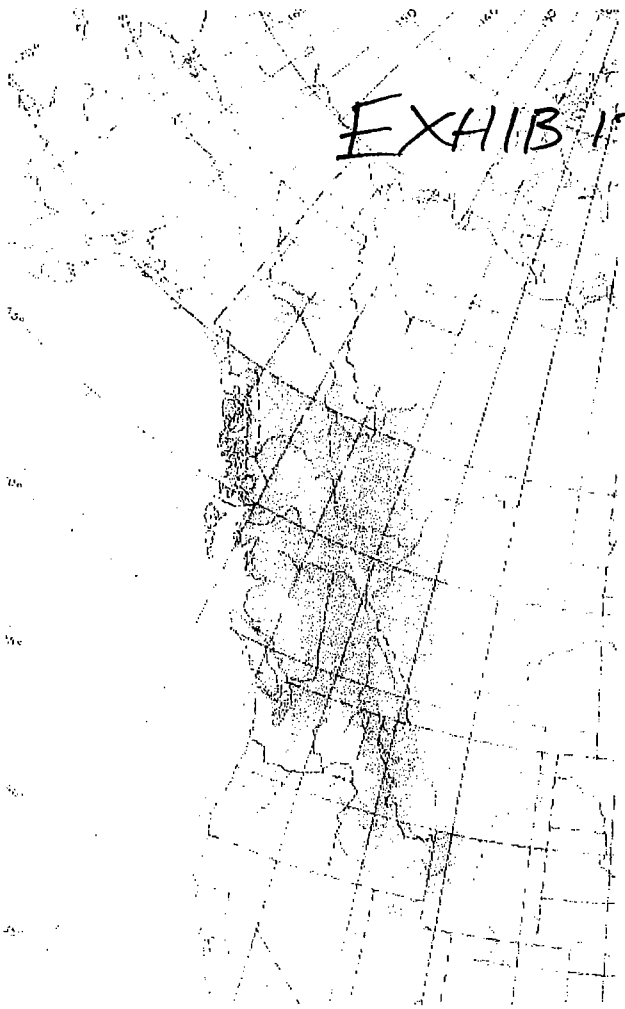

EXHIBIT 2

Seasonal growth of lodgepole pine has been observed on the east slope of the Rocky Mountains in Alberta and the Sierra Nevada in California. In the subalpine forest of Alberta leader growth of saplings for a 4-year period consistently started in early May and continued for 12 weeks (*40*).

An 8-year record made on the west slope of the Sierra Nevada, at about 5,200 feet elevation, showed that lodgepole pine begins height growth earlier than its common tree associates in this locality. For example, 88 percent of the seasonal height growth of lodgepole pine was completed before white fir started height growth. About 60 percent of the seasonal height growth of lodgepole pine was completed at the time of needle emergence from the fascicle sheath, and all of it was completed before needle growth ceased. Lodgepole pine also ceased height growth before any of its tree associates in this region (*27*).

Vegetative reproduction.—Lodgepole pine has been grafted successfully on mature ponderosa pine (*52*) and on Scotch pine (*Pinus sylvestris*) (*37*). It does not reproduce naturally by sprouting. Adventitious roots have been developed artificially from 8-year-old lodgepole pines by air-layering, after treatment with 1.2 percent solutions of either indole acetic or indole butyric acid in a talcum powder carrier. The roots developed from the cambium along with the secondary xylem of the current year's growth, and from parenchymatous callus tissues (*82*).

F–489697

200-year-old lodgepole pine on the Targhee National Forest, Idaho.

Sapling Stage to Maturity

Growth and yield.—Lodgepole shows remarkable range in stand density and striking reactions to both density and environment (*66*, *72*). For example, in the Rocky Mountains in 100-year-old stands of varying density the maximum yield was of 20,000 board feet per acre with 800 trees; yield fell off rapidly to less than 1,500 board feet when the number of trees increased to 1,800 (*48*). Stagnated stands 70 years old may have as many as 100,000 trees per acre, averaging only 4 feet in height and less than 1 inch in diameter at the ground.

On the average, yields of 12,000 to 15,000 board feet per acre are considered good in old-growth Rocky Mountain lodgepole pine. Yields of 20,000 to 25,000 board feet per acre are exceptional. Generally, yields per acre are lower in Montana than in Colorado.

The lodgepole growing at a low elevation in northeastern Washington and adjacent areas in northern Idaho has a faster growth rate and dies earlier than the lodgepole pine at higher elevations in Montana. These low-elevation stands generally start breaking up at 80 to 100 years.

Lodgepole pine does not prune well naturally and in open-grown stands branches are retained nearly to the ground. In dense stands the clear-boled appearance of the trees is often misleading. Pruning of the bole for 10 to 25 percent of its length is common. However, pruning often does not progress to complete elimination of the basal part of the branches.

Sizes attained at maturity vary greatly. Within the main lodgepole pine region most trees at 140 years are 7 to 13 inches in diameter and 60 to 80 feet tall (*48*). In the Blue Mountains of Oregon at 100 years old, trees average 12 inches in diameter and 70 to 80 feet in height. At 100 years in the Sierra Nevada trees reach average diameters of 15 to 18 inches and average heights of 90 to 100 feet (*33*).

Trees of the coastal form vary greatly in size at given ages; mature trees are from 6 to 20 inches in diameter and from 20 to 40 feet tall. On a small plateau a few miles wide along the coastal plain of Mendocino County, Calif., an extreme condition is found where mature lodgepole pine is little more than a canelike dwarf 2 to 5 feet high. This dwarfed condition is associated with a highly acid hardpan soil (*49*).

The largest tree of this species on record is 19 feet in circumference at 4½ feet above ground and is 106 feet tall (*3*). It is located outside of

EXHIBIT 3

Shore/Lodgepole Pine

Pinus contorta spp

Description:

This conifer has two forms the Shore Pine grows to around 10m maximum whereas the Lodgepole Pine subspecies grows to a maximum of 45-50m.

It is a short lived but very hardy species that will survive in habitats that defeat other conifers.

The Shore Pine grows in lowland and prefers bog conditions whereas the Lodge Pole Pine prefers montane locations.

Problems:

None known

Facts:

Introduced: 1855

Origin: North America, Canada

Location: Various UK locations

Status: Stable

Comments:

EXHIBIT 4

Marc E. Setchko
CONSULTING FORESTER

870 Fox Glenn Avenue
Eugene, Oregon 97405
Phone: (541) 344-0473
FAX: (541) 344-7791

EXHIBIT 5-1

September 5, 2006

Mr. Joe Misek
Forest Resource Policy Division
Oregon DEpartment of Forestry
2600 State Street, Building D
Salem, Oregon 97310

RE: Request for Approval of Alternate Methodology for Estimating Site Productivity Capability for 18-12-02-20 TL 1900

Dear Mr. Misek:

Thank you for your time on the telephone.

I have been asked to determine the forest productivity capability of a 52 acre site located approximately 2 miles north of the city of Florence and west of US 101. It is generally characterized as a stabilized sand dune. The site contains six Soil Map Units: 44 Dune Sand, 94C&E Netarts, 131C&E Waldport and 140 Yaquina.

The dominant tree species is shore pine. I have been unable to locate shore pine site index and yield tables anywhere. I have contacted the USFS, NRCS and ODF to see if they have any and they do not. Because such tables are not available for the Soil Map Units on the site, I am unable to calculate the productivity capability for the site using published data.

Where the SCS data are not available, Oregon Department of Forestry Land Use Planning Notes Number 3X April 1998 provides the following guidance:

Under OAR 660-06-005 "where the SCS data are not available or are shown to be inaccurate, an alternative method for determining productivity may be used. An alternative method must provide equivalent data and be approved by the Department of Forestry". (p.1)

The Planning Notes further provide:

Because the soil survey information is not specific information, The Department of Forestry has agreed to approve methods that would allow a land owner to use site specific information to determine the productivity of the land when applying for a dwelling or other land use decision. (p.4)

Marc E. Setchko
CONSULTING FORESTER

870 Fox Glenn Avenue
Eugene, Oregon 97405
Phone: (541) 344-0473
FAX: (541) 344-7791

EXHIBIT 5-2

I hereby submit the following alternate method to calculate the forest productivity capability of the above referenced site. The proposed method uses site specific information to calculate the site's productivity capability in cubic feet per acre per year ("cf/ac/yr"). Such method provides equivalent data and will be used in conjunction with a pending land use decision.

Using A Site's Clear Cut Shore Pine Timber Harvest to Determine Its Potential Forest Productivity

1) Provide substantial evidence that shore pine is the dominant species on the site.

2) Provide substantial evidence that a fully stocked even aged stand of shore pine existed on the site at the time of commencement of the timber harvest.

3) Provide substantial evidence of the age of the stand.

4) Provide substantial evidence that the harvest was a clearcut.

5) Provide substantial evidence of the total acres clearcut.

6) Provide substantial evidence of the total number of board feet removed.

7) Convert board feet removed to cubic feet removed.

8) Calculate the cubic feet per acre removed by dividing cubic feet removed by total acres clearcut.

9) Calculate cubic feet per acre per year by dividing cubic feet per acre removed by the age of the stand.

I request ODF approve this alternate method to determine a site's forest productive capability in cubic feet per acre per year.

Please call me after you receive this letter. Thank you.

Sincerely,

Marc E Setchko

Oregon
Theodore R. Kulongoski, Governor

Department of Forestry
State Forester's Office
2600 State Street
Salem, OR 97310
503-945-7200
FAX 503-945-7212
TTY 503-945-7213 / 800-437-4490
http://www.odf.state.or.us

"STEWARDSHIP IN FORESTRY"

September 25, 2006

Mr. Marc E. Stechko
870 Fox Glenn Avenue
Eugene, Oregon 97405

Dear Mr. Stechko,

RE: Request for Approval of Alternate Methodology for Estimating Site Productivity Capability for 18-12-02=20 TL 1900

I am responding to your September 5, 2006 letter requesting approval of an alternate method to calculate the forest productive capability of a particular site (referenced above) that is predominantly covered with shore pine. In looking over your proposed methodology I have reviewed the Department's publication *Land Use Planning Notes #3*, a technical bulletin that was developed to assist landowners and local governments when they must use an alternative to the USDA Soil Survey to determine the productivity of forestland. In this bulletin the following points are articulated:

1. First ODF advises using USDA Cubic Foot Productivity Class system of measurement to determine productivity of the land (commonly available in soil survey information).
2. Before using an alternative method for measuring the productivity of the forestland, contact USDA NRCS soil scientist to determine what the survey information for the property in question is based on and if the survey might be able to be utilized. If the soil survey has no rating (and the soil scientist cannot translate the sites' productivity for forestry) or the rating is shown to be inaccurate, an alternate method is provided in *Land Use Planning Notes #3*.
3. The alternate method is summarized in the handout along with the necessary tables to calculate site class for the three most common commercial forest types.
    1. Use of other tables for other species must be approved by the Department of Forestry on a case by case basis.
    2. Plots must be taken to measure the productivity for each different soil type and aspect on the property selecting dominant or co-dominant site trees that have been in that position throughout their stand life. Tree selection criteria is provided. Where selective harvesting has occurred it may be necessary to select site-trees from an adjacent property with the same aspect, elevation, and soil type.
    3. If the parcel is a forest site but the trees on the site are not suitable site trees, or if the site index cannot be determined accurately from the existing timber in the surrounding area, then a soil survey methodology will be required to accurately assess the site productivity. This requires the

Exhibit 6-1

landowner to employ a soil scientist to do a higher intensity soil survey (than the USDA Soil Survey).

In reviewing your letter and with a follow-up phone conversation you have indicated that:

1. You have contacted NRCS about the information in the soil survey and found no site index or yield tables for shore pine are available through NRCS.
2. In your letter you seek to utilize an alternative method for determining productivity of the forest land in question. You have indicated that you have sought tables for shore pine (a variety of lodgepole pine that has different growth rates than inland lodgepole pine) in an effort to utilize the method provided by the Department of Forestry, and that none exist to your knowledge. I have also looked for such tables and have not been able to locate any tables for that variety of lodgepole pine. This would seem to negate being able to utilize the alternative method provided in this handout as no tables for shore pine apparently exist to determine the cubic foot productivity.
3. Another alternative is provided when the parcel is a forest site and no trees are available for site index calculations, or if the site index cannot be determined accurately from the existing timber in the area, then soil survey mapping providing more specific data that is more accurate than the USDA Soil Survey should be conducted by the landowner utilizing qualifications and procedures contained in OAR 603-80-0040 (3). My understanding in conversation with you is that the surrounding area is also predominantly shore pine. Since no tables are available for this species, it appears this more detailed soil mapping is not warranted, because it cannot provide a site index with a shore pine index table.

There is no additional procedure or method suggested by the Department of Forestry in *Land Use Planning Notes #3* to serve as an aid to help in determining the productivity of the forestland in question, however, the Planning Notes do provide for approval of alternate methods to determine productivity. You propose another methodology that utilizes the "site's clear-cut Shore Pine timber harvest to determine its potential forest productivity". While such a method would show what was harvested on the site, and that volume could be expressed in cubic feet, it would not necessarily be an accurate measure of the productive capability of the site unless you can provide substantial evidence that the clear cut was a fully stocked even aged stand at least 50 years old and provide substantial evidence to support each of the 9 steps in the alternate methodology proposed in your letter dated September 5, 2006. The alternate methodology you propose is approved for use on this site only and only for the pending land use decision. The sufficiency of the evidence to support your productivity capability number is to be determined by Lane County. In the future if better information becomes available for shore pine areas it should be considered for such land use cases.

I hope this response addresses the issues you raised in your letter. If not please feel free to contact me.

Sincerely,

Joseph F. Misek

Joseph F. Misek
Policy Analyst
Oregon Department of Forestry

Cc: David Morman, ODF
Ted Lorensen, ODF
Ron Eber, ODF

FOREST PRODUCTS HARVEST TAX
SEMIANNUAL RETURN

RECEIVED
JUN 28 1993
BAKERSFIELD

FA

Instructions and Conversion Table are on Reverse Side of Return

Report Timber Harvested to the Nearest 1,000 Board Feet (MBF).

1 Social Sec. or Federal E.I.N. No.	2 Account No.	3 Year	4 Period	
75-2313678	389189	93	JAN-JUN	1

DEPARTMENT USE ONLY

Edit Date:	By:	Date Received

5 CARVER LEROY/ADAMS A DBA
T BAR RANCH LTD
4900 CALIFORNIA AVE STE 100
BAKERSFIELD CA 93309

Phone No. 669-9177

If no harvest occurred during this period, check the "No Harvest" box. Sign, date, and return this form to the Oregon Department of Revenue. The law requires this form to be returned even if there was no harvest this reporting period (ORS 321.045).

☐ NO HARVEST

SEE INSTRUCTIONS AND CONVERSION TABLE ON BACK SIDE

6 Forestry Permit Number	7 Harvest Complete*	8 Operator	9 Landowner Sale Name/Contract No.	10 County Code	11 Section	12 Township N or S	13 Range E or W	14 Volume (MBF)
50693	X	T-BAR RANCH	CARVER LEROY/ADAMS A	20	02	18 S	12 W	123

Subtotal Volume From Any Additional Pages (enter on first page only) 15

*Please close any permit which will have no further harvest this year by placing an "X" in Column 7 beside the permit number.

Total Volume (MBF)	16	123
Tax Rate	17	1.80
Tax (Multiply Total MBF (box 16) by Tax Rate (box 17))	18	$ 221.40

DECLARATION

Under penalties for false swearing, I declare that I have examined this return, including accompanying schedules and statements, and to the best of my knowledge and belief it is true, correct, and complete.

SIGN HERE ▶ Signature: Leroy Carver

Date: 7/31/93 Phone Number: 805 395-1600

Credits	Prior Payment	Enter amount paid on quarterly estimate or by other prior payment	19 $ - 0
	25 MBF Exemption	Exemption per fiscal year July 1 — June 30	20 $ - 45
		TAX DUE WITH THIS RETURN (box 18 less boxes 19 and 20)	21 $ 176.40
Late Filing	Penalty ▶	Up to 3 months late, enter .05 of box 21 Over 3 months late, enter .25 of box 21	22 $
	Interest ▶	No. of days late X daily rate .0002192 X box 21 Daily Rate =	23 $
		TOTAL PAYMENT	24 $ 176.40

Make check payable to: **Oregon Department of Revenue**

Mail to: **Box 14003**
Salem OR 97309-2502

DEPARTMENT USE ONLY				
Prepared By	Date	Cost Center	Person I.D. No.	Transaction Code

KEEP A COPY FOR YOUR RECORDS

150-502-001 (Rev. 4-92) THE BOX 20 EXEMPTION CANNOT BE TAKEN IF USED DURING THE PRIOR PERIOD.

EXHIBIT 7

EXHIBIT 8

Table 31. Board-Foot Contents of Sawn Lumber

Size in inches	Dimension Table—Length in Feet																								
	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
2x4	8	9	11	12	13	15	16	17	19	20	21	23	24	25	27	28	29	31	32	33	35	36	37	39	40
2x6	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
2x8	16	19	21	24	27	29	32	35	37	40	43	45	48	51	53	56	59	61	64	67	69	72	75	77	80
2x10	20	23	27	30	33	37	40	43	47	50	53	57	60	63	67	70	73	77	80	83	87	90	93	97	100
2x12	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84	88	92	96	100	104	108	112	116	120
2x14	28	33	37	42	47	51	56	61	65	70	75	79	84	89	93	98	103	107	112	117	121	126	131	135	140
3x4	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
3x6	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90
3x8	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84	88	92	96	100	104	108	112	116	120
3x10	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150
3x12	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	126	132	138	144	150	156	162	168	174	180
3x14	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140	147	154	161	168	175	182	189	196	203	210
4x4	16	19	21	24	27	29	32	35	37	40	43	45	48	51	53	56	59	61	64	67	69	72	75	77	80
4x6	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84	88	92	96	100	104	108	112	116	120
4x8	32	37	43	48	53	59	64	69	75	80	85	91	96	101	107	112	117	123	128	133	139	144	149	155	160
4x10	40	47	53	60	67	73	80	87	93	100	107	113	120	127	133	140	147	153	160	167	173	180	187	193	200
4x12	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160	168	176	184	192	200	208	216	224	232	240
4x14	56	65	75	84	93	103	112	121	131	140	149	159	168	177	187	196	205	215	224	233	243	252	261	271	280
6x6	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	126	132	138	144	150	156	162	168	174	180
6x8	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160	168	176	184	192	200	208	216	224	232	240
6x10	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300
6x12	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360
6x14	84	98	112	126	140	154	168	182	196	210	224	238	252	266	280	294	308	322	336	350	364	378	392	406	420
8x8	64	75	85	96	107	117	128	139	149	160	171	181	192	203	213	224	235	245	256	267	277	288	299	309	320
8x10	80	93	107	120	133	147	160	173	187	200	213	227	240	253	267	280	293	307	320	333	347	360	373	387	400
8x12	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432	448	464	480
8x14	112	131	149	168	187	205	224	243	261	280	299	317	336	355	373	392	411	429	448	467	485	504	523	541	560
10x10	100	117	133	150	167	183	200	217	233	250	267	283	300	317	333	350	367	383	400	417	433	450	467	483	500
10x12	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	500	520	540	560	580	600
12x12	144	168	192	216	240	264	288	312	336	360	384	408	432	456	480	504	528	552	576	600	624	648	672	696	720
12x14	168	196	224	252	280	308	336	364	392	420	448	476	504	532	560	588	616	644	672	700	728	756	784	812	840
14x14	196	229	261	294	327	359	392	425	457	490	523	555	588	621	653	686	719	751	784	817	849	882	915	947	980

Size in inches	BOARD TABLE—LENGTH IN FEET																								
	6	8	10	12	14	16	18	20	22	24	6	8	10	12	14	16	18	20	22	24	6	8	10	12	14
1x2	1	1½	1½	2	2½	2⅔	3	3½	3⅔	4	5	6⅔	8⅓	10	11⅔	13⅓	15	16⅔	18⅓	20	10	13⅓	16⅔	20	23⅓
1x3	1½	2	2½	3	3½	4	4½	5	5½	6	7½	10	12½	15	17½	20	22½	25	27½	30	15	20	25	30	35
1x4	2	2⅔	3⅓	4	4⅔	5⅓	6	6⅔	7⅓	8	10	13⅓	16⅔	20	23⅓	26⅔	30	33⅓	36⅔	40	20	26⅔	33⅓	40	46⅔
1x5	2½	3⅓	4⅙	5	5⅚	6⅔	7½	8⅓	9⅙	10	12½	16⅔	20⅚	25	29⅙	33⅓	37½	41⅔	45⅚	50	25	33⅓	41⅔	50	58⅓
1x6	3	4	5	6	7	8	9	10	11	12	15	20	25	30	35	40	45	50	55	60	30	40	50	60	70
1x8	4	5⅓	6⅔	8	9⅓	10⅔	12	13⅓	14⅔	16	20	26⅔	33⅓	40	46⅔	53⅓	60	66⅔	73⅓	80	40	53⅓	66⅔	80	93⅓
1x10	5	6⅔	8⅓	10	11⅔	13⅓	15	16⅔	18⅓	20	25	33⅓	41⅔	50	58⅓	66⅔	75	83⅓	91⅔	100	50	66⅔	83⅓	100	116⅔
1x12	6	8	10	12	14	16	18	20	22	24	30	40	50	60	70	80	90	100	110	120	60	80	100	120	140
1½x4	3	4	5	6	7	8	9	10	11	12	15	20	25	30	35	40	45	50	55	60	30	40	50	60	70
1½x6	4½	6	7½	9	10½	12	13½	15	16½	18	22½	30	37½	45	52½	60	67½	75	82½	90	45	60	75	90	105
1½x8	6	8	10	12	14	16	18	20	22	24	30	40	50	60	70	80	90	100	110	120	60	80	100	120	140
1½x10	7½	10	12½	15	17½	20	22½	25	27½	30	37½	50	62½	75	87½	100	112½	125	137½	150	75	100	125	150	175
1½x12	9	12	15	18	21	24	27	30	33	36	45	60	75	90	105	120	135	150	165	180	90	120	150	180	210
2x2	2	2⅔	3⅓	4	4⅔	5⅓	6	6⅔	7⅓	8	10	13⅓	16⅔	20	23⅓	26⅔	30	33⅓	36⅔	40	20	26⅔	33⅓	40	46⅔
2x3	3	4	5	6	7	8	9	10	11	12	15	20	25	30	35	40	45	50	55	60	30	40	50	60	70
2x4	4	5⅓	6⅔	8	9⅓	10⅔	12	13⅓	14⅔	16	20	26⅔	33⅓	40	46⅔	53⅓	60	66⅔	73⅓	80	40	53⅓	66⅔	80	93⅓
2x5	5	6⅔	8⅓	10	11⅔	13⅓	15	16⅔	18⅓	20	25	33⅓	41⅔	50	58⅓	66⅔	75	83⅓	91⅔	100	50	66⅔	83⅓	100	116⅔
2x6	6	8	10	12	14	16	18	20	22	24	30	40	50	60	70	80	90	100	110	120	60	80	100	120	140
2x8	8	10⅔	13⅓	16	18⅔	21⅓	24	26⅔	29⅓	32	40	53⅓	66⅔	80	93⅓	106⅔	120	133⅓	146⅔	160	80	106⅔	133⅓	160	186⅔
2x10	10	13⅓	16⅔	20	23⅓	26⅔	30	33⅓	36⅔	40	50	66⅔	83⅓	100	116⅔	133⅓	150	166⅔	183⅓	200	100	133⅓	166⅔	200	233⅓
2x12	12	16	20	24	28	32	36	40	44	48	60	80	100	120	140	160	180	200	220	240	120	160	200	240	280
3x3	4½	6	7½	9	10½	12	13½	15	16½	18	22½	30	37½	45	52½	60	67½	75	82½	90	45	60	75	90	105
3x4	6	8	10	12	14	16	18	20	22	24	30	40	50	60	70	80	90	100	110	120	60	80	100	120	140
3x5	7½	10	12½	15	17½	20	22½	25	27½	30	37½	50	62½	75	87½	100	112½	125	137½	150	75	100	125	150	175
3x6	9	12	15	18	21	24	27	30	33	36	45	60	75	90	105	120	135	150	165	180	90	120	150	180	210
3x8	12	16	20	24	28	32	36	40	44	48	60	80	100	120	140	160	180	200	220	240	120	160	200	240	280
3x10	15	20	25	30	35	40	45	50	55	60	75	100	125	150	175	200	225	250	275	300	150	200	250	300	350
3x12	18	24	30	36	42	48	54	60	66	72	90	120	150	180	210	240	270	300	330	360	180	240	300	360	420
4x4	8	10⅔	13⅓	16	18⅔	21⅓	24	26⅔	29⅓	32	40	53⅓	66⅔	80	93⅓	106⅔	120	133⅓	146⅔	160	80	106⅔	133⅓	160	186⅔
4x5	10	13⅓	16⅔	20	23⅓	26⅔	30	33⅓	36⅔	40	50	66⅔	83⅓	100	116⅔	133⅓	150	166⅔	183⅓	200	100	133⅓	166⅔	200	233⅓
4x6	12	16	20	24	28	32	36	40	44	48	60	80	100	120	140	160	180	200	220	240	120	160	200	240	280
4x8	16	21⅓	26⅔	32	37⅓	42⅔	48	53⅓	58⅔	64	80	106⅔	133⅓	160	186⅔	213⅓	240	266⅔	293⅓	320	160	213⅓	266⅔	320	373⅓
4x10	20	26⅔	33⅓	40	46⅔	53⅓	60	66⅔	73⅓	80	100	133⅓	166⅔	200	233⅓	266⅔	300	333⅓	366⅔	400	200	266⅔	333⅓	400	466⅔
4x12	24	32	40	48	56	64	72	80	88	96	120	160	200	240	280	320	360	400	440	480	240	320	400	480	560
6x6	18	24	30	36	42	48	54	60	66	72	90	120	150	180	210	240	270	300	330	360	180	240	300	360	420
6x8	24	32	40	48	56	64	72	80	88	96	120	160	200	240	280	320	360	400	440	480	240	320	400	480	560
6x10	30	40	50	60	70	80	90	100	110	120	150	200	250	300	350	400	450	500	550	600	300	400	500	600	700
6x12	36	48	60	72	84	96	108	120	132	144	180	240	300	360	420	480	540	600	660	720	360	480	600	720	840
8x8	24	32	40	48	56	64	72	80	88	96	120	160	200	240	280	320	360	400	440	480	240	320	400	480	560
8x10	30	40	50	60	70	80	90	100	110	120	150	200	250	300	350	400	450	500	550	600	300	400	500	600	700
8x12	36	48	60	72	84	96	108	120	132	144	180	240	300	360	420	480	540	600	660	720	360	480	600	720	840
10x10	40	53⅓	66⅔	80	93⅓	106⅔	120	133⅓	146⅔	160	200	266⅔	333⅓	400	466⅔	533⅓	600	666⅔	733⅓	800	400	533⅓	666⅔	800	933⅓
10x12	48	64	80	96	112	128	144	160	176	192	240	320	400	480	560	640	720	800	880	960	480	640	800	960	1120
12x12	56	74⅔	93⅓	112	130⅔	149⅓	168	186⅔	205⅓	224	280	373⅓	466⅔	560	653⅓	746⅔	840	933⅓	1026⅔	1120	560	746⅔	933⅓	1120	1306⅔

Table 32. Board Foot-Cubic Foot Ratio for 15-Ft. Logs of Various Diameters

Diameter at small end (in.)	Volume in cubic feet[a]	Volume in board feet[b]	Board feet per cubic foot
4	2.27	6.64	2.93
5	3.23	13.04	4.04
6	4.36	21.2	4.86
7	5.67	31.1	5.49
8	7.16	42.8	5.98
9	8.81	56.2	6.38
10	10.64	71.4	6.71
12	14.8	107.1	7.22
14	19.7	150.	7.60
16	25.3	200.	7.89
18	31.6	256.	8.12
20	38.6	320.	8.30
25	59.1	511.	8.64
30	84.0	745.	8.87
35	113.2	1,023.	9.04
40	146.8	1,346.	9.17

[a] Smalian's formula, assumed taper ½ in. per 4 ft.
[b] International ¼-In. Rule.
Source: D. Bruce and Frances X. Schumacher, *Forest mensuration*, McGraw-Hill Book Co., Inc., New York, 1942.

A pen of wood stacked in layers is used in the South as a pulpwood unit. It consists of two pulpwood sticks to a layer, each layer being stacked at right angles to the one beneath. Five pens, 6 ft. high, are considered equal to a cord (if of 4-ft. wood), or to a unit (if of longer wood—generally 5 ft., 3 in.).

A unit in the Province of Quebec is a stack of wood containing 100 cu. ft. of solid wood; in volume calculations each stick is measured separately at both ends, and the sum is divided by 2. (In the Pacific Northwest a "unit" describes 100 cu. ft. of hogged mill waste).

Solid Content of a Stacked Cord. (By "solid content" is meant both wood and bark, in the case of unpeeled wood. The term "wood content" will later be used to indicate wood alone.) To determine the solid content of a stacked cord or pen, photograph the face. Along equally spaced lines on the print, measure the proportion of each line crossing solid wood (or wood and bark), and average. Or superimpose on the print a transparent template of equally spaced dots, and count the dots falling on wood or bark in relation to the total number of dots; this method is particularly well adapted to unpeeled wood.

Because the area of any circle is 0.785 (approximately) of that of the square in which it is inscribed, the solid content of a cord of sticks, all perfect cylinders, and of a single diameter, would be the same whether the sticks were large or small. (Staggering the rows—hexagonal piling—increases the ratio to 0.8.) A mixture of sizes would, however, give a larger solid content, because small sticks, down to the minimum size for cordwood, could be inserted in the spaces between the larger. It is because even unsplit cordwood sticks are never uniform in size and shape, and are never perfect cylinders, that the solid content varies. Roughness, crook or anything which causes cordwood sticks to vary from perfect cylinders—increase the air space in a stacked cord. Hence:

WESTBROOK
ENTERPRISE LLC

990 Obie Street
Eugene, OR 97402
Phone: 1-541-485-4015 Fax: 1-541-485-5624
Toll free: 1-800-364-1681
chip@westbrookent.com
member of Phineus Group, LLC.

September 8, 2006

Mr. Roy Carver, III
PO Box 51505
Eugene, OR 97405

Re: 18-12-02-20 TL 1900

Dear Roy,

I was asked in 2003 to prepare a topographical map for the south portion the above referenced property. The map was prepared using aerial photography flown in 2003 for such purpose. The topographical map was overlaid on a site aerial photograph of the same scale. The AUTOCAD file for this work was transferred electronically to Mr. Brian Rabe at Cascade Earth Sciences for his use. Recently, I was asked to develop a topographical map for the remainder to the north . This topographical map was prepared using 1991 photography taken before any improvements to the property. This map was overlaid on a site aerial photograph of the same scale. The AUTOCAD file for this work was also transferred electronically to Mr. Brian Rabe at Cascade Earth Sciences for his use.

I was recently asked to analyze aerial photography of the site and to express my professional opinion regarding trees and past timber harvests. As a licensed Photogrammetrist, I have spent over 40 years analyzing aerial photography of timber tracts. My experience encompasses mapping and analyzing millions of acres of forest land in Oregon and Washington. I am experienced in developing site topography, identifying tree species and their characteristics such as density and height and signs of past disturbances to land. My clients have included the US Forest Service, Oregon Department of Forestry and Weyerhaeuser. My resume is attached.

My recent analysis of the subject property included detailed examination of stereo pairs of aerial photography from 1994 (after the 1993 timber harvest), 1991 (before the 1993 timber harvest) and 1976 (oldest aerial photography available at WAC). The 1991 photography shows a fully stocked

even aged homogeneous stand of Shore pine with crown closure over the entire site except for a few small areas of wetlands and the Dune 44 soils. I have identified the dominant species as Shore pine. There are small numbers of scattered tall Douglas fir, Red cedar and hemlock. The Shore pine height is relatively uniform across the property which shows the stand is even aged. The photography shows two narrow roads (trails) across the property that lead to the sand dunes west of the property. The roads extend up to the sand dunes indicating there were used for dune access. The topography and sand would limit the use of such roads by vehicles except ATVs. The 1991 photography shows no signs of past timber harvest on the property. There are no logging roads, skid trails or other evidence of disturbance on the property in the 1991 photography that would indicate past logging.

The 1976 aerial photography also shows no evidence of past logging. There are no logging roads, skid pads or other disturbance to suggest past logging. If the property had been logged within the 30 years prior to the 1976 photography, the 1976 photography would show signs of such logging. For example, roads, and skid trails for logging cover vegetative matter and create a richer nutrient base for tree re-growth after harvest than would undisturbed soils. If the property had been disturbed by roads and/or skid trails, new thicker and taller tree stands in such areas would show a pattern visible to the trained eye . There are no such signs on any of the aerial photography.

I was asked whether or not the property was selectively logged prior to 1993. Again, the 1976 photography shows no signs of any past logging, partial or clear cut. At a minimum, a logging road for ingress and egress and a skid trail would be required to selectively harvest and remove trees. There is no indication of any such disturbance. The 1976 photos show some scattered large trees (Douglas fir, red cedar and hemlock) among the Shore pine stands. These scattered trees were the larger and more valuable species on the property in the 1976 photography. I compared the 1976 aerial photography with the 1991 aerial photography. All of these larger species growing on the site in the 1976 photography are also clearly visible growing on the site in the 1991 photography. If a selective harvest had occurred after 1976, these trees would have been the largest and most valuable species for removal, not the Shore pine. If the selective logging had occurred prior to 1976, signs of such prior logging would be visible on the 1976 photography and the taller more valuable species would not visible on the 1976 aerial photography because it would have been logged. This is further supports my conclusion that no one selectively harvested trees on this site prior to the 1993 harvest.

I was asked to develop test plots on the 3 major soil types on the property and examine the trees in detail. Using the site specific soils map for the property prepared in 2004 by Cascade Earth Sciences and the 1991 aerial photography, I located 5 test plots (with the same aspect) in the middle of each of three Soil Map Units: Yaquina 140, Netarts 94C and Waldport 131C. The average height of the Shore pine stand was 62 feet in the Yaquina, 64 feet in the Netarts and 56 feet in the Waldport. The average stand density per acre of the taller dominant species was 98 trees in the Yaquina, 97 trees in the Netarts and 100 trees in the Waldport. These tree counts exclude under-story trees. Based upon the stand density tests, there is no statistically significant difference in Shore pine stand density among these three soil types on this site. The average shore pine tree height in the Yaquina soils is11% higher

than in the Walport soils. The average shore pine height in the Netarts soils is 14 % higher than in the Waldport soils. The average shore pine height in the Netarts soils is 3% higher than in the Yaquina soils. The Netarts/Yaquina height difference is so little (2') and the measurement is close enough to the margin or error that from the photographic analysis, I believe there is no meaningful statistical difference in height between the shore pine in the Yaquina soils and shore pine in the Netarts soils.

I was also asked to calculate the area of the 1993 timber harvest. I reviewed the 1994 aerial photography taken after the 1993 harvest. The photography shows the harvest was a clear cut. I measured the clear cut area and determined it to be 43.5 acres.

Based upon my 40 years experience as a certified Photogrammetrist and after careful analysis of the 1976, 1991 and 1994 aerial photography of the site including tree species, heights and densities, my professional opinion is: 1.) The site had not been logged (partial or clear cut) for at least 50 years prior to the 1993 harvest, 2.) The dominant species on the site at time of the 1993 harvest was Shore pine, 3.) The property was fully stocked with Shore pine at the time of the 1993 harvest, 4.) The Shore pine stand on the site at time of the 1993 harvest was an even aged stand, 5.) The 1993 harvest was a clear cut removing all trees from the logged area, 6.) The shore pine density is the same across the Netarts, Yaquina and Waldport soils, 7.) The average tree height is the same for the Netarts and Yaquina soils, 8.) The tree height in the Netarts and Yaquina soils is maximum 14% higher than the Waldport soils, and 9.) The area of the 1993 harvest was 43.5 acres.

Please contact me if you have any questions.

Sincerely,

Chip Westbrook
Consulting Photogrammetrist

Qualifications of Emil M. "Chip" Westbrook

Personal Status:
Birth Place: Suplee, Oregon
Birthday: September 12, 1941
Married: June 17, 1965
Three Grown Daughters

Current Position: President-Founder, Westbrook Enterprise, LLC.

Educational Background:
International Correspondence Schools, Scranton, Pa.-- 1995, Civil Engineering
Oregon Contractor School --1996
Oregon State University --1987 Oregon Land Surveying Law Workshop No.1 & 2
Initial Point Seminars --1981 Real Property and Boundaries
Lane Community College, Eugene, Or --1980 Surveying Math and Notes
Lane Community College, Eugene, Or.-- 1973-1974 Geology & Mineralogy
Northwest Nazarene College, Nampa, Id. --1963-1967 Mathematics & Art
International Correspondence Schools, Scranton, Pa. -- Degree Mapping & Surveying

Professional Status and Affiliations

Oregon Land Surveyor in training	(Certification #402LSIT)	1979
Certified Photogrammetrist	(Certification #291)	1976
Oregon Professional Photogrammetrist.	(Certification# 42601RRPP)	2006
Licensed Contractor in the State of Oregon	(Certification #128935)	1997

American Society of Photogrammetry	1971
International Who's Who of Entrepreneurs	1998

Conference Presentations:
"Close Range Photogrammetry" American Society of Photogrammetry 1983
"Casting Checking" Instrumentation Engineers Society of America 1983
"Close Range Photography" Instrumentation Engineers Society of America 1982
"Digital Mapping & Application", Shen Zhen Hi-Tech Expo 83, Shen Zhen City, Canton Province, People's Republic of China 1983.

Analytical Plotter Short Courses presented:
B.L.M. Anchorage, Alaska
U.S. Army School of Mapping, Fort Clayton, Panama
Du Pont LaFleurs, Willmington, Del.
U.S. Air Force, St. Louis, Mo.
B.L.M., Anchorage, Alaska.
Matra Tech., Las Gatos, Ca.

Current Duty: January 1998 to present
Westbrook Enterprise, LLC.
Eugene, OR

Current President and Chief Photogrammetric Consultant for Westbrook Enterprise, LLC. and is responsible for the following functions:

- Technical consulting for photogrammetric, analytical, and surveying applications
- Photogrammetric compilation chief
- Analytical aerotriangulation
- Photogrammetric training of new employees
- Program support in Fortran 5 & 77
- Estimating and proposal submissions

Professional Experience:
The following list covers some of the Equipment used during my years in the field of mapping and surveying.

Surveying Equipment:

Theodolite: Wild T2, Ti - Zeiss - Kern - Askynia - Wild Polar Attachment
Transits & Compass: Gurley - Brunton - Wild magnetic - Wild Gyro
Distance measuring: Distomat - Hewlett Packard - Tellurometers
Gravity meters: Wardon - La Cross Romba - Texas Instrument
Magnetometers
Altimeters
Levels: Standard differential and Three wire
GPS: Ashteck - Trimble - Lica

Photogrammetric Equipment:

Stereo plotters:
Kelsh plotters - K & E plotter - Santoni IIC - Matra Traster Plotter - Helger watts - Kail plotter - KEK plotter - Matra Ortho

- Wild Pug 4 - Kern Mono Comparitor

Digitizer:
Kurta - Talos

CAD Systems:
AutoCAD 2.6 thru R13 - Generic CAD - VisualCAD - FASTCAD - Micro station - Terramodel -Corel CAD - Corel CAD 7- Calama -Atlas-Cambridge

Operating Systems:
Microsoft: DOS - Windows - Windows 95 - Windows NT - XP
Data General: RDOS

Photo Lab Equipment:
Durst Enlarger - Bessler Enlarger - Saltzman Rectifying Enlarger - Chicago Enlarger - Kodak Developer - Du Pont Developer - Hand Tanks - PACO Print washers & dryers - Contact printers - Log E printer

Aerial cameras:
K 17 - K & E - Wild - Zeiss - T 11

Terrestrial Cameras :
Matra - Rollei - Wild - Electron microscope - Hassalblad - HP photosmart

Heavy Equipment:
Austin Weston Road grader - Caterpillar D2, D4, and D6 - John Deer 420 - Case Backhoe -Knodwell - Bombadeer - Trucks up to 5 ton

Brief list of projects:

Gathering system: 80 gas wells, Alkali Lake, Alberta - Pipeline: Zama, Alberta - Gas well location: Seven Persons & Spencer Creek, Alberta - Oil well location Hay River, North West Territories - First Order net - Gravities and Mags on Ellif Ringes Island, North West Territories -Gravity maps: east face of the Rocky Mountains from Hinton, Alberta to Fort Nelson, British Columbia - Mapped: the city of Calgary, The city of Vancouver, WA, The city of Corvallis, OR -The city of Cottage Grove, OR, the city of Salem, OR, The city of Lebanon, OR, The city of Sisters, OR, 3D model of England, 3D model of Hong Kong, 3D mapping of Denali Nat. Park, 3D mapping of Manhattan Island, 3D modeling of South Pacific Islands.

September 1989-December 1997
Kowchee Photogrammetric, Eng. Inc. 7, Eugene OR.

Mr. Westbrook and Albert Kowchee founded Kowchee Photogrammetric Eng. Inc. in 1989 with the intention of providing a minority enterprise in Photogrammetry to fulfill the requirements of government contracts. KPE carried on the high quality reputation which was earned by Inter-Mountain Photogrammetry, Inc. Trained one Operator.

September 1977 - September 1991
Inter-Mountain Photogrammetry, Inc., Eugene, OR.

Mr. Westbrook founded Inter-Mountain Photogrammetry, Inc. in 1977 with the intention of providing digital graphic Photogrammetric products to engineering, forestry and private disciplines. He was responsible for IMP's sound reputation of quality and products and 'common sense' approach to projects utilizing his experience and the unique capabilities of the TRASTER. Mr. Westbrook was instrumental in applications using photogrammetry to diversified industries such as metal stress analysis, failure analysis of industrial accidents, legal presentations, auto motor displacement, and dental distortion measurements. Typical Photogrammetric applications he performed at Inter-Mountain include planimetric/topographic mapping, cross-section/profile computations, volume computations of log and gravel stockpiles, quarries, mines, solid waste and chip piles, analytical computations with problem analysis and data plane adjustments, digital terrain models, digital planimetric models, ortho photo scanning and mosaics.

Mr. Westbrook guided Inter-Mountain from conventional applications to digital land base management systems (now GIS), being directly responsible for computer programming and software development as well as design of odd and even grids software for selectable options to refine plotting of digitized data for the best resolution. Operator training was approved by the U.S. Government. Four students participated in the two year program. An additional thirty students were trained as CAD operators, and six drafts persons were trained in ink drafting and scribing.

September 1977 - September 1978
Olson & Thompson Consulting Engineers., Eugene, OR

Mr. Westbrook served as Party Chief for land surveying applications which involved property surveys, sub-division planning and surveying, section sub-dividing, building location, and aerial photo control.

June 1972 - August 1977
H.G. Chickering, Eugene, OR

Photogrammetrist in charge of mapping operations, job estimating, analytical aerotriangulation (independent models), control analysis and layouts, volume computations of log decks, sawdust, chip piles, rock quarries capacity and acreage of reservoirs cut and fill quantities of road and airport constructions total remaining reserves of landfill sites estimation and grade slope design for earth restoration. Operator training approved by U.S. Government ten students participated in the two year program Experienced on 4 Kelsh and a Santoni IIC Stereoplotters, IBM Keypunch, Autotrol digitizing equipment and patch panel wiring.

December 1971 - June 1972, Calgary, Alberta, Canada
J. H. Honing Contractors International Ltd.

Party chief of all field work - 3 crews, pipe line layout and surveys, well-site location, plant right-of-way surveys and staking, seismic surveys. Field equipment design - stadia boards, range pole, and signals. Arctic control surveys for sub-surface geological exploration at 79 degrees north latitude.

June 1971 - December 1971, Calgary, Alberta, Canada
Photogravity Surveys

Surveyor and Party Chief - running studio over 400 square miles, building gravity loops using Texas Instruments and Wardon Gravity meters, Mag loops using fixed and portable Magnetometers, field work location scout, mechanic on all machines, cook.

May 1971 - June 1971, Calgary, Alberta, Canada
Tronnes Surveys

Surveyor - foundation staking and certificates, title surveys, land subdivisions; well site locations, pipe line layout and surveys.

October 1970 - May 1971, Calgary, Alberta, Canada
Mach Air Surveys Ltd.

Chief Plotter Operator - Photo Lab Tech. Application - road right-of-ways - Mapping for the City of Calgary, - Geomorphic mapping MacKenzie River pipeline from Inuvik, Northwest Territories to Fort Vermillion, Alberta. T Prained one Operator.

September 1967 - October 1970
Aerial Mapping Co., Boise, ID

All phases of mapping - Plotter Operator - Drattsman - Photo Lab Tech. - Camera Man -in field work - Tellurometers and Theodolites, chaining and levels. Application - center line location, photo control, section location, core drill sights, claim comers, lot staking. Second order levels and triangulations.

June 1963 - December 1963
Greenleaf Feed Bunks, Greenleaf, ID

Sub-foreman and foreman, bench levels for establishing bed locations for concrete structures.

Cross-section Samples of Work Experience:

Curry County plan map - plan mapping all the private land in Curry County at a scale of 1"=1000' and reducing to 1"=1500' finished product, approx. acres: 144 square miles
COR: Curry County Road Dept.

Coeur D'Alene Mines prospect area - to produce topographic and planimetric maps over 54 square miles of rugged mountain terrain location in northern Idaho along the Coeur D'Alene River.
COR: Steve Murray of Coeur D'Alene Exploration and Development.

Detroit Ranger Station - mapping plan and topog. 320 acres, then superimposing underground utilities from ground observance and historic maps. mapping scale 1"=50'
COR: Cary Mick, Willamette National Forest.

Power plant sites north and south Santiam - plan and topog. at 1"=50' along rivers for approx. 3 miles each. transmission routes at 1"=100' Eugene Water and Electric Board Eugene, OR
COR: Dan Axtill, P.E.

Forest Service Region 6 - contracts covered all forests in Oregon and Washington - topog. mapping at various scales over approximately 10,000,000 acres, included aerotriangulation, digital terrain modeling, orthophotography, ink drafting, negative engraving, and additional photo-lab reproduction services. Beginning of AutoCAD mapping within the forest service.
COR: Rodney Dawson, P.E. and Roger Crystal, P.E.

Linn County, Oregon Road Dept. - plan and topog. mapping 1"=200' over 15 miles
COR: Willis Grafe, P.E.

Weyerhaeuser Oregon Timber lands plan and topog. over 30 square miles of forest lands scale 1"= 400'. Timber typed Island Gates Creek drainage.
COR: Dick Wakley and Bob Stockdall, Forester

Weyerhaeuser plant site, Oklahoma - plan and topog. over one square mile of Southern Oklahoma pulp and paper div. - map scale
COR: Dick Wakley, Forester

Weyerhaeuser plant site, Louisiana - plan and topog. over three square miles for plan and development of new pulp mill plant site - map scale 1"=50'
COR: Dick Wakley, Forester

Weyerhaeuser plantation site, Papua, New Guinea - plan and topog. of coconut plantation site covering 300 hectors map scale 1"=10,000'
COR: Dick Wakley, Forester

Weyerhaeuser tree farm, Aberdeen, WA. - plan and topog., digital terrain modeling of tree farm covering 108 sections map scale 1"=400', 20' CI
COR: Don Vahl and Julie Bulgrin

U.S. Forest Service, R1O and Sealaska Corp., Dali Island, AK. - plan and topog. mapping of south half of Dali Island covering approx. 8 townships - map scale 1"=1000'
COR: Dallas Hemphill, P. E.

Sewer system, Kings Canyon, CA - plan map for sewer design in Kings Canyon, CA covering 25 square miles - map scale 1"=50'
COR: John Eberhardt, Ayletek, Inc.

Travis Air Force Base, San Francisco, CA - plan and topog. covering two square miles scale 1"=100'
COR: John Eberhardt, Ayletek, Inc.

Slide area, Featherville, CA - plan and topog. of landslide area around pen stock and flume area covering 640 acres - scale 1"=100'
COR: Tom Northrup, TM Graphics

City of Willits, CA - plan and topog. of entire city area covering 18 square miles at 1 "=400' and 9 sq. miles at 1"=100'
COR: Tom Herman, L.S.

Hughes Aircraft, Camp Pendelton, CA - digital terrain modeling and orthophoto laminated for use in Air Force Flight Simulator graphics CAD system covering 12 - 7 ½ minute USGS quads
COR: Tom Ellis, P.E.

Valley Center pressure sewer system, Valley Center, CA - plan map at scale 1"=50', digitizing of profiles for plan and profile sheets over 25 square miles
COR: Bill Bowne, P.E.

U.S. Forest Service - Region 4, Ogden, UT. - contracts covered all forests in Southern Idaho, Nevada, Utah and Wyoming - topog. mapping at various scales over approximately 1,000,000 acres, aerotriangulation, forest mapping, digital terrain modeling, orthophotography, ink drafting, negative engraving, additional photo-lab reproduction services, Ortho production
COR: Lynn Wiese

U.S. Soil Conservation Service, Phoenix, AZ. - plan and topog. map, cross sections and profiles covering six square miles of Frye Creek, AZ.
COR: Robin McArthur

U.S. Soil Conservation Service, Phoenix, AZ. - plan and topog. map, cross sections and profiles covering twenty square miles of Kyenta, AZ.
COR: Robin McArthur

Landfill sites, Tacoma, WA. - plan and topog. map superimposed over orthophotography over Tacoma, WA. toxic waste landfill site.
COR: Jerry Dugas, Lockheed - EMSCO

Landfill sites Marion County, OR - plan and topog. maps, digital terrain modeling of several landfill sites located in Marion County, OR.
COR: Bill Worcester, P.E.

Aircraft skin measurements for distortion and displacement fracture movement. Southwest Research Institute, San Antonio, TX
COR: Dave Davidson, P.E.

Accident Measurement and reconstruction on drilling rigs - industrial - auto accident - materials failure - 3D modeling. Failure Analysis, San Jose, CA.
COR: Burney Ross, P.E.