NEVADA LEGISLATIVE COUNSEL BUREAU STAFF STUDY OF THE FEASIBILITY OF A FORESTRY NURSERY FACILITY IN SOUTHERN NEVADA

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OF THE

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STATE OF NEVADA

September 1974

NEVADA LEGISLATIVE COUNSEL BUREAU
STAFF STUDY OF THE FEASIBILITY OF A FORESTRY NURSERY FACILITY IN SOUTHERN NEVADA

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Assembly Concurrent Resolution No. 57—Mr. Demers and Mrs. Ford

FILE NUMBER 113

ASSEMBLY CONCURRENT RESOLUTION—Directing the legislative commission to study the feasibility of establishing a nursery facility of the division of forestry in southern Nevada.

WHEREAS, Plants ameliorate Nevada's arid climate by reducing blowing winds, snow, and high evaporation losses; and

WHEREAS, Plants provide food, shelter and beauty for all living things within their environment; and

WHEREAS, Southern Nevada's climate and growing conditions are significantly different from other geographical areas within the state; and

WHEREAS, Plants shipped into southern Nevada from other regions create unique transportation and storage problems and often die because they are not acclimatized; and

WHEREAS, The ecology of native plants of southern Nevada renders them more adaptable to the local environment and indigenous plants are hardier and require less water for survival, thereby being more suitable for propagation and more convenient for public use; now, therefore, be it

Resolved by the Assembly of the State of Nevada, the Senate concurring, That the legislative commission is directed to make a study, aided by the division of forestry of the department of conservation and natural resources, to determine the feasibility of establishing a nursery facility in southern Nevada devoted to the propagation of native and adapted species of plantlife appropriate to the particular conditions of the region and suitable for use as windbreaks, soil stabilizers, recreational attractions and other purposes, and to report the results of such study with any recommended legislation to the 58th session of the legislature.

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REPORT OF THE LEGISLATIVE COMMISSION

TO THE MEMBERS OF THE 58TH SESSION OF THE NEVADA LEGISLATURE:

This report is submitted in compliance with Assembly Concurrent Resolution No. 57 of the 57th Session of the Nevada Legislature, which directed the Legislative Commission to initiate and supervise a staff study to establish feasibility for a State Division of Forestry nursery facility in southern Nevada. The Legislative Commission assigned Mr. Richard A. Signs, Deputy Researcher with the Nevada Legislative Counsel Bureau, to perform the study and recommend appropriate legislation to the next session of the legislature. With the concurrence of the commission, Mr. Signs appointed an advisory committee to assist him in the study. The following legislators and citizens were named as members: Assemblyman Daniel J. Demers, Assemblyman Jean E. Ford, William L. Dunning, Keith E. Grover, Robert V. Long, Dudley F. Zoller and Ferren W. Bunker.

The Legislative Commission accepts the report and thanks the staff and advisory committee for its efforts in making the required study.

The report is transmitted to the members of the 1975 legislature for their consideration and appropriate action.

Respectfully submitted,

Legislative Commission
Legislative Counsel Bureau
State of Nevada

Carson City, Nevada
September 1974.

ACKNOWLEDGMENTS

The Legislative Commission's Advisory Committee would like to express its appreciation to the following individuals for their assistance to the advisory committee in the capacity as consultants in the preparation of this report:

William Hoff, Agriculturalist
Nevada Department of Agriculture
Las Vegas, Nevada

Joseph Downs, Soil Scientist
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Las Vegas, Nevada

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Los Angeles County Fire Department
Los Angeles, California

SUMMARY OF RECOMMENDATIONS

The Legislative Commission's Advisory Committee Studying the Feasibility of a Forestry Nursery Facility in Southern Nevada submits the following recommendations for the consideration of the 58th Session of the Nevada Legislature:

1. That a forestry nursery facility (plant materials center) be established in southern Nevada by the Nevada State Division of Forestry, featuring the tripartite functions of arboretum, research and production.

2. That conservation plant materials from the plant materials center not be placed in direct competition with the sale and distribution of certain plant materials produced by private nursery interests.

3. That certain geographical areas in southern Nevada be further considered as alternatives for the location of a plant materials center.

4. That chapter 528 of NRS be amended to better accommodate the concepts of desert and urban forestry while allowing for the propagation and distribution of conservation plant materials.

REPORT OF THE LEGISLATIVE COMMISSION'S STAFF STUDY OF THE FEASIBILITY OF A FORESTRY NURSERY IN SOUTHERN NEVADA

I. Introduction

Assembly Concurrent Resolution No. 57 of the 1973 legislative session (File No. 113 of the Statutes of Nevada) directed the Legislative Commission to study the feasibility of establishing a Nevada Division of Forestry nursery facility (plant materials center) in southern Nevada, and to report the results of such study with recommended statutory changes to the 58th session of the legislature.

Pursuant to this directive, the Legislative Commission designated Mr. Richard A. Signs of the Legislative Counsel Bureau to execute the study. Mr. Signs created an advisory committee to assist him and named the following as members:

Name	Representing
Assemblyman Daniel J. Demers	Legislature
Assemblyman Jean E. Ford	Legislature
Ferren W. Bunker	Clark County Extension Service
William L. Dunning	U.S. Soil Conservation Service
Keith E. Grover	Nevada Division of Forestry
Robert V. Long	Nevada Division of Forestry
Dudley F. Zoller	Nevada Department of Agriculture

The advisory committee held its organizational meeting on October 25, 1973. A formal public hearing was convened in Las Vegas on March 15, 1974. On May 9, 1974, the advisory committee met in executive session in Las Vegas to review additional information and adopt its recommendations to the Legislative Commission. As an adjunct to committee meetings and public hearings, field trips to possible nursery facility sites were held on March 14, 1974, and on April 5, 1974.

In the resolution which promulgated this feasibility study, the Nevada legislature acknowledged the probable value and popularity of a nursery facility in southern Nevada, similar in scope and function to the Division of Forestry's tree nursery currently in operation in Sparks, Nevada. With the creation of a southern nursery, such details as plant specimens would likely differ, but the general features of the materials center concept would no doubt be duplicated. (See Exhibit A.) By providing governments and certain private entities with conservation plant materials of both native and adapted origin, the facility in northern Nevada has proven economical in operation and beneficial in output. It can be said without qualification that this facility is well suited to conservation needs in certain areas of Nevada.

Nevada is a state with a variety of geographical areas allowing for a great many climatic and growing conditions. The pines, which are so well suited to northwestern Nevada, are not well accommodated by southern Nevada's hot arid deserts. While plant materials are easily transplanted in northern elevations in late spring, the transplanting process in the south is at optimum during the late winter months. It is practically impossible to transplant desired species of plant life, at the appropriate time, from Sparks to the greater Las Vegas area.

While it is a fact that private nursery facilities in Arizona and California currently supply private southern Nevada nurseries with plant materials, it should be recognized that these plant materials are not always suited to the climatic conditions of the area, often perishing for want of a hardier nature or because of abrupt changes in altitude and growing conditions. Costs now range from 35 to 48 percent higher than for native and adapted prime stock which could be locally produced with considerable saving. (See Exhibit B.)

At the present time, there is no nursery operating in Clark County that produces stock for sale other than a very small facility located in Blue Diamond. The owner of this nursery facility testified before the advisory committee that he does grow his own stock, but that he cannot begin to supply the demand for materials.

Southern Nevada is now awakening to its own proud heritage of indigenous plant life, many desert species' proving excellent for both ornamental and conservation purposes. There is a spontaneous demand to further scientifically investigate and propagate indigenous species of a sturdy and minimum water utilizing nature.

II. Plant Materials Center Concept

A plant materials center is a scientifically designed plant nursery featuring professional nursery management coupled with modern buildings and sophisticated equipment. Integral to the entire concept are the guiding principles of arboretum (display and education), research and production (propagation and distribution). Most nursery programs have only concentrated on production and distribution phases, research almost exclusively falling within the jurisdiction of academic investigation.

The chief benefits of an arboretum would include:

(a) An established and maintained specimen collection of woody plant materials.

(b) Empirical data as to the most desirable native and adapted plant materials of the region.

(c) An educational center where plant materials may be observed and studied by schools, garden clubs and the general public.

Among the benefits deriving from research and a research facility would be:

(a) Scientific information as to the propagation, establishment, protection and maintenance of conservation plant materials for a given geographical area.

(b) Scientific information as to the ecological impact of exotic plant materials for a defined area.

(c) Relevant research findings available for dissemination to interested public and private parties.

(d) Cooperation and joint investigations with the University of Nevada, U. S. Forestry Experiment Stations and Soil Conservation Plant Material Centers.

The major benefits accruing from production would be:

(a) The propagation, maintenance, protection and distribution of sufficient quantities of plant materials to meet demand.

(b) Generation of adequate revenue to perpetuate the entire plant materials center.

(c) Plant materials would be readily accessible to the public year-round as opposed to a single shipment from Reno once a year.

III. Supply and Demand

Because supply and demand are major pillars upon which feasibility rests, it was necessary in the preparation of this study to carefully examine actual parameters. Supply in this case is not really a problem if demand is justified, our question here having to do almost exclusively with the actual breadth and depth of solid public sentiment. And, more specifically, to what economic base recognizable has need actually reverberated?

In order to identify real demand, the various government agencies of the region were identified and polled. (See Exhibit C.) In addition, responses from local garden clubs, beautification and architect committees were received and found to indicate a widespread support. Not only did the ten government entities unanimously agree that the climatic and plant differences between southern and northern Nevada justify a forestry nursery in the south, but that such a facility would be directly beneficial to them in serving the public. Nine of the ten desired stock not presently available through the Division of Forestry, feeling that native and adapted species should be further propagated in a state plant materials center. It is interesting to note that 89 percent of these agencies favored native and

adapted plants for esthetic value, reduced water consumption (67 percent) and soil erosion stabilization (56 percent) being of somewhat lower priority.

Another method of evaluating demand is to scrutinize the Division of Forestry's plant distribution from 1933 through 1973. (See Exhibits D, E, F and G.) Prior to 1957, when the Sparks Tree Nursery was created by the Nevada legislature (A.B. 360), placement of stock by the division seldom exceeded 20,000 trees per year. Since the facility was placed in full running order in 1958, tree placements have progressively soared. An in-depth analysis of the various exhibits reveals that northern counties have experienced rapid increase in demand with subsequent supply acceleration. In evidence of this, the Sparks operation handled 130,025 trees in fiscal year 1973-74.

Stock of the northern facility is highly in demand because it is essentially indigenous of the region. While it is true that some stock is shipped to the Las Vegas area from Sparks, the demand cannot be called extensive. In fact, demand by southerners for northern stock has gradually diminished over the last 4 years. (See Exhibit H.) The Clark County graph simply indicates that a few northern species may be viable in the south.

The results of the survey seem to confirm the premise that the distribution curve for Clark County would follow the same dramatic growth pattern as the one exhibited in Washoe County with the inception of the Division of Forestry's plant materials center there in 1957. A corollary to this premise would dictate that conservation plant materials indigenous to southern Nevada be the main items for propagation and distribution.

IV. Native and Adapted Conservation Plant Materials

It may be presumptive to specifically disclose the conservation plant materials which the Division of Forestry would choose to propagate in southern Nevada, but it is important to understand clearly that many low water requiring plants and shrubs indigenous to the region are suitable for conservation purposes. (See Exhibit I.) It is also evident

that water in the Las Vegas basin is limited and that the expansion of population continues. The dream of a lush, green landscape is generally frustrated by actual experience. But there is real hope that species requiring very little water will, in their own very special ways, provide an improved landscape of appreciated esthetic value. Desert species not only are beautiful when properly utilized, but can perform rather well as windbreaks, soil stabilizers and recreational attractions.

V. Desert and Urban Forestry

New to forestry are the twin concepts of desert and urban forestry. Traditional has been the approach that deserts and cities either do not deserve forests or would be the last two places to acquire them. By definition, the concept of forestry is in radical transition.

Desert forestry has been defined as a science of developing, caring for or cultivating conservation type materials in an arid environment and modifying the response to adverse growing conditions, while minimizing the consumptive use of water. In our world of natural resource shortages, it is expedient that desert areas also be utilized to the maximum, measurable productivity of useful native and adapted plant species in desert areas being the major objective of desert forestry.

In Nevada, the potential for desert forestry is great. Native poplar trees on thousands of acres of flood plain could be managed for various multiple use purposes. The pinon pine-juniper woodlands, which occupy in excess of 7 million acres in Nevada, might well be conserved for more efficient utilization. There are thousands of acres of salt cedar along the Colorado River, at present being indiscriminately destroyed, which possibly could be scientifically managed and propagated for the production of forestry materials. And there are many conservation plant materials such as the brutia pine, which have recognized potential as permanent and viable desert species.

The desert forestry idea has realized some public vision and support through the years, but the concept of urban forestry is indeed a new departure. This new approach in such large

metropolitan areas as Los Angeles is meeting with outstanding public acclaim. Urban forestry is a science of developing, caring for or cultivating conservation type materials in an urban environment to enhance air quality and quantity, provide shade protection, stabilize soils, reduce noise and dust levels and improve esthetics.

As a manifestation of the urban forestry trend are the numerous greenbelts, arboretums and parks which have been referred to as "vital" in the master plans of the nation's metropolitan areas. It should be remembered that conservation plant specimens in urban settings contribute to the 35 pounds of oxygen which the average human being consumes daily. Plants also efficiently collect and purify most of the 12 million tons of particulate matter (dirt in the air) released into the atmosphere during the 1973 calendar year. Other benefits afforded by urban forestry would include shade protection and reduced soil erosion.

VI. Competition and Private Interests

The primary purpose of a forestry nursery in southern Nevada would be to provide conservation plant materials to corresponding units of government and to qualified private citizens for conservation purposes. (See proposed bill in Appendix 1.)

The major responsibility inherent in this study is to examine the feasibility of a nursery facility which would make prime native and adapted conservation stock available to appropriate entities at a fair and equitable price. As long as private nursery interests do not impinge upon the conservation purposes enumerated herein, there is no competition with or infringement upon the rights of these private interests.

While enthusiastic over ornamental plants of foreign origin (outside of Nevada), the people of southern Nevada are now looking to native ornamentals with qualities of durability and excellence. With greater population density and water restrictions, there is a renewed sense of local environment. And, while private nurserymen adequately provide imported varieties of ornamentals, they neither have the finances

nor research capabilities to identify and propagate native ornamentals of first quality. What is normally obtained is inferior stock at inflated prices from Arizona and California, stock which is not at all climatized to Nevada's high deserts. Private nurserymen simply do not have the available capital to perform necessary botanical and marketing research.

A fundamental objective of a Division of Forestry plant materials center would be the performance of various research functions. Specifically, once a native species has been analyzed, all research information identifying it for ornamental utilization would, at no charge, be provided to private nurseries. The Division of Forestry would propagate and distribute only those plant materials classified as useful for conservation purposes. The implementation of this concept should prove invaluable to private nurseries wishing to expand and improve business.

A forestry nursery arboretum, as another dimension of a forestry nursery, would also be beneficial to the private nursery business since it would educate people as to new ornamental varieties and their proper utilization.

VII. Site Selections

This feasibility study could not be complete without some discussion of site criteria and specific alternatives available for consideration in Clark County. The sites examined include Tule Springs, Gilcrease Ranch, North Las Vegas Regional Park, Metropolitan Police Department's Rehabilitation Farm, BLM site adjacent to the rehabilitation farm, Sunset Park, Irwin Soper's Mohave site, BLM Mohave site and the Krupp Ranch. The criteria for selection were water (quality, quantity and availability), acreage, elevation, soil, utilities (available) access, labor, security (of proposed facility), cost of land, compatibility (with other uses) and owner's interest (reason for selling). (See Exhibits J and K.) Greater quantities of technical information are available on each of the nine locations from the U.S. Soil and Conservation Service in Las Vegas, Nevada.

The following abstracts were derived from various onsite investigations:

(a) Tule Springs--Sixty acres of available land. The City of Las Vegas is interested in allowing the use of this property for a nursery facility of limited size (10 acres). The city is still uncertain whether water rights will be included in a lease agreement or if water would actually be made available.

(b) Gilcrease Ranch--Eighty acres of available land. This land is privately owned but the owner is willing to sell at a reasonable price. If sold to private interests, the property would sell for considerably more than the $1,000 per acre ($2,000) for which it has been offered to the state. The property runs along a natural underground river, but there is some question whether a permit would be issued for well drilling.

(c) North Las Vegas Regional Park--North Las Vegas will donate a 40-acre parcel from the 1,080-acre regional park to the Division of Forestry. (See Exhibit L.) A well is already available on the parcel with a projected output of 275 gallons per minute. According to Mr. D. C. Morby, Superintendent of Parks for the City of North Las Vegas, an unlimited supply (3,000 gallons per minute) of city water is also available 5 to 6 miles away from the proposed nursery site. Effluent water will likewise be made available for specified nursery purposes. (See Exhibit M.)

(d) Metropolitan Police Department's Rehabilitation Farm--Various parcels would be made available for a forestry facility. The farm is in the lowest part of the valley and the soil does not drain well. The soil is heavily saturated with salts and would need considerable work to render it acceptable for nursery stock. A prime concern is whether the effluent water from the sewage treatment plant might actually be utilized for nursery purposes.

Some thought has been given to employment of the rehabilitation farm labor force in the nursery operation. Several members of the advisory committee felt this would not be feasible inasmuch as the inmates remain at the farm for no more than 6 months at a time, resulting in an undesirable ratio of work productivity to training time and supervision.

(e) BLM sites adjacent to the rehabilitation farm--Three separate BLM sites are available. Water availability is good, especially if effluent water can be utilized. Land can be purchased from the Bureau of Land Management for $2.50 per acre. Located at the lowest part of the valley, these three sites also have serious drainage problems.

(f) Sunset Park--Ten acres of available land. Water is definitely not a problem here and the soil is excellent. The park officials are very much interested in releasing this property for a nursery facility. In addition, a nursery facility would be very compatible with the park master plan and present recreational activities.

Some possible drawbacks must be given careful consideration. In a letter from Mr. Eric R. Cronkhite, Administrator for the Nevada Division of State Parks, to Mr. Elmer Anderson, Director of the Clark County Parks and Recreation Department, Mr. Cronkhite explains that Clark County originally purchased Sunset Park with matching financial assistance from Land and Water Conservation Funds. The utilization of these funds is controlled and adjudicated by the U. S. Bureau of Outdoor Recreation. The letter warns that, should any portion of the site (25 acres) be converted to a nursery, the amount of matching funds ($44,284) for that acreage must be reimbursed Water Conservation Funds, inasmuch as the Bureau of Outdoor Recreation does not consider a forestry nursery to be an allowable non-recreation use. (See Exhibit N.) The Clark County

Board of County Commissioners nevertheless approved on April 5, 1974, the provision of 5 acres of land at Sunset Park for a state forestry nursery. (See Exhibit O.)

(g) Krupp Ranch--Ten acres of land are available. Beautiful as it may be, Krupp Ranch is not particularly well suited to a nursery facility of three distinct elements (research, production and arboretum). The Krupp Ranch is a very popular location but water is a primary problem inasmuch as all available water is now being used. There is also real concern by the Nevada Division of Parks as to the physical location of a forestry nursery on the ranch, how to camouflage it and how to fully adapt it to what is called "ranch flavor." Also be considered are the restrictions which were placed upon this property by the Bureau of Outdoor Recreation because of the use of Land and Water Conservation Funds in the purchase. Once again, there is the problem that a forestry nursery is not an allowable nonrecreation use. It would be necessary to reimburse the Federal Government $3,700 per acre for matching grants which originally emanated from Land and Water Conservation Funds.

(h) Mohave Sites--Involving two adjacent parcels of land on the Colorado River. One is a private parcel owned by Mr. Irwin Soper, the other, BLM land. Growing conditions and altitude of the region do not closely parallel those of the greater Las Vegas area since both locations are only 590 feet above sea level (Las Vegas ranges from 1,800 to 2,500 feet above sea level). They are located approximately 80 miles south of the Las Vegas metropolitan area, this distance almost entirely eliminating them from further consideration. The soil, however, is the best of any site examined and water rights are readily available. There would also be the possibility here of selling stock to nurseries in Arizona, Utah and California.

At the request of the advisory committee, U. S. Soil and Conservation Service performed extensive investigations on six of the more outstanding sites. Not only does the report provide excellent site descriptions, but also includes appropriate maps of designated areas. (See Exhibit P.) Tables 1 and 2 (See Exhibits Q and R) list those soils which were thought to have bearing on final site selection. One should keep in mind that a given soil may occur at more than one location.

VIII. Cost Considerations

A forestry nursery facility will cost money. It would, however, be one of the few state programs with the potential of operating on a slight profit margin. And should these recommended statutory changes be approved, commodity sales could slightly exceed production costs.

The biennial budget for the proposed facility cannot be firm because no specific location has been chosen and the final choice will necessitate some tailoring of budget figures. (See Exhibits J (Cost of Land) and S.) Including a projected inflation rate of 2 1/2 percent per month, the first year budget has been established at $154,683; the proposed budget for fiscal year 1976 will be $112,913. (See Exhibits T and U.)

IX. Statutory Recommendations

Chapter 528 of the Nevada Revised Statutes directs, limits and authorizes the Nevada Division of Forestry in the performance of designated forestry activities. This chapter likewise permits and defines the operation of a forestry nursery facility. The advisory committee, in reviewing current law, strongly suggests that chapter 528 be amended (See Appendix 1), allowing for the construction and operation of nursery facilities with the capability of meeting Nevada's needs.

X. Conclusion

We conclude that it is feasible to construct a plant materials center (forestry nursery facility) in southern Nevada. Doing so would be a definite advantage to government entities, private nurserymen and private citizens. It would promote a true flowering of the desert and ameliorate Nevada's arid climate.

Exhibits

1973-74 Price List of Planting
Stock and Stock Description

Item Number	SPECIES	SIZE	PRICE PER 50
1.	European Sage (unrooted cuttings)	9"	4.00
2.	Caragana (Siberian Pea) (bare root)	10"-12"	10.00
3.	Sand Cherry (bare root)	8"-10"	12.00
	TREES DECIDUOUS (Bare root)		
4.	Ash, Green	12"-20"	10.00
5.	Elm, Siberian	12"-20"	8.00
6.	Locust, Honey (thornless)	18"-24"	10.00
7.	Poplar, Lombardy (columnar)	24"-30"	10.00
8.	Poplar, Souixland (spreading)	18"-24"	12.00
9.	Willow, Golden	18"-24"	8.00
10.	Olive, Russian	12"-20"	8.00
	TREES EVERGREEN (Bare root)		
11.	Pine, Ponderosa	6"-8"	12.00
12.	Pine, Jeffrey	6"-8"	12.00
13.	Pine, Scotch	6"-8"	12.00
14.	Pine, Austrian	6"-8"	12.00
15.	Juniper, Rocky Mountain	6"-8"	12.00

	TREES EVERGREEN (1 Gallon Cans) (Minimum 25) (Age 2 yrs.)	
16.	Pine, Jeffrey	1.00 ea.
17.	Pine, Ponderosa	1.00 ea.
18.	Pine, Scotch	1.00 ea.
19.	Juniper, Rocky Mountain	1.00 ea.
20.	Redwood, Sierra	1.00 ea.

IMPORTANT

1. To purchase seedlings, one must own at least 1 acre. To adjacent property owners, whose combined acreage totals 1 acre or more, are eligible.

2. Seedlings are sold by species in lots of 25. A total of at least 50 seedlings must be ordered.

3. Complete the application and sign.

4. Trees can be picked up at the Nursery during closed hours by out-of-towners, IF arrangements are made IN ADVANCE with the Nursery Manager.

5. In some Counties, the County Agents make a trip to Reno to pick up the orders for their areas. If you are interested in this arrangement contact your agent before ordering and indicate this on the order blank under shipping instructions.

6. If replacement stock is ordered, please indicate on the face of the order blank.

7. If further information is desired, contact your County Agent, SCS District Conservationist or a Nevada Division of Forestry, Forester.

STATE TREE NURSERY, 160 Boynton Lane, Reno, NV Phone: 786-6286
Mailing Address, 2595 E. Second Street, Reno, NV 89502
NURSERY HOURS: 8 a.m. to 5 p.m. Weekdays, Closed Weekends

STOCK DESCRIPTION

1. European Sage, Artemisia abrotanum, is also known as Southern wood and worm wood. It is a fleecy, fast growing, many stemmed shrub which grows successfully at elevations between 3,000 and 5,000 feet. The plant has an expected life of about 15 years. It will reach a height of four to six feet and is frost resistant, which makes it usable in frost pockets. Rabbits and sheep will eat this plant if it is not properly protected. It is very good for erosion control and small game and upland bird cover. When planted two to three feet apart in a row it will form a tight dense hedge, especially if trimmed occasionally.

2. Siberian Pea, Caragana arborescens, is an introduced shrub that has been extensively planted for shelterbelts. It is cold drought resistant and grows about six to 10 feet tall. It is used for erosion control, game cover, windbreaks, and shelterbelts. In a windbreak, plant this shrub in the first row about six to eight feet apart. Plant any of the deciduous trees listed on the order blank in the second row.

3. Sand Cherry, Prunus besseyi, is a shrub growing three to five feet high. It does best on well drained light loamy soil. Sand Cherry has white flowers which produce sweet edible berries similar to Choke cherry. The berries are eaten by upland game bird and song birds. When planted about three feet apart it will spread and provide complete ground cover.

4. Green Ash, Fraxinus lancolata, is a large hardy tree with a tall stout trunk; its spreading, often drooping, branches form a round-topped to pyramidal shape 50 or 60 feet tall. It is a native of the eastern U.S. and will persist on dry, sterile soils when established. The tree is exceedingly hardy to climate extremes. It is relatively free from insect and fungus attack, but the thin barked young trees are highly susceptible to fire danger. Because of its high stumpage value it should be encouraged in farm woodlot management.

5. Siberian Elm, Ulmus pumila, is a fast growing tree and can be used to create a quick screen or windbreak. It grows to a height of 55 feet and does well in some of the poorer soils of the state. This tree is hardier and more resistant than most elms.

6. Honey Locust, Gleditsia triacanthos, is a large hardy tree, with very hard and tough wood. It grows on various kinds of soils. It is more adapted to higher elevations and poorer soils than the black locust, but it does not grow as fast. (The thornless variety is raised at the nursery). This native to the eastern U.S. grows to a maximum height of about 90 feet, making a large, towering, spreading tree. When grown in a woodlot of the same species or with other hardwoods, it will produce desirable wood for farm use because of its strength. This tree is not subject to chlorsis or yellowing as are many of the hardwoods. Honey locust is intolerant and needs full sunlight.

7. Lombardy poplar, Populus nigra car. italica, is a slender tree often reaching 50-70 feet in height. It is a very cold hardy tree and does well on high water tables. The tree grows rapidly but is short-lived.

8. Souixland poplar, Populus soixland, is a fast growing cottonless tree from South Dakota. This spreading cottonwood has done well in all parts of Nevada. It grows to a height of 90-100 feet. If not properly cared for the tree becomes susceptible to canker infections.

9. Golden Willow, Salix alba vitellina, is a small tree, recommended for windbreaks and shelterbelts on irrigated or swampy lands and for planting along stream banks to prevent erosion. It will grow in alkaline soil and survive up to 6,000 feet elevation. This tree derives its name from the golden or yellow color of the branches and young shoots, which gives it a very outstanding appearance. It grows to a height of about 30-40 feet. The branches grow quite long and have a tendency to droop, giving a semi-weeping effect.

10. Russian Olive, Elaeagnus angustifolia, is a hardy, Asiatic tree that was introduced into the United States for planting under rather extreme conditions. It is a rather low growing tree with a tendency to branch out. The branches are thorny and the wood is strong. The fruit is eaten by song birds, quail, and pheasants. The olive is extremely hardy, being able to adapt itself to either wet or dry sites and to grow on good or poor soils up to about 6,000 feet in elevation. Its branchy growth conforms particularly well to windbreak or hedge plantings.

11. Ponderosa pine, Pinus ponderosa, this tree grows best on a rather loose, sandy loam soil that is well watered and well drained, but does not tolerate alkali nor elevations much above 6,500 feet. Usually there are three needles to the cluster about 3-8 inches long. The Ponderosa is gaining popularity as a Christmas tree.

12. Jeffrey pine, Pinus jeffreyi, the most noteworthy feature of this species is its similarity in appearance and behavior to ponderosa pine (see ponderosa pine description). Jeffrey pine is more frost resistant than the ponderosa pine especially in the seedling stage.

13. Scotch pine, Pinus sylvestris, this pine of European origin tolerates a wide range of soil and climate conditions. This species attains a height of 60-90 feet. The needles occur in clusters of two and are 3 1/2 inches long. It does reasonably well on poor sites.

14. Austrian pine, Pinus nigra, is a native of Europe and Western Asia. It is a well developed tree with a handsome appearance. It grows about 50 feet tall. The needles occur in clusters of two and are 3-6 inches long. This species grows well in both sand and clay and may average a foot of growth per year.

15. Rocky Mountain Juniper, Juniperus scopulorum, this very drought resistant tree grows between 4600-9500 feet in elevation. They grow to 40-55 feet tall.

16. Sierra Redwood, Sequoidendron giganteum, grows in Western Nevada between 4,000-7,000 feet elevations. This evergreen has a very symmetrical and handsome appearance. It is naturally resistant to most insect and disease problems. Seedlings and young trees should be protected against direct exposure to winter winds.

COST COMPARISON BY SPECIES*

(5-gallon containers)

Species	Low Estimate	High Estimate	Commercial	Low Percent Difference **	High Percent Difference ***
Pinus halepensis	$1.95	$2.26	$3.75	48	40
Nerium oleander	$1.85	$2.17	$3.50	47	38
Gleditsia triacanthos	$2.45	$2.70	$4.50	45	40
Cupressus arizonica	$1.95	$2.26	$3.50	44	35
Fraxinus velutina	$2.45	$2.70	$4.25	42	36

Exhibit B

* Estimated costs for the species listed above would be subject to variation dependent on weather conditions, cost of the lining out stock, cost of soils and containers.

** Low Percent Difference--is the percentage difference between the low estimate sale price of the Division of Forestry and the going commercial charge.

*** High Percent Difference--is the percentage difference between the high estimate sale price of the Division of Forestry and the going commercial charge.

SURVEY OF INTEREST -- GOVERNMENT ENTITIES IN SOUTHERN NEVADA

		1. Do you feel that the climatic and plant differences between southern and northern Nevada justify a nursery in southern Nevada to grow acclimated stock?	2. Do you need nursery stock which is not now available through the Nevada State Nursery?	3. Would a state tree nursery be beneficial to you if located in southern Nevada?	4. Do you feel the development of native grown species should be introduced and propagated in a state nursery?
1.	University of Nevada at Las Vegas	yes	yes	yes	yes
2.	Nevada Division of Parks	yes	yes	yes	yes
3.	Nevada Division of Fish and Game	yes	yes	yes	yes
4.	North Las Vegas Parks Department	yes	yes	yes	yes
5.	U.S. Forest Service	yes	no	yes	yes
6.	U.S. Fish and Wildlife	yes	yes	yes	no
7.	Clark County Park and Recreation Department	yes	yes	yes	yes
8.	Nevada Highway Department	yes	yes	yes	yes
9.	Las Vegas City Park Department	yes	yes	yes	yes
10.	Clark County Public Works Department	yes	yes	yes	yes

Of those agreeing with Number 4 above, approval was granted for the following reasons:

67 Percent	(a)	Reducing water consumption
89 Percent	(b)	Aesthetic value
33 Percent	(c)	Wildlife habitat
44 Percent	(d)	Windbreaks
56 Percent	(e)	Soil erosion stabilization
44 Percent	(f)	Other conservation purposes

Survey designed, implemented and tallied by Keith E. Grover and Ferren W. Bunker.

Exhibit D

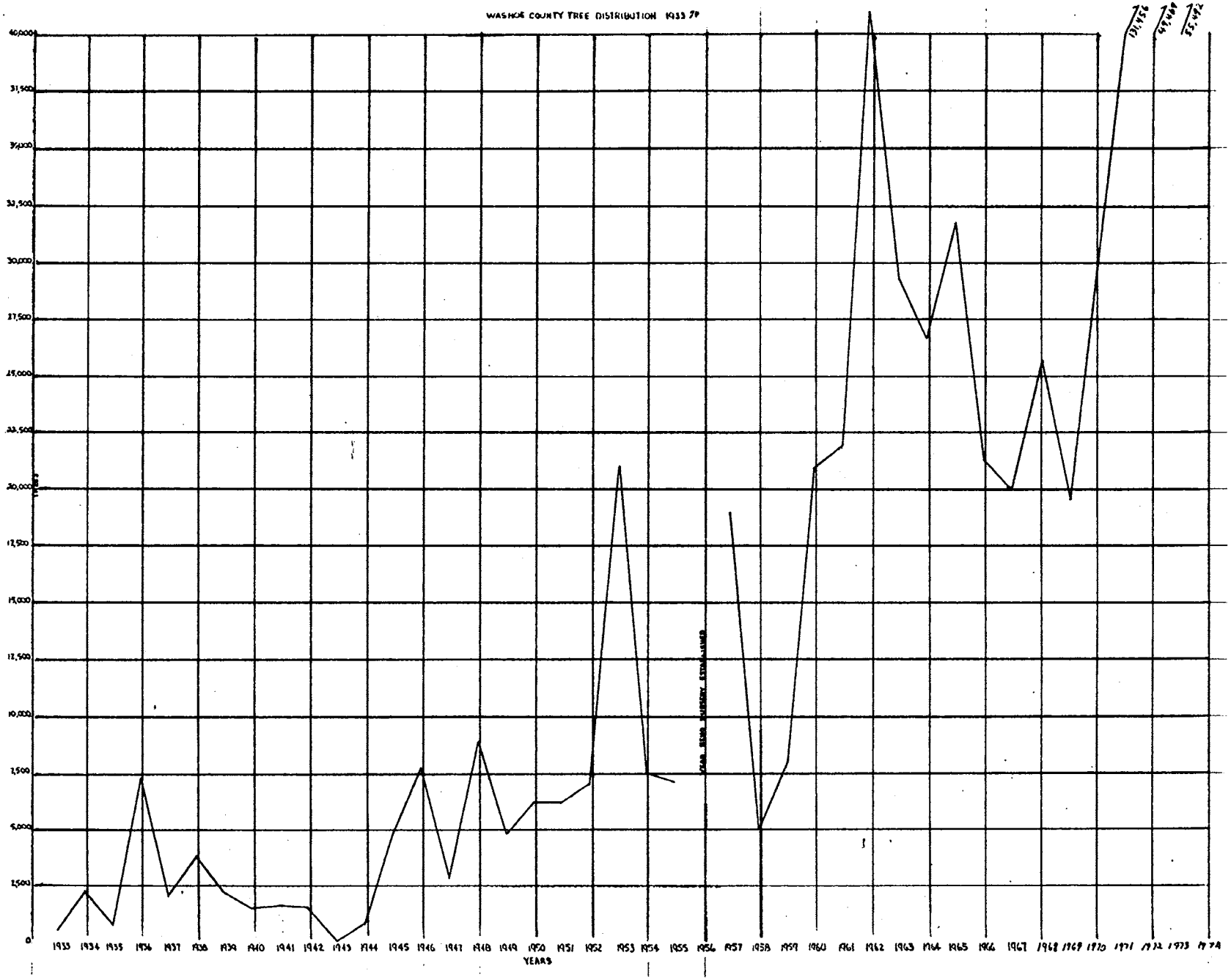

WASHOE COUNTY TREE DISTRIBUTION 1933 TO
40,000
31,500
30,000
27,500
25,000
22,500
20,000
17,500
15,000
12,500
10,000
7,500
5,000
2,500
0
1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974
YEARS
131,956
47,949
35,492

Exhibit E

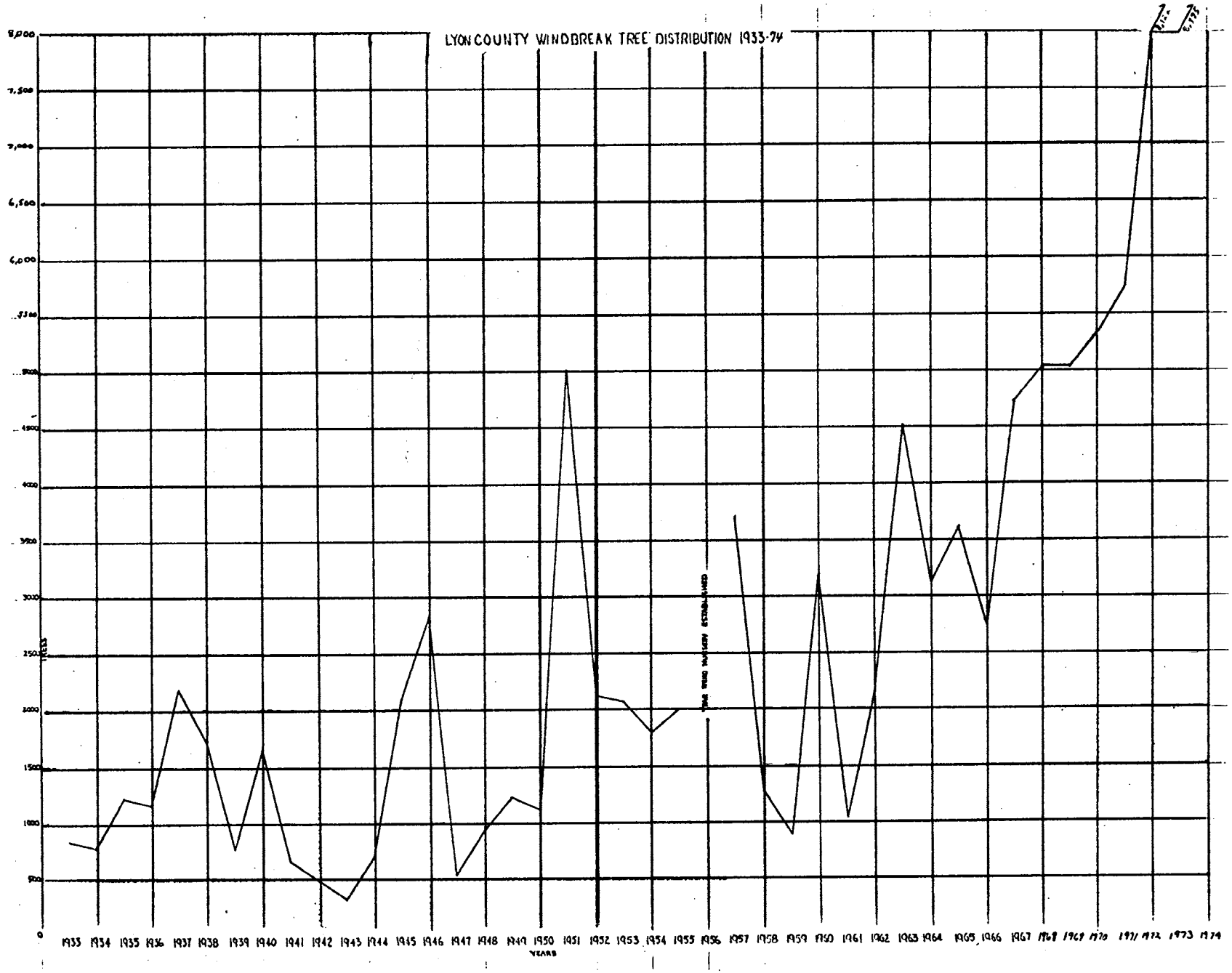

LYON COUNTY WINDBREAK TREE DISTRIBUTION 1933-74
8,000
7,500
7,000
6,500
6,000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
TREES
1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974
YEARS

Exhibit F

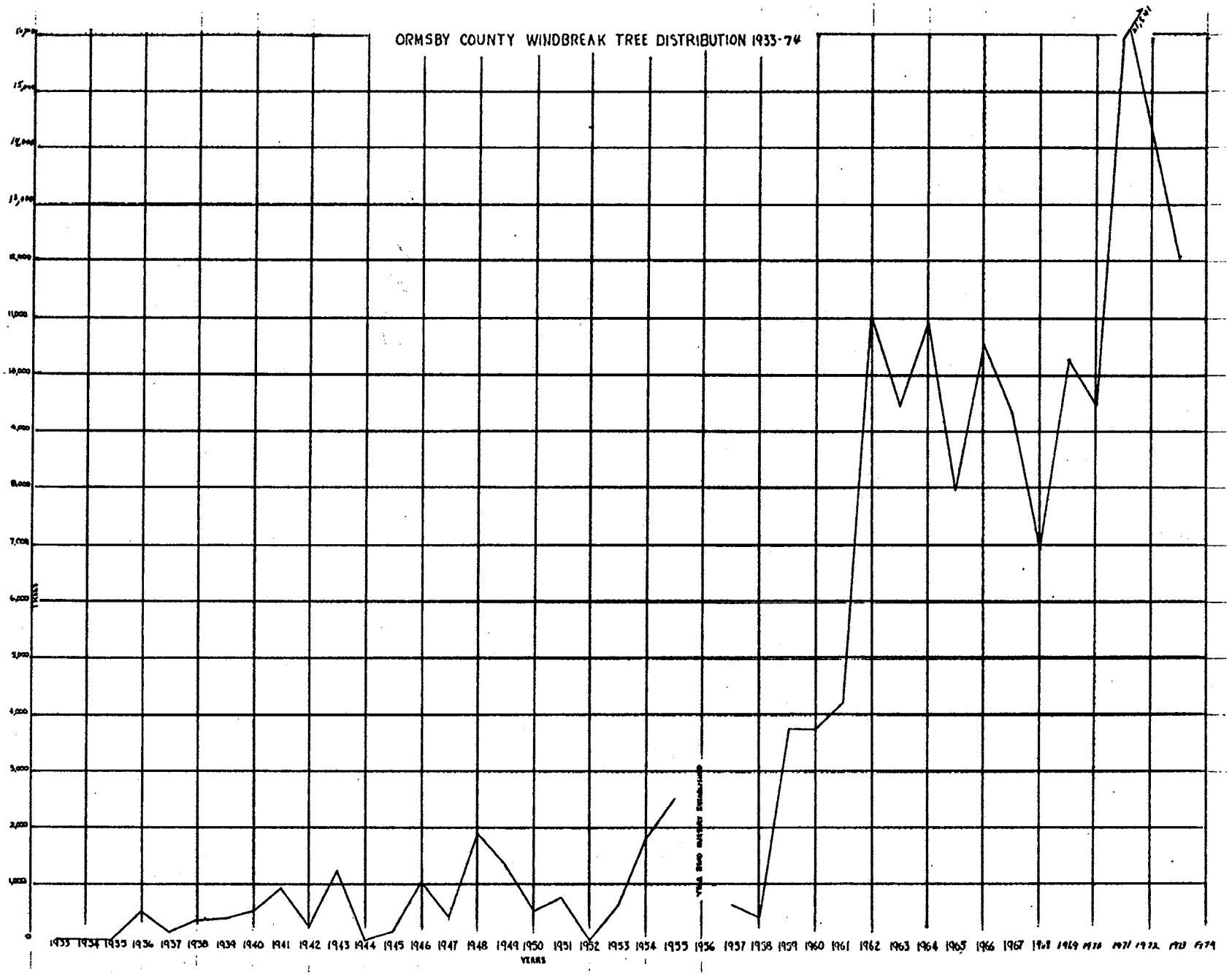

ORMSBY COUNTY WINDBREAK TREE DISTRICTION 1933-74
TREES
YEARS
1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974

Exhibit G

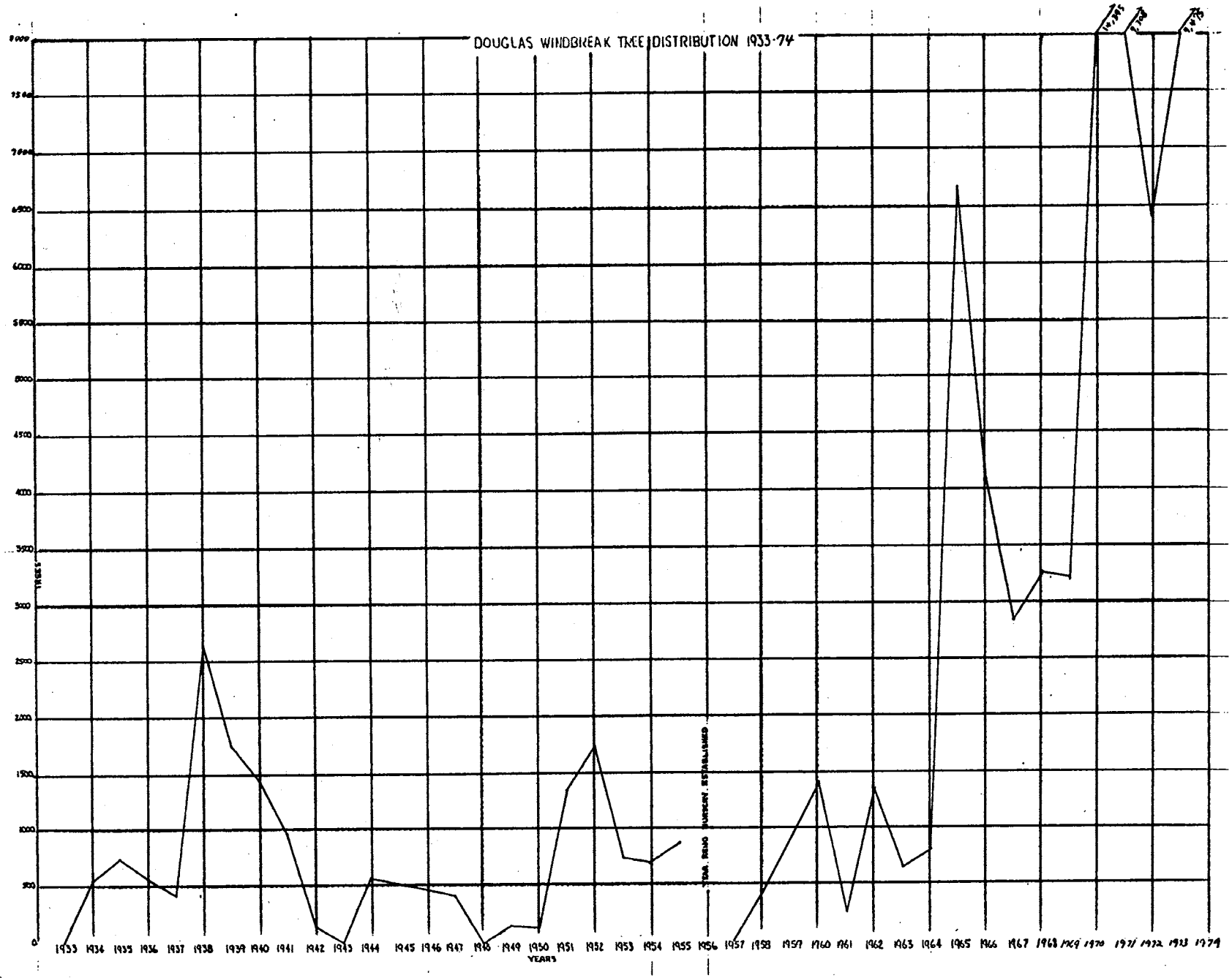
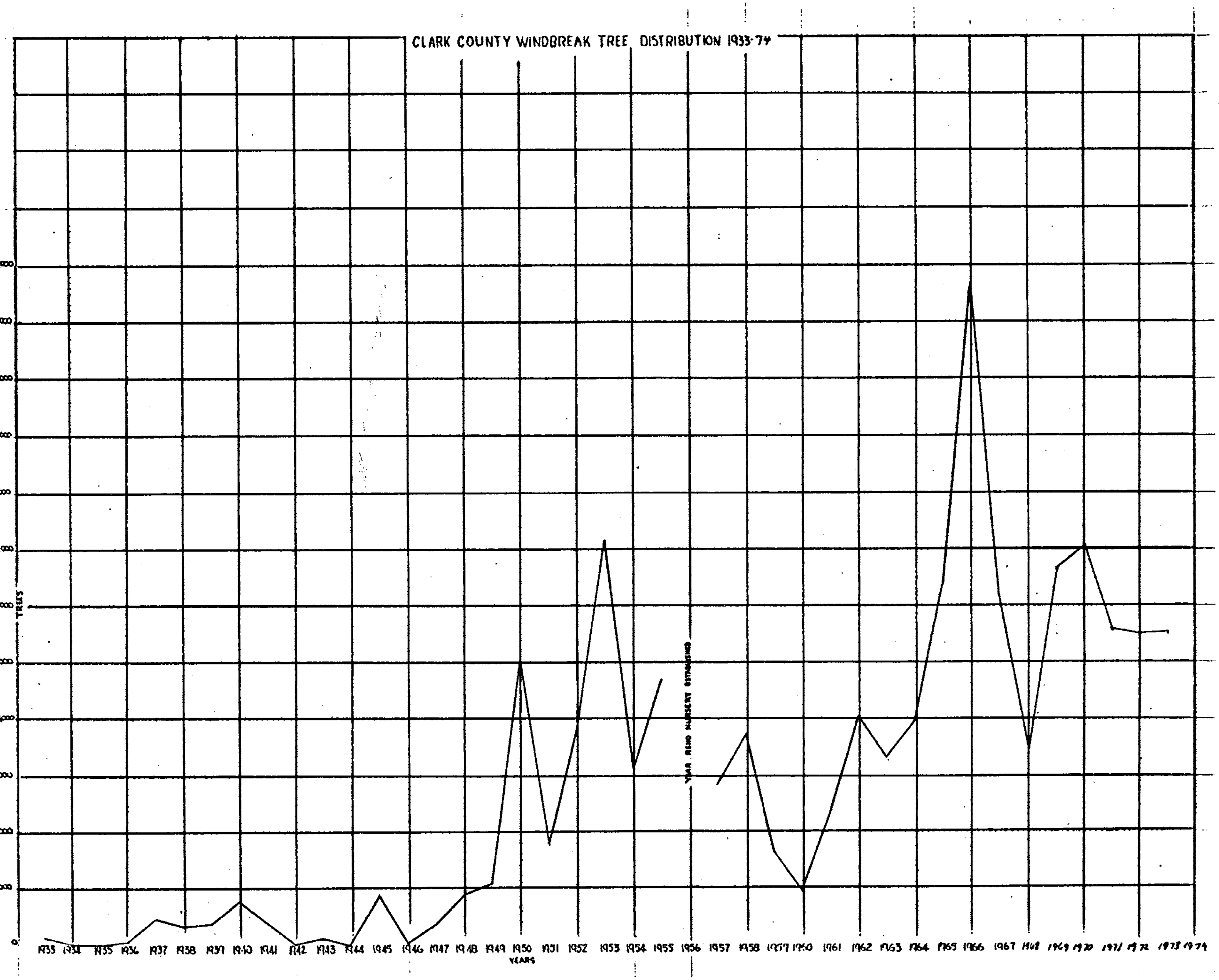

DOUGLAS WINDBREAK TREE DISTRIBUTION 1933-74
TREES
YEARS
1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974

Exhibit H


CLARK COUNTY WINDBREAK TREE DISTRIBUTION 1933-74
TREES
YEARS
YEAR RENO NURSERY ESTABLISHED
24,000
22,000
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6000
4000
2000
0
1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974

ADAPTABLE SPECIES
for
SOUTHERN NEVADA NURSERY FACILITY

1. Forbes cypress
2. Athel
3. Italian cypress
4. Afganistan pine
5. Oleander
6. Single leaf ash
7. Mock Orange
8. Muscrue
9. Tamarask
10. Brutea pine
11. Allepo pine
12. Red pine
13. Palms
14. Twisted juniper
15. Creosote
16. Hybrid Mesquite
17. Eucalyptus gunii
18. Privet
19. Russian Olive

Exhibit I

Exhibit J

CHART OF COMPARATIVE SITES:
SOUTHERN NEVADA FORESTRY NURSERY FACILITY

	TULE SPRINGS	GILCREASE RANCH	NORTH LAS VEGAS REGIONAL PARK	METROPOLITAN POLICE DEPARTMENT'S REHABILITATION FARM	BLM SITE	SUNSET PARK
WATER Quality Quantity Available	good adequate questionable	--- 500 gallon per minute	good well-275g.p.m.;city H_2O yes yes,6mi.	from sewage treatment plant very adequate yes	sewage plant okay yes	good adequate yes
ACREAGE	40-50	20 plus	40	10	30 plus	10 + arboretum
SOIL	acceptable	questionable	poor-calchie deposits (can be ripped)	poor--drainage problems (high salinity)	acceptable--needs leveling	very good--sandy loam
ELEVATION	2500'	2400'	2400'	1800'	1800'	2000'
UTILITIES	yes, power no gas	yes power no gas	yes power no gas	yes power yes gas	yes power yes gas access.	yes power yes gas access.
ACCESS	good	good	medium	good	good	good
LABOR	good Spring Mt.	good Spring Mt.	good Spring Mt.	good	good	good
SECURITY	adequate	needs to be manned	needs to be manned	good	needs manned	adequate
COST OF LAND	possible lease	$1,000 per acre	$1 per 50-year lease	possible lease agreement	$2.50 per acre	$1,771 per acre
COMPATIBILITY	very good	questionable--area not planned	excellent	some problems--flood hazard	poor--unaesthetic area	excellent
OWNER'S INTEREST	some	interest in selling	very good	poor	N/A	very good
PROPERTY OWNER(S)	Las Vegas	Ted & Bill Gilcrease	North Las Vegas	Las Vegas	BLM	Clark County

CHART OF ADDITIONAL COMPARATIVE SITES:
SOUTHERN NEVADA FORESTRY NURSERY FACILITY

	Krupp Ranch	Mohave Sites (Public and Private)
Water		
Quality	good	adequate
Quantity	20-30 gpm/seasonal	adequate
Availability	very limited	available
Acreage	questionable	ample--BLM land or privately owned
Elevation	3,800'	490'
Soil	fair-sandy	excellent
Utilities	yes power no gas	yes power no gas
Access	fair	very poor
Labor	poor	fair
Security	good	poor
Cost of Land	$3,700 per acre	minimal cost
Compatibility	poor--interferes with "ranch flavor"	fair
Owner's Interest	in preserving ranch as is	interest in selling
Owner(s)	Nevada State Division of Parks	BLM and Irwin Soper

City of North Las Vegas

2200 Civic Center Drive • P.O. Box 4086
NORTH LAS VEGAS, NEVADA 89030
Telephone 649-5811

May 15, 1974

Richard A. Signs
Deputy Researcher
State of Nevada
Legislative Counsel Bureau
Legislative Building
Carson City, Nevada 89701

Dear Mr. Signs:

In reply to your correspondence of May 2nd, I am enclosing the comments of our Director of Library, Parks, and Recreation. The ideas expressed in his memorandum are in accordance with the General Master Plan of the City of North Las Vegas, and would probably receive favorable consideration by our City Council, if you wish to proceed along these lines.

Yours very truly,

Clay Lynch

CL/sk
Enc.

C
O
P
Y

CITY OF NORTH LAS VEGAS

INTER - OFFICE MEMORANDUM

Date: May 8, 1974

To: Mr. Clay Lynch Department: City Manager

From: R. O. Forson, Director Department: Library, Parks & Rec.

Subject: Answer to Legislative Counsel Bureau letter

In regards to Mr. Sign's letter of May 2nd which asks five questions in reference to the City of North Las Vegas and our intention to release certain lands in our Regional Park to the State of Nevada to establish a State Tree Nursery here in the south, I submit the following:

It would appear that the area that we have in mind has the capability of expanding from 5 to 25 acres. There is a well on the property but we do not know what its actual capacities in terms of gallons per minute will be when the well is fully developed.

In answer to the five questions:

Q. Under what circumstances will you make adequate land and water available to the state, and at what price?

A. The City can make land available in a block of 25-30 acres at no cost to the State of Nevada on a long term lease basis. The water would be a state responsibility. The well that exists could be taken over by the state with the state's own water permit.

Q. What part do you expect the State of Nevada to play in the development of such a facility?

A. The construction and development of the facility would be solely the responsibility of the State of Nevada, as would be the further development of the well and the bringing of necessary power to the site. Access has already been provided by Ann Road. Surveys of the area are already complete.

Q. Were Land and Water Conservation Funds used to purchase the property?

A. No.

Q. If so, will the Bureau of Outdoor Recreation approve a change of use?

A. No.

Q. To what amount of money will the Federal Government be reimbursed for that portion of the property converted (if this applies)?

A. We would anticipate that the property would remain in the ownership of the City of North Las Vegas and that a long term lease of say 50 years at $1.00 would assure the State of continued operation at that location.

We hope that this adequately answers the questions and trust that the advantages of the North Las Vegas Regional Park site will prove to be satisfactory enough as to make it a possible location for the proposed State of Nevada Tree Nursery. It is immediately and readily accessible to the north-south freeway which will officially open on the 24th of May and this makes it an ideal location to serve all of the geographic and political locations within Southern Nevada.

Since the property is owned by the City of North Las Vegas and was acquired under patent from the Bureau of Land Management at $2.50 an acre under the provisions of the Recreation and Public Purposes Act of 1936, this land cannot be sold or given away or taken out of public ownership without paying the fair market value at current market prices. Since this would neither be advantageous to the City of North Las Vegas nor to the State of Nevada, it would appear that the lease of the property to the State of Nevada for from 50 to 99 years for $1.00 would be the best document for assuring the State of continued use of the land. The land that we are recommending for their use is the land on the NE 1/4 of the NE 1/4 of Section 33.

If this project is accepted by both the City and the State, we will need to make reference to the project and get approval from the Bureau of Land Management since it is a slight change of location as proposed on the Master Plan. Since it would be an acceptable project it would give us a little more breathing time on our own projects and help secure the land by providing the necessary continuing improvements required by B.L.M.

Respectfully submitted,

R. O. Forson, Director
Library, Parks & Recreation

ROF:mm

CITY OF NORTH LAS VEGAS

INTER-OFFICE MEMORANDUM

COPY

Date July 16, 1974

To: R. O. Forson, Director Department: Library, Parks & Recreation

From: D. C. Morby Department: Supt. of Parks

Subject: Water Information - Regional Park

Existing well production capabilities - Test Well ran a maximum of 275 gals./min.

Projected Output:

275 gals/min	x	60	=	16,500 gals/hr
16,500 gals/hr	x	24	=	396,000 gals/day
396,000 gals/day	x	7	=	2,772,000 gals/wk
2,772,000 gals/wk	x	52	=	144,144,000 gals/yr

322,850 gals/acre foot = 442.36 acre feet/yr
27,154 gals/acre inch = 5,308.38 acre inches/yr

City Water Source

Craig Road and Decatur - Unlimited Supply (3,000 gal/min)
Distance from Regional Park - 5-6 miles

Future Water Source

Potential water main down Craig Road

Effluent Water Availability

This is still in the thinking stages. Cost estimates for a treatment plant are running in the neighborhood of 4-5 million dollars.

Power Source

Power lines run through the top two thirds of the Regional Park - about one mile from Ann Road. The existing well pump on the Regional Park site will have to be replaced to get maximum gallonage as per original test.

D. C. Morby
Supt. of Parks

DCM/jw

Exhibit M

COPY

April 16, 1974

Mr. Elmer Anderson, Director
Parks & Recreation Department
200 East Carson
Las Vegas, Nevada 89101

Dear Elmer:

An article which appeared in the April 7, 1974 issue of the Las Vegas Sun was brought to my attention regarding the offer of the county of five acres in Sunset Park as a site for a state nursery.

We are advising you that there are certain restrictions regarding the nonrecreation use of lands purchased with Land and Water Conservation Funds. A change of use must first be approved by the Bureau of Outdoor Recreation.

The Bureau of Outdoor Recreation has told us a tree nursery is not an allowable nonrecreation use. If the portion of the park site is converted to a nursery, it is required to pay back that portion of the Land and Water Conservation Fund monies used for the amount of acreage converted to nonrecreation use. An arboretum may be an exception.

We support a nursery in Sunset Park, but before any commitments are made, you should know that the applicant may be required to reimburse the federal government for that portion of the property converted. Please let us know when you are ready to make a definite commitment so that we can submit the project to the Bureau of Outdoor Recreation for their final consideration.

Sincerely,

Eric R. Cronkhite
Administrator

ERC:lk

cc: Elmo DeRicco
George Zappettini

Exhibit N

COMMISSIONERS

TOM WIESNER
CHAIRMAN

JACK R. PETITTI
VICE-CHAIRMAN

ROBERT N. BROADBENT
MYRON E. LEAVITT
R. J. "DICK" RONZONE
JAMES G. RYAN
AARON WILLIAMS

DAVID B. HENRY
COUNTY ADMINISTRATOR
Phone: 386-4011

Office of the County Administrator

CLARK COUNTY COURTHOUSE
LAS VEGAS, NEVADA

July 1, 1974

Richard A. Signs
Legislative Council Bureau
Legislative Building
Carson City, Nevada 89701

Dear Mr. Signs:

Thank you for your letter of May 2, 1974, which queried several matters of policy pertaining to the growth and development of Sunset Park as a forest nursery.

The Board of County Commissioners approved the provision of five (5) acres of land at Sunset Park for a state forestry nursery on April 5, 1974. At that time, it was understood that only five (5) acres of land would be used as a nursery. However, an additional twenty (20) acres of land could be used as an arboretum for various studies while not interfering with the recreational nature of the park. For example, the playing field of the baseball park could be surrounded with trees being studied, while in no way interfering with recreation.

In developing this facility, the State of Nevada should be prepared to do the following things. First, because Land and Water Conservation Funds were used to purchase the property, the State should reimburse the County for that property used for a nursery facility. The Bureau of Outdoor Recreation would require $44,284 if a twenty-five (25) acre nursery, excluding arboretum, is envisioned. A five (5) acre facility would be much less expensive. Second, the State should provide funding for initial development and maintenance of the nursery facility. Third, the State should provide the personnel to operate the nursery. And fourth, the State should pay for the water consumed to operate the nursery at the same rate being charged by the Las Vegas Valley Water District.

It is hoped that the above information is sufficient, however, if more information is needed, please feel free to contact this office.

FOR THE COUNTY ADMINISTRATOR,
DAVID B. HENRY

Dorothy J. Hutchens

DOROTHY J. HUTCHENS
Executive Assistant

DJH/ae

Soil Inventory and Evaluation for a Forestry Nursery Facility in Southern Nevada

The following was prepared at the request of the Advisory Committee for the Feasibility Study of a Forestry Nursery in Southern Nevada.

The committee requested a soil investigation on six of the potential sites. A short description of each site follows. Included in the description is the name of the soil, or soils, that were found at each site. Tables 1 and 2 list these soils and the interpretations that were thought to have bearing on the proposed use. A given soil may occur at more than one location.

Location: Fort Mohave Indian Reservation
SE 1/4, Sec. 29, T33S, R66E, Clark County, Nevada

Elevation: 490 feet

This proposed site is located in the extreme southeast corner of Nevada on the Colorado River floodplain. The average soil temperature at 20 inches is 73.5°F., with a low of 52°F. in December and a 97°F. high in July and August. Rainfall is less than 4 inches with low humidity.

The soils which are in the Glendale series are deep silt loams or sandy loams with low fertility and moderate salts. They have an irrigated land capability class of II. If this site is selected further investigations should be made on the drainage and/or possibility of a water table.

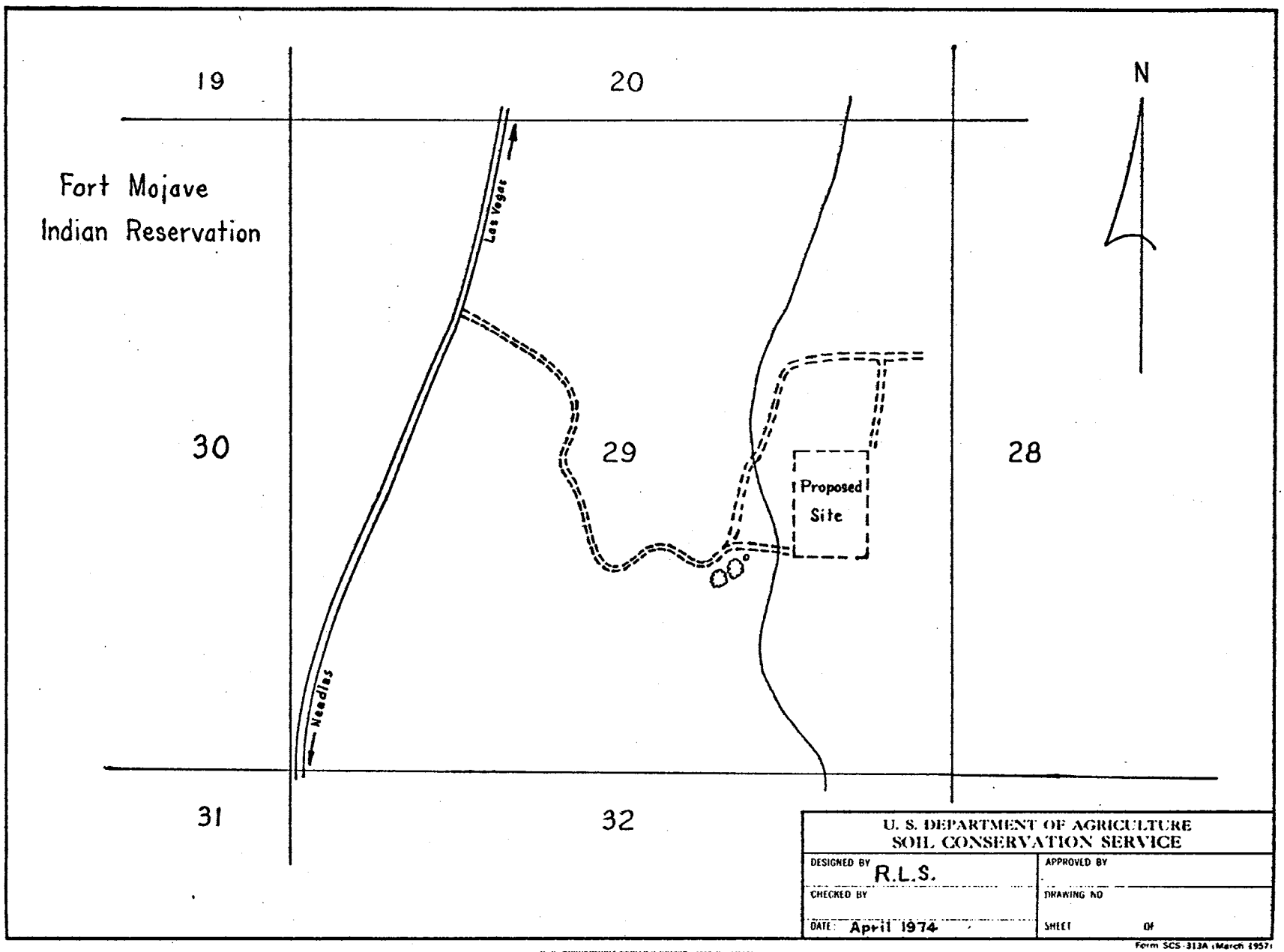


Exhibit P--page 3

Location: Sunset Park
NW 1/4, Sec. 1, T22S, R61E, Clark County, Nevada

Elevation: 2,000 feet

This proposed site is located at Sunset Park east of the present improved area and north of the irrigation reservoir. The soils are developing in the Duck Creek flood plain. The average soil temperature at 20 inches is 68°F., with a February low of 50°F. and a July high of 90°F. Rainfall is less than 4 inches with low humidity.

The soils are deep with a water table below 8 feet. The major soil on the site is Land silt loam. This is a deep silty soil with high accumulations of soluble salts in the upper 4 feet. It has an irrigated land capability class of IV. Glendale very fine sandy loam is also found. This is a deep very fine sandy loam with moderate accumulations of soluble salts. It has an irrigated land capability class of II.

These soils would need to be leached of excess salts before being used as a nursery. Quality and quantity of water needs to be checked. Soil samples of the Land series need to be analyzed for presence of sodium.

This has potential for a good nursery site.

Location: Sunset Park
SW 1/4, Sec. 1, T22S, R61E, Clark County, Nevada

Elevation: 2,000 feet

This site is located at Sunset Park east of the railroad tracks at the corner of Eastern Avenue and Warm Springs Road. The soils are developing in the Duck Creek floodplain. The average soil temperature at 20 inches is 68°F., with a February low of 50°F. and a July high of 90°F. Rainfall is less than 4 inches with low humidity.

The area has been roughly leveled. Some sand dunes were on the site and when leveled added about 2 feet of loamy sand which overlies the existing soils. The Glendale, Land, and McCarran series were mapped. They have irrigated land capability classes of II, IV, and VIII respectively. The Glendale very fine sandy loams have moderate salts in the upper 4 feet. Land silt loam contains high amounts of salt, and the McCarran soils are high in gypsum.

Due to the presence of the sandy layer these soils need to be deep plowed to break up the contrasting horizon; leached of excess salts and analyzed for the presence of sodium. Quality and quantity of water needs to be checked.

This has potential for a good nursery site.

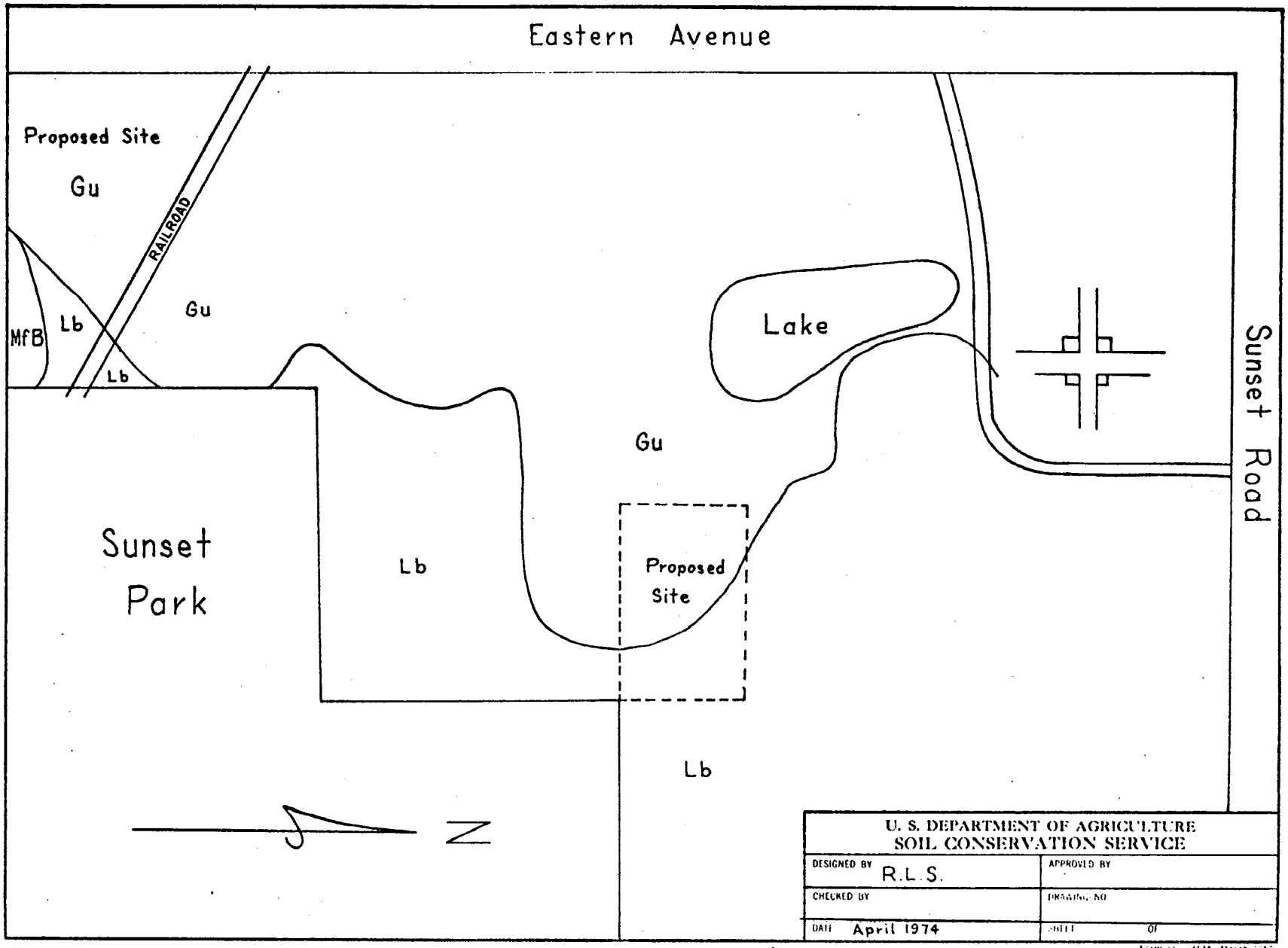


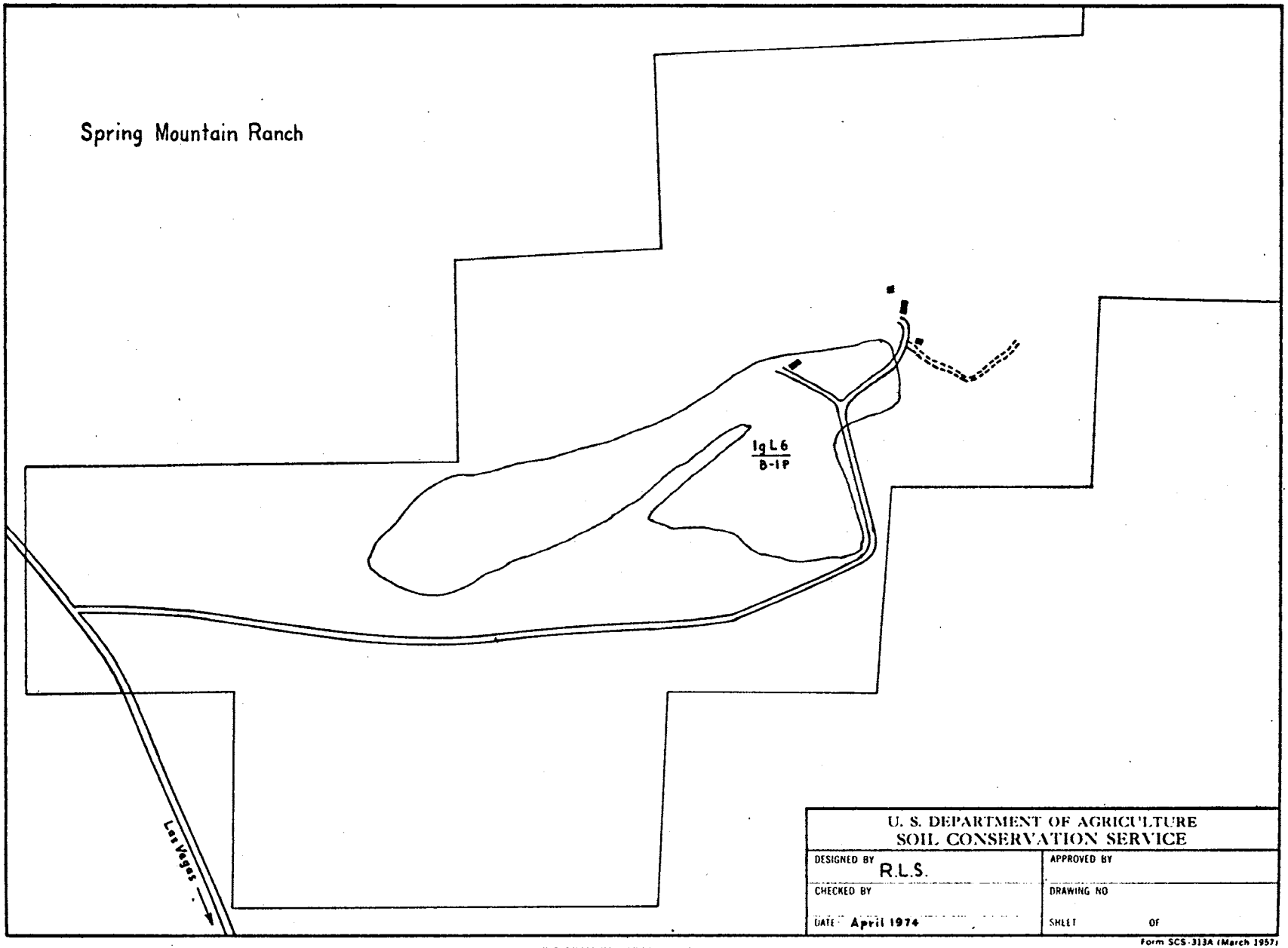
Exhibit P--page 6

Location: Spring Mountain (Krupp) Ranch
NE 1/4, Sec. 3, T22S, R58E, Clark County, Nevada

Elevation: 3,800 feet

This site is located in the Red Rock Recreation Area. The soils are developing in mixed alluvium from sandstone and limestone. The average soil temperature at 20 inches is 63°F., with a January low of 50°F. and a July high of 82°F. Rainfall is estimated at around 6 inches with low humidity.

The area has been leveled and is presently being irrigated. Adequate water may be a critical factor. The soils were mapped as lgM5. This is a deep medium textured B-1 gravelly soil with moderately rapid permeability. Slopes range from 2 to 4 percent. The irrigated land capability class is III. The non-irrigated areas on the ranch would not be suitable for a nursery because of gravels and limited water.



U. S. GOVERNMENT PRINTING OFFICE: 1957 O - 425474

Exhibit P--page 8

Location: North Las Vegas
N 1/2, Sec. 34, T19S, R61E, Clark County, Nevada

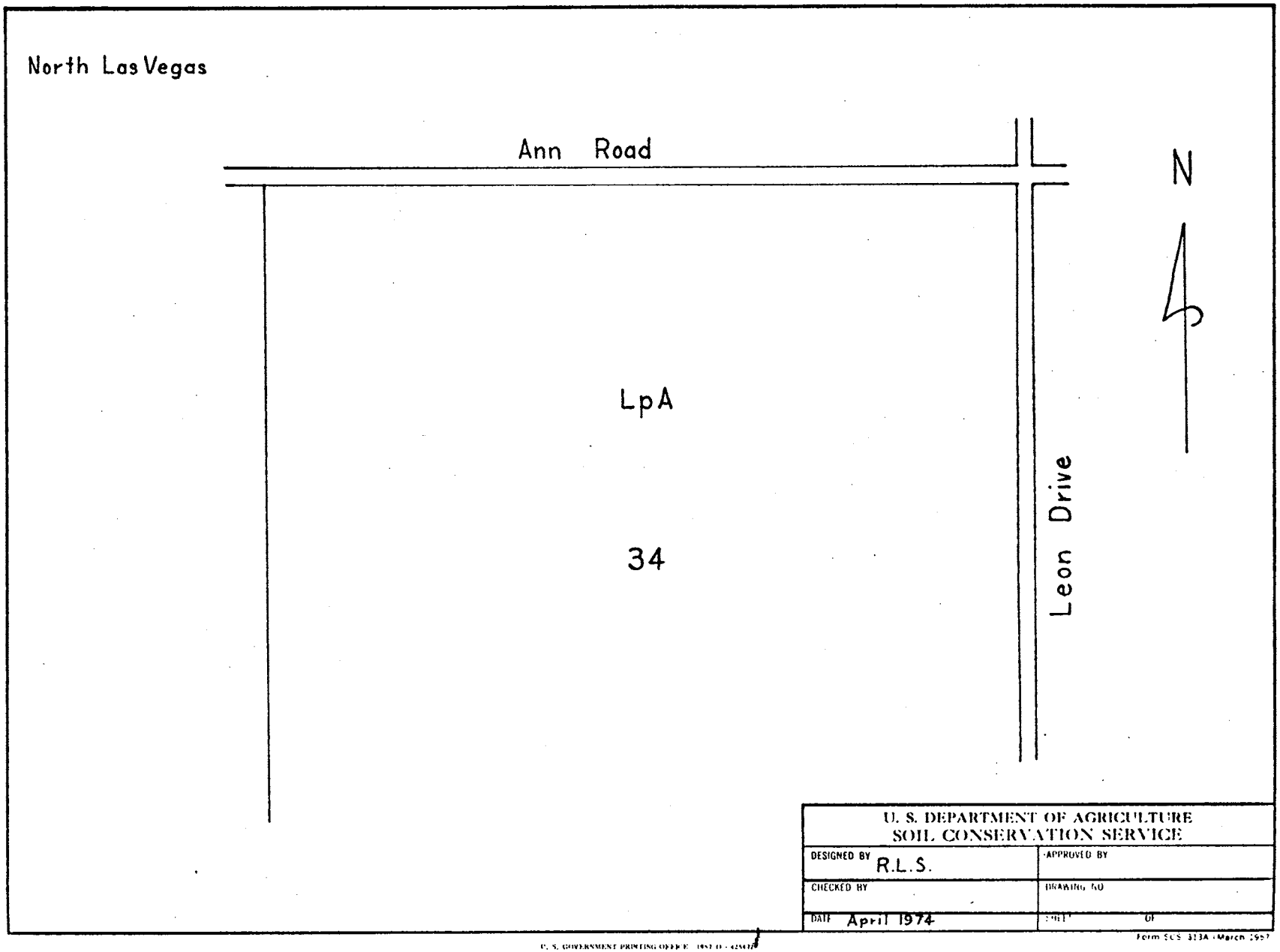
Elevation: 2,040 feet

This site is located at the proposed North Las Vegas Regional Park. The soils are developing in highly calcareous lacustrine sediments of the Las Vegas Valley. The average soil temperature at 20 inches is 68°F., with a February low of 50°F. and a July high of 90°F. Rainfall is less than 4 inches with low humidity.

The soil is Las Vegas loam which is a shallow gravelly loam with low fertility. The land capability is class VIII. Indurated caliche occurs at less than 20 inches. The caliche appeared to be rippable, having a large number of fractures and being generally less than 18 inches thick.

This site would need to be ripped and caliche fragments removed during land preparation. Salts would need to be leached. The soils are highly calcareous and it may be difficult to lower the pH.

Without major investment this does not have much potential as a nursery site.


North Las Vegas
Ann Road
N
LpA
34
Leon Drive
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
DESIGNED BY R.L.S.
APPROVED BY
CHECKED BY
DRAWING NO
DATE April 1974
SHEET OF
Form SCS 313A (March 1957)

Location: Tule Springs
Sec. 9, T19S, R60E, Clark County, Nevada

Elevation: 2,480 feet

This site is located at Tule Springs. No definite location was given for the proposed nursery so the overall area was considered. The soils are developing in outwash from the limestone mountains and highly calcareous sediments of the Las Vegas Valley. The average soil temperature at 20 inches is 68°F., with a February low of 50°F. and a July high of 90°F. Rainfall is less than 4 inches with low humidity.

There were four major soils mapped in the area. Tonopah cobbly loamy sand is unsuitable for irrigation. It is very gravelly with low fertility and water holding capacity. Las Vegas loam is a shallow gravelly loam similar to the North Las Vegas park site. The third soil was mapped as Badlands. This is deep calcareous silty material with low fertility. This has a capability class of VIII, but if leveled and excess salts leached from the soil it could be irrigated. Glendale fine sandy loam, irrigated land capability class II, was mapped near the reservoir. This is similar to the Glendale soil at Sunset Park and Fort Mojave and would be the most suitable for a nursery site.

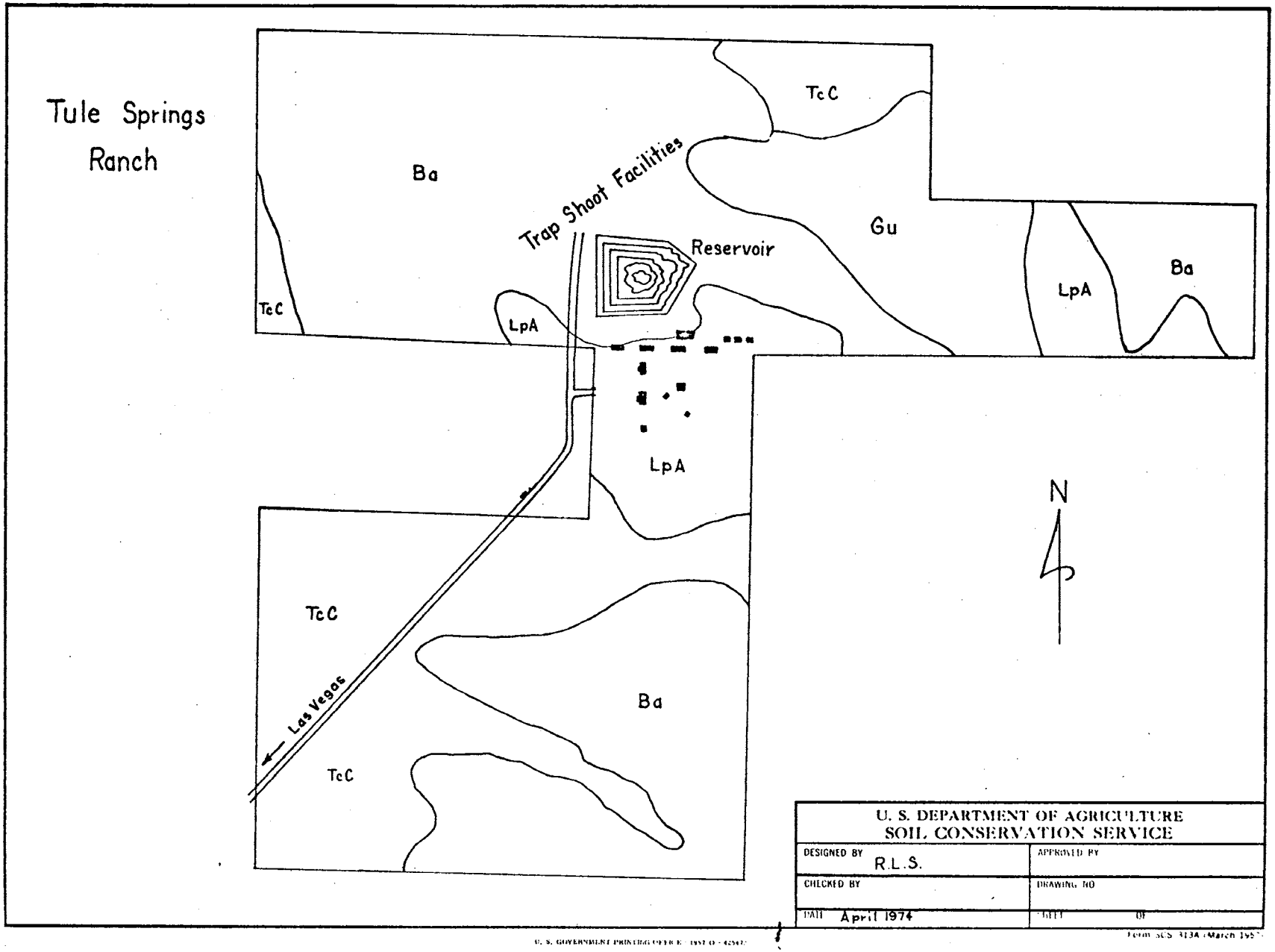

Tule Springs
Ranch
TcC
Ba
Trap Shoot Facilities
Reservoir
Gu
LpA
Ba
TcC
LpA
LpA
N
TcC
Las Vegas
Ba
TcC
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
DESIGNED BY R.L.S.
APPROVED BY
CHECKED BY
DRAWING NO
DATE April 1974
SHEET OF

Table 1 Estimated Soil Properties

Map Unit	Soil	Permeability (in/hr)	Available Water Cap. (in/in)	Salinity (mmhos per cm)	Corrosivity	
					Steel	Concrete
Ba	Badland	< 0.2	0.02-0.12	4	High	High
Gu	Glendale very fine sandy loam	0.6-2.0	0.08-0.19	4	High	High
Lb	Land silty loam	< 0.06	0.13-0.16	> 16	High	High
LpA	Las Vegas loam	0.6-2.0	0.1-0.15	6	High	Mod.
MfB	McCarran fine sandy loam	0.2-0.6	0.13-0.17	4-10	High	High
1gM5 B-1	Unnamed	2.0-6.0	0.07-0.12	< 2	Mod.	Low

Exhibit R

Table 2 Soil Interpretations for Selected Uses

Map Unit	Soil	Shallow Excavation	Local Roads & Streets	Topsoil	Pond Reservoir	Embankments	Drainage	Irrigation
Ba	Badland	Moderate - Flooding, texture	Moderate - Shrink-swell	Poor - Excess salts	Favorable	Compressible, low strength	Flooding, percolates slowly	Droughty, erodes, stratified
Gu	Glendale very fine sandy loam, moderately saline	Moderate - Flooding	Moderate - Shrink-swell	Fair - Excess salts	Seepage	Excess salts	Excess salts, percolates slowly	Excess salts, floods
Lb	Land silty loam	Severe - Floods	Severe - Shrink-swell	Poor - Excess salts, excess alkali	Favorable	Low Strength	Excess salts	Excess salts
LpA	Las Vegas loam	Severe - Cemented pan	Severe - Cemented pan	Poor - Thin layer	Cemented Pan	Thin layer	Cemented pan	Cemented pan
MfB	McCarran fine sandy loam	Slight	Moderate - Low strength	Poor - Excess salts	Seepage	Low Strength, piping, unstable fill	Excess salts	Excess salts
lgM5 B-1	Unnamed	Moderate - Small stones	Slight	Poor - Small stones	Seepage	Favorable	Favorable	Droughty, slope

ELMO J. DeRICCO, *Director*
Department of Conservation
and Natural Resources

GEORGE ZAPPETTINI
State Forester

MIKE O'CALLAGHAN
Governor

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STATE OF NEVADA

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

DIVISION OF FORESTRY

CARSON CITY, NEVADA 89701

August 1, 1974

M E M O R A N D U M

TO: Richard A. Signs, Deputy Researcher

FROM: George Zappettini, State Forester

SUBJECT: Proposed two-year budget (1975-1977) for a southern Nevada forestry nursery facility.

A. 1st YEAR CAPITAL IMPROVEMENTS AND EQUIPMENT

1.	Slumpstone Bldg., 2000 sq. ft. at $30/ft.	$60,000	
2.	Water system	2,000	
3.	Land leveling $500/acre	2,500	
4.	Access road	2,500	
5.	Water transport from well	2,500	
6.	Pick-up	3,000	
7.	Small tractor	8,000	
8.	Soil Shredder	500	
	TOTAL	$81,000	
	SUBTOTAL		$81,000

1st YEAR SALARIES

1.	One Forester II	$10,765	
2.	One Seasonal Aid	6,918	
	TOTAL	$17,683	
	SUBTOTAL		$17,683

1st YEAR OPERATING BUDGET		$25,000	$ 25,000
			$123,683
Add estimated inflation at 2 1/2 per cent per month			32,000
	TOTAL 1st YEAR BUDGET		$154,683

B. 2nd YEAR CAPITAL IMPROVEMENT

1. Greenhouse, 18X50 ft. at $20/ft.		$18,000	
2. Shadehouse, 1 acre lumite		15,000	
3. Water system		6,000	
	TOTAL	$39,000	
	SUBTOTAL		$ 39,000
2nd YEAR SALARIES			
1. Forester II		$10,765	
2. Foreman I		8,230	
3. Seasonal Aid		6,918	
	TOTAL	$25,913	
	SUBTOTAL		$ 25,913
2nd YEAR OPERATING BUDGET		$25,000	$ 25,000
Add estimated inflation at 2 1/2 per cent per month			20,000
	TOTAL 2nd YEAR BUDGET		$112,913

SPARKS PLANT MATERIALS CENTER

Year	Revenues	Expenditures		
		Equipment & Operating	Salaries	Total
1973-74	$34,272	$19,400	$40,000	$59,400
1972-73*	$23,964	$15,600	$35,000	$50,600
1971-72*	$18,238	$19,200	$18,000	$36,000

Costs incurred by Nevada 1973-74

Total expenditures	$59,400
Less revenues	($34,272)
	$25,128
Less Federal cost sharing	($12,000)
Total cost to Nevada	$13,128

*Figures for these years were mixed with those for fire control activities; the Sparks plant materials center was separately accounted for in 1973-74.

ESTIMATED PRODUCTION COSTS, SOUTHERN NEVADA

Fixed Costs (same for all species)

Soil, $2.00 to $5.00 per yard for base material.
$7.00 per bale peatmoss.
$1.50 methyl bromide fumigant.

$10.50 to $13.50 per cubic yard of finished mix.

4.2 to 5.4 cents per gallon can.
21 to 27 cents per 5 gallon can.

Containers,
Self processed gallon cans will cost about 6 cents ea.
Commercial plastic or metal cans up to 22 cents ea.

Commercial 5 gallon cans about 50 cents ea.

Labor for canning, including soil preparation, $5.00 per hr.
1 gallon cans, 1000 per day, 8 cents ea.
5 gallon cans, 200 per day, 40 cents ea.

Managerial and capital investment,
Estimated as 25% of the total cost.

Variable Costs

Lining out stock

Pinus halepensis	18 cents.
Nerium oleander	15 cents.
Gleditzia triacanthos	20 cents.
Cupressus arizonica	15 cents.
Fraxinus velutina	18 cents.

Staking,

Stake	15 cents.
Labor	25 cents.

Watering,
Sprinkler system amortized over a ten year period,
$1,000.00 per year.
1 gallon cans 1 cent per year.
5 gallon cans 5 cents per year.

Exhibit U

SUMMARY--Expands reforestation to involve desert, urban forestry and redefines nursery stock to include other conservation plant materials. Fiscal Note: Yes. (BDR 47-186)

AN ACT relating to the reforestation of Nevada lands; providing that deserts and urban settings as well as mountainous terrain may be reforested with adapted and indigenous conservation plant materials; expanding the purposes for reforestation; redefining general nursery stock categories to include additional conservation plant materials; authorizing division of forestry to establish nursery facilities which provide arboretum, production and research operations; and providing other matters properly relating thereto.

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. Chapter 528 of NRS is hereby amended by adding thereto the provisions set forth as sections 2 to 9, inclusive, of this act.

Sec. 2. As used in NRS 528.100 to 528.140, inclusive, and sections 3 to 9, inclusive, of this act, unless the context otherwise requires, the terms defined in sections 3 to 9, inclusive, of this act have the meanings ascribed to them in such sections.

Sec. 3. "Conservation plant materials" means those trees, shrubs and plants used for:

1. Well-established conservation purposes such as windbreaks, woodlots, soil erosion control, wildlife habitation, reforestation, noise abatement and fire control; or

2. Beautification purposes for parks, recreation areas, greenbelts, schools and public buildings.

Sec. 4. "Desert forestry" means the science of developing, caring for or cultivating conservation plant materials in an arid environment by modifying their response to adverse growing conditions while minimizing the consumptive use of water.

Sec. 5. "Production" means the propagation, maintenance, protection and distribution, at cost of production, of sufficient quantities of conservation plant materials to meet the purposes of NRS 528.100 to 528.140, inclusive, and sections 3 to 9, inclusive, of this act.

Sec. 6. "Public property" means all forms of property in which a government or governmental subdivision or agency has an ownership interest.

Sec. 7. "Reforestation" means planting and cultivation of conservation plant materials which are indigenous or adaptable to forests, plains, meadows, deserts and urban areas of Nevada.

Sec. 8. 1. "Research" means investigation of:

(a) The propagation, establishment, protection and maintenance of conservation plant materials.

(b) The ecological impact of exotic plant materials.

(c) Methods of utilizing desert or urban forestry in landscape design.

2. Research includes the dissemination of relevant research findings to interested private individuals and public agencies.

Sec. 9. "Urban forestry" means the science of developing, caring for or cultivating conservation plant materials in an urban environment to enhance air quality, provide shade protection, stablize soils, reduce noise and dust levels, and improve aesthetics.

Sec. 10. NRS 528.100 is hereby amended to read as follows:

528.100 1. In order to aid agriculture, conserve water resources, renew the timber supply, promote erosion control, beautify urban areas, educate the public, improve natural forests, deserts, wildlife habitation, and in other ways advance the general welfare and bring about benefits resulting from reforestation and the establishment of windbreaks, shelterbelts, [and farm woodlots] woodlots, greenbelts, open space, parks and arboretums on lands in the State of Nevada, the state forester firewarden is authorized and directed to act for the State of Nevada in negotiating for and entering into cooperative agreements with the United States of America, with the governing bodies of the counties and other political subdivisions of this state, and with organizations and individuals for the purpose of securing the establishment and development of a nursery site or sites for

the procurement and production , research and display of forest tree seeds and [plants.] conservation plant materials.

2. The state forester firewarden is authorized to receive money contributions from cooperators under the cooperative agreement, such contributions to be paid into the division of forestry account in the general fund in the state treasury.

Sec. 11. NRS 528.105 is hereby amended to read as follows:

528.105 1. Any state nursery authorized by NRS 528.100 shall be operated under management of the state forester firewarden and shall [grow] propagate stock for [use] uses as provided in this section.

2. The state forester firewarden may:

(a) Purchase nursery stock [and seed.] , seed and other conservation plant materials.

(b) Engage in seed [and tree development work.] , tree and plant development research.

(c) Demonstrate methods of [tree planting] conservation plant material planting, propagation and landscaping to public or private organizations or individuals.

(d) Distribute, [without charge, trees] at cost of production, conservation plant materials for planting on public property for the purposes of soil erosion control, windbreaks, noise abatement,

reforestation, greenbelts, watershed protection, wildlife protection and beautification . [of streets, highways and school grounds.]

(e) Distribute, at cost of production, [trees] conservation plant materials for planting on private property for the purposes of production of forest or woodlot products, reforestation, [and providing farm windbreaks.] windbreaks, woodlots, shelterbelts, greenbelts and wildlife habitat.

3. [Trees] Conservation plant materials distributed by the state forester firewarden under the provisions of paragraph (e) of subsection 2 shall be used only for the purposes therein set forth. The state forester firewarden may, pursuant to chapter 233B of NRS, set the criteria for eligibility for distribution of plants under paragraph (e) of subsection 2.

4. Any person who violates the provisions of this section [shall be] is guilty of a misdemeanor.

Sec. 12. NRS 528.110 is hereby amended to read as follows:

528.110 The boards of county commissioners of the counties of the State of Nevada are likewise authorized to enter into cooperative agreements with the representative of the State of Nevada appointed pursuant to the provisions of NRS 528.100 and with other counties, municipalities, organizations and individuals for the purpose of establishing a cooperative nursery or nurseries for [the production of tree seeds and plants,] production, arboretum

and research purposes, and to appropriate and expend funds for all necessary expenses incurred in the [producing of tree seeds and plants for planting on farms and in public areas.] planting and cultivation of conservation plant materials.