

FORT NONSENSE UNIT VEGETATION STUDY 1986

Between August 20, and September 3, 1986 a vegetation study was conducted at the Fort Nonsense Unit of Morristown National Historical Park (see map#1). The study was designed to provide the information necessary for planning and development of the vistas for the unit. The parameters of the study include identifying the various species present in each of the two vistas and the percent cover of each species. The study is restricted to woody vegetation, vines, and herbaceous species covering a large percentage of the plot.

After a visual survey of the areas was conducted by the Resource Management Specialist and the literature consulted, a fixed plot method was determined to be the most suitable one for this project. Each vista was treated as a separate entity. The entire vistas were marked as large plots to be studied (see map#2). Within each vista, which was a forty five by fifty foot area, two transect lines T1 and T2 were established five feet from the outside border. Along each transect line five one meter square plots were established starting five feet from the center (twenty five foot line) and every five feet from the end of the preceeding plot. A large ten foot square plot was established ten feet below the midpoint of the entire vista (see diagram 1 and 2). The plots represent 8.8 % of the entire vista area in each case.

In addition, the specimen trees in the area at the top of Fort Nonsense were identified and the diameter at breast height was recorded. The study revealed some interesting facts about the unit which has not received the same attention from the scientific community as the Jockey Hollow Unit. The vegetation found in Vista I and the vegetation in Vista II are completely different. This is, of course, partially a result of the aspect and canopy cover in each respective area. However, the main reason for the difference appears to be the manipulation of the area by vista clearing projects. The vegetative composition of Vista I appears to be a direct result of an earlier vista clearing project. This vista has become completely dominated by invasive, exotic plants. Whereas, Vista II is composed of young successional plants which are mostly native to the area.

Extrapolations from the data collected in each of the vistas has resulted in the following percent cover estimates:

Vista I is made up of approximately 16.7 % Ailanthus altissima, 17.2 % Menispermum canadense (Japanese Knotweed), 28.5 % Brambles, 7.1 % Lonicera japonica (Honeysuckle), and insignificant percentages of Grasses, Forbs, Oaks, Hickory, Maple, and Plane trees (these species are further identified in the species list. Vista II is composed of 26 % Viburnum acerifolia (Maple Leaf Viburnum) 1.1 % Prunus serotina (Black Cherry), 5.3 % various oaks, 2 % blueberry, 30 % Witch Hazel, 4 % Hickory, 4 % Rhodendron pinxter, with the rest of the area containing approximately 5 % Forbs and 58 % grasses.

Although Vista II has also been subjected to clearing activities, the aspect and denser canopy cover have prevented the invasion of exotic plants that has plagued Vista I. Vista II has never been as open and barren as Vista I and therefore has recovered without a dramatic change in vegetative cover. This subject will be discussed further in the prescription for maintenance of the vistas being established.

MAINTENANCE PRESCRIPTION

The establishment and maintenance of these two vistas and a third which will be a later part of this same project will be a labor intensive endeavor. The key to success will be a consistent approach to the removal of the revegetating species. The original clearing will be performed in the late fall or winter and will therefore prohibit the effective use of herbicides. Before a regular maintenance of these vistas can become effective a secondary clearing of the sprouting woody species will be necessary as early as the following march or april. The best results will be achieved by grubbing out the entire plants of the invasive exotics such as the Ailanthus altissima and the vine Moonseed. The herbaceous plants such as the Japanese Knotweed can be controlled with mechanical methods such as mowing, tractor work, or weedeaters. However, the first three years of maintenance will probably decide the success or failure of the clearing project.

In order to establish an open meadow in the area hand clearing projects will have to be employed several times and the mowing and weedeating programs will have to be performed on a very regular basis. Once the meadow is established the rigors of this maintenance will lessen a great deal. I would suggest a program such as the following:

- november 1986-original clearing of areas,
- march 1987- a secondary clearing,
- april 1987-a mowing and weedeating of the area
- may 1987- a mowing and weedeating of the area with girdling of any woody species still sprouting
- june 1987- a third clearing of the area by hand and power tools
- july 1987- a mowing and weedeating of the area
- august 1987 a mowing and weedeating of the area
- march 1987 a clearing of any woody species which should be minimal
- april 1987 a mowing and weedeating of the area
- may 1987 a mowing and weedeating of the area
- june 1987 a mowing and weedeating of the area
- july 1987 a clearing of any woody species if necessary
- september a mowing and weedeating of the area
- april 1988 a mowing and clearing if required by the circumstances at this point sowing of grasses and other desirable species might be helpful and they should outcompete the woody species very effectively
- june 1988 a mowing and clearing of the area
- august 1988 a mowing and clearing of the area
- october 1988 a mowing and clearing of the area if required.

At this point an open vista area should be well established and a new schedule to meet the needs of meadow management can be established. This program should be used as a guideline, however, actual management at the field level should be flexible enough to incorporate other ideas not detailed herein. Herbicides may be resorted to if the methods outlined here are not acceptable. Soil solarization has proven to be effective in the elimination of noxious weeds in farmland areas and might be considered as an alternative. These methods, however, are the ones which will be most compatible with the maintenance of the historic scene.

SPECIES LIST

TREE #	SPECIES	DBH
1	<u>ROBINIA pseudoacacia</u>	10.2
2	<u>Quercus alba</u>	27.5
3	<u>Quercus montana</u>	43.3
4	" "	16.9
5	<u>Quercus alba</u>	19.5
6	<u>Quercus rubra</u>	16.2
7	<u>Quercus alba</u>	30.2
8	<u>Quercus velutina</u>	24.4
9	<u>Quercus alba</u>	26.5
10	<u>Quercus rubra</u>	19.7
11	" "	29.0
12	<u>Quercus prinus</u>	20.3
13	<u>Carya Glabra</u>	13.9
14	<u>Quercus alba</u>	26.3
15	" "	19.2
16	" "	15.4
17	<u>Quercus prinus</u>	17.3
18	<u>Quercus alba</u>	17.2
19	<u>Quercus velutina</u>	37.4
20	<u>Quercus alba</u>	12.9
21	<u>Carya glabra</u>	18.7
22	<u>Quercus alba</u>	22.5
23	" "	25.5
24	<u>Quercus prinus</u>	28.4
25	<u>Quercus velutina</u>	28.4
26	<u>Quercus prinus</u>	19.8
27	<u>Quercus velutina</u>	27.0
28	<u>Quercus alba</u>	19.3
29	<u>Quercus velutina</u>	26.7
30	" "	38.0
31	" "	32.5
32	<u>Quercus alba</u>	30.5
33	<u>Carya glabra</u>	22.5
34	" "	23.4
35	<u>Quercus alba</u>	46.0
36	<u>Quercus prinus</u>	14.6
37	<u>Quercus alba</u>	24.1
38	<u>Quercus prinus</u>	33.5
39	" "	13.2
40	" "	27.5
41	" "	21.4
42	" "	20.3
43	<u>Quercus velutina</u>	18.1
44	" "	38.6

SPECIES LIST CONTINUED

45	<u>Quercus prinus</u>	12.9
46	<u>Quercus velutina</u>	19.5
47	<u>Robinia pseudoacacia</u>	16.3
48	<u>Quercus alba</u>	21.3
49	<u>" "</u>	18.8

For the exact location of these trees refer to map # 2.

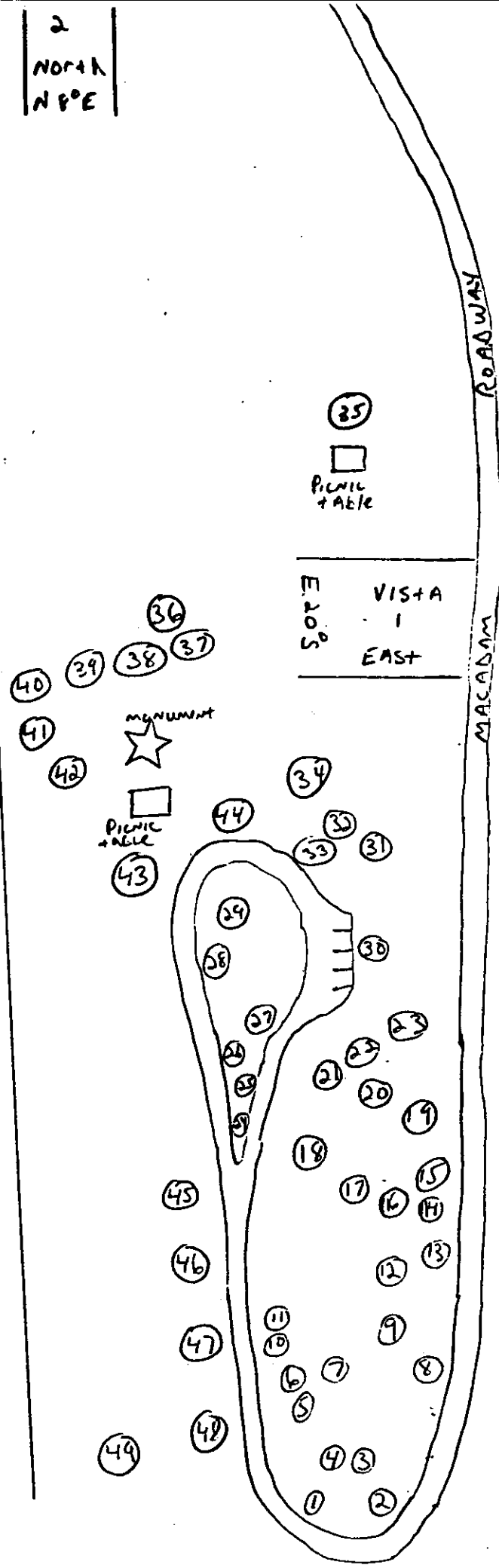
The remainder of the plant species which were found, but not yet listed:

Black Cherry	<u>Prunus serotina</u>
Norway Maple	<u>Acer platanoides</u>
Red Maple	<u>Acer rubrum</u>
Witch Hazel	<u>Hamamelis virginiana</u>
Black Birch	<u>Betula lenta</u>
Moonseed	<u>Menispermum canadense</u>
Japanese Knotweed	<u>Polygonum cuspidatum</u>

N 48°-11'-02"

2
NORTH
N 8°E

MAP #2

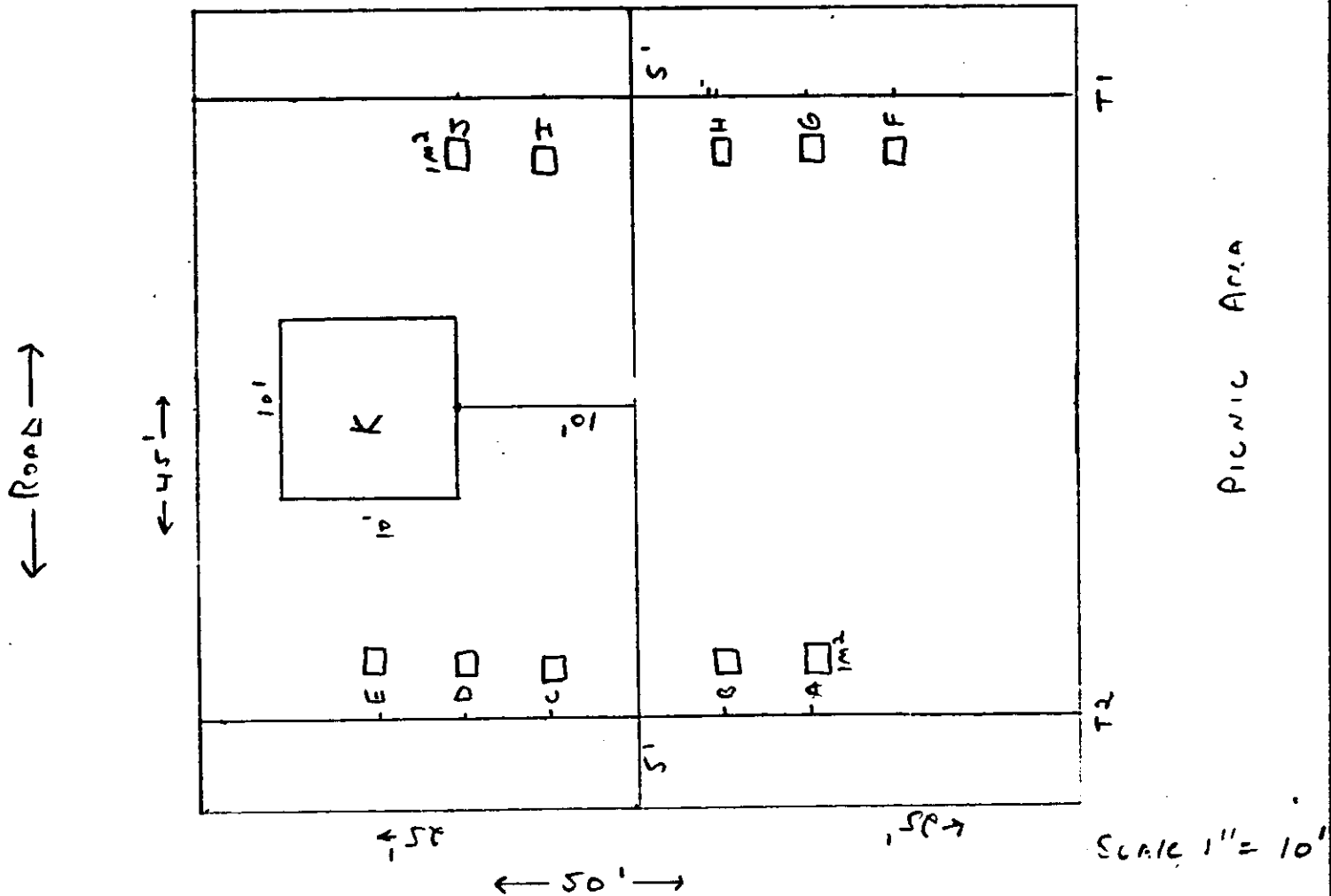


N 49°-28'-33" E

DIAGRAM # 1

VISTA I

← E 20° S



$$\text{VISTA I} = 2250 \text{ Ft}^2$$

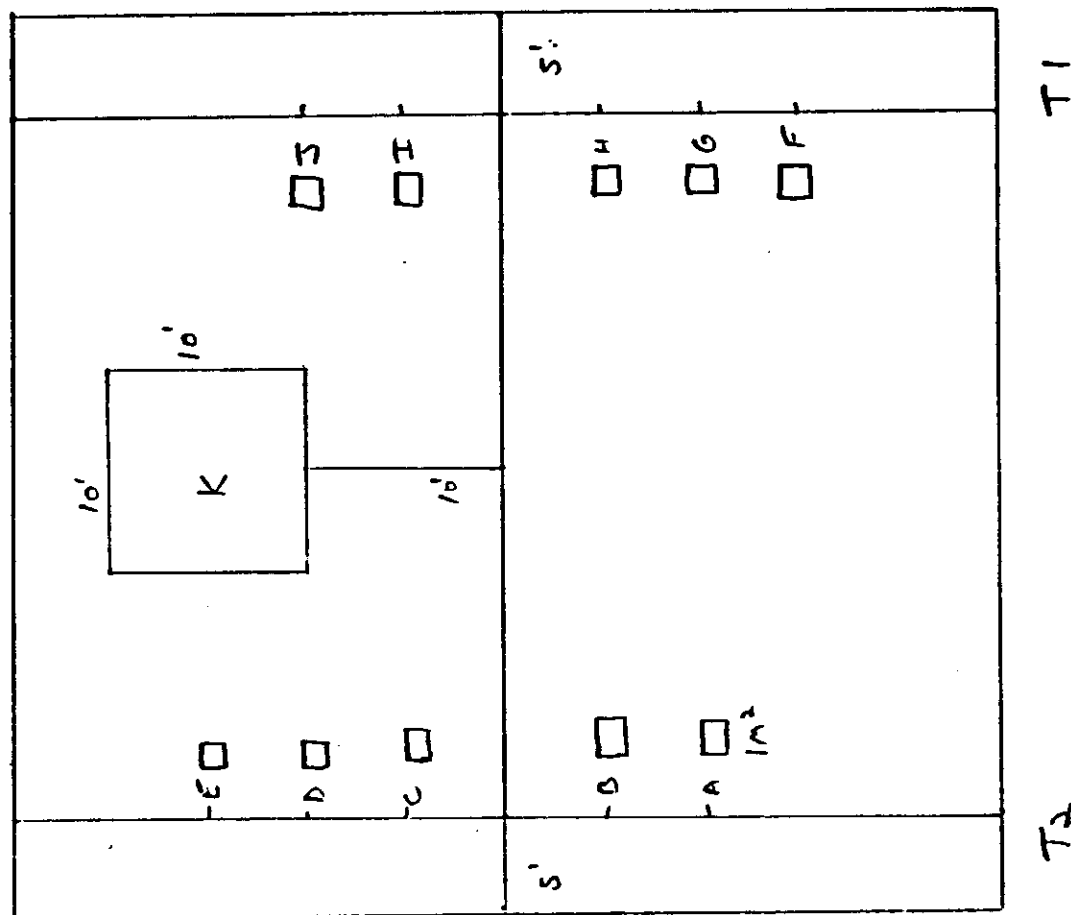
There Are 10 (1M²) PLOTS A-J

AND A 10 Ft² PLOT K WITHIN THE VISTA WHICH REPRESENT
8.8% OF THE TOTAL AREA OF VISTA I

DIAGRAM #2

VISTA II

↑ N 80° E



$$\text{VISTA II} = 2250 \text{ FT}^2$$

THE PLOTS ARE THE SAME DIMENSIONS AS VISTA I

PLOTS = 8.8% OF THE TOTAL VISTA

PARTICIPANTS IN THE STUDY

-John Donahue Resource Management Specialist

-Daniel Dearborn Equestrian Ranger

-Jamie Hubbard Ranger

-Sarah Donahue Volunteer