123/D-210

CULTURAL LANDSCAPE REPORT FOR THE CARRIAGE ROAD SYSTEM

ACADIA NATIONAL PARK

MOUNT DESERT ISLAND, MAINE

Prepared for:

U.S. Department of the Interior

National Park Service

North Atlantic Regional Office

Contract Number:

CX 1600-1-0046

Prepared by:

Rieley & Associates
109 Second Street, SE
Charlottesville, Virginia 22901
September, 1993

CULTURAL LANDSCAPE REPORT

for the

CARRIAGE ROAD SYSTEM

ACADIA NATIONAL PARK

MOUNT DESERT ISLAND, MAINE

Prepared for:

U.S.Department of the Interior
National Park Service
North Atlantic Regional Office
15 State Street
Boston, Massachusetts

Contract Number:

CX 1600-1-0046

Prepared by:

Rieley & Associates, Landscape Architects
109 Second Street, SE
Charlottesville, Virginia 22901

September, 1993

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

INTRODUCTION

This document provides several components of a Cultural Landscape Report for Acadia National Park's carriage road system. These components include: 1) a strategic management plan for the long-term preservation of the carriage roads; 2) a short-term stabilization strategy to prevent further deterioration of the roads; and 3) a model rehabilitation plan for one section of the carriage road system. The overall goal is to provide park management with a method to establish priorities for rehabilitation and a process to ensure that the rehabilitation effort meets the standards of historic preservation.

John D. Rockefeller, Jr., along with a team of designers and contractors, built the carriage road system between 1913 and 1940. The roads then have been in place for 50 to 80 years. Some of the key features, including the roads' surface, are being lost. The short-term stabilization strategy, the strategic management plan, and the model rehabilitation plan address the repair and replacement of these key features to return the roads to their historical appearance.

The report is divided into three sections: 1) an evaluation of the resource; 2) a discussion of the strategic management plan; and 3) a description of the model rehabilitation plan.

The evaluation of the resource includes:

- A description of the carriage road system (including an overall plan) and a discussion of work previously done to document its history and construction;

- A discussion of the additional research and field work done for this report and the results of that effort;

- A report on the existing conditions of the carriage road system and its key features; and

- A review of the 1990 demonstration project.

The strategic management plan addresses:

- A short-term stabilization strategy which identifies problems that need immediate attention and also includes recommendations for routine maintenance which will keep the roads in stable condition until rehabilitation can be undertaken.

- A long-term strategy for rehabilitation which:

  Defines management units and a methodology for dividing the carriage road system into sections and subsections for rehabilitation and maintenance; and

  Includes a methodology for establishing priorities and identifying a section for model rehabilitation;

- A maintenance program designed to preserve the newly rehabilitated roads.

The segment on the model rehabilitation plan includes the plans and specifications for the rehabilitation of the section selected as the model, including the treatment of all major features of the system, including the bridges, retaining walls, coping stones, vistas, and plantings. It also discusses why that section was selected and how this model can be used as a guide for the rehabilitation of the remaining miles.

EVALUATION OF RESOURCE

John D. Rockefeller, Jr., conceived, planned and funded Acadia National Park's carriage road system, which includes approximately 50 miles of road (six outside of the Park), 17 stone-faced bridges, and two gate lodges (Figure 1). Rockefeller built them between 1913 and 1940 and maintained them until his death in 1960. They link and make accessible significant natural and cultural features of Mount Desert Island and today remain closed to motorized vehicles (with the exception of snowmobiles which are allowed on one segment).

Local engineers and contractors laid out and built the roads. Other consultants used by Rockefeller in developing his carriage road system include William Welles Bosworth and Charles Stoughton for the bridges, Grosvenor Atterbury for the gate lodges, and Beatrix Farrand for general consultation and planting design. Frederick Law Olmsted, Jr., worked with Rockefeller primarily on the motor roads in the Park, but he did prepare a report on the carriage roads and advised Rockefeller on a section of the carriage roads which was planned but never built. (The narrative histories in the Appendix describe those involved on each segment of the roads and the sequence of their construction.)

Rockefeller's team designed and built the roads and bridges well. The excellent drainage system, in particular, allowed the roads to remain in reasonably good shape for a long period of time. Now, however, several maintenance issues have become critical: the crown and surface of the roads are being lost; the bridges need cleaning and repair; vegetation is clogging ditches and culverts which in turn is causing erosion to the road surface; culverts are failing; and vistas are obscured by undergrowth. The deteriorating condition of the roads makes this a critical time to begin rehabilitation and provide for continued maintenance.

The *Historic Resource Study* prepared in 1989 documented the design and construction history of the carriage road system and also analyzed their place in American social history. It included sections which discussed: the context locally and nationally, culturally,

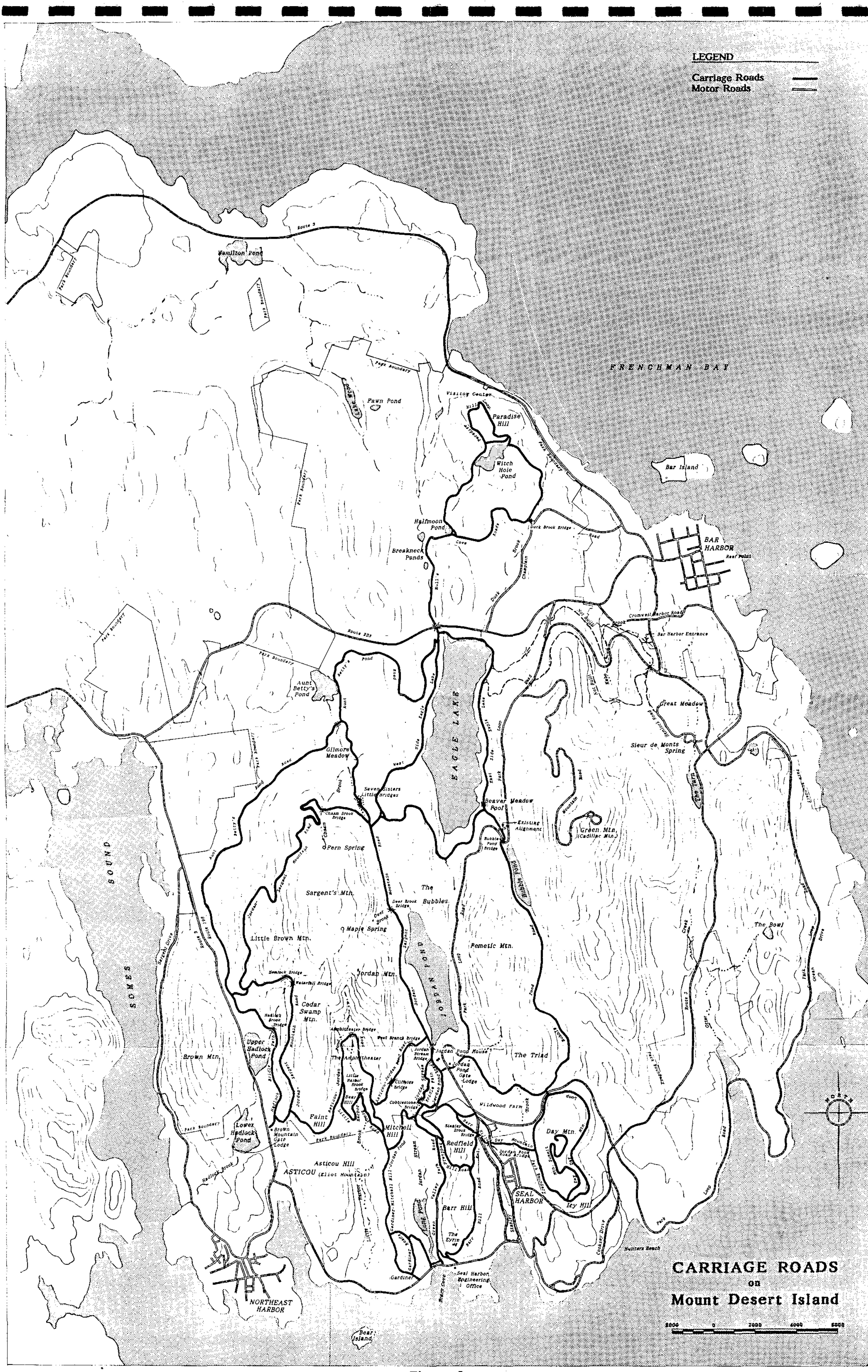

LEGEND
Carriage Roads
Motor Roads
FRENCHMAN BAY
Route 3
Hamilton Pond
Fawn Pond
Visitor Center
Paradise Hill
Witch Hole Pond
Bar Island
BAR HARBOR
Halfmoon Pond
Breakneck Ponds
Duck Brook Bridge
Route 233
Cromwell Harbor Road
Bar Harbor Entrance
Aunt Betty's Pond
EAGLE LAKE
Great Meadow
Sieur de Monts Spring
The Tarn
Gilmore Meadow
Seven Sisters Little Bridges
Beaver Meadow Pool
Existing Alignment
Green Mtn. (Cadillac Mtn.)
Fern Spring
SOUND
Sargent's Mtn.
The Bubbles
Maple Spring
Little Brown Mtn.
Pemetic Mtn.
The Bowl
SOMES
Jordan Mtn.
JORDAN POND
Cedar Swamp Mtn.
Upper Hadlock Pond
Brown Mtn.
The Amphitheater
Jordan Pond House
The Triad
Jordan Pond Gate Lodge
Wildwood Farm
Paint Hill
Mitchell Hill
Redfield Hill
Day Mtn.
Lower Hadlock Pond
Brown Mountain Gate Lodge
Asticou Hill
ASTICOU (Eliot Mountain)
SEAL HARBOR
Icy Hill
Barr Hill
The Eyrie
Hunters Beach
Gardiner
Seal Harbor Engineering Office
NORTHEAST HARBOR
Bear Island
NORTH
CARRIAGE ROADS
on
Mount Desert Island
2000 0 2000 4000 6000

Figure I

and within the history of road design; the sequence of development from the private roads which remain on Rockefeller property to the culmination of the effort, the summit road to the top of Day Mountain; the materials and methods of their construction; and the rehabilitation, use and maintenance.

This *Cultural Landscape Report* applies the research and conclusions of the *Historic Resource Study* to the development of a management plan and construction documents for the actual rehabilitation of the roads. We began by supplementing the research done for the *Historic Resource Study* written in 1989. We reviewed materials at Acadia such as glass negatives of early scenes in the Park, original construction drawings, and correspondence. We also reviewed construction documents and correspondence at the Rockefeller Archives Center and pursued information at other relevant repositories including the University of California in Berkeley, the Library of Congress, the Frederick Law Olmsted National Historic Site, the archives of the Denver Service Center, and several sources of aerial photographs of Mount Desert Island which show early views of the carriage roads. In addition, at the request of the North Atlantic Regional Office, we reexamined the documentary research completed for the *Historic Resource Study* and have provided in the Appendix a list of the sources consulted and the data unearthed in each location.

As a result of this additional research, we found correspondence at the Rockefeller Archive Center between Beatrix Farrand, Rockefeller's landscape architect, and William and Charles Miller, his nurserymen, which documented the varieties and quantities of plants purchased at various times during the 1930's and also noted the general area of their installation. This information confirmed that supplied by Beatrix Farrand in her notes. It also provided us with specific planting recommendations for the model rehabilitation plan. In addition, aerial photographs from 1944, 1947 and 1956 provided valuable data regarding the vistas. Those in 1944 show the vegetation before the fire which devastated Mount Desert Island in 1947; those in 1947 show the effects of the fire.

To inventory the existing conditions, we first identified the roads according to sections (and one mile subsections) based on the system used by Federal Highways and the

Park Maintenance Staff. A map (1"=2.000') illustrates the location of each section. Using field reports developed for this purpose, our field crews walked all the roads with measuring wheels noting the condition of the surface and crown, and locating and assessing culverts, ditches, retaining walls, and coping stones. The data collected were then compiled into a database which also records the location of documented vistas (including those from the aerial photographs). In addition, those sections for which historical construction documents exist are noted and reference is made to the kind of documentation available. For example, the database will indicate that a preliminary profile exists for the first 940 feet of Section 13-11c of Aunt Betty's Pond Road. (The map also illustrates those sections with documentation.)

This database will also allow the Park to quickly determine such things as the number of culverts in the entire system (582), how many culverts are metal (376), or where coping stones are missing (Section 5-3a of the Witch Hole Pond Loop). The database also includes the location of signs and intersections, bridges (both stone and culvert), the FHWA route number, and both the historic and modern names for each section. Printouts of two of the reports typical of those which can be generated are included in the Appendix. They describe the number of items in each section and the location and condition of each item by section. A computer disk containing the database was sent separately to the Park and the North Atlantic Regional Office.

Road Surface and Alignment

The original specifications for the roads required that in general the roads be 16 feet in width and that they have an eight inch (8") crown from centerline to shoulder (a rate of one inch per foot). Later in the construction period, this was reduced to six inches (6") or 3/4" per foot. These roads were built as broken stone roads. The surface consists of three layers: a base layer of heavy foundation stones, usually three to six inches in greatest dimension and installed to a depth of six to eight inches; a middle layer of one to two inch

NOTHING IS MENTIONED ABOUT SPECS. REQUIRING THAT FOUNDATION STONES BE CROWNED BUT BASED OF FIELD OBSERVATIONS WERE NOT FOUND TO BE.

stones which is four inches in depth; and a surface layer of smaller stones with a clay binder which packs together to form a water-tight surface.

Cross-sections dug through the roads in five locations (in conjunction with Park staff and an National Park Service archaeologist) confirm this construction. (Figures 2 through 6). They also indicate, however, that the original surface has deteriorated over the last decades.

- Figure 2, the cross-section taken at the Amphitheater Road, shows the original foundation stones in place with a variety of surface materials applied through the years.

- The cross-section from Aunt Betty's Pond Road (Figure 3) shows the foundation stones, with an indistinguishable middle layer and an existing surface layer which no longer conforms to the slope of the foundation stones.

- The Day Mountain Road cross-section (Figure 4) shows the foundation stones placed on a solid rock ledge with a layer of the old surface material still in place covered by a layer of new surface material.

- Figure 5, the Jordan Pond Road cross-section, shows the foundation stones, covered by layers of the old road surface and new surface material. It is also clear from this section that settlement has occurred where the road was built on organic material and not compacted subgrade.

- The Little Harbor Brook Road was constructed as a bridle path and therefore to a different standard than the carriage roads; the cross-section taken here (Figure 6) shows the foundation stones and middle layer were omitted.

Samples of both the new and old surface materials were tested by a laboratory to determine their composition. Figures 7 through 14 illustrate the particle sizes contained in each sample. Three samples were taken on Day Mountain Road: DM-1 from the middle

ALL ROAD SURFACES HAVE BE CHANGED (MAINTAINED) OVER THE YEARS.

layer, and DM-2 and -3 from the old surface layer. Two samples from Aunt Betty's Pond Road were taken from the middle layer (ABP-1) and from the surface layer which is probably original, but deteriorated (ABP-2). The three Jordan Pond samples were taken from the middle layer (JP-3), and the old surface (JP-1 and -2). Samples for the middle layer (AMP-3), and three different surface layers (AMP-1, -2, and -4) came from the Amphitheater section. In all cases, the most durable surfaces (i.e., well-compacted ~~and~~ watertight) were those found to contain approximately 20 percent of aggregate which passed a #200 sieve. In other words, they had enough "fines" to make a good binding surface.

THE STATEMENT IS ONLY CONJECTURE

FINES DO NOT MAKE A DURABLE SURFACE ALONE

Figure 11 compares two mixes obtained from local stone suppliers (3/8"- and SUM 92) to the recommended mixes (RPT-1 and REC-92). Neither mix has the range of particle sizes required to meet the specifications, especially in the lower particle sizes. This is confirmed by Figure 12 which shows the three most durable surfaces (DM-3, JP 2, and AMP-4) and compares them to the mix recommended in the ***Historic Resource Study*** (RPT-1) the mix recommended in this report (REC-92), and the 3/8" minus material (TEM-1). The aggregate composition shown below compares well to those determined in the field to be most durable. Figure 13 shows that the average of the three best surfaces investigate in the field parallels the recommended surface. Dr. E.O. Gooch, a consulting geologist, has reviewed this data and concurred with the recommendation that the surface be composed of the following:

THIS DOES NOT BELONG IN THE REPORT

WE DISAGREE WITH THE ABOVE; IT SHOULD NOT BE INCLUDED IN THE REPORT.

WHERE DID THE 3/8" AND SUM 92 COME FROM, ~~WHAT ARE THE THE RPT-1~~.

100% to pass a 1" screen
90-100% to pass a 3/4" screen
85-95% to pass a ½" screen
75-85% to pass a ¼" screen
? 55-65% to pass a #10 sieve
35-45% to pass a #40 sieve
REC-92 20-30% to pass a #100 sieve
18-23% to pass a #200 sieve

ATTACHED IS THE SOILS ENGINEERS REPORT DONE BE A LICENSED ENGINEER WHICH DISPUTES THE ABOVE FROM RIELEY!

THIS IS TRUE ONLY BECAUSE THE ROAD SURFACE REFERRED TO BY [illegible] IS COVERED BY MATERIAL PLACED OVER THE 50 YRS.

In summary, as Figure 13 shows, where the road surface is holding up well, the mixture more closely resembles the surface as it was historically specified. It is important that the initial depth not be more than 2 inches, with a compacted depth of 1½". NOT TRUE

NOT TRUE: FOUNDATION STONES ARE FLAT NOT CROWNED OR SUPERELEVATED

The conclusion from this analysis of the cross-sections and surface samples is that the foundation stones have generally retained their original configuration. However, the original middle and surface layers have ~~deteriorated~~ disappeared over time. As a result, ~~the surface does not have its historic compacted, watertight character~~ foundation stones can be found visible on the road surface. Through inappropriate grading operations, ~~anb~~ and because new material has not been added to maintain the original crown and/or super-elevation of the roads, the historic cross-section and profile have deteriorated as well (Figure 15). What about useage, wind, rain, runoff and frost action?

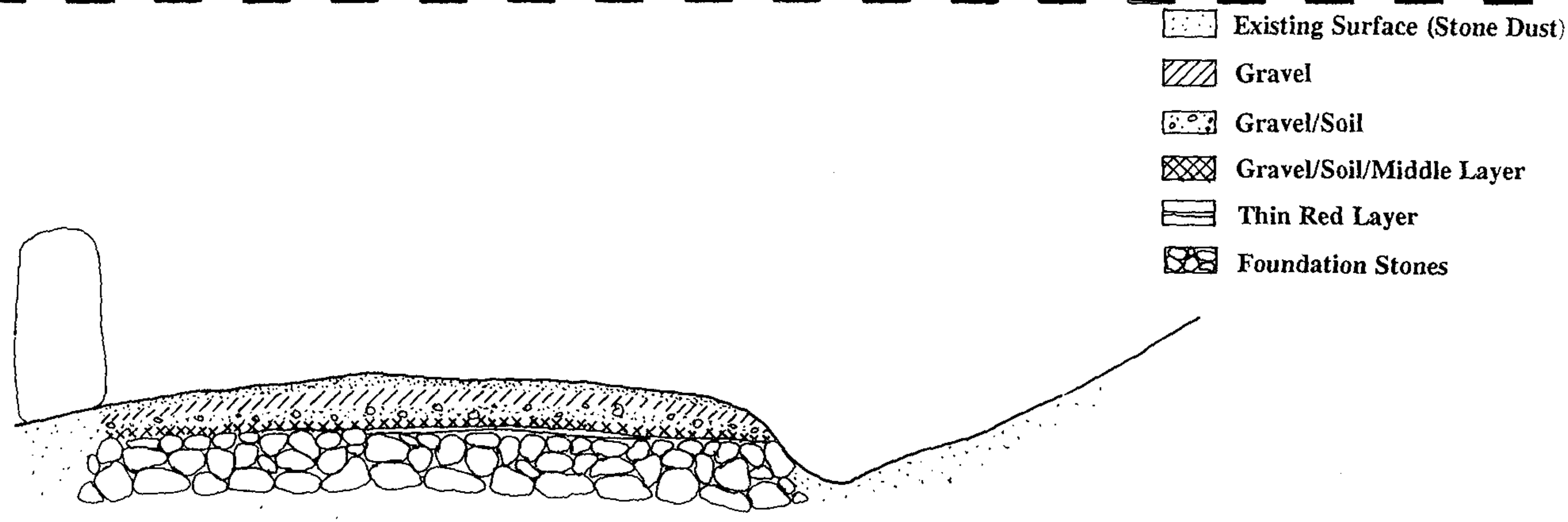
The field work, as documented in the database, confirmed that the engineers for the roads were using the geometry of horizontal and vertical alignment shown on their plans and profiles to lay them out. In fact, some of their benchmarks (? are the iron rods benchmarks/controls?) are still extant. The primary reason for designing a carefully aligned roadway on paper prior to construction is to produce a beautiful, flowing line in the landscape. Aesthetic concern with respect to the carriage roads is confirmed by the specifications' requirement that ". . . the lines, particularly on curves, shall be true and even." Horizontal and vertical curves were calculated and shown on the plans and offset stakes were set in the field as the road was constructed to assure conformance with the plans and specifications which describe the design intentions (Figure 16).

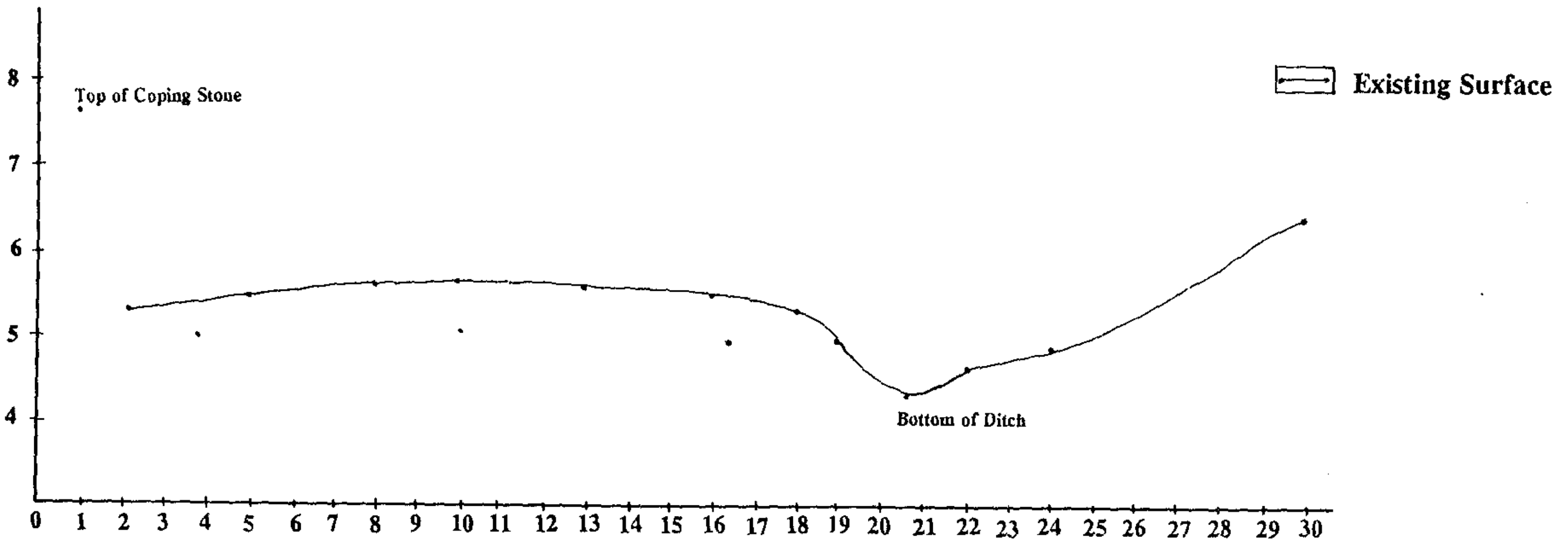
FROM HISTORIC SPECS.

FINISH SURFACE: "FINISH WITH 2" OF GRAVEL THAT WILL PASS A 1-½ INCH MESH AND ONE INCH OF CLAY AS A BINDER."

Retaining Walls

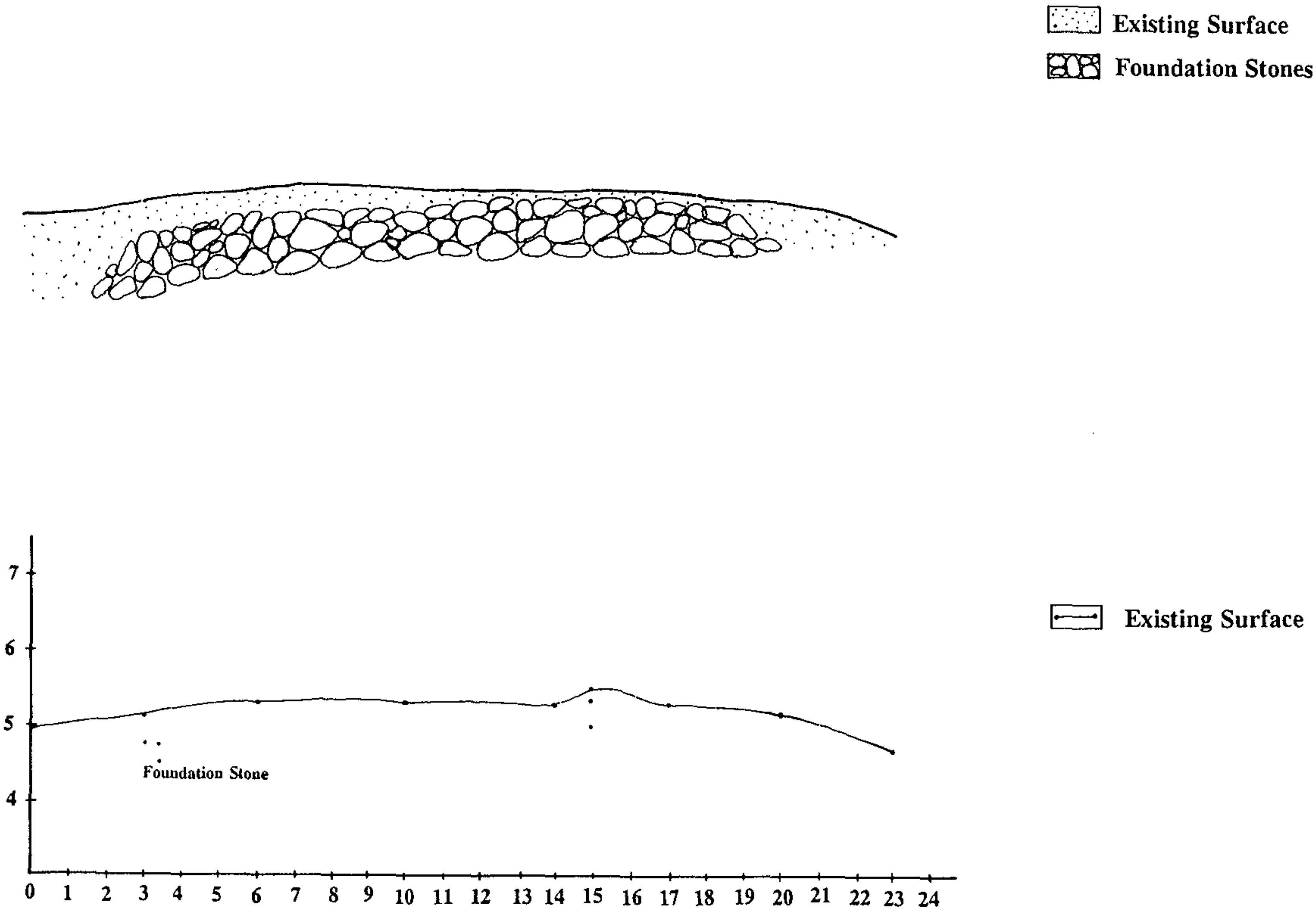
Where the roads were to be built on a steep hillside, a system of breast and retaining walls was often used. Breast walls were built on the uphill side of the road to hold the original grade of the ground where a cut had been made below; a retaining wall was built on the downhill side and retained new fill. This allowed for the roads to be built with a narrower path of disturbance. The walls, built as they were originally specified, were



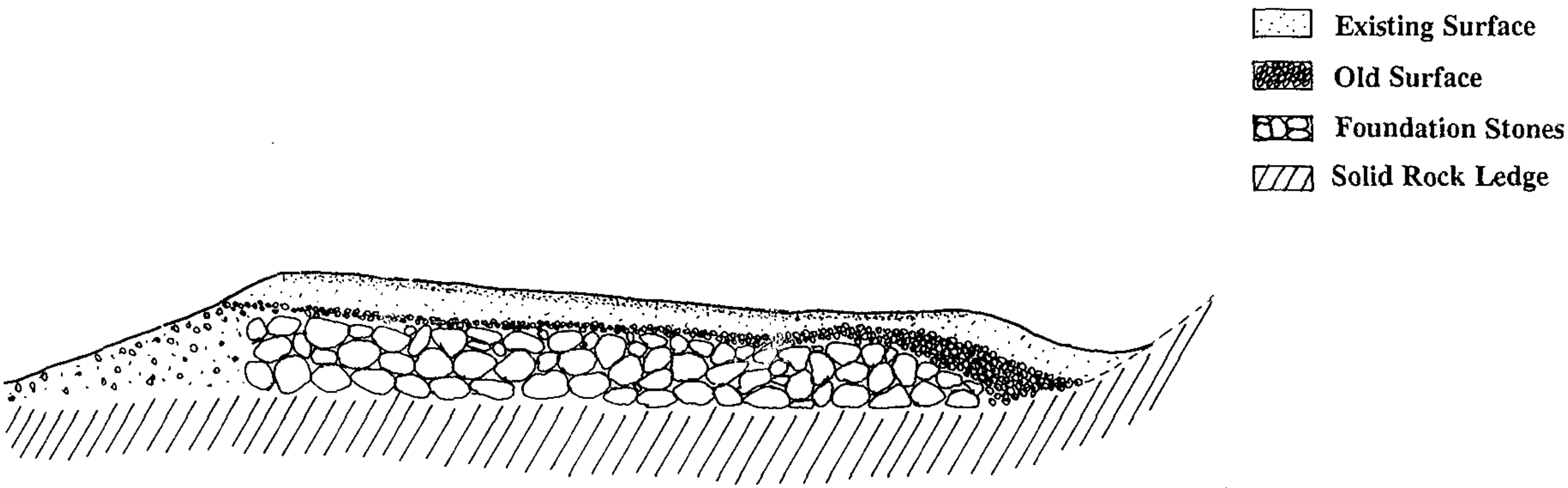


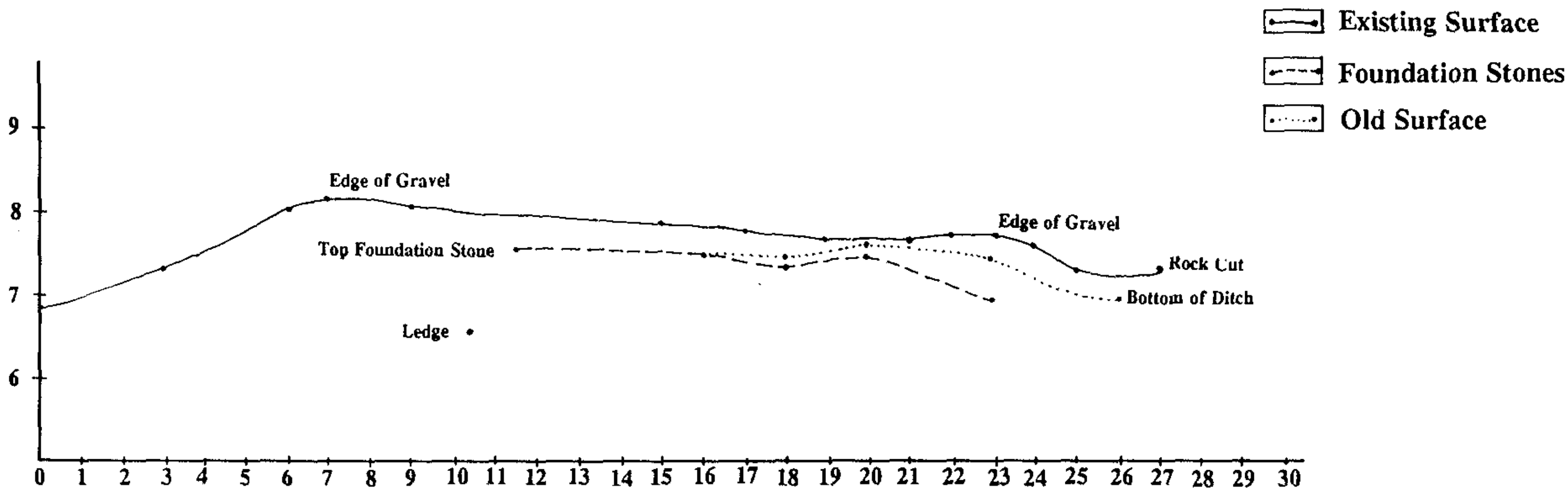
SECTION AND PROFILE - AMPHITHEATRE ROAD

Figure 2



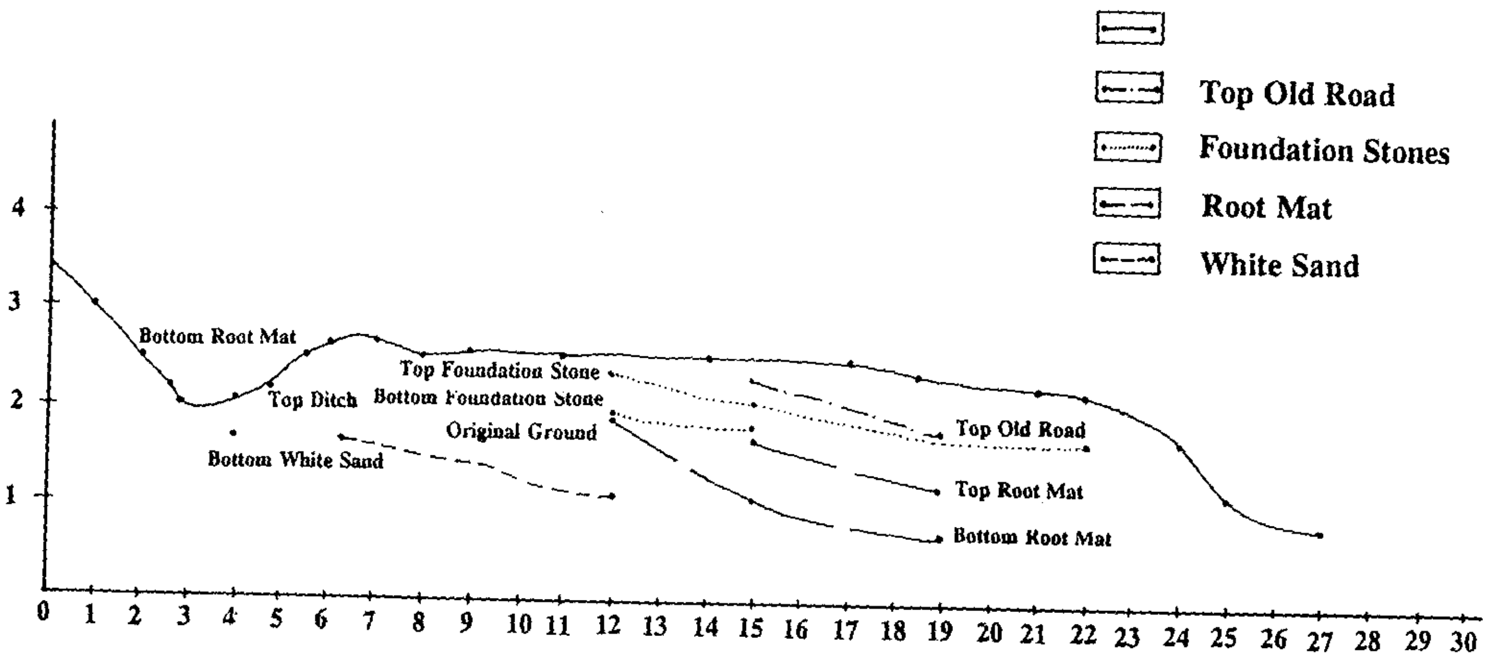
SECTION AND PROFILE - AUNT BETTY'S POND ROAD
Figure 3





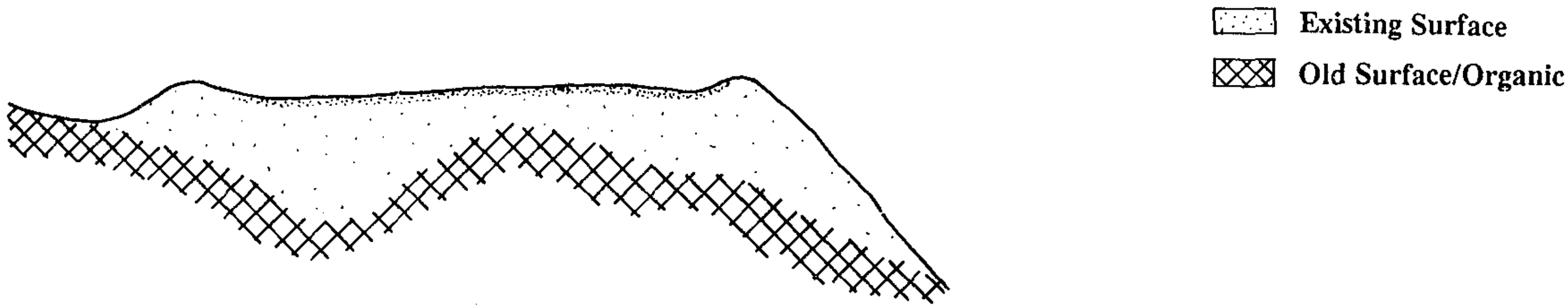
SECTION AND PROFILE - DAY MOUNTAIN ROAD

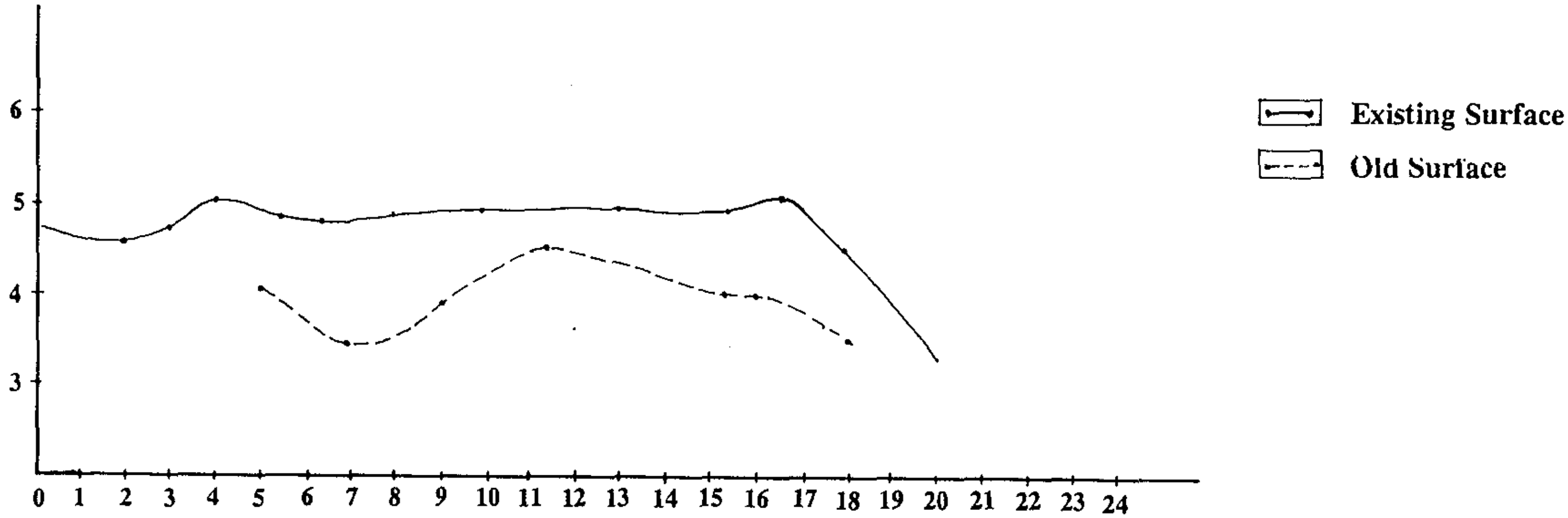
Figure 4



SECTION AND PROFILE - JORDAN POND ROAD

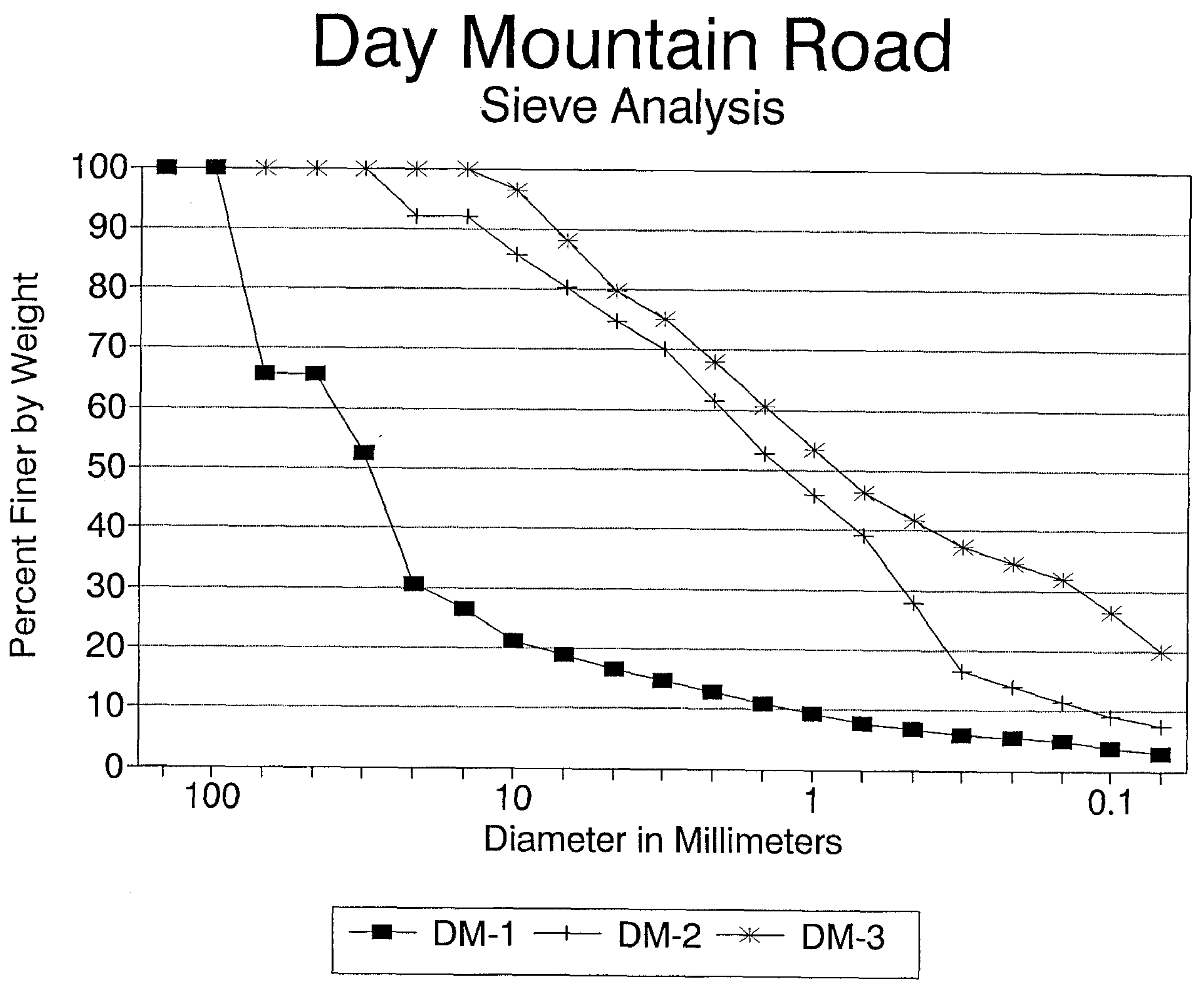
Figure 5





SECTION AND PROFILE - LITTLE HARBOR BROOK

Figure 6



Day Mountain Road
Sieve Analysis
Percent Finer by Weight
100
90
80
70
60
50
40
30
20
10
0
100
10
1
0.1
Diameter in Millimeters
DM-1
DM-2
DM-3

Figure 7

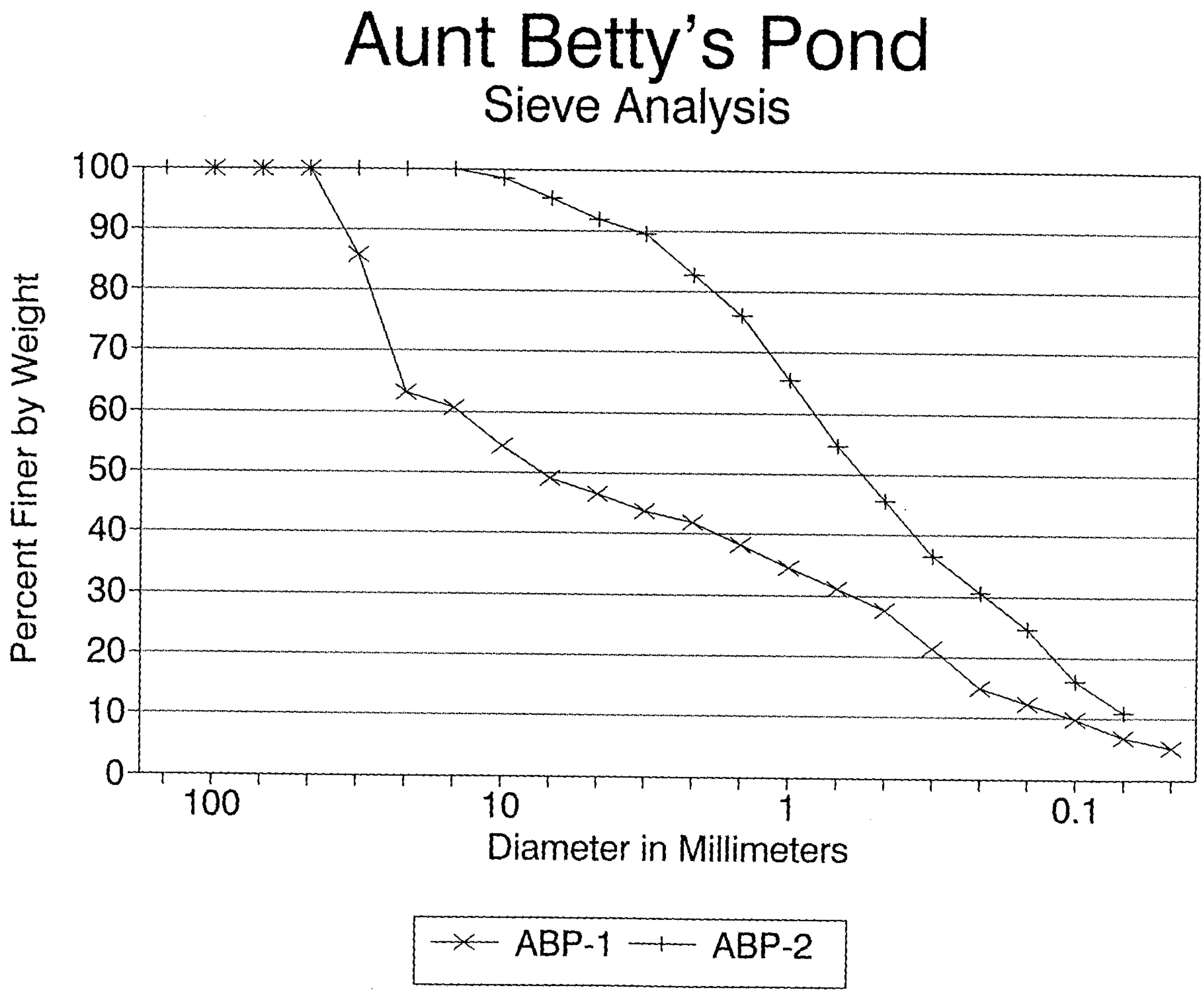
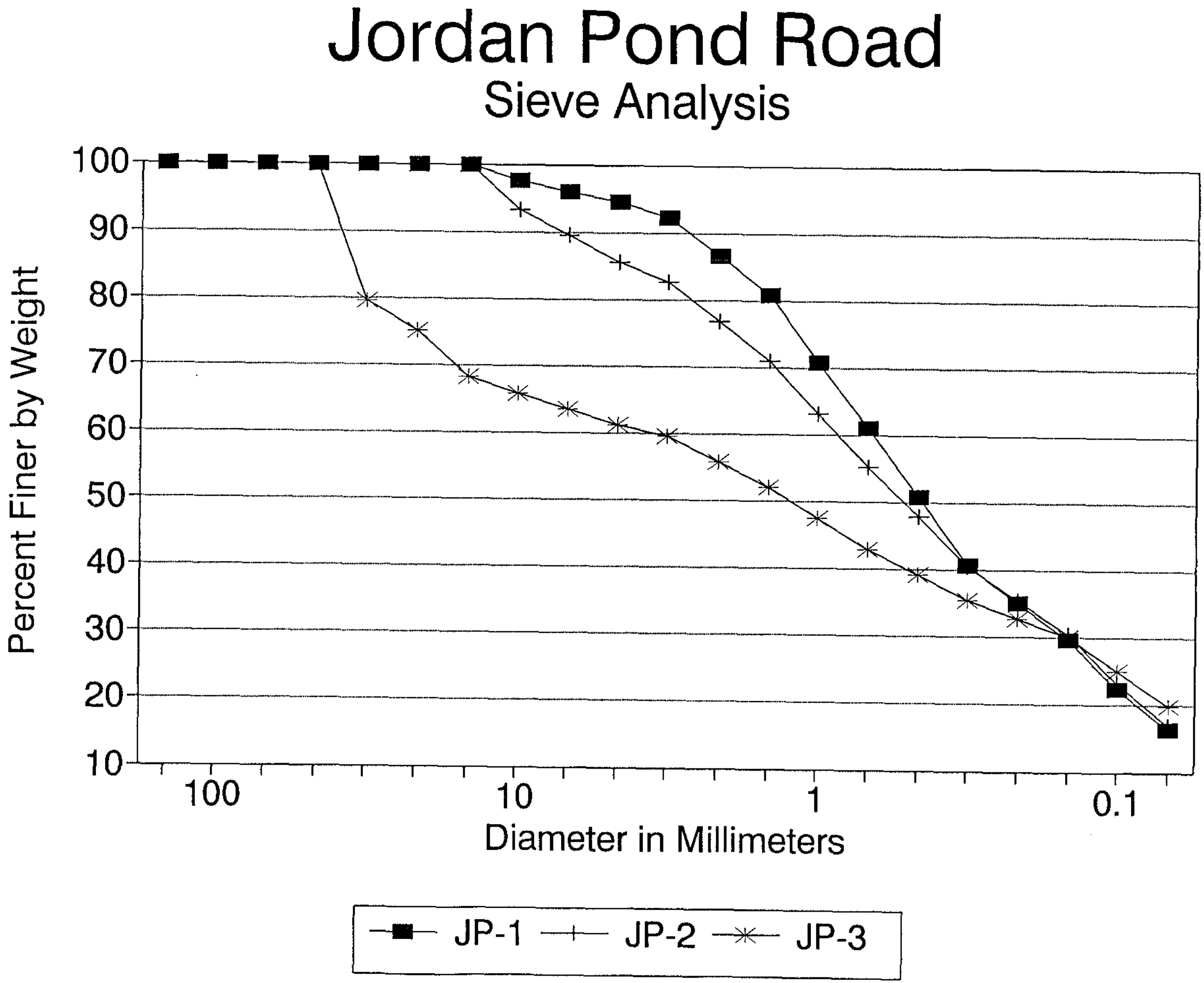

Aunt Betty's Pond
Sieve Analysis
Percent Finer by Weight
100
90
80
70
60
50
40
30
20
10
0
100
10
1
0.1
Diameter in Millimeters
ABP-1
ABP-2

Figure 8



Jordan Pond Road
Sieve Analysis
100
90
80
70
60
50
40
30
20
10
Percent Finer by Weight
100
10
1
0.1
Diameter in Millimeters
JP-1
JP-2
JP-3

Figure 9

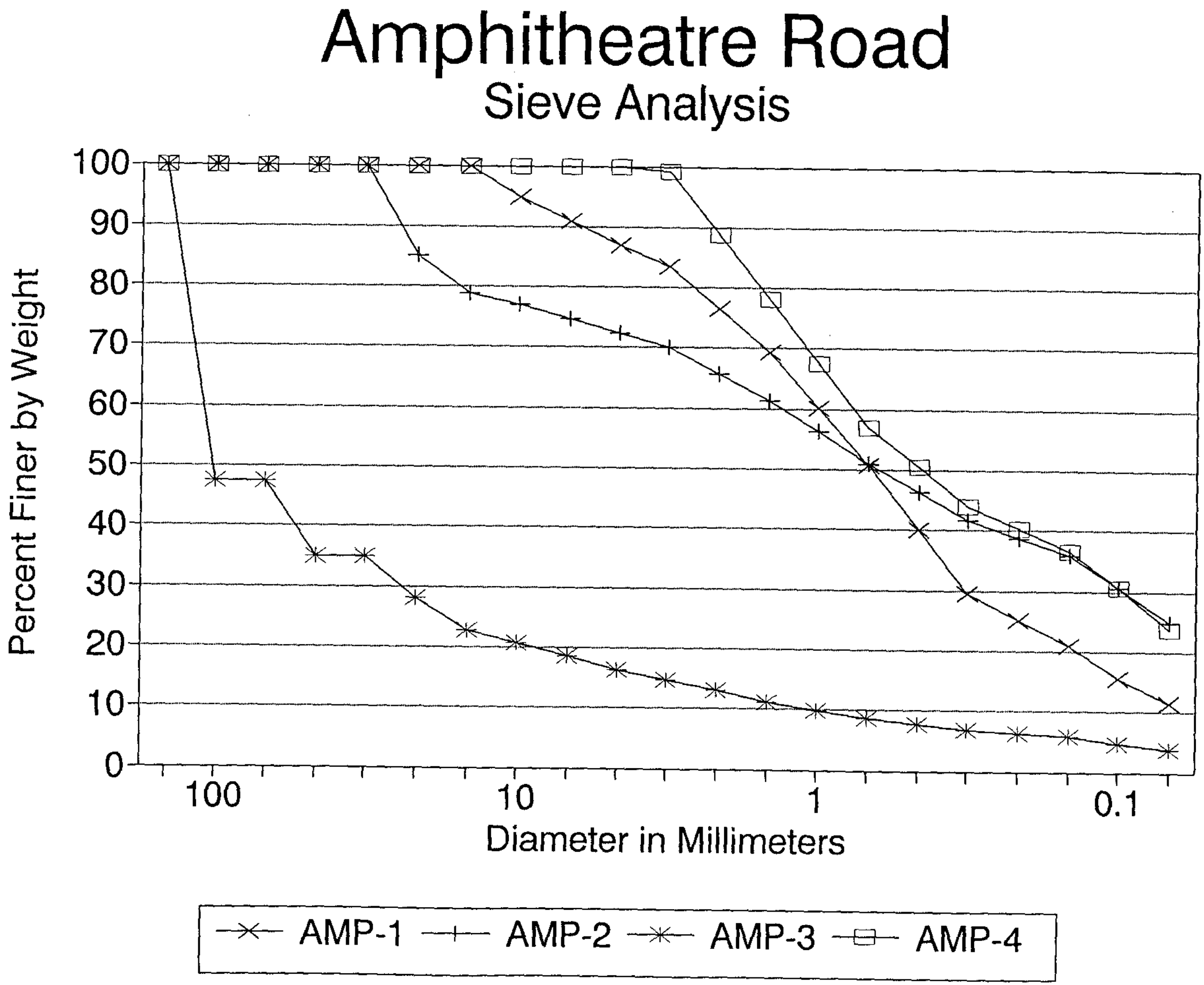
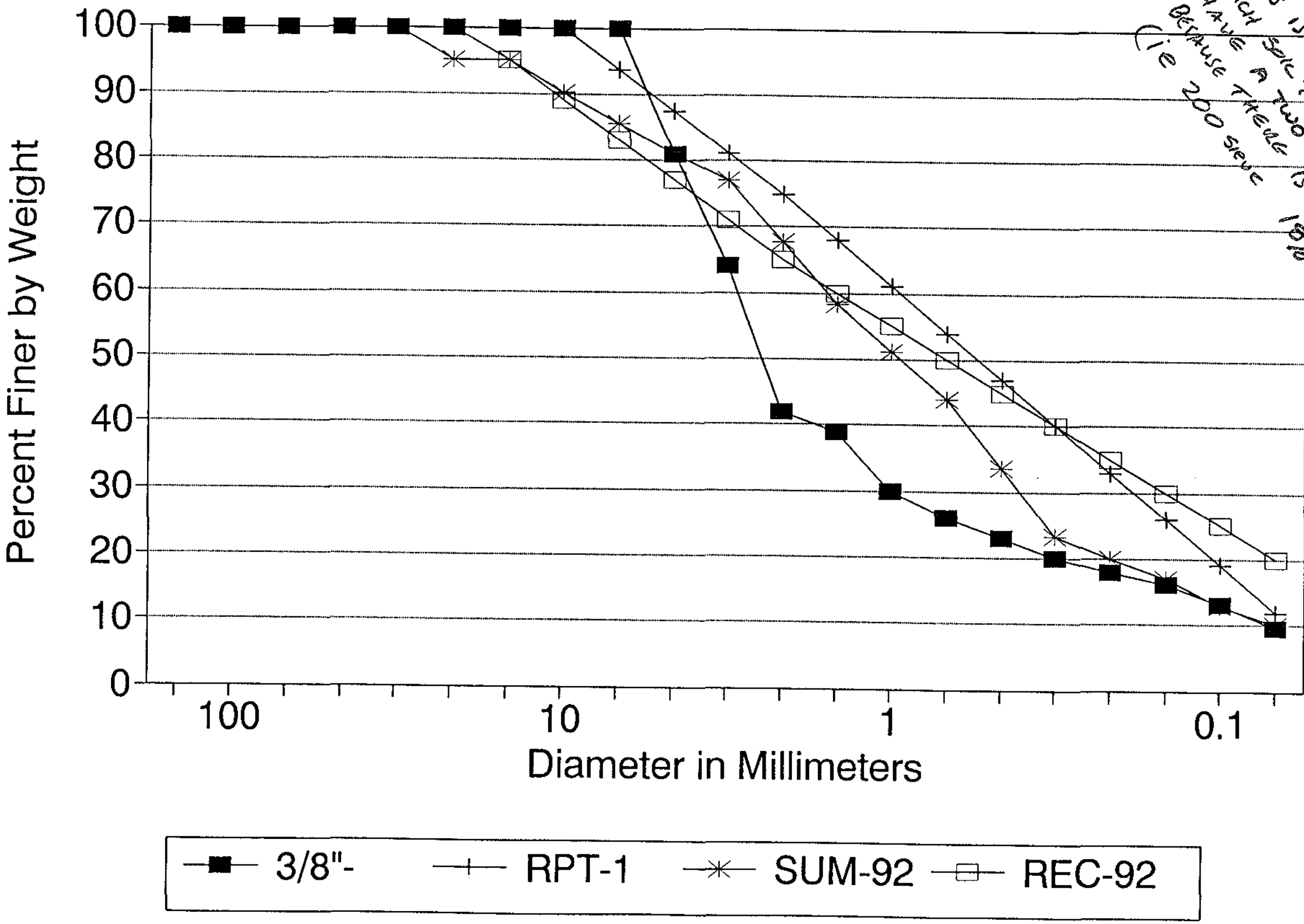

Amphitheatre Road
Sieve Analysis
Percent Finer by Weight
100
90
80
70
60
50
40
30
20
10
0
100
10
1
0.1
Diameter in Millimeters
AMP-1
AMP-2
AMP-3
AMP-4

Figure 10

Current Materials
and Recommendations



RIGGY SHOWS HIS ~~SOIL~~ RECOMMENDED SOILS AS A SINGLE LINE. THIS IS NOT CORRECT. EACH SOIL TYPE SHOULD HAVE A TWO LINE PLOT BECAUSE THERE IS A RANGE. (ie 200 SIEVE 18%-23%

SEE A/E FIGURES

Figure 11

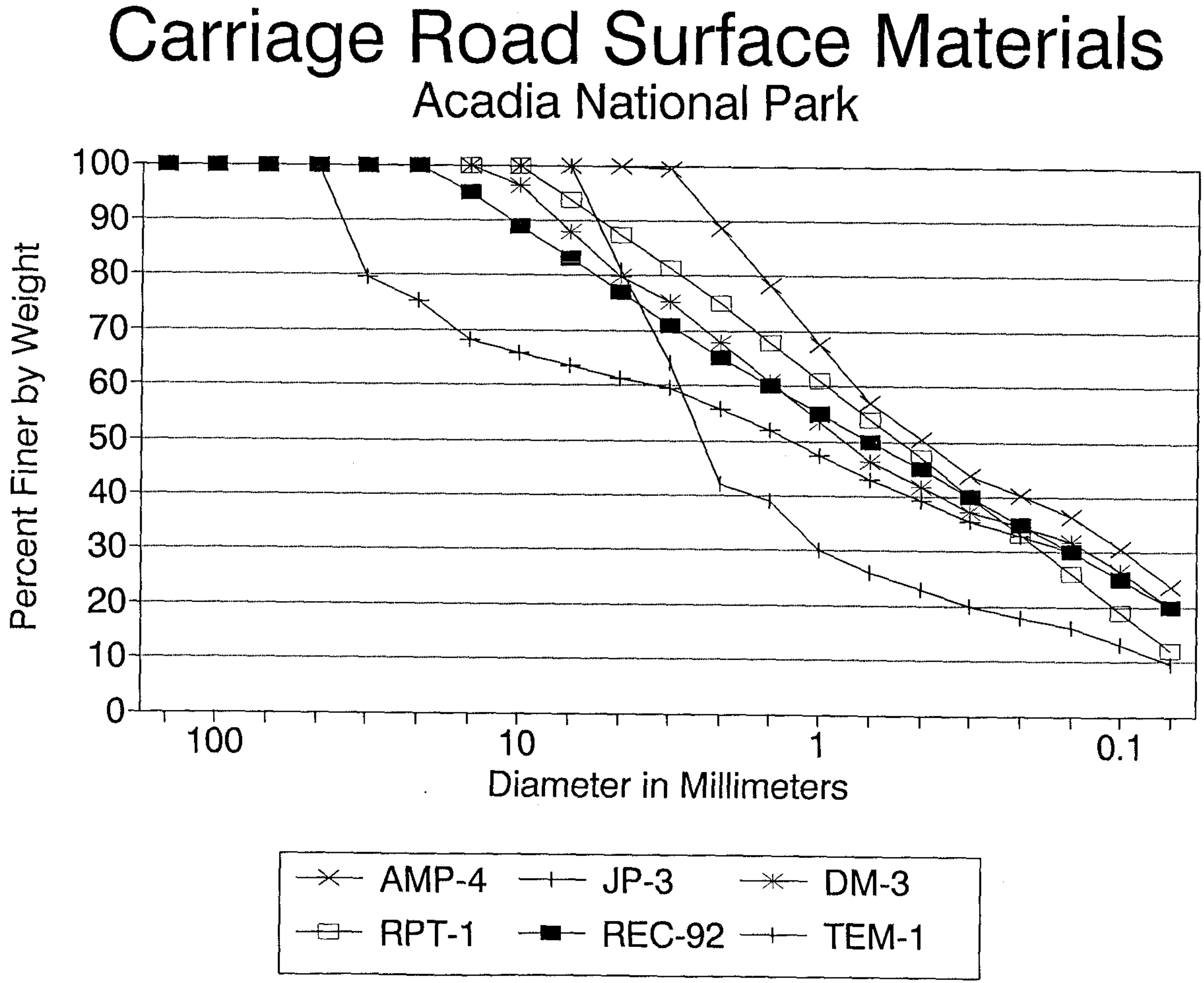

Carriage Road Surface Materials
Acadia National Park
Percent Finer by Weight
100
90
80
70
60
50
40
30
20
10
0
100
10
1
0.1
Diameter in Millimeters
AMP-4
JP-3
DM-3
RPT-1
REC-92
TEM-1

Figure 12

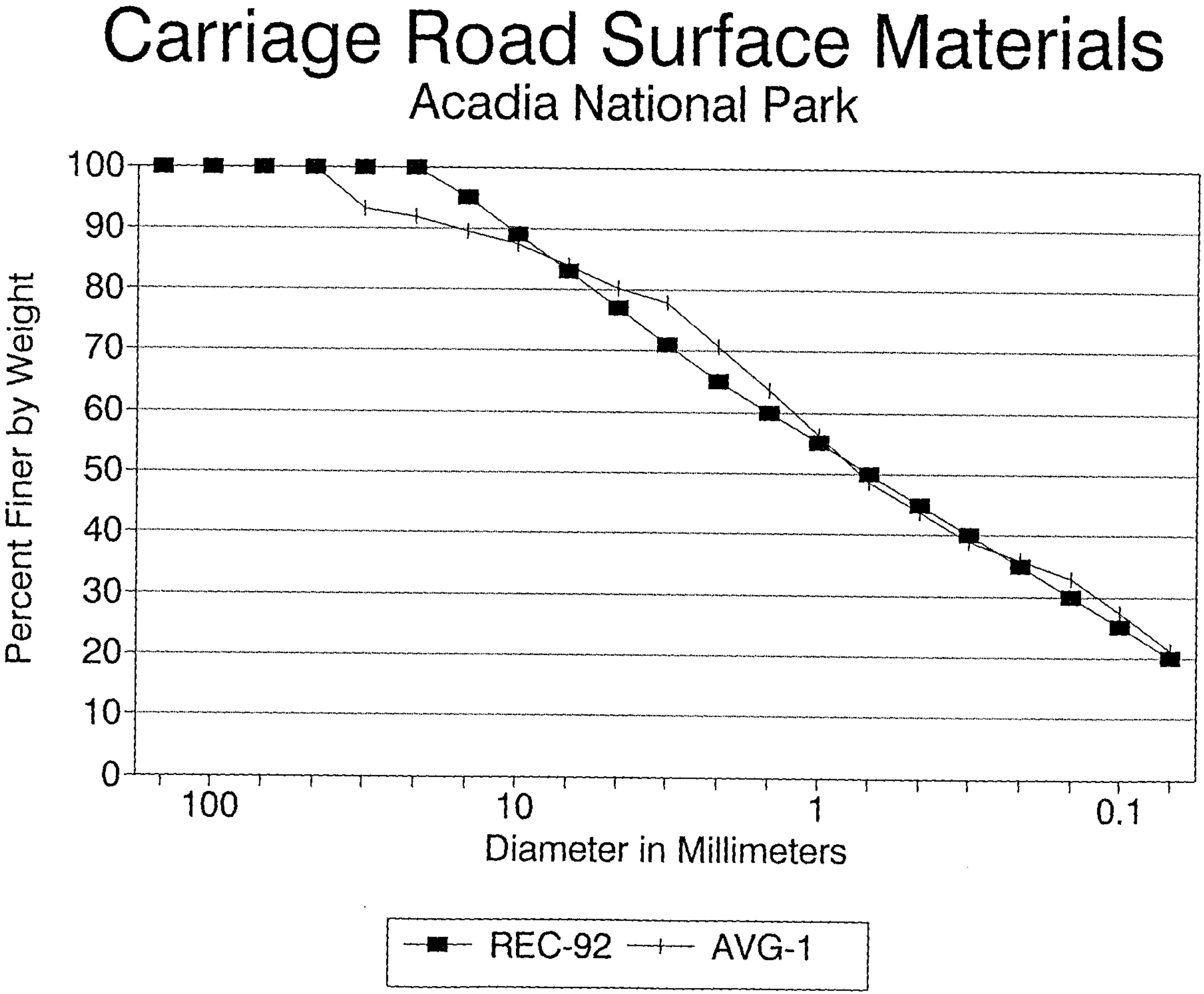

Carriage Road Surface Materials
Acadia National Park
Percent Finer by Weight
100
90
80
70
60
50
40
30
20
10
0
100
10
1
0.1
Diameter in Millimeters
REC-92
AVG-1

Figure 13

Acadia National Park Carriage Roads
Surface Material Sieve Analysis

Sieve Size	3/8" -	ABP-1	ABP-5	AMP-1	AMP-2	AMP-3	AMP-4	JP-1	JP-2	JP-3	LHB-1	DM-1	DM-2	DM-3	RPT-1
5"	100	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
4"	100	100.0	100.0	100.0	100.0	47.4	100.0	100.0	100.0	100.0	67.7	100.0	100.0	100.0	100.0
3"	100	100.0	100.0	100.0	100.0	47.4	100.0	100.0	100.0	100.0	67.7	65.8	100.0	100.0	100.0
2"	100	85.7	100.0	100.0	100.0	34.9	100.0	100.0	100.0	100.0	67.7	65.8	100.0	100.0	100.0
1-1/2"	100	63.2	100.0	100.0	100.0	34.9	100.0	100.0	100.0	79.5	67.7	52.6	100.0	100.0	100.0
1"	100	60.6	100.0	100.0	85.1	28.0	100.0	100.0	100.0	75.2	61.7	30.7	92.1	100.0	100.0
3/4"	100	54.5	100.0	100.0	78.8	22.7	100.0	100.0	100.0	68.2	60.7	26.5	92.1	100.0	100.0
1/2"	100	49.1	98.5	94.7	77.0	20.7	100.0	97.6	93.3	65.9	58.0	21.1	85.9	96.4	100.0
3/8"	100	46.5	95.2	90.8	74.7	18.5	100.0	96.1	89.5	63.6	55.7	18.8	80.3	88.1	93.8
1/4"	81	43.8	91.9	86.9	72.3	16.3	99.9	94.5	85.6	61.2	53.3	16.5	74.6	79.7	87.5
#4	64	41.9	89.4	83.4	70.0	14.7	99.3	92.3	82.7	59.5	51.3	14.6	70.2	75.2	81.3
#8	42	38.3	82.8	76.5	65.7	13.0	88.8	86.6	76.9	55.8	47.4	12.8	61.5	68.0	75.0
#10	39	34.6	76.2	69.5	61.4	11.2	78.2	80.8	71.0	52.0	43.4	10.9	52.7	60.7	68.0
#16	30	31.2	65.5	60.2	56.2	9.9	67.6	70.9	63.1	47.5	38.9	9.4	46.0	53.5	61.0
#20	26	27.7	54.7	50.8	50.9	8.6	56.9	61.0	55.2	42.9	34.4	7.8	39.2	46.3	54.0
#30	23	21.3	45.6	40.1	46.3	7.8	50.4	50.9	47.9	39.2	30.9	6.9	27.9	41.8	47.0
#40	20	14.8	36.5	29.4	41.6	6.9	43.9	40.7	40.5	35.4	27.3	5.9	16.6	37.2	40.0
#50	18	12.4	30.5	25.1	38.7	6.4	40.2	35.2	35.5	32.8	25.3	5.4	14.1	34.6	33.0
#60	16	9.9	24.5	20.8	35.8	5.8	36.5	29.6	30.5	30.1	23.2	4.9	11.5	31.9	26.0
#100	13	6.8	16.0	15.7	30.6	4.8	30.5	22.4	23.1	25.1	18.7	3.9	9.2	26.5	19.0
#200	9.6	5.1	10.9	11.5	24.8	3.7	23.7	16.4	16.9	19.8	13.1	3.0	7.4	20.0	12.0

?

WHAT IS THIS?

WHAT ABOUT THIS?
THIS IS SUPPOSED TO BE SURFACE MATERIAL.

SURFACE MATERIAL

WHAT ABOUT THIS RESULT?
THIS IS SUPOSED TO BE HISTORIC SURFACE MATERIAL

BASED ON THIS CHART RANGE ~~?~~ 13-20 NOT 18-23

RANGE OF SURACE MATERIAL
7.4 - 24.8

AMP	JP	DM
11.5	16.4	7.4
24.8	16.9	20.1
23.7		
20.0	16.5	13.7

Figure 14

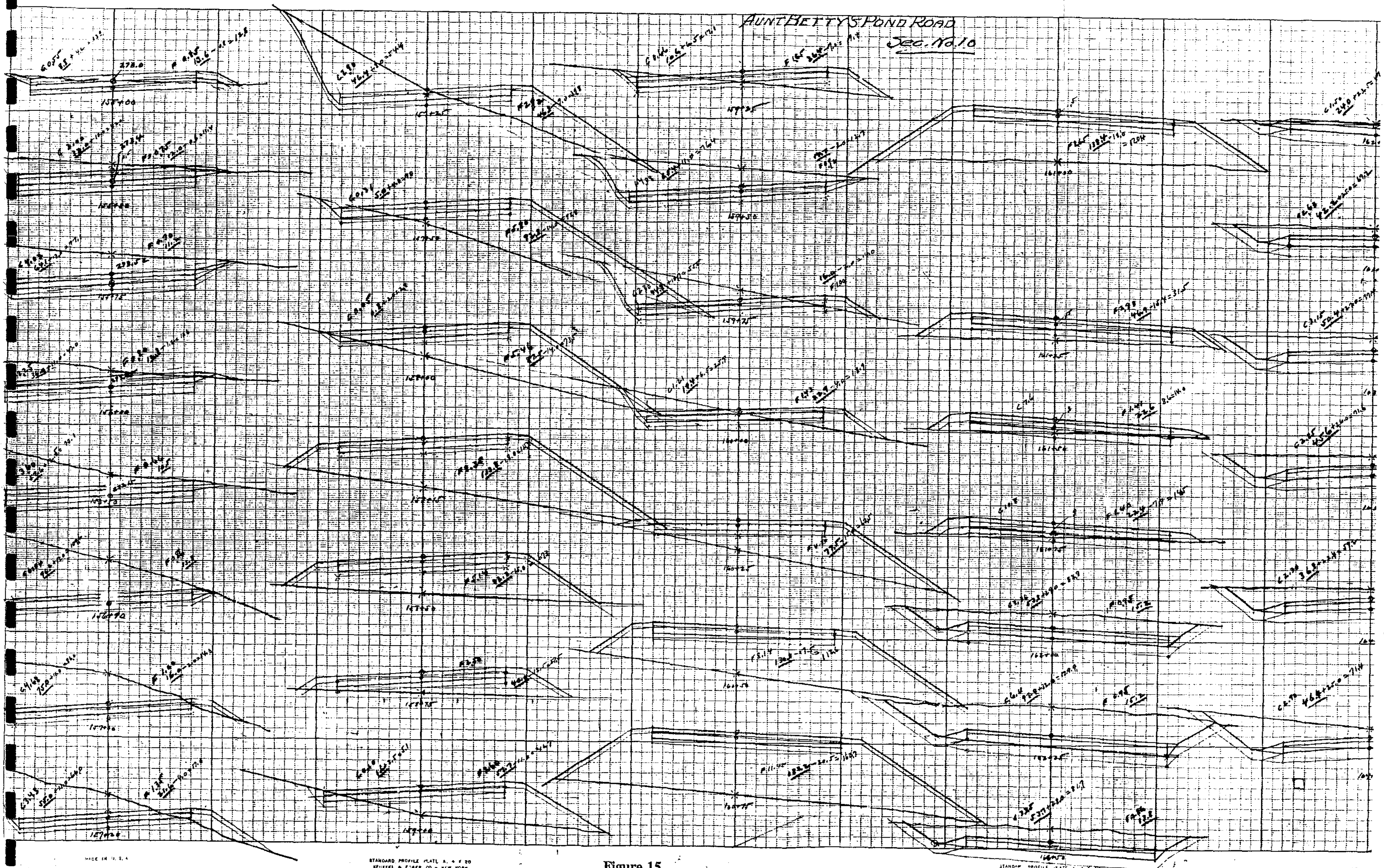


Figure 15

Figure 16

NOT ENTIRELY TRUE: THERE ARE NUMEROUS LOCATIONS WHERE WALLS WERE BUILT WITH STONE ≈8" x 14" x 4" AND ALSO MANY OTHER SIZES.

constructed of very large stones (minimum 1'-6" x 4'-0") with a batter of ½ inch per foot and a width of 18 inches at the top. The walls remain in good condition with only a few instances of repair required, as noted in the database (Figure 17).

Drainage System

Rockefeller was firmly committed to the installation of a good drainage system as the way to achieve "the greatest economy in maintenance". Culverts were to be of stone or iron pipe. If iron, they were to be at least 10 inches in diameter (this was upgraded to 12 inches in 1922). Stone culverts were preferable and metal culverts were to be used only where there was insufficient depth for a stone culvert. Stone head walls were specified for both ends of all metal pipe. A catch basin was to be built at the entrance to each culvert, at least 18 inches wide, with its bottom at least a foot below the bottom of the culvert "so as to form a receptacle for leaves and debris and prevent the stopping up of the culvert". They were designed to occur at frequent intervals to prevent the concentration of runoff and to interrupt the natural drainage pattern as little as possible.

This drainage system allowed the roads to remain in good condition for a long period of time. However, the field work verified that clogged ditches and culverts are now causing severe erosion problems. In addition, many catch basins have displaced stones and there are pipe failures which badly need attention. Again, all these have been noted in the database, with those items requiring immediate action identified in the Appendix.

Coping Stones and Signs

Two other details of the road construction are the signs and the coping stones which function as guard rails. The coping stones were used for safety wherever necessary and placed about one foot apart, depending on the shape of the stone. They have remained in place for the most part. Areas where one or several are missing have been recorded in the

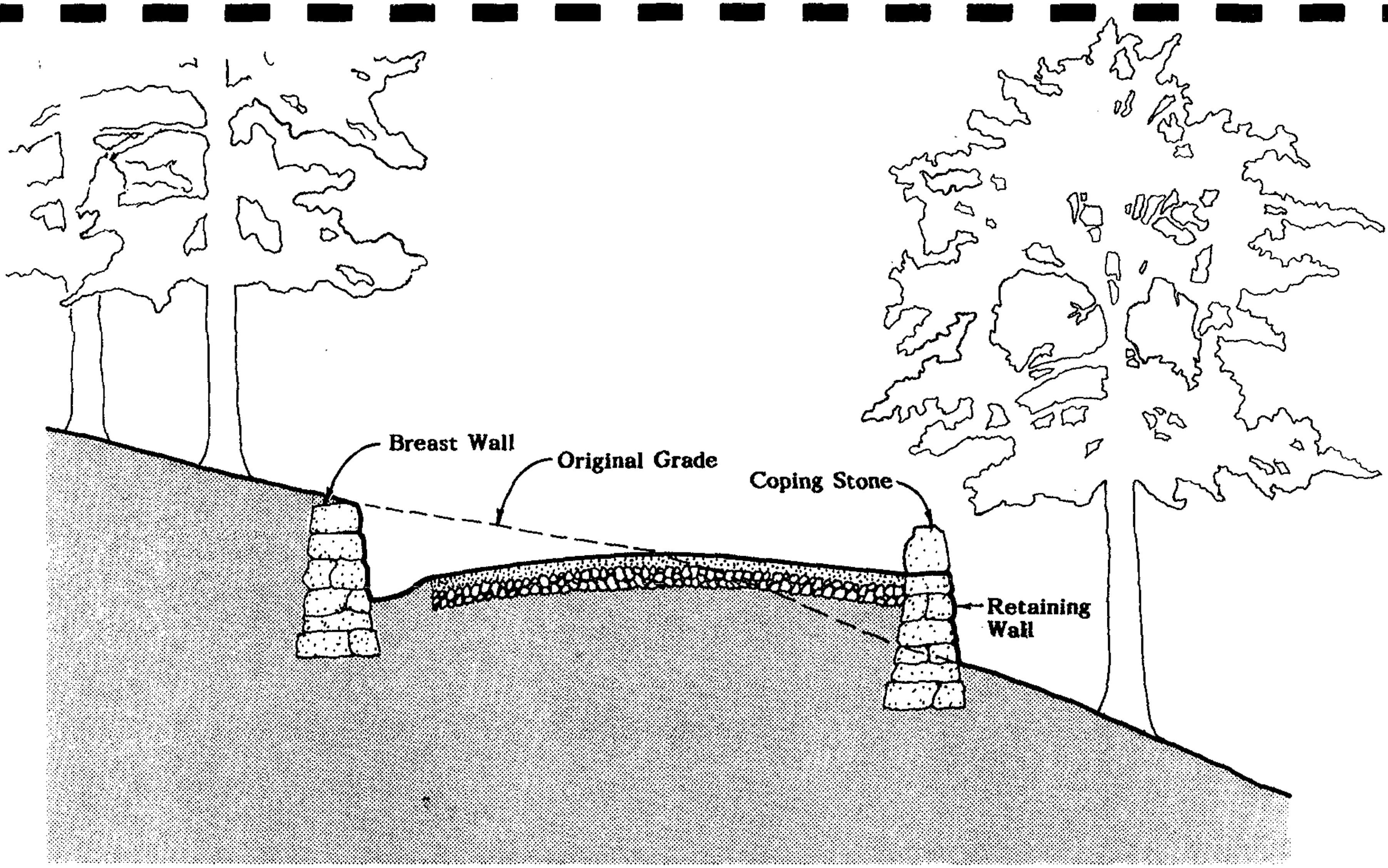


Figure 17

database. In most instances the original coping stone has been only slightly dislodged or has slid down the adjacent slope. These can be retrieved and set back in place. The style and location of signs was carefully studied initially by both Rockefeller and the NPS (Appendix). The number and location of signs has been recorded in the database.

Roadside Clearing, Planting and Vistas

Planting the roads, roadside clearing and vista clearing were the final design problems addressed when the roads were constructed. For this, Rockefeller relied on Beatrix Farrand, a well-known landscape architect who also owned a summer residence on Mount Desert Island. Her planting design for the carriage roads can still be discerned in the field, although no planting plans exist. For the most part, she relied on notes and her on-site work with Rockefellers' nurserymen. Vistas, however, can be precisely located. The vistas documented by correspondence and articles (***Historic Resource Study***, Figure XXII) are noted in the database, as are those identified through the aerial photography. Some vista clearing work has been recently undertaken in the Park. Most, however, will need to be re-established through a carefully planned vista management program. As for roadside clearing, there are many overhanging limbs and dead branches which need to be removed if Rockefeller's original instructions are to be followed.

NEED TO DISCUSS THE ROADSIDE CLEARING ADJACENT TO THE CARRIAGE ROADS. REMOVING ALL LEAVES, DEAD LIMBS & BRANCHES AND DOWNED TREES.

Bridges

The field inspection of the bridges included checking the condition of the stone, mortar, waterproofing (where visible) and the extent of the efflorescence. A laboratory analysis was also conducted of the efflorescence and the results are described in the Appendix. It included thin section analysis and x-ray diffraction to determine the composition and structure of the crust samples, as well as chemical analysis to determine the iron content. The resulting data indicate no evidence of concrete decay, thus core testing is not required.

RIELEY WAS REQUIRED IN HIS CONTRACT TO PERFORM STRUCTURAL ANALYSIS OF BRIDGES W/ A STRUCTURAL ENGINEER.

NOT TRUE. TO PROPERLY EXAMINE AND INSPECT BRIDGES CORE TESTING SHOULD BE PERFORMED.

DISAGREE. IF PROPERLY REPAIRED THERE WILL BE NO ADDITIONAL PROBLEMS.

(Breaching the concrete by removing a core sample for testing can sometimes create additional problems. Avoiding it is the best alternative.)

Specific information regarding each of the bridges as well as recommendations for repair and cleaning are also included in the Appendix. In general, the problems included the accumulation of efflorescence, cracks in mortar joints, sloppy repointing, failing waterproofing systems, and the general need for cleaning.

MANY ~~SOME~~ BRIDGES HAVE ~~[illegible]~~ CONCRETE WHICH IS CRACKING. ALSO, CONCRETE IS SPAWLING.

REILEY IS NOT CAPABLE TO MAKE JUDGEMENTS ON CONDITIONS OF BRIDGE. NEITHER HE NOR HIS CONSULTANT ARE LICENSED STRUCTURAL ENGINEERS OR HISTORIC ARCHITECT.

Review of the 1990 Demonstration Project

In 1990, private contractors under National Park Service supervision undertook the rehabilitation of Section 20-21, the Amphitheater carriage road. It was to serve as a "demonstration" to the public of the original appearance of the carriage roads. Drainage ditches were cleared of vegetation, culverts were replaced as necessary, and a new surface was applied. Also as part of the project, the University of Maine College of Forest Resources cleared five vistas. At least one of these vistas is evident in the aerial photography (obtained after the work was done). The five vistas chosen were excellent ones (logical in terms of the views selected) and the vista clearing was done well. NOT TRUE SEVERAL OF THE VISTAS WERE NOT HISTORIC AND SHOULD NOT HAVE BEEN DONE

The project, however, does not demonstrate how the roads were historically constructed. Many problems were addressed (displaced culverts, eroded surface, clogged ditches) but not in a manner which reflected how they were planned and built. The vertical alignment, as originally designed[1], would have provided for smooth curves making the transition from one grade to another. The contractors did not work from a profile, therefore there are localized dips and humps in the road surface where the original grade had shifted and was not repaired. ?

In addition, the surface material used was too uniform or did not include enough variety in particle size, and, since it was just added to the existing surface (the middle layer was not modified), it is much too thick. Also, it is not crowned enough to drain effectively. These three factors resulted in a "mushy" character when, in fact, the original roads would have been compacted and had a more solid running surface. Further, the shoulders on the ditch side were not restored to the correct profile, and the road surface was carried into the ditchline. The result is that the edge of the surface does not blend gradually to the ditch but drops sharply off. This results in surface erosion down steep slopes into the ditch.

[1]Original construction documents available for this section include a plan of the horizontal alignment, a profile of the existing topography at the time of construction, and a preliminary profile for a third of the proposed road.

Some drainage problems were not addressed; in at least one place, a necessary pipe was not installed and a large volume of water still runs across the road surface. Overall, cleaning the ditches was handled well and the displaced culverts repaired nicely. One objection, though, is the use of plastic pipe. It is not acceptable for practical reasons and from a preservation perspective. The original roads were built with iron or stone culverts. If replacement cannot be made in kind, substitutions should match the original as closely as possible. Plastic pipe is clearly modern. Concrete or smooth steel pipe would be preferable as they are historically accurate. From a practical standpoint, the only advantage to plastic pipe is that it is inexpensive. It is not as durable as steel or concrete.

STRATEGIC MANAGEMENT PLAN

The purpose of the strategic management plan is threefold:

1. Stabilize the road system to prevent further deterioration until each segment can be rehabilitated;

2. Develop a methodology for establishing priorities for rehabilitation as well as a prototypical approach to the preparation of construction documents; and

3. Develop a program for on-going maintenance which will keep the roads in good condition once they have been rehabilitated.

The database was used to record the inventory of the roads and their features because it allowed for efficient assessment of their overall condition and also provided an effective method for establishing priorities. By assigning a priority to each item based on its condition, and then weighting each item according to its importance to the integrity of the entire road system, the database will generate a list of sections and subsections in priority order (Figure 18). After reviewing this list, the sections can then be grouped in five to six mile segments to provide a logical, economical construction package. The database can also be used to determine practical segments for maintenance based on the capacity of the Park's maintenance staff and the money available. For example, the Bubble Pond loop (Section 17-7) can be combined with Section 7-8 of the Eagle Lake loop.

FIGURE 18
Acadia National Park
Carriage Roads

Total Weighted Priority of Sections
July 17, 1993

No.	Section	Priority
1	14-21a	737
2	19-12b	625
3	6-7b	535
4	5-3a	521
5	36-17a	472
6	10b-12b	425
7	11-10a	416
8	10a-14a	414
9	17-7b	372
10	17-7a	357
11	9-11a	330
12	17-7c	327
13	17-7c	327
14	10b-12a	316
15	9-11b	309
16	13-18a	288
17	39-36a	286
18	13-11a	282
19	6-4a	274
20	13-11c	271
21	10a-14b	256
22	7-8b	255
23	13-11b	245
24	22-20a	239
25	19-12a	238
26	7-8a	235
27	5-4a	234

28	6-7a	218
29	10b-12c	212
30	16-17a	210
31	21-20a	204
32	3-1a	185
33	9-11c	175
34	4-2a	173
35	9-8a	166
36	2-3a	145
37	10b-12d	136
38	15-23a	135
39	20-19a	135
40	15-14a	132
41	1-2a	129
42	9-8b	111
43	36-38a	107
44	36-17b	103
45	13-11d	100
46	38-37a	92
47	12-13a	90
48	13-18b	88
49	29-30a	88
50	16-17b	86
51	21-22a	79
52	6-4b	69
53	39-36b	65
54	21-20b	64
55	10a-8a	39
56	22-20b	37
57	25-16a	37
58	23-25a	35
59	19-18a	31
60	18-192a	27
61	16-15a	25
62	23-24a	23
63	11-10b	23

64	6-9a	19
65	5-4b	18
66	6-7c	17
67	10a-10ba	16
68	10a-14c	14
69	17-7d	13
70	4-2b	8
71	29a-29a	4

A. SHORT-TERM STABILIZATION

Roads

As previously discussed, those problems which require immediate action to prevent further serious damage were communicated to Park management and are listed here in the Appendix. In addition, the following short-term stabilization techniques are already being implemented by the Park's maintenance staff. They primarily involve the drainage system because controlling the runoff is the single most important factor in preserving the roads.

1. Remove vegetation and accumulated organic material in both lined and unlined ditches. For unlined ditches, use a motor grader with a trapezoidal blade or a track-hoe with rotating bucket. Stone-lined ditches will require hand pruning.

2. Clean clogged culverts and repair inlets/outlets which have displaced stones blocking the flow of water.

3. Remove vegetation from the surface of the road and reestablish at least a 2% crown to improve drainage; apply thin layer of appropriate surface material and compact by watering and rolling.

4. Thin heavy spruce regeneration in triangles at intersections.

Thinning the heavy spruce regeneration is included in the list of short-term stabilization measures because immediate thinning will allow the remaining spruce to continue growing into healthy specimens. In addition, with bicycles using the carriage roads, visibility is important for safety at the intersections.

B. LONG-TERM REHABILITATION

The step-by-step approach outlined below is designed to ensure that the roads are rehabilitated in a manner which returns them to their historical appearance. As noted, the first step is studying the original drawings and specifications. It is only by comparing them to the existing conditions that the roads as they exist can be repaired appropriately. Where no specific documentation exists for any given road segment, this process can still be applied. Even without curve data, the historical specifications for the roads allow for an appropriate rehabilitation. In addition, the geometry for the horizontal and vertical alignments can be calculated in the same manner using the existing elevations.

A survey of the existing conditions for each section is critical to the success of the rehabilitation effort. The construction documents used to obtain bids from contractors will need to be precise in their description of the work which needs to be done. Without a survey noting the elevations along the edges and centerline of the road, it would also be impossible to develop a plan and profile with the proper horizontal and vertical curvature. Second, the contractor doing the work will be unable to gauge the amount of work involved without a clear understanding of what exists on site; nor will he be able to lay it out precisely as it was designed. Figure 16 shows the grade stakes used by the early engineers to ensure that the roads were constructed as shown on their plans and profiles. Modern roads continue to be laid out in a similar manner.

RIBLEY SURVEY NEGLECTED TO MEASURE DEPTH TO FOUNDATION STONES. THIS MUST BE DONE TO ENSURE PROPER LEVEL OF MIDDLE LAYER MATERIAL IN SEVERAL AREAS TO CROWN THE ROAD USING RIBLEY DATA WOULD HAVE RESULTED IN DIGGING UP FOUNDATION STONES. FIELD CORRECTE

Prototypical Approach

1. Review original construction documents (if any) for the roads and bridges as well as research to date to gather pertinent data for the construction documents, e.g., curve data, construction details, and specific planting notes.

2. Map existing conditions from the database and documented vistas at

WE QUESTION THE NEED FOR THIS MUCH "COSTLY" ACCURACY?

1"=40' 0" (the scale of the original drawings).

WHAT ABOUT FOUNDATION STONES? THEY ARE IMPORTANT AS ROAD SURFACE AND WERE NOT DONE BY RIELEY'S WORK

3. Complete a field survey to include:

   a. Spot elevations at 50-foot intervals along each edge of the road and the existing centerline; decrease spacing to 25 feet on curves of less than 500 feet in radius.

   b. Culvert locations and elevations of top and inverts in and out.

   c. Locations of coping stones and retaining walls, along with top and bottom of wall elevations.

   d. The location and elevations of drainage channels on side slopes as well as diversion ditches.

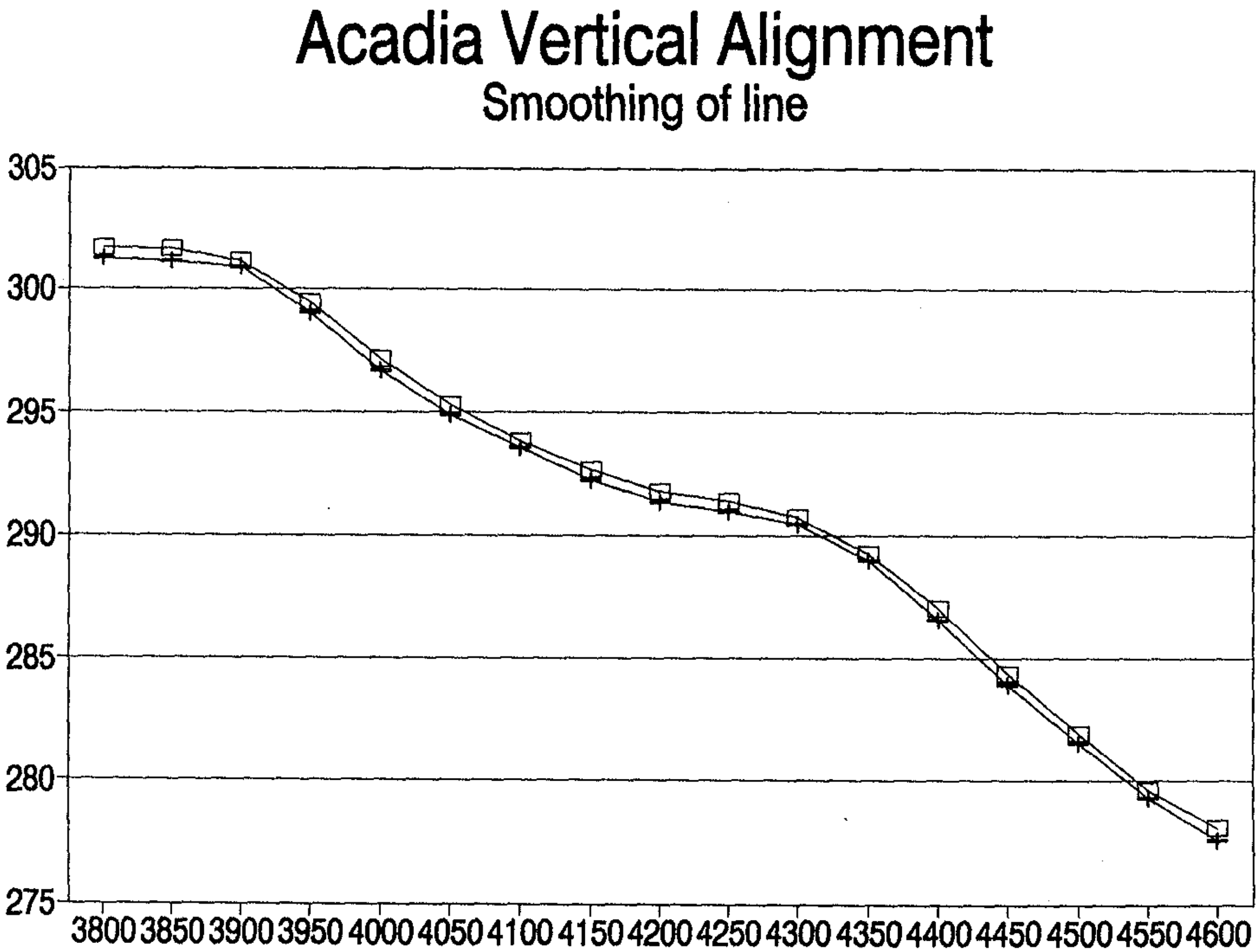
With this information in hand in both plan and profile format, the existing alignment (horizontal and vertical) can be compared with the original construction documents and storm drainage calculations can be done to test the capability of the existing drainage system. By generating P.I. (point of intersection) lines from the survey of existing conditions, a geometry for the circular and vertical curves can be calculated which very closely matches the original. For example, to obtain a given elevation for a point on the curve, a smoothing program can be used to develop vertical curves based on established elevations at the right height above existing grade to allow for the proper crown or superelevation. The profile is smoothed with a series of overlapping vertical curves. ~~The~~ graph included illustrates the results.[1] (Figure 19)

ONLY NEED TO BE DONE IN AREAS WHERE THERE ARE OBVIOUS DRAINAGE PROBLEMS DO TO UNDERSIZED CULVERTS AND DITCHES.

THIS DOES CONFORM TO HISTORICAL DESIGN ??

Construction documents for the road rehabilitation can then be prepared. They would

[1] In some cases, the elevations were uniformly raised so that surface material can be applied over the existing road without disturbing the foundation stones.



Acadia Vertical Alignment
Smoothing of line
305
300
295
290
285
280
275
3800 3850 3900 3950 4000 4050 4100 4150 4200 4250 4300 4350 4400 4450 4500 4550 4600

Figure 19

include the following drawings:

- The plan and profile which shows:

  1. the reconciled circular curvature and vertical curves,
  2. spot elevations for superelevated curves and crowned segments,
  3. the location of culverts as well as the elevations of their tops and inverts in and out with notations regarding repair,
  4. the location of ditchlines (including diversion ditches) and top and bottom of ditch elevations.
  5. the location of retaining walls and coping stones with notations of areas requiring repair.

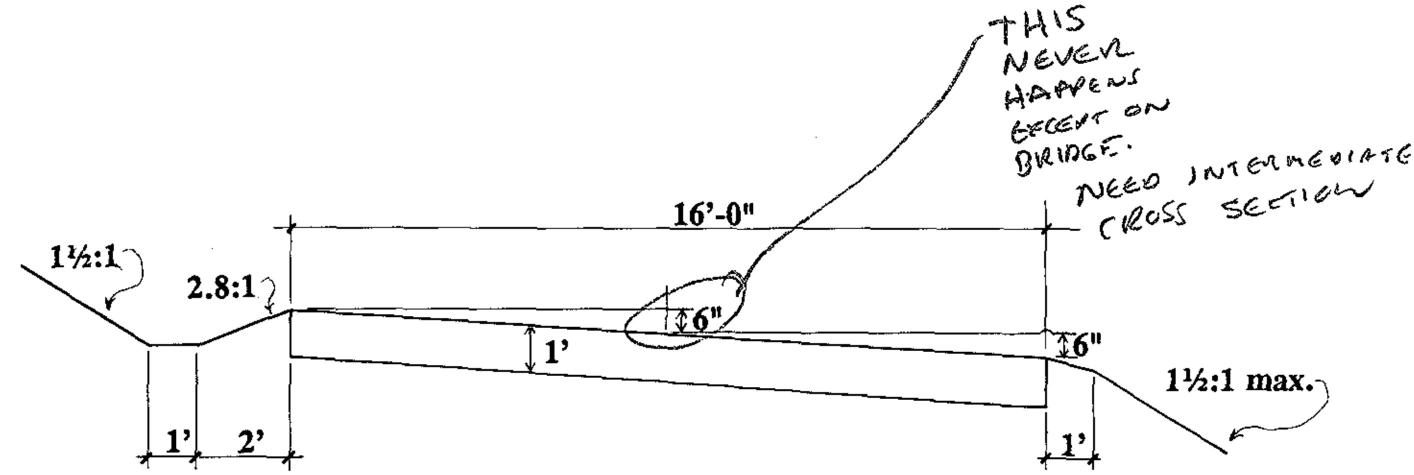
- Typical sections showing the ditches and roads for both crowned and superelevated roads (Figure 20).

- Details for the road surface.

  The detail for the surface should remain as shown in Figure 21. Whether crowned or superelevated, the configuration of the different layers will remain the same. It is important that the new surface be "boxed out" when it is put in place. In other words, the sides of the aggregate should be vertical and defined by the edges of the excavation. The aggregate should not be sloughed off into the ditches as it does not have the same angle of repose as soil and will not retain the proper shape over time. No more than 2 inches of surface material should be applied to the roads at any one time. Once it place, this 2" depth should be rolled to a compacted depth of 1½".

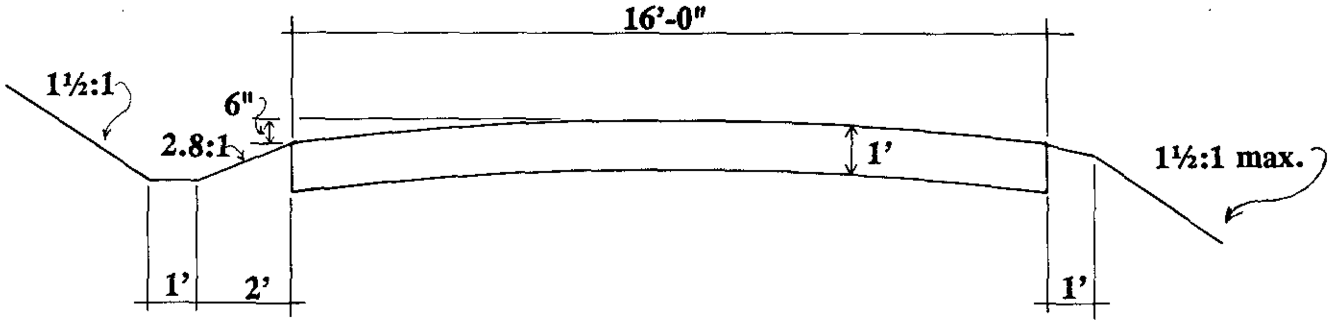
NEED EDGE OF ROAD DETAIL AT DITCH & COPING STONES

BOXING OUT MAY NOT BE BEST WAY TO DO WORK. DITCH SHOULD BE ESTABLISHED AFTER SURFACING IS COMPLETE.



TYPICAL SECTION-DITCH AND SUPERELEVATION PROFILES

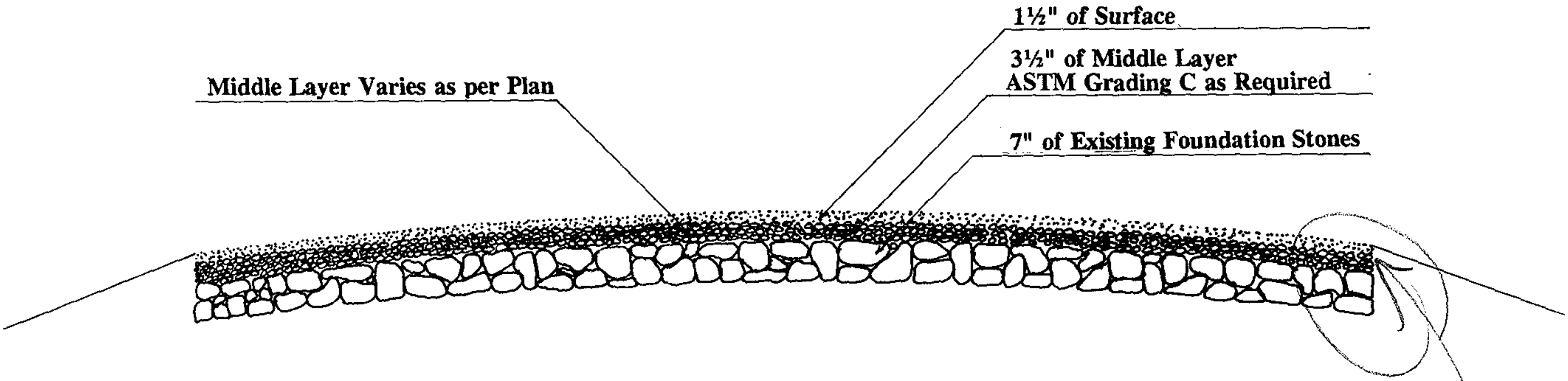
Scale: ¼" = 1'-0"



TYPICAL SECTION-DITCH AND CROWN PROFILES

Scale: ¼" = 1'-0"

Figure 20



BROKEN STONE ROAD

Scale: ½" = 1'-0"

NOT TRUE.
THIS ASSUMES FOUNDATION STONES ARE CROWNED; AND THEY ARE NOT.

Figure 21

EXISTING ROAD SURFACE SHOULD BE 1ST SAMPLED TO DETERMINING ADEQUACY FOR BEING USED AS MIDDLE LAYER, BLEND MATERIAL MAY NEED TO MAKE MATERIAL ACCEPTANCE. IF MATERIAL IS TOTALLY UNACCEPTABLE AND CANNOT BE BLENDED IT WILL NEED TO BE REMOVED.

NO

As the specifications state, the existing roads should be stripped of their surface material down to the top of the foundation stones. The composition of the material removed should then be analyzed to determine the aggregate sizes to be added to bring the material to ASTM D2940 standards. This material will then be used for the middle course. Because aggregate to this standard will hold its shape, this will allow the middle layer to be installed at the various depths required to accommodate ~~the uneven or inconsistent nature of~~ the foundation stones. As the surface tests indicated, the most durable ~~composition includes 20~~ percent which passes a 200 sieve. Therefore, the recommended composition includes: Approximately one third of the aggregate should be pink granite to match the color of the original material observed when the samples were taken. The remaining aggregate should be tan as the dark grey colors obscure the pink.

WRONG

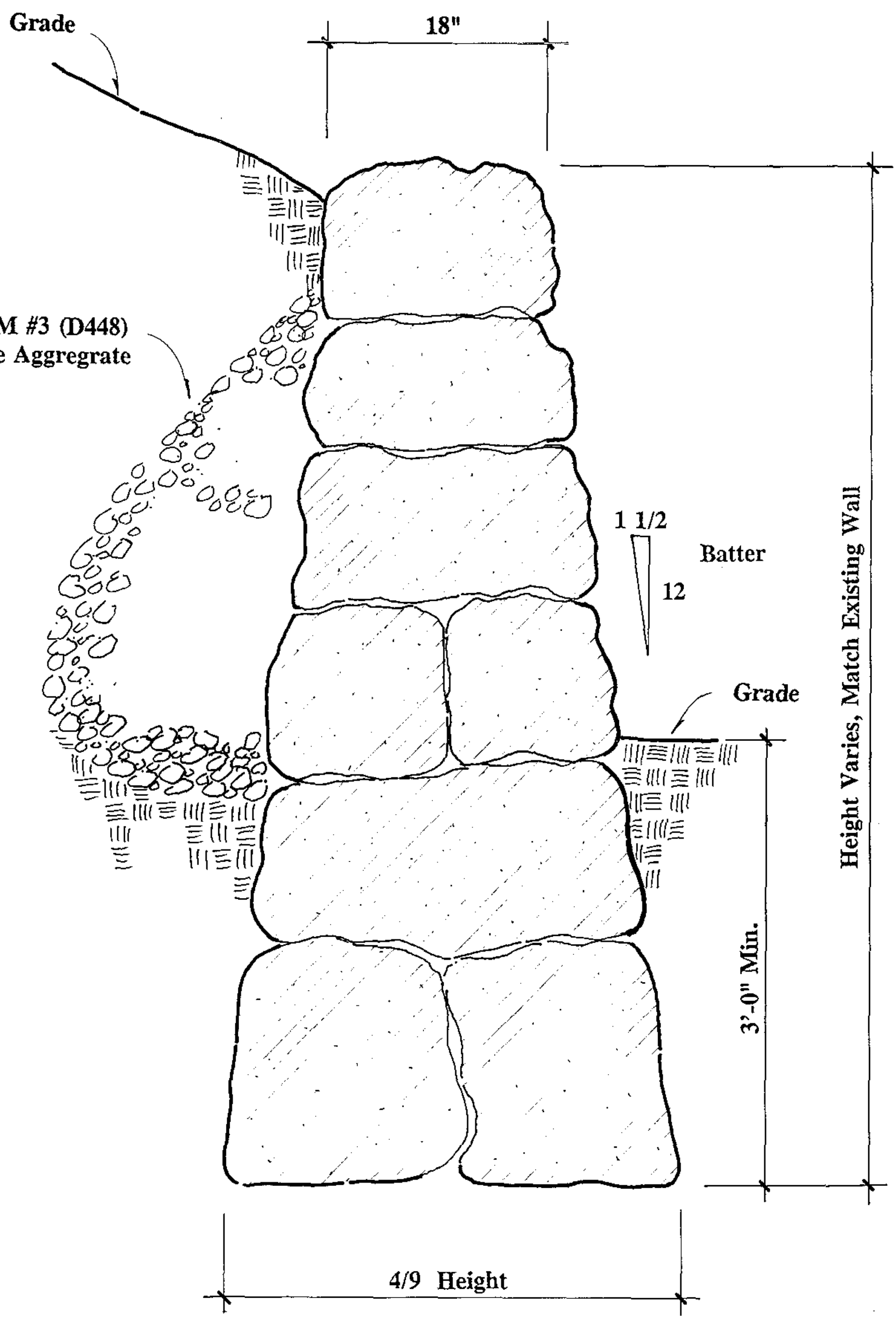
STONE COLOR NEEDS TO BE CHANGED

The retaining walls were also constructed similarly, although, as discussed below, it is extremely important that modifications be made as necessary to match the existing walls. This approach is particularly applicable to the culverts. Though they are all stone, they were built differently by the different road crews who worked on the roads (Figure 22).

STONE RETAINING WALLS VERY GREATLY. THE DETAIL (FIGURE 22) IS ONLY ONE OF MAY CONDITIONS.

- Roadside clearing, planting plan and vista clearing documents.

In general, the approach to vista clearing in this setting should be to provide a sequence of views of varying character. As clearing designs are developed for each vista, the necessity of obtaining a view must be balanced with the need to preserve handsome trees or frame a particular view. For example, selectively cut windows may be more appropriate than clearing an entire vista. In addition, (sun-loving shrubs should be left in place (if they do not obscure the view) in order to inhibit the growth of seedlings which might eventually obscure the vista.



RETAINING WALL DETAIL

1" = 1'-0"

Figure 22

Where no specific planting recommendations for this section are unearthed in reviewing the research, certain planting patterns established by Beatrix Farrand can be replicated. Reference is often made in her notes to softening the harsh appearance of the coping stones by planting them with clematis and blackberries. Also, shrubs such as blackberries, wild roses, blueberries, sweet fern and Diervilla were often planted in masses behind the coping. Where screening was necessary on steep banks, spruce or pine were selected depending on the composition of the existing vegetation. In other words, existing pines were supplemented by more pine plantings. Where erosion on steep banks was a problem, cedar logs were often used to create pockets of soil in which to establish plants which included red-berried elders, wild cherries and blackberry bushes. As assessment should be made of each segment to determine an appropriate planting strategy.

Pruning dead timber and overhanging branches should also be an important part of the rehabilitation. Rockefeller stressed that he did not want to see deadwood as he looked into the woods while travelling down the roads. It is also important from a safety perspective and for the health of the trees. ?

only immediately adjacent to roads - & then should be done as part of a professional hazard tree program - not all deadwood is unsafe

only an ~~issue~~ if managing specimen trees - normal in natural forest

- Signs

The historical construction documents include a drawing (with an alphabet) and specifications for replacing them (Appendix). Since such detailed information exists, the signs could easily be restored to their original appearance. The alphabet included in this report was generated by duplicating the letters shown on the historical construction document and then using the same style and proportions to develop the remaining letters.

The construction document package for the roads would also include technical specifications for the construction including the surface, coping stone selection and placement, retaining wall repair, ditchline repair, planting and vista clearing. These will be fairly standard specifications; however, editing will be required for each package to ensure that the specifications meet the particular requirements of each section.

If the work will include any excavating (e.g., work on the diversion ditches which exist at the top of the slopes along some of the roads), NPS archaeologists must be notified prior to construction so on-site investigations can be conducted. Excavating along the roadway, however, will require no archaeological study. The specifications should also include reference to obtaining weathered coping stones which match those in place in both color and shape.

Cost estimates for each mile segment should be prepared when the construction documents are complete. At that point, it will be clear how many linear feet of retaining wall will need to be repaired, for example. Actual cost figures will also be available from the rehabilitation of the model mile.

HOW IMPORTANT?

Bridge Rehabilitation

Bridge rehabilitation at the minimum will include new waterproofing, removal of efflorescence, and an analysis of their structural integrity with regard to supporting heavy construction equipment. The model rehabilitation will test known methods to remove the efflorescence. The most effective method in this situation should be employed on the remaining bridges. Prior to removal of the efflorescence, however, a field survey should be made to document its extent. This is important both to direct the work on these bridges and also to establish a baseline for a monitoring system. In other words, by documenting the growth of the efflorescence from the date the bridge was built to the date the efflorescence is removed, we can determine an average rate of accumulation and measure it against any new accumulation.

requires coring which KELLEY ENGINEER STATED SHOULD NOT BE DONE

It doesn't appear that the calcite crusts observed on the bridges are problems themselves, but their presence does affect the bridges in two ways: 1) It restricts the ability to monitor the rate at which the crust is building up, and resultant concrete backup deterioration, is occurring; and 2) It is aesthetically unappealing. Therefore, it should be removed. Removal of the efflorescence would also be helpful in locating moisture sources.

The efflorescence crusts should be removed using a combination of mechanical and chemical methods. The difference in hardness between the stone and the crust and the brittleness of the crust suggest that localized mechanical removal by abrasive blasting would be a good option to test. Because of the relative hardness of the stone compared to the crust, softer abrasive like walnut shell could probably be used successfully; micro-abrasive techniques are now available for use on a commercial scale that allow for tight control in localized cleaning. In-house crews can be trained in the crust removal and operation of the equipment. Chemical methods could also be tested, but any chemical system that would effect removal of the efflorescence could also be expected to effect at least the surface of the mortar joints.

REELEY IS NOT AN HISTORIC ARCHITECT AND SHOULD NOT BE TELLING US HOW TO DO THIS WORK. WE HAVE A HISTORICAL CONSULTANT ON CONTRACT WHO CAN ADVISE.

After removal of the efflorescence, careful study should be made of the stones and mortar. If the crust formation has caused the granite to decompose, recommendations for repair and maintenance of the specific problem should be made.

Eliminating the sources of moisture that are causing the formation of the crusts should be a priority. Hence, the existing waterproofing must be examined. It is clearly deteriorating and therefore a waterproofing solution should be developed for each bridge. The waterproofing system tested in the model rehabilitation and modified as required should be installed before the new road surface is put in place. Details and specifications for construction for cleaning, repointing and waterproofing should be included in the construction documents. Cost estimates can be made based on the expense of the repairs at the West Branch and Cliffside bridges.

THIS WAS NOT DONE AWAITING RECOMMENDATIONS BY A/E.

C. MAINTENANCE

Routine maintenance, especially of the drainage system, is critical to the preservation of the carriage road system. Something as simple as unclogging a culvert will prevent more serious damage. Recommended procedures are as follows:

ONGOING

Surface. Vegetation and horse dung should be removed from the road surface periodically. The dung should be scraped to the edge of the road and then removed.

Culverts and Catch Basins.

The drainage system should be inspected and cleaned in the spring and autumn. The culverts and catch basins in particular should be cleared of silt and accumulated vegetation at these times. Doing so will undoubtedly prevent bigger problems (e.g., surface erosion) at a later date. One particular problem to watch out for is drainage running under a pipe rather than through it. This indicates the pipe has failed and needs to be replaced. Replacement pipes should be smooth steel or concrete, properly bedded, and laid true to grade with ~~a laser~~ level. Their locations should remain the same unless there is erosion or water standing in the ditchline.

When repair work is necessary on the catch basins, it should be done by a qualified mason after careful analysis of the existing structure with an eye toward matching the installation technique. There is no original detail for the culverts -- they were designed "on the ground" by the engineers in the field. Replacement stones will need to be carefully matched in color and character, as will the mortar (with consideration given to its appearance after weathering).

ANNUAL

Crown and Superelevation. The road surface should be regraded every year in the early spring when no frost is in the ground. After sprinkling with water, grading should be done from the edge to the center and then the surface rolled with a three to five ton vibratory roller. Settlement inevitably occurs over time and regrading at regular intervals will keep the roads in good condition.

Ditches. Once the ditches have been cleared of vegetation during the rehabilitation, leaves and seedlings should be removed by hand every autumn to prevent overgrowth from becoming a problem again and also to allow for revegetation by grass and moss.

FIVE-YEAR CYCLE

An annual, complete and detailed inspection of the roads should be made to identify any major repairs which are necessary and have not been undertaken as part of routine maintenance. These should be scheduled for heavy maintenance. Addressing these and the following items on a rotational five-year schedule would mean that every year, ten miles of the roads would be scheduled for heavy maintenance.

Vistas. When vistas have been reestablished as part of the rehabilitation, vigilance in removing new, unwanted undergrowth will keep the vistas open. An inspection in late fall (after the leaves are off the trees and before the snow falls) will identify the work which needs to be done. Also, doing the work during the off-season will cause less disruption, especially with regard to the noise. Clearing should include the removal of new growth not shown on the vista clearing plans done during the rehabilitation process. Brush and small limbs should be chipped and left as mulch. Sun-loving shrubs should be retained to discourage seedlings. In addition, trees identified to remain in the rehabilitation plans should be pruned and checked for dis-

WHAT ABOUT STUMP SPROUTS AND USE OF HERBICIDES?

ease and replaced if necessary.

NO! WE WILL NOT BE CUTTING & CLEARING BACK 100 FT FROM ROAD SURFACE

Roadside clearing. As the vistas are being inspected and maintained, dead timber and overhanging limbs should be removed along the roads in a corridor which extends approximately 100 feet from the centerline into the woods on each side of the road. This would accomplish two purposes~~: First, it would keep~~ the roads in the condition Rockefeller specified; second, it would serve as a fire break.

Coping Stones. Once the stones have been replaced ~~during~~ the rehabilitation, their displacement should be a relatively rare occurrence. Therefore, any missing stones should be identified and replaced on an annual basis.

I'm not convinced this is true.

This should be in the annual maintenance section

MODEL REHABILITATION PLAN

Section 14-21, the Asticou-Jordan Pond Road was identified by the database as the highest priority for rehabilitation. After discussions with the NPS, it was selected as the segment for the model rehabilitation plan for four reasons:

1. Its condition as established by the database;
2. Its location adjacent to the Jordan Pond House makes it a well-visited segment of road by visitors to the Park;
3. Its accessibility for construction equipment;
4. Its physical connection to the demonstration project completed in 1990;
5. Its diversity of features including two bridges, retaining walls, and coping stones, and documented vistas.
6. The availability of original construction documents.

Because of these factors, this model rehabilitation will serve as a guide on many different levels. First, it will be possible to assess the materials used and their method of installation. Second, the cost estimates developed by the Park (Appendix) can be checked against actual costs incurred. Third, bridge cleaning techniques can be evaluated for their effectiveness. And, last, the success of this model as an historic preservation effort can be assessed. The results of this analysis, then, can be applied as plans are developed for the remaining restoration work.

Road Surface and Alignment

The original construction documents available for this section (dated 1931), include plans and profiles of the existing conditions at the time of construction from approximately stations 6+50 to 39+00 and again from stations 49+00 to 52+00 and preliminary profiles showing the vertical curvature proposed for the entire length of the section. (Figures 23 and 24). Drawings for both of the bridges exist as well, including site surveys. Specific notes were also found regarding the plants installed along this section after the road was built.

Completing a survey of the existing conditions was the second step in developing construction documents for Section 14-21. This survey included elevations every 50 feet along the centerline and both sides of the road (closer on curves and bridges). It also documented the location of retaining walls, coping stones and the size, type, inverts, and location of culverts and catch basins. This survey and the original construction documents are the basis of the plan and profile produced for the rehabilitation. As expected, a comparison of the two indicated the existing horizontal alignment closely matched the construction drawings. The rehabilitation plan, then, includes curve data for construction layout which ensures that the repair work will retain the original alignment. The plan and profile were prepared at a horizontal scale of 1"=40'-0" and a vertical scale of 1"=6'-0". This matches the scales of the original construction documents and allowed for easier comparison.

FOUNDATION STONES WERE NOT SURVEYED IN; AND NEED TO BE. IN SEVERAL LOCATIONS ON THE EDGE OF THE ROAD THE LOWER END OF THE CROWN RESULTED IN REQUIRED REMOVAL OF FOUNDATION STONES

The plan and profile drawings done for the rehabilitation (included in this package) show elevations derived from a comparison of the existing elevations with the elevations shown on the original construction documents. The final vertical alignment reconciles the two and allows for repair of the road surface without necessitating the removal of any foundation stones. The horizontal alignment shown on the rehabilitation plan is virtually identical to that shown on the original engineering plans. At the beginning and end of the section, the original horizontal data were not available. The calculations shown, therefore, reflect the existing alignment and are in keeping with the technique of the original engineering. The curve data are noted on the plans along with coordinate points for locating in the field the points of curvature and tangency for all the curves. Also shown are typical sections for both superelevated and crowned sections of the road, with spot elevations for superelevated areas.

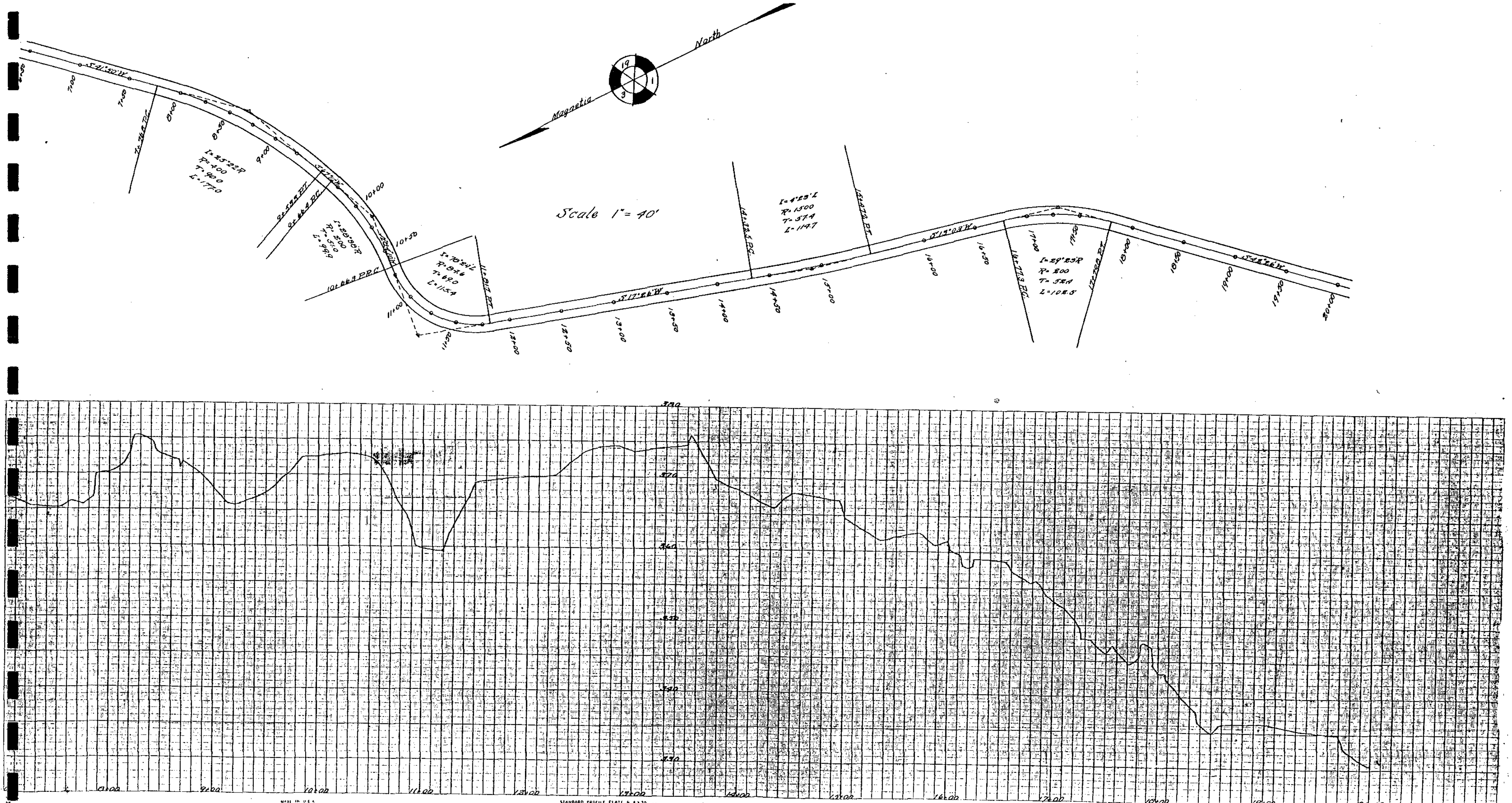


Figure 23

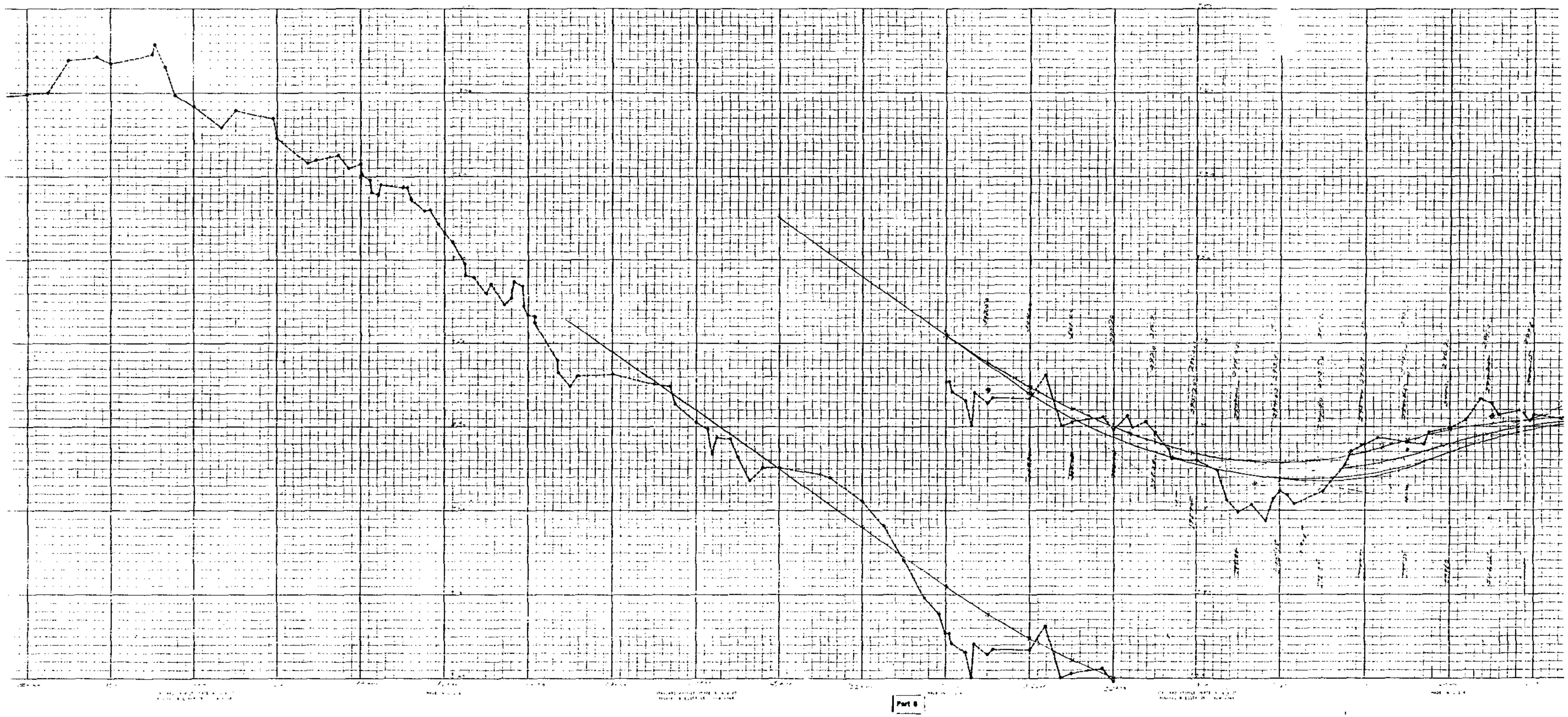


Figure 24

THIS WAS NOT DONE

The specifications describe in detail the composition of the surface material and the method of its installation. A detail is also shown on the drawings. As noted, two alternatives will be installed so they can be evaluated in place.

Coping Stones, Retaining Walls and Drainage System

The rehabilitation drawings also reflect data gathered on the existing conditions for the database. This includes the location of retaining walls as well as the location and type of ditches. Figure 25 illustrates the kind of repair necessary for the retaining walls. It shows a gap in the stonework (note hand-held recorder shown for scale). As described the specifications, stones of similar character should be used to fill these gaps. In addition, the drawings show an area adjacent to Cliffside Bridge where the existing retaining wall needs to be extended to control an erosion problem. The existing slope is not holding and, where soil and vegetation fall into the ditch at the base of the slope, water is being diverted onto the surface of the road. Again, the extension of this wall should be done with stones of similar character using the same method of installation.

IT HAS BEEN RECOMMENDED THAT THIS NOT BE DONE

All the ditches should be cleared and re-shaped as shown on the drawings and indicated in the specifications. All of the culverts should be cleared of debris and erosion repairs made as necessary at the outlets. One of the culverts will need repair as it collapsed during culvert cleaning operations. NOT REQUIRED

The drainage swale shown on the plans at West Branch bridge did not appear in the original construction documents. It results from an analysis of an existing drainage pattern which causes water to run across the road and therefore creates erosion. This is perhaps the result of a change in the drainage pattern further upslope. The ditch as proposed should alleviate the problem without having significant visual impact or affecting the historical character of the road and bridge. In fact, drainage ditches of this nature were employed elsewhere along the roads to solve similar problems. The rest of the storm drainage system is functioning adequately.

Figure 25

Planting and Vistas

No vistas were documented along this section through study of the original research. The 1944 aerial photographs, however, reveal distinct vistas, one from station 21+00 to 22+50 which provides a view of the Jordan Pond House and another from Cliffside Bridge. Both the stations and bearings are noted on the drawings to allow for precise location in the field. In general, the existing vegetation at both vistas is predominantly hardwoods with scattered white pine, hemlock and spruce. The slopes are twenty percent or greater and the soil a sandy loam. As the specifications indicate, the exact trees to be removed shall be located and marked in the field.

Prior to the construction on this section, the moss, sweet fern, sheep laurel, and blueberries should be removed in mats from the road shoulders and used to heal the unvegetated slopes. Once the rehabilitation is complete, the plants as shown on the drawings can be installed. The species and quantities shown reflect those noted in a memorandum to Rockefeller from his nurseryman.[2] They include spirea, viburnum, ferns, Virginia creeper, sweet fern, dewberry, elder, bush honeysuckle, blueberry, laurel, clematis, paper birch, and wild red cherry. The same memo notes that pruning of the hardwoods along the road corridor had just been suspended for the winter.

Bridges

Two bridges exist on this section of road, the West Branch and Cliffside. Both were designed by Charles Stoughton, although Charles Simpson, the first engineer for the roads, completed preliminary drawings for the West Branch. This is one of the carriage roads bridges modelled after a bridge in Central Park. Both the bridges and this road section were built by Rockefeller's own crews under the supervision of his superintendent, S.F. Ralston.

[2]Charles Miller to John D. Rockefeller, Jr., January 11, 1934.

There are extensive areas of efflorescence inside the arch of West Branch bridge; Cliffside has small areas of efflorescence. This efflorescence should be manually removed as part of the rehabilitation according to the procedures previously described. In addition, both bridges should be cleaned and repointed if necessary as described in the specifications.

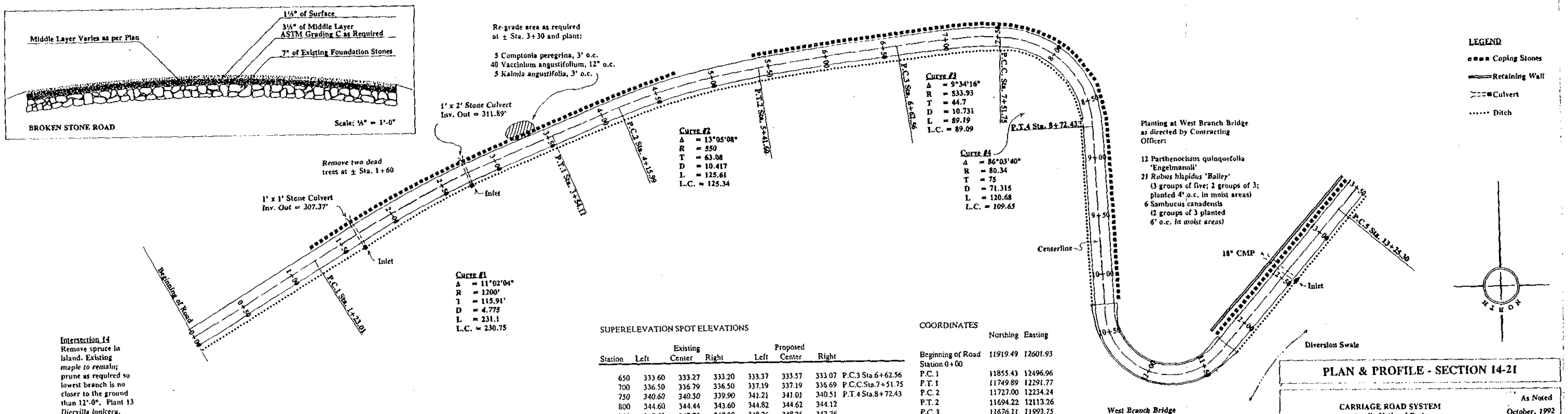
The drawings (reduced versions) and specifications for the rehabilitation of Section 14-21 are included in this section of the report. They reflect the prototype outlined in the Strategic Management Plan and are designed to return the carriage roads to their historical appearance. If implemented as planned, this section of the road system will serve as a reliable benchmark for the remaining rehabilitation.

CONCLUSION

THESE COMMENTS ARE NOT APPROPRIATE IN THIS DOCUMENT. THEY ARE A SIGN OF "SOUR GRAPES" THAT WE ARE QUESTIONIN

During the initial research on the carriage roads, original drawings and specifications for the roads were found along with dozens of photographs of the roads under construction and voluminous correspondence regarding their design and development. This documentation provided a clear picture of how the roads were built, what they looked like, and how they were expected to be maintained. Later field work and the investigations undertaken for this report only served to confirm what had already been learned. These rehabilitation plans do not rely on conjecture. Every recommendation is based on solid historical evidence and/or elements still extant in the field.

Since sequence of layout and construction for modern roads remain substantially the same as when these roads were built, applying what has been learned to the rehabilitation of this road system is a straightforward task. If implemented well, the result will be a carriage road system which will illustrate for future generations the nature of broken stone roads, and the care taken by John D. Rockefeller, Jr. to develop a carefully planned and constructed network of roads for their use.

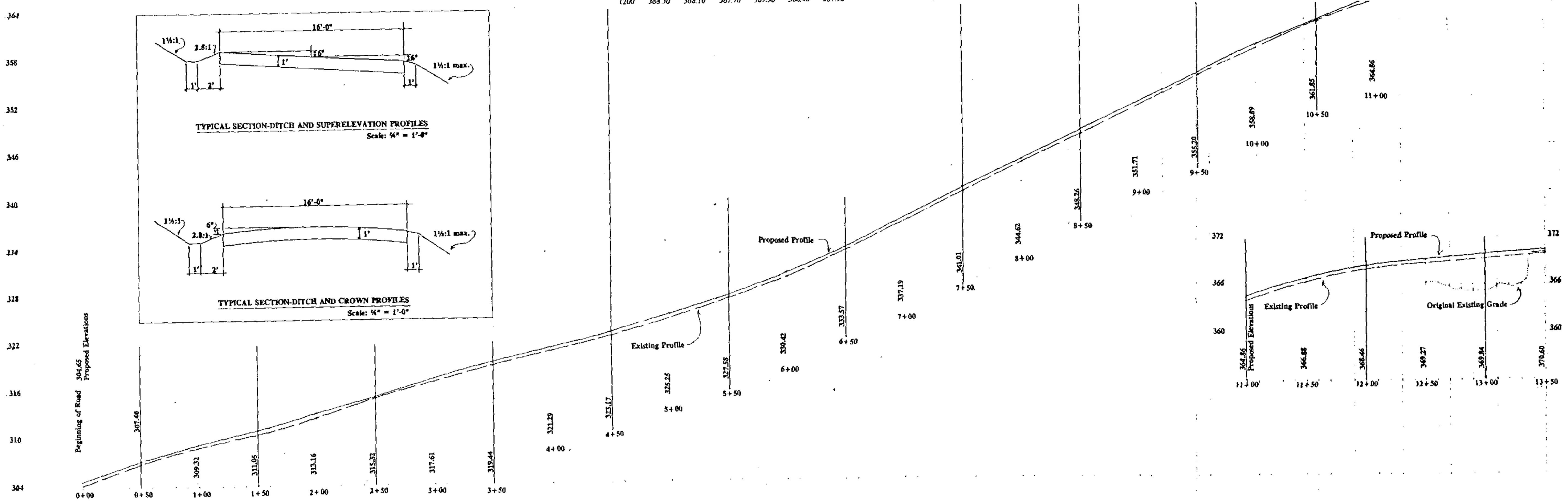


SUPERELEVATION SPOT ELEVATIONS

	Existing			Proposed			
Station	Left	Center	Right	Left	Center	Right	
650	333.60	333.27	333.20	333.37	333.57	333.07	P.C.3 Sta.6+62.56
700	336.50	336.79	336.50	337.19	337.19	336.69	P.C.C.Sta.7+51.75
750	340.60	340.50	339.90	341.21	341.01	340.51	P.T.4 Sta.8+72.43
800	344.60	344.44	343.60	344.82	344.62	344.12	
850	347.60	347.75	347.20	348.26	348.26	347.76	
900	351.40	351.26	351.00	351.21	351.71	351.21	
1050	361.40	361.78	362.10	361.35	361.85	362.10	W. Branch Bridge
1100	364.20	364.14	364.70	364.36	364.86	365.36	
1150	366.40	366.67	366.90	366.38	366.88	367.13	
1175	367.10	367.60	367.70	367.50	368.00	368.00	
1200	368.30	368.10	367.70	367.96	368.46	367.96	

COORDINATES

	Northing	Easting
Beginning of Road Station 0+00	11919.49	12601.93
P.C. 1	11855.43	12496.96
P.T. 1	11749.89	12291.77
P.C. 2	11727.00	12234.24
P.T. 2	11694.22	12113.26
P.C. 3	11676.11	11993.75
P.C.C.	11670.16	11904.86
P.T.4	11746.31	11825.96
P.I.1	11792.75	12399.46
P.I.2	11703.67	12175.63
P.I.3	11669.41	11949.55
P.I.4	11671.41	11829.97

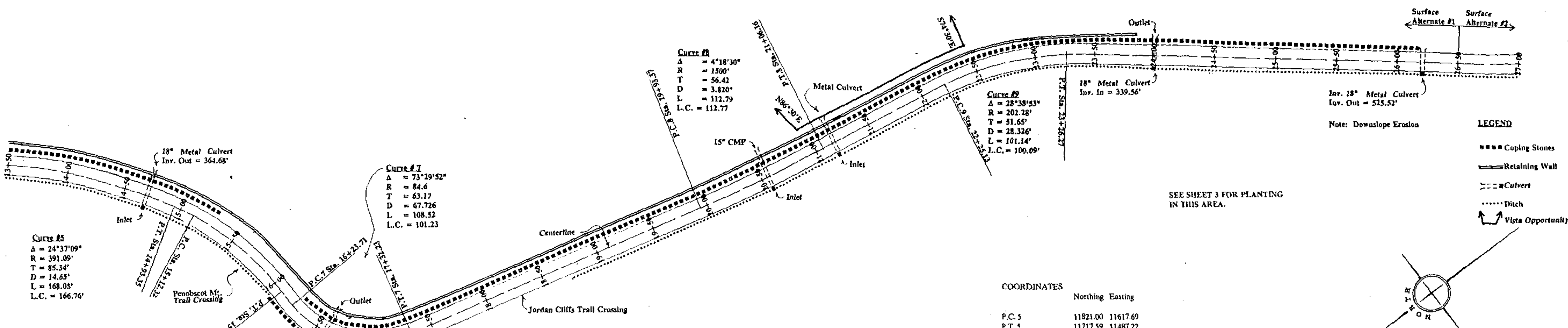


PLAN & PROFILE - SECTION 14-21

CARRIAGE ROAD SYSTEM
Acadia National Park
Mount Desert Island, Maine

As Noted
October, 1992

1 of 4



Curve #6
Δ = 24°39'43"
R = 200'
T = 43.72'
D = 28.65'
L = 86.09'
L.C. = 85.42'

5' x 3' Stone Culvert

SUPERELEVATION SPOT ELEVATIONS

	Existing			Proposed			
Station	Left	Center	Right	Left	Center	Right	
1600	371.80	372.01	371.80	371.91	372.41	372.21	P.C.7 Sta. 16+23.71
1650	371.90	372.23	372.50	372.25	372.75	372.95	P.T.7 Sta. 17+32.23
1700	372.30	372.76	373.20	372.55	373.05	373.45	
1750	372.80	372.90	373.20	372.89	373.39	373.49	
2200	357.00	357.05	356.60	357.19	357.39	356.89	P.C.9 Sta. 22+21.14
2250	353.30	353.37	352.90	353.90	353.70	353.20	P.T.9 Sta. 23+22.22
2300	349.70	349.65	349.40	350.52	350.32	349.82	
2350	346.60	346.60	346.20	346.63	346.63	346.13	

COORDINATES

	Northing	Easting
P.C. 5	11821.00	11617.69
P.T. 5	11717.59	11487.22
P.C. 6	11709.51	11470.40
P.T. 6	11686.68	11377.19
P.C. 7	11686.21	11362.72
P.T. 7	11623.04	11283.61
P.C. 8	11370.91	11217.73
P.T.8	11260.78	11193.52
P.C.9	11143.67	11172.55
P.T.9	11052.58	11131.07
P.I.5	11754.55	11564.14
P.I.6	11688.27	11426.20
P.I.7	11684.16	11299.58
P.I.8	11316.32	11203.47
P.I.9	11092.83	11163.44

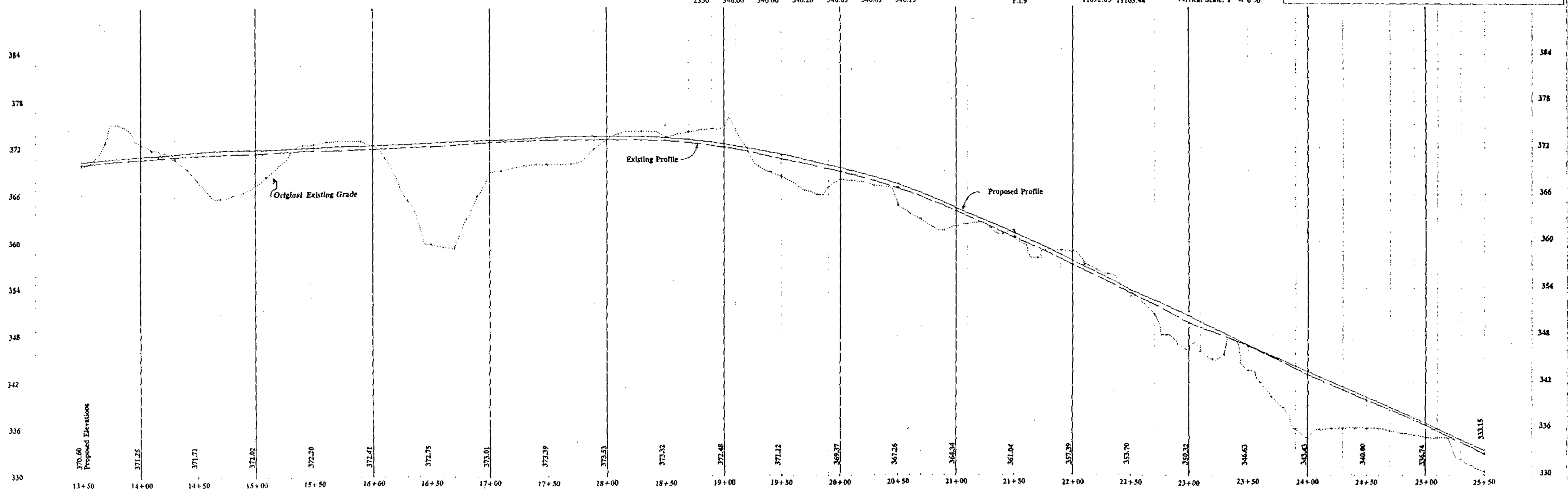
Horizontal Scale: 1" = 40'-0"
Vertical Scale: 1" = 6'-0"

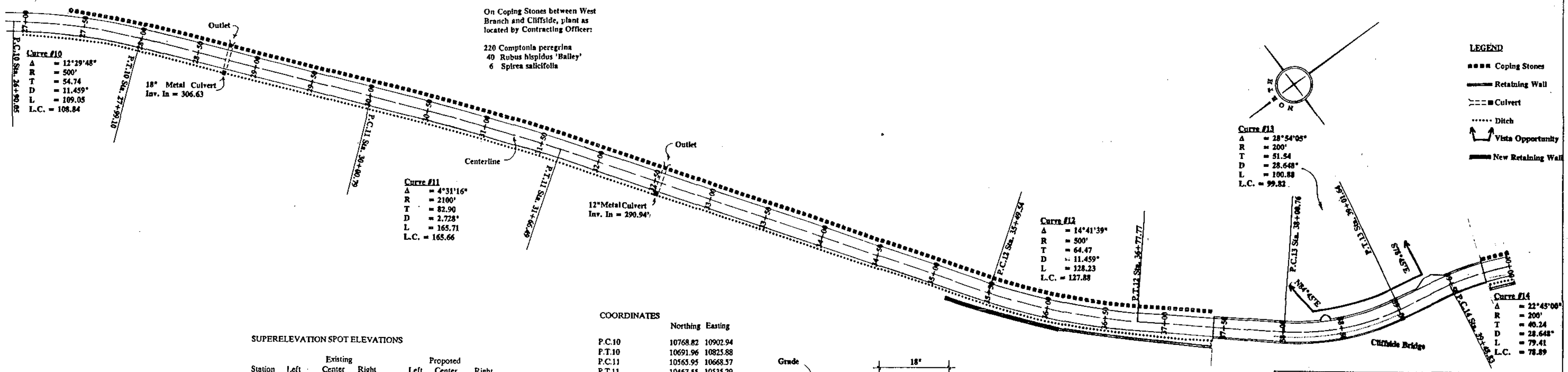
PLAN & PROFILE - SECTION 14-21

CARRIAGE ROAD SYSTEM
Acadia National Park
Mount Desert Island, Maine

RIELEY & ASSOCIATES • LANDSCAPE ARCHITECTS

As Noted
October, 1992





On Coping Stones between West Branch and Cliffside, plant as located by Contracting Officer:

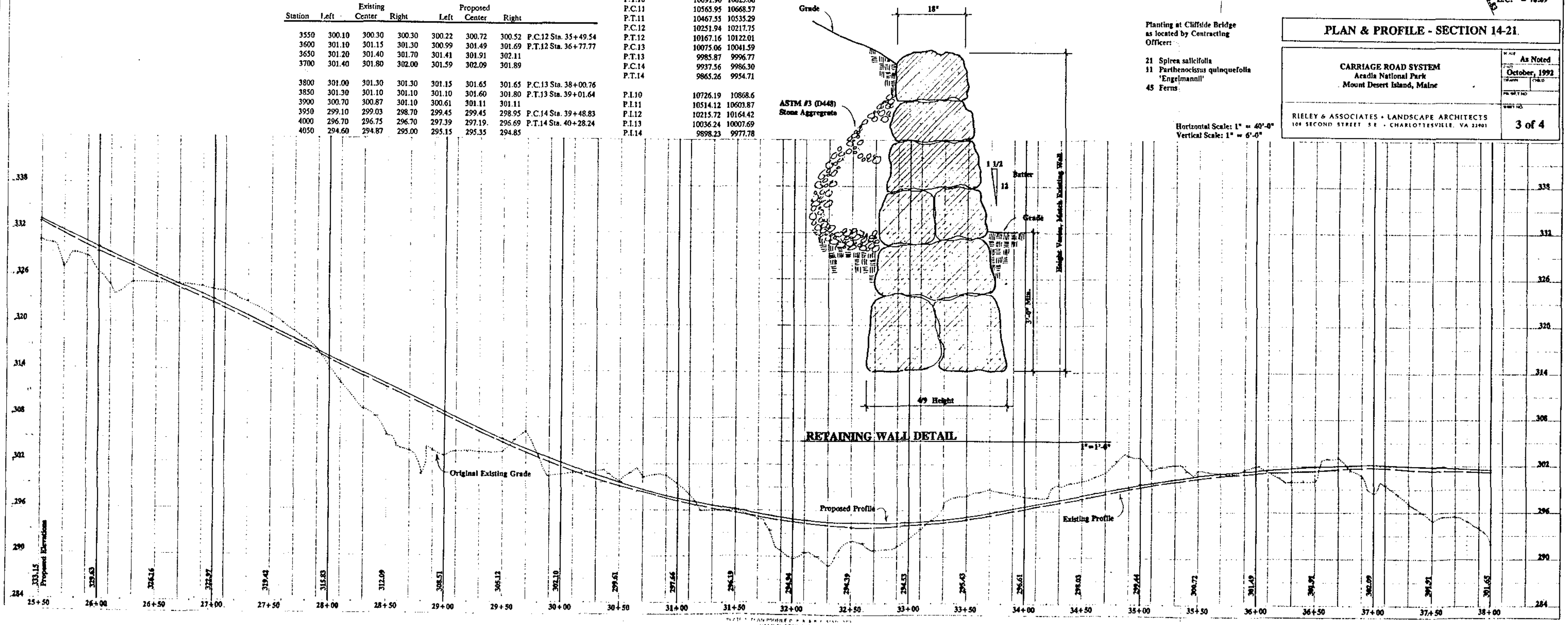
220 Comptonia peregrina
40 Rubus hispidus 'Bailey'
6 Spirea salicifolia

SUPERELEVATION SPOT ELEVATIONS

	Existing			Proposed			
Station	Left	Center	Right	Left	Center	Right	
3550	300.10	300.30	300.30	300.22	300.72	300.52	P.C.12 Sta. 35+49.54
3600	301.10	301.15	301.30	300.99	301.49	301.69	P.T.12 Sta. 36+77.77
3650	301.20	301.40	301.70	301.41	301.91	302.11	
3700	301.40	301.80	302.00	301.59	302.09	301.89	
3800	301.00	301.30	301.30	301.15	301.65	301.65	P.C.13 Sta. 38+00.76
3850	301.30	301.10	301.10	301.10	301.60	301.80	P.T.13 Sta. 39+01.64
3900	300.70	300.87	301.10	300.61	301.11	301.11	
3950	299.10	299.03	298.70	299.45	299.45	298.95	P.C.14 Sta. 39+48.83
4000	296.70	296.75	296.70	297.39	297.19.	296.69	P.T.14 Sta. 40+28.24
4050	294.60	294.87	295.00	295.15	295.35	294.85	

COORDINATES

	Northing	Easting
P.C.10	10768.82	10902.94
P.T.10	10691.96	10825.88
P.C.11	10565.95	10668.57
P.T.11	10467.55	10535.29
P.C.12	10251.94	10217.75
P.T.12	10167.16	10122.01
P.C.13	10075.06	10041.59
P.T.13	9985.87	9996.77
P.C.14	9937.56	9986.30
P.T.14	9865.26	9954.71
P.I.10	10726.19	10868.6
P.I.11	10514.12	10603.87
P.I.12	10215.72	10164.42
P.I.13	10036.24	10007.69
P.I.14	9898.23	9977.78



RETAINING WALL DETAIL

1" = 1'-0"

Planting at Cliffside Bridge as located by Contracting Officer:

21 Spirea salicifolia
11 Parthenocissus quinquefolia 'Engelmannii'
45 Ferns

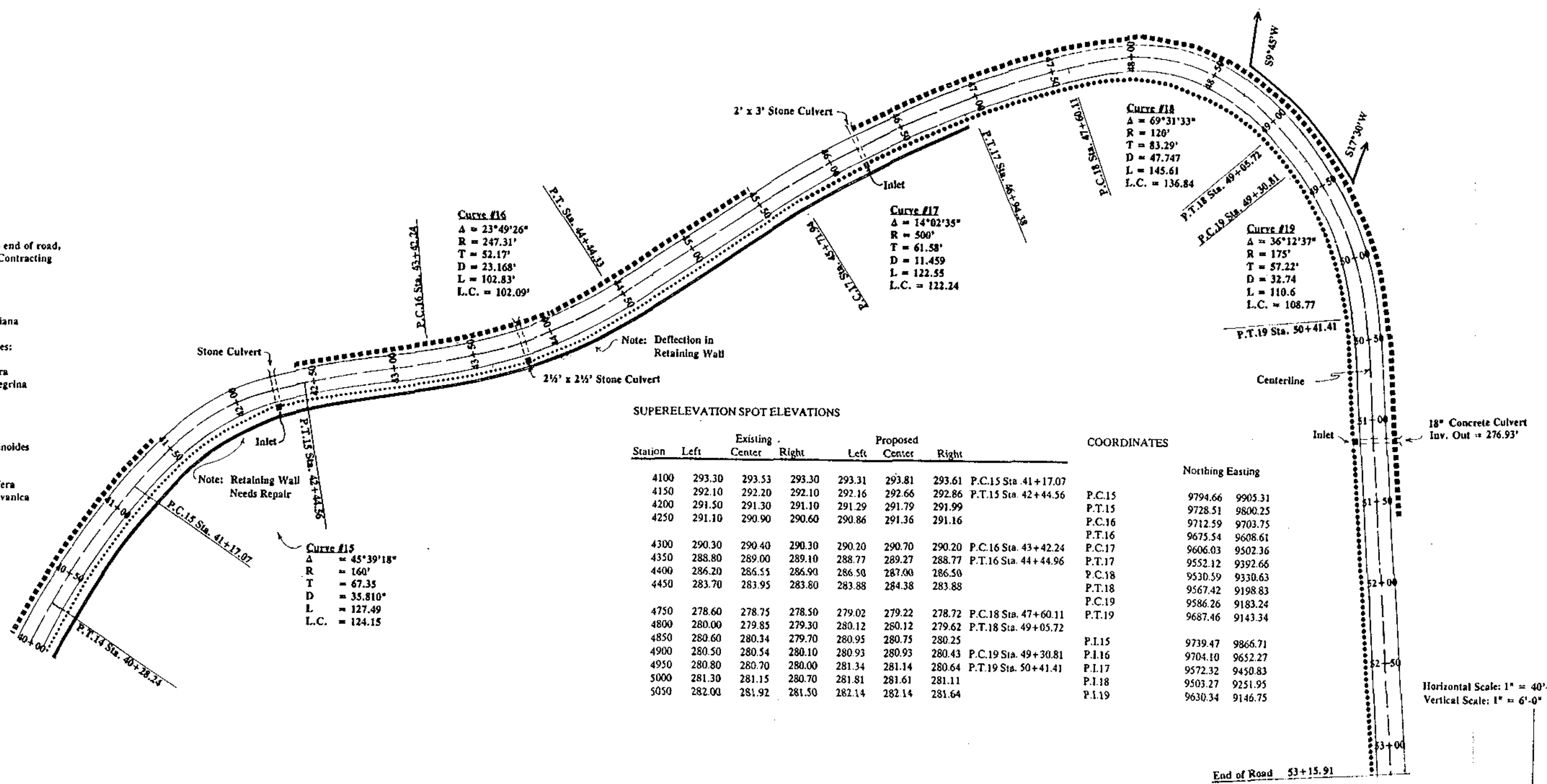
Horizontal Scale: 1" = 40'-0"
Vertical Scale: 1" = 6'-0"

PLAN & PROFILE - SECTION 14-21

CARRIAGE ROAD SYSTEM
Acadia National Park
Mount Desert Island, Maine

RIELEY & ASSOCIATES • LANDSCAPE ARCHITECTS
109 SECOND STREET S.E. • CHARLOTTESVILLE, VA 22901

Scale: As Noted
Date: October, 1992
Sheet No. 3 of 4



LEGEND

- Coping Stones
- Retaining Wall
- Culvert
- Ditch (Unlined)
- Ditch (Stone Lined)
- Vista Opportunity

From Sta. 40+00 to end of road, plant as located by Contracting Officer:

On Coping Stones:

100 Clematis virginiana

Behind Coping Stones:

25 Diervilla lonicera
55 Comptonia peregrina
50 Rubus hispidus

Others as Directed:

8 Viburnum cassinoides
75
175
1 Betulus papyrifera
1 Prunus pennsylvanica

SUPERELEVATION SPOT ELEVATIONS

Station	Existing Left	Existing Center	Existing Right	Proposed Left	Proposed Center	Proposed Right	
4100	293.30	293.53	293.30	293.31	293.81	293.61	P.C.15 Sta. 41+17.07
4150	292.10	292.20	292.10	292.16	292.66	292.86	P.T.15 Sta. 42+44.56
4200	291.50	291.30	291.10	291.29	291.79	291.99	
4250	291.10	290.90	290.60	290.86	291.36	291.16	
4300	290.30	290.40	290.30	290.20	290.70	290.20	P.C.16 Sta. 43+42.24
4350	288.80	289.00	289.10	288.77	289.27	288.77	P.T.16 Sta. 44+44.96
4400	286.20	286.55	286.90	286.50	287.00	286.50	
4450	283.70	283.95	283.80	283.88	284.38	283.88	
4750	278.60	278.75	278.50	279.02	279.22	278.72	P.C.18 Sta. 47+60.11
4800	280.00	279.85	279.30	280.12	280.12	279.62	P.T.18 Sta. 49+05.72
4850	280.60	280.34	279.70	280.95	280.75	280.25	
4900	280.50	280.54	280.10	280.93	280.93	280.43	P.C.19 Sta. 49+30.81
4950	280.80	280.70	280.00	281.34	281.14	280.64	P.T.19 Sta. 50+41.41
5000	281.30	281.15	280.70	281.81	281.61	281.11	
5050	282.00	281.92	281.50	282.14	282.14	281.64	

COORDINATES

	Northing	Easting
P.C.15	9794.66	9905.31
P.T.15	9728.51	9800.25
P.C.16	9712.59	9703.75
P.T.16	9675.54	9608.61
P.C.17	9606.03	9502.36
P.T.17	9552.12	9392.66
P.C.18	9530.59	9330.63
P.T.18	9567.42	9198.83
P.C.19	9586.26	9183.24
P.T.19	9687.46	9143.34
P.I.15	9739.47	9866.71
P.I.16	9704.10	9652.27
P.I.17	9572.32	9450.83
P.I.18	9503.27	9251.95
P.I.19	9630.34	9146.75

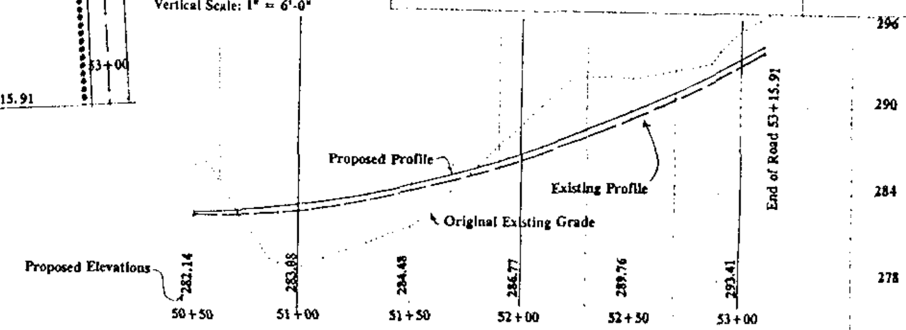
PLAN & PROFILE - SECTION 14-21

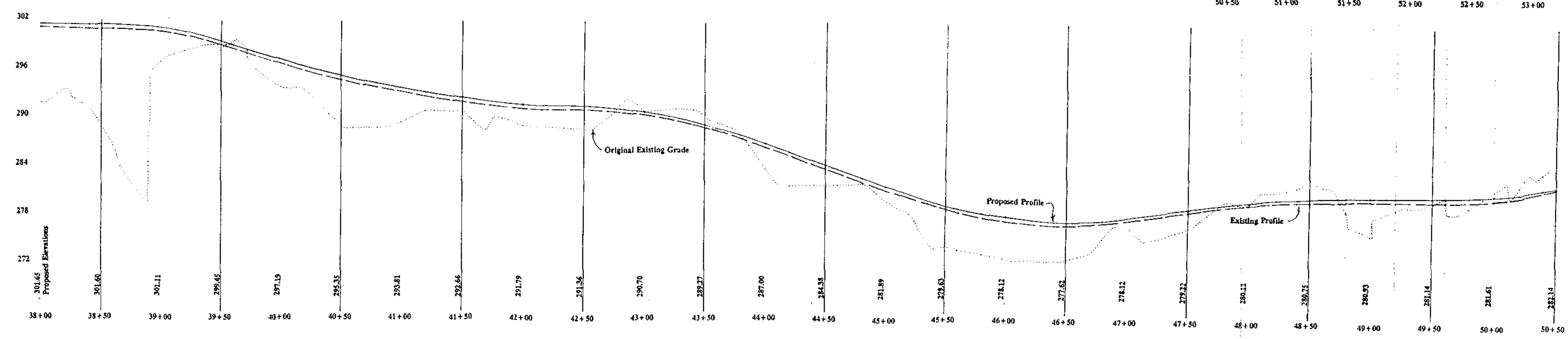
CARRIAGE ROAD SYSTEM
Acadia National Park
Mount Desert Island, Maine

As Noted
October, 1992

4 of 4

Horizontal Scale: 1" = 40'-0"
Vertical Scale: 1" = 6'-0"





PART 1: GENERAL

1.1 DESCRIPTION:

A. The work of this contract consists of the general construction of the restoration of broken stone carriage roads, including their surface, ditchlines and drainage system, retaining walls, coping stones, and vistas.

B. All work will be performed under a single contract.

1.2 LOCATION: Acadia National Park, Mount Desert Island, Maine.

1.3 CONTRACTOR'S USE OF PREMISES:

A. Construction Trailer: The Contractor may for his own convenience install a trailer at the Park's maintenance facility

B. The carriage road section under construction will be closed to the public during construction. However, maintain access for National Park Service administrative personnel and other official business throughout the construction phase.

C. Provide and maintain temporary toilet facilities in accordance with State Health Department and National Park Service requirements.

D. Construction equipment shall be brought in or out between 5:00 a.m. and 8:00 a.m. The shortest route to the construction site shall be used.

E. Storage areas for materials and staging areas at the work site shall be identified by the Contracting Officer.

F. Preservation of natural features: Confine all operations to work limits of the project. Prevent damage to the natural surroundings. Restore damaged areas, repairing or replacing damaged trees and plants, at no additional expense to the Government.

1. Provide temporary barriers to protect existing trees and plants and root zones.

2. Do not remove injured, or destroyed trees or other plants without prior approval. Consult the Contracting Officer and remove agreed-on roots and branches that interfere with construction.

3. Do not fasten ropes, cables, or guys to existing trees.

4. Carefully supervise excavating, grading, filling, and other construction operations near trees to prevent damage.

G. Existing utilities: Notify Contracting Officer and utility companies of proposed locations and times for excavation.

1. Contractor shall be responsible for locating and preventing damage to known utilities. If damage occurs, repair utility at no additional expense to the Government.

H. Hauling restrictions: Comply with all legal load restrictions in the hauling of materials. Load restrictions on Park roads are identical to state load restrictions with such additional regulations as may be imposed by the Park Superintendent. Information regarding rules and regulations for vehicular traffic on Park roads may be obtained from the Office of the Park Superintendent. A special permit will not relieve Contractor of liability for damage which may result from moving of equipment.

1.4 SPECIAL CONSTRUCTION REQUIREMENTS

A. All work will be scheduled between April 1 and October 15.

1.5 FIELD VERIFICATION: Field verify all new and existing dimensions affecting the work of this contract before ordering products.

1.6 CONTRACTOR-FURNISHED ITEMS: All materials, including borrow and aggregates, shall be Contractor-furnished from outside the Park.

1.7 EMERGENCY INSTRUCTIONS: Post telephone numbers and reporting instructions for ambulance, physician, hospital, fire department, and police in conspicuous locations at the work site.

<u>PART 2: PRODUCTS</u> Not used.

<u>PART 3: EXECUTION</u> Not used.

<u>PART 4: MEASUREMENT AND PAYMENT</u>

4.1 SUMMARY OF WORK: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 LAYOUT OF WORK:

A. Contracting Officer will set a base line and bench mark for each area of the work. Contractor shall lay out the work by accurately measuring from these controls. All work improperly located due to Contractor's errors or omissions shall be corrected by him at no additional expense to the Government.

B. Contractor shall preserve controls thus established. Controls originally set by Contracting Officer that are destroyed by Contractor will be replaced by Contracting Officer, with the cost of replacement deducted from Contractor's final payment.

C. Locations and elevations shown on the drawings are subject to final field adjustment by Contracting Officer before construction. Contractor shall immediately notify the Contracting Officer of apparent errors discovered on the drawings or in the initial stakeout. If changes in stakeout are required, Contractor shall cooperate with Contracting Officer in prompt establishment of the field control for altered or adjusted work.

D. Existing Monuments: All bench marks, land corners, and triangulation points established by other surveys and existing within the construction area shall be preserved. If existing monuments interfere with the work, secure written permission before removing them.

1.2 QUANTITY SURVEYS:

A. Quantity surveys shall be conducted, and the data derived from these surveys shall be used in computing the work completed in vista clearing.

B. The Government shall conduct the original and final surveys and make the computations based on them. The Contractor shall conduct the surveys for any periods for which progress payments are requested and shall make the computations based on these surveys. All surveys conducted by the Contractor shall be conducted under the direction of a representative of the Contracting Officer, unless the Contracting Officer waives this requirement in a specific instance.

C. Promptly upon completing a survey, the Contractor shall furnish the originals of all field notes and all other records relating to the survey or to the layout of the work to the

Contracting Officer, who shall use them as necessary to determine the amount of progress payments. The Contractor shall retain copies of all such material furnished to the Contracting Officer.

PART 2: PRODUCTS Not used.

PART 3: EXECUTION Not used.

PART 4: MEASUREMENT AND PAYMENT

4.1 FIELD ENGINEERING: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 REFERENCE STANDARDS: The following abbreviations, which may be used in the construction specifications, refer to the organizations and specifications of the organizations listed below:

AAN - American Association of Nurserymen
1250 I Street, N.W., Suite 500
Washington, D.C. 20005

AASHTO - American Association of State Highway and Transportation Officials
444 North Capitol Street, Suite 225
Washington, D.C. 20001

ACPA - American Concrete Pipe Association
8320 Old Courthouse Road
Vienna, Virginia 22180

ANSI - American National Standards Institute
1430 Broadway
New York, New York 10018

ASLA - American Society of Landscape Architects
1733 Connecticut Avenue, N.W.
Washington, D.C. 20009

BOCA - Building Officials Code Administrators
4051 W. Flossmoor Road
Country Club Hills, Illinois 60477-5795

OSHA - Occupational Safety and Health Administration
(U.S. Department of Labor)
Government Printing Office
Washington, D.C. 20402

PART 2: PRODUCTS Not used.

PART 3: EXECUTION Not used.

PART 4: MEASUREMENT AND PAYMENT Not used.

END

PART 1: GENERAL

1.1 DESCRIPTION: The work of this section consists of establishing an effective accident prevention program and providing a safe environment for all personnel and visitors.

1.2 SUBMITTALS:

A. Accident Prevention Program: Before on-site work begins, submit for approval an accident prevention program. The Contracting Officer will review the proposed program for compliance with OSHA and project requirements. If the program requires any revisions or corrections, the Contractor shall resubmit the program within 10 days. No progress payments will be processed until the program is approved. The program shall include:

1. Name of responsible supervisor to carry out the program.

2. Weekly and monthly safety meetings.

3. First aid procedures.

4. Outline of each phase of the work, the hazards associated with each major phase, and the methods proposed to ensure property protection and safety of the public, National Park Service personnel, and Contractor's employees. Identify the work included under each phase by reference to specification section or division numbers.

5. Training, both initial and continuing.

6. Planning for possible emergency situations, such as floods, fires, cave-ins, slides, and wind storms. Such planning shall take into consideration the nature of construction, site conditions, and degree of exposure of persons and property.

7. Housekeeping: Section 01560.

8. Fire Protection: Section 01510.

B. Certificates: Provide certificates from a mechanic that all mechanical equipment has been inspected and meets OSHA requirements.

C. Submit a copy of test reports, as required by OSHA, for personnel working with hazardous materials.

D. Submit a report of safety meetings and of inspections.

E. Upon request, submit proof of employees' qualifications to perform assigned duties in a safe manner.

1.3 QUALITY ASSURANCE:

A. Clauses entitled "Accident Prevention" and "Permits and Responsibilities" of the General Provisions. In case of conflicts between Federal, state, and local safety and health requirements, the most stringent shall apply. Equipment or tools not meeting OSHA requirements will not be allowed on the project sites. Failure to comply with the requirements of this section and related sections may result in suspension of work.

B. Qualifications of Employees:

1. Ensure that employees are physically qualified to perform their assigned duties in a safe manner.

2. Do not allow employees to work whose ability or alertness is impaired because of drugs, fatigue, illness, intoxication, or other conditions that may expose themselves or others to injury.

3. Operators of vehicles, mobile equipment, hoisting equipment, and hazardous plant equipment shall be able to understand signs, signals, and operating instructions, and be capable of operating such equipment. Provide operating instructions for all equipment. Newly hired operators shall be individually tested by an experienced operator or supervisor to determine if they are capable of safely operating equipment.

1.4 ACCIDENT REPORTING:

A. Reportable Accidents: A reportable accident is defined as death, occupational disease, traumatic injury to employees or the public, property damage by accident in excess of $100, and fires. Within 7 days of a reportable accident, fill out and forward to the Contracting Officer a DI-134 form, which may be obtained from Contracting Officer.

B. All Other Accidents: The Contractor shall report all other accidents to the Contracting Officer as soon as possible and assist the Contracting Officer and other officials as required in the investigation of the accident.

PART 2: PRODUCTS

2.1 FIRST AID FACILITIES: Provide adequate facilities for the number of employees and the type of construction at the site.

2.2 PERSONNEL PROTECTIVE EQUIPMENT: Meet requirements of NIOSH and MSHA, where applicable, as well as ANSI.

2.3 BARRIERS: Section 01530.

PART 3: EXECUTION

3.1 EMERGENCY INSTRUCTIONS: Post telephone numbers and reporting instructions for ambulance, physician, hospital, fire department, and police in conspicuous locations at the work site.

3.2 ESCAPE ROUTES: Provide and maintain adequate escape routes at all times in accordance with the Life Safety Code (NFPA 101-85).

3.3 PROTECTIVE EQUIPMENT:

A. Inspect personal protective equipment daily and maintain in a serviceable condition. Clean, sanitize, and repair, as appropriate, personal items before issuing them to another individual.

B. Inspect and maintain other protective equipment and devices before use and on a periodic basis to ensure safe operation.

3.4 SAFETY MEETINGS:

A. As a minimum, conduct weekly 15-minute "toolbox" safety meetings. These meetings shall be conducted by a foreman and attended by all construction personnel at the worksite.

B. Conduct monthly safety meetings for all levels of supervision. Notify the Contracting Officer so that he may attend. These meetings shall be used to review the effectiveness of the Contractor's safety effort, to resolve current health and safety problems, to provide a forum for planning safe construction activities, and for updating the accident prevention program. The Contracting Officer will enter the results of the meetings into his daily log.

3.5 HARD HATS AND PROTECTIVE EQUIPMENT AREAS:

A. A hard hat area will be designated by the Contracting Officer. The hard hat area shall be posted by the Contractor in a manner satisfactory to the Contracting Officer.

B. It is the Contractor's responsibility to require all those working on or visiting the site to wear hard hats and other necessary protective equipment at all times. As a minimum, provide six hard hats for use by visitors. Change liners before reissuing hats.

3.6 TRAINING:

A. First Aid: Provide adequate training to ensure prompt and efficient first aid.

B. Hazardous Material: Train and instruct each employee exposed to hazardous material in safe and approved methods of handling and storage. Hazardous materials are defined as explosive, flammable, poisonous, corrosive, oxidizing, irritating, or otherwise harmful substances that could cause death or injury.

PART 4: MEASUREMENT AND PAYMENT

4.1 ACCIDENT PREVENTION: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 PRECONSTRUCTION CONFERENCE: Before start of construction, Contracting Officer will arrange an on-site meeting with Contractor. The meeting agenda will include the following:

A. Minimum Agenda:

Correspondence procedures
Designation of responsible personnel
Labor standards provisions
Payroll reports
Changes
Payments to Contractor
Subcontractors
National Park Service regulations
Accident prevention program (including name of responsible supervisor)
Accident reporting
Documents required under the contract
Park rules and regulations
Saturday, Sunday, holiday and night work
Safety program (compliance with the "Accident Prevention" clause of the General Provisions)
Tentative construction schedule
Submittal of shop drawings, project data, and samples
Relationship of Division 1 to other divisions

1.2 PROGRESS MEETINGS: The Contracting Officer will schedule weekly meetings with the Contractor and subcontractors. Subcontractors will not be allowed to work until they have attended a meeting. Additional meetings will be held as needed or for new subcontractors.

A. Minimum Agenda:

Approval of minutes of previous meetings
Review of work progress
Field observations, problems, and decisions
Identification of problems which impede planned progress
Review of submittals schedule and status of submittals
Review of off-site fabrication and delivery schedules
Maintenance of progress schedule
Corrective measures to regain projected schedules
Planned progress during succeeding work period
Coordination of projected progress
Maintenance of quality and work standards

Effect of proposed changes on progress schedule and coordination
Other business relating to work

PART 2: PRODUCTS Not used.

PART 3: EXECUTION Not used.

PART 4: MEASUREMENT AND PAYMENT

4.1 PROJECT MEETINGS: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION: The work of this section consists of submittal requirements before and during construction.

1.2 RELATED REQUIREMENTS: Closeout submittals - Section 01700.

1.3 SCHEDULES: As soon as possible after Notice of Award and before beginning any work, submit Progress Schedule and Schedule of Values as a package. Contracting Officer will review the Progress Schedule and the Schedule of Values for format and content.

A. Progress Schedule: Submit four copies of Progress Schedule (normally in bar chart form) showing estimated starting and completion dates for each part of the work. The first progress payment will not be issued until an acceptable progress schedule is submitted.

B. Schedule of Values: Submit a schedule of dollar values based on the Contract Bid Schedule including all bid items. Break down into component parts each bid item involving a series of operations for which progress payments may be requested. The total costs for the component parts shall equal the bid amount for that item, and the total cost of all items shall equal the contract sum. The Contracting Officer may request data to verify accuracy of dollar values. The Schedule of Values will form the basis for progress payments as provided for in the General Provisions.

1.4 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES:

A. General Procedures:

1. As specified in the individual sections, forward submittals to Contracting Officer at least 30 days before need for approval. Unless a different number is specified, submit five copies of each shop drawing, three specimens of each sample, and five copies of all other submittals requested, all of which will be retained by Contracting Officer. Submit any additional copies that are to be returned.

2. Coordinate all submittals and review them for legibility, accuracy, completeness, and compliance with contract requirements. Forward submittals that are related to or affect one another as a package to facilitate coordinated review.

3. List submittals on National Park Service form DSC-1(CS). Contracting Officer will provide a project identification stamp and an approval stamp. Imprint the front of each sheet or item with both stamps and fill in the blanks in the identification stamp.

4. Submittals will not be accepted for review if identification or approval stamps are missing or are placed on the back of the submittal, an incorrect amount of submittals are submitted, the transmittal form is incorrectly filled out, submittals are not coordinated, or submittals do not show evidence of Contractor's approval.

5. Contracting Officer reserves the right to require submittals in addition to those called for in individual sections.

B. Specific Procedures:

1. Samples: Samples shall be large enough to illustrate clearly the functional characteristics and full range of color, texture, or pattern.

2. Manufacturers' Literature: Submit only pertinent pages; mark each copy of standard printed data to identify products referenced in specification section.

C. Contracting Officer's Review:

1. After approving submittals, Contracting Officer will return Contractor's copies.

2. If submittals are not approved, Contracting Officer will return all copies to Contractor with reasons for rejection. Resubmit, identifying changes.

3. Any work done before approval shall be at Contractor's own risk.

1.5 APPROVED EQUALS:

A. For each item proposed as an "approved equal," submit a separate request. With each request submit supporting data, including:

1. Drawings and samples as appropriate.

2. Comparison of the qualities of the proposed item with that specified.

3. Changes required in other elements of the work because of the substitution.

4. Name, address, and telephone number of vendor.

5. Manufacturer's literature regarding installation, operation, and maintenance.

B. A request for approval constitutes a representation that Contractor:

1. Has investigated the proposed item and determined that it is equal or superior in all respects to that specified.

2. Will provide the same warranties for the proposed item as for the item specified.

3. Has determined that the proposed item is compatible with interfacing items.

4. Will coordinate the installation of an approved item and make all changes required in other elements of the work because of the substitution.

5. Waives all claims for additional expenses that may be incurred as a result of the substitution.

1.6 MANUFACTURER'S INSTALLATION INSTRUCTIONS: When contract documents require compliance with manufacturer's printed instructions, provide one complete set of instructions for Contracting Officer and keep another complete set of instructions at the project site until substantial completion.

PART 2: PRODUCTS Not used.

PART 3: EXECUTION Not used.

PART 4: MEASUREMENT AND PAYMENT

4.1 SUBMITTALS: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION: The work of this section consists of providing temporary services required for Contractor's performance of the work of this Contract.

PART 2: PRODUCTS

2.1 GENERAL: Temporary materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

2.2 SANITARY FACILITIES: Sufficiently lighted and ventilated toilet facilities in weatherproof, sightproof, sturdy enclosures. Provide separate facilities for men and women.

2.3 FIRE PROTECTION EQUIPMENT: UL Class 2A, 2-1/2-gallon water type, stored-pressure extinguisher and UL Class 10, Type I, 15-pound B:C carbon dioxide extinguisher.

PART 3: EXECUTION

3.1 ELECTRICITY AND LIGHTING:

A. There is no electrical service available at the project site. Contractor shall provide his own source for power and lighting.

B. Contractor may establish field office at his discretion. If temporary field office is installed, Contractor shall provide his own temporary source and connections for all utilities. Field office and utilities connections shall meet all applicable regulations and shall be removed at the end of project. When temporary connections are removed, restore existing utility services to their original condition.

3.2 WATER:

A. Water for construction is not available within the park boundaries. The Contractor shall furnish water from his own source outside the park boundary.

B. Furnish cool, potable water for construction personnel in locations convenient to work stations.

3.3 SANITARY FACILITIES:

A. Place in approved locations secluded from public observation and convenient to work stations. Relocate as work progress requires.

B. Completely remove sanitary facilities on completion of work.

3.4 FIRE PREVENTION AND PROTECTION:

A. A capable and qualified person shall be placed in charge of fire protection. The responsibilities shall include locating and maintaining fire protective equipment and establishing and maintaining safe torch cutting and welding procedures.

B. Hazard Control: Take all necessary precautions to prevent fire during construction.

C. Spark Arresters: Equip all gasoline or diesel powered equipment used in potential forest or grass fire locations with spark arresters approved by the U. S. Forest Service. Written determinations of areas and periods of potential fire hazard will be issued by Contracting Officer.

D. Locate internal combustion equipment so that exhausts discharge well away from combustible materials.

E. Locate service areas a minimum of ten feet from forest edge. Shut down equipment before refueling.

F. Smoking: If conditions allow, areas at the work site shall be designated for smoking by the Contracting Officer. Smoking outside of these areas is prohibited.

G. Welding: Cutting by torch or welding shall be performed only when adequate fire protection is provided.

3.5 PROTECTION EQUIPMENT REQUIRED:

A. Provide one extinguisher on each vehicle or piece of equipment, at storage sheds and, if applicable, at field office.

PART 4: MEASUREMENT AND PAYMENT

4.1 TEMPORARY SERVICES: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION: The work of this section consists of furnishing, installing, and maintaining barriers to protect existing facilities and the public from construction operations.

PART 2: PRODUCTS

2.1 GENERAL: Material may be new or used, but shall be suitable for intended purpose. Fences and barriers shall be structurally adequate and neat in appearance.

2.2 BARRICADES AND SIGNS: ANSI D6.1-78, "Manual on Uniform Traffic Control Devices" (MUTCD), Part VI.

2.3 LUMBER: Free of nails, large knot holes and splinters.

2.4 BARRIER TAPE: Banner Guard, imprinted with "CAUTION: CONSTRUCTION AREA", manufactured by Reef Industries, Inc., Houston, Texas, or approved equal.

PART 3: EXECUTION

3.1 PROTECTION OF PUBLIC:

A. Barricade, or otherwise block off the immediate work area to prevent unauthorized entry to the work area.

B. Erect and maintain barricades and warning signs in accordance with ANSI D6.1-78.

3.2 BARRIER TAPE: Install where directed by Contracting Officer. Keep a minimum of two rolls on site at all times.

3.3 REMOVAL: Completely remove barriers no longer needed and when approved by Contracting Officer.

PART 4: MEASUREMENT AND PAYMENT

4.1 BARRIERS: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION: The work of this section consists of providing temporary controls.

PART 2: PRODUCTS Not used.

PART 3: EXECUTION

3.1 HOUSEKEEPING:

A. Keep project neat, orderly, and in a safe condition at all times.

B. Provide enough refuse containers for collecting construction debris.

C. Wet down dry materials and rubbish to prevent blowing dust.

D. Keep volatile wastes in covered containers.

E. Utilize excavated material as soon as possible.

3.2 DISPOSAL:

A. Dispose of excess excavated material.

B. Unless otherwise specified, all removed material becomes the property of the Contractor and shall be disposed of outside the park.

C. Immediately remove hazardous rubbish from project site. Place other construction debris in refuse containers at least daily. Dispose of refuse at least weekly, in a legal manner, at public or private dumping areas outside the park. Do not burn or bury refuse inside the park.

3.3 AIR AND WATER POLLUTION CONTROL:

A. Take all necessary reasonable measures to reduce air and water pollution by any material or equipment used during construction.

B. Do not dispose of volatile wastes or oils in storm drains.

C. Do not allow waste materials to be washed into streams or bodies of water.

D. Sod or seed slopes, as specified in Section 02931, as soon as possible to prevent erosion. If it is impossible to prevent erosion, the Contracting Officer may require construction of sedimentation basins to prevent water pollution.

PART 4: MEASUREMENT AND PAYMENT

4.1 TEMPORARY CONTROLS: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION: The requirements of this section consist of furnishing, locating, and removing temporary structures.

PART 2: PRODUCTS

2.1 CONTRACTOR'S FIELD OFFICE: Contractor may provide an office for his own use. Size, location, and construction shall be subject to approval. If Contractor elects to provide field office, he shall provide and maintain heat, light, power and telephone.

2.2 STORAGE SHEDS: Provide temporary weathertight sheds or other covered facilities for storage of materials subject to weather damage. Number and size of structures shall be subject to Contracting Officer's approval.

PART 3: EXECUTION

3.1 STORAGE SHEDS: Provide at locations designated by Contracting Officer.

3.2 REMOVAL: Remove structures when work is completed.

PART 4: MEASUREMENT AND PAYMENT

4.1 FIELD OFFICES AND SHEDS: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION: The work of this section consists of the general procedures for handling, storing, and protecting material and equipment.

1.2 TRANSPORTATION AND HANDLING: Arrange deliveries of materials in accordance with construction schedules; coordinate to avoid conflict with work and conditions at the site. Deliver materials in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.

1.3 STORAGE AND PROTECTION: Store materials in accordance with manufacturer's instructions, with seals and labels accessible for inspection.

A. Exterior Storage:

1. Store products subject to damage by the elements in weathertight enclosures.

2. Store fabricated products above the ground, on blocking or skids; prevent soiling or staining. Cover products subject to damage or deterioration with impervious sheet coverings; provide adequate ventilation to avoid condensation.

3. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.

B. Protection After Installation: Provide adequate coverings as necessary to protect installed materials from damage resulting from natural elements, traffic, and subsequent construction. Remove when no longer needed.

PART 2: PRODUCTS Not used.

PART 3: EXECUTION Not used.

PART 4: MEASUREMENT AND PAYMENT

4.1 MATERIAL AND EQUIPMENT: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION: The work of this section consists of final cleanup, closeout submittals, and final inspection procedures.

PART 2: PRODUCTS

2.1 CLEANING MATERIALS: As recommended in Section 04520, Stone Masonry.

PART 3: EXECUTION

3.1 CLEANING: Remove all tools, equipment, surplus materials, and rubbish. Restore or refinish surfaces of existing facilities that are marred, scratched, or damaged due to the work of this contract to match original condition. Remove grease, dirt, stains, and foreign materials. At time of final inspection, project shall be thoroughly clean and ready for use.

3.2 PROJECT RECORD DRAWINGS:

A. Using colored ink, make changes on a set of clean prints of original tracings. Show all changes and revisions to the original design that affect the permanent structures and will exist in the completed work.

B. Keep record drawings current. Inspection will be made monthly. Certification of accuracy and completeness will be required on monthly payment requisitions. Project record drawings are the property of the Government and shall be delivered to the Contracting Officer before closeout.

3.3 CLOSEOUT SUBMITTALS: Submit before final inspection request.

A. Project Record Drawings: As specified above.

B. Guarantees and Bonds: As specified in individual sections.

3.4 SUBSTANTIAL COMPLETION AND FINAL INSPECTION: Submit written certification that project, or designated portion of project, is substantially complete, and request in writing a final inspection. Contracting Officer will make an inspection within 10 days of receipt of request.

A. When Contracting Officer determines that the work is substantially complete, he will prepare a list of deficiencies to be corrected before final acceptance and issue a Letter of Substantial Completion.

B. If Contracting Officer determines that the work is not substantially complete, he will immediately notify Contractor in writing, stating reasons. After completing work, Contractor shall resubmit certification and request a new final inspection.

3.5 ACCEPTANCE OF THE WORK: After all deficiencies have been corrected, a Letter of Acceptance will be issued.

3.6 POST-CONSTRUCTION INSPECTION: Before expiration of warranty period, Contracting Officer will inspect project and notify Contractor in writing of all deficiencies.

PART 4: MEASUREMENT AND PAYMENT

4.1 CONTRACT CLOSEOUT: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION:

A. Perform site preparation work as shown and specified. The work includes:

1. Protecting existing vegetation.

2. Protecting existing site improvements to remain.

3. Stripping and stockpiling topsoil.

4. Removing existing vegetation as indicated.

B. Related work:

1. Section 02210: Earthwork.

2. Section 02450: Planting.

3. Section 02116: Vista Clearing

1.2 PROJECT CONDITIONS:

A. Perform site preparation work before commencing site construction.

B. Locate, protect, and maintain active utilities and site improvements to remain.

C. Provide necessary barricades, coverings, and protection to prevent damage to existing improvements indicated to remain.

D. Restore to original grades and conditions, areas adjacent to site disturbed or damaged as a result of site preparation work.

PART 2: PRODUCTS

2.1 MATERIALS:

A. Materials and equipment: As selected by the Contractor, except as indicated.

B. Tree protection: Snow fencing.

PART 3: EXECUTION

3.1 CLEARING:

A. Locate and suitably identify trees and improvements indicated to remain.

B. Remove trees, plants, undergrowth, and other vegetation as specified for vista clearing.

1. Fell trees in a manner to prevent injury to adjacent facilities and to trees scheduled to remain.

2. Use hand methods for grubbing inside the drip line of trees to remain. Strip grass materials to a maximum depth of 1" under tree canopies. Carefully till or scarify existing grade to a depth of 1".

3. Remove stumps and roots to a clear depth of 36" below subgrades. Remove stumps and roots to their full depth within 5'-0" of footings and paved areas.

C. Protect existing trees scheduled to remain against injury or damage, including cutting, breaking, or skinning of roots, trunks or branches; smothering by stockpiled construction materials, excavated materials or vehicular traffic within branch spread.

1. Protect designated trees with temporary wood snow fence enclosure. Provide a minimum 8'-0" radius from center of tree trunk. Increase enclosure size as directed for large trees.

2. Erect temporary fencing before commencing site preparation work. Maintain fencing during full construction period. Remove temporary fencing when no longer needed or when acceptable to the Contracting Officer.

3. Interfering branches of trees scheduled to remain may be removed when acceptable to the Contracting Officer.

4. Repair trees scheduled to remain and damaged by construction operations in a manner acceptable to the Contracting Officer. Repair damaged trees promptly to prevent progressive deterioration caused by damage.

5. Replace trees scheduled to remain and damaged beyond repair by construction operations, as determined by the Contracting Officer, with trees of similar size and species. Cost for tree replacement shall be determined in accordance

with the Tree Evaluation Formula as described in "A Guide to the Professional Evaluation of Landscape Trees, Specimen Shrubs, and Evergreens", published by the International Society of Arboriculture.

6. Repair and replacement of trees scheduled to remain and damaged by construction operations or lack of adequate protection during construction operations shall be at Contractor's expense.

D. Protection of existing site improvements to remain including:

1. Retaining walls

2. Culverts

3. Bridges

4. Coping stones

E. Repair of existing site improvements scheduled to remain which are damaged during construction shall be at contractor's expense.

3.2 STRIPPING TOPSOIL:

A. Strip topsoil to its full depth at all areas to be regraded within contract limit work area.

B. Stockpile topsoil in a location acceptable to the Contracting Officer for use in finish grading.

1. Stockpiled topsoil shall be free from trash, brush, stones over 3" diameter, and other extraneous matter.

2. Grade and slope stockpiles for proper drainage and to prevent erosion.

3. No topsoil shall be removed from the site.

C. Protect all areas which are not to be resurfaced or regraded, and adjacent areas outside of the contract limits from damage due to site preparation work.

3.3 DISPOSAL OF WASTE MATERIALS:

A. Stockpile, haul from site, and legally dispose of waste materials and debris. Accumulation is not permitted.

B. Maintain disposal routes clear, clean, and free of debris.

C. On-site burning of combustible cleared materials is not permitted.

3.4 CLEANING:

A. Upon completion of site preparation work, clean areas within contract limits, remove tools, and equipment. Provide site clear, clean, and free of materials and debris and suitable for site work operations.

PART 4: MEASUREMENT AND PAYMENT

4.1 SITE PREPARATION: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION: The work of this section consists of removing selected trees, stumps, and undergrowth; pruning; stockpiling salvageable material; and disposing of excess vegetation and debris.

PART 2: PRODUCTS

2.1 TREE PAINT: Approved asphalt base paint prepared especially for tree surgery.

2.2 BACKFILL MATERIAL: Install as specified in Section 02210.

PART 3: EXECUTION

3.1 PROTECTION OF TREES AND PLANTS TO REMAIN: Sections 01010 and 02100.

3.2 SELECTION: Contracting Officer will identify trees and shrubs for thinning.

3.3 REMOVAL: Cut stumps and roots flush with ground. Where open grass areas are planned, remove stumps and roots and fill stump and root holes as specified in Sections 02100 and 02210.

3.4 PRUNING: Identify for approval trees and shrubs to be pruned. Do not remove more than one-fourth of the living foliage of any plant. Remove all dead wood, rubbing branches, rotted stubs, and borer infested and structurally weak branches. Make cuts flush with trunk or branch. Paint cuts larger than 1/2 inch in diameter with tree paint.

3.5 SALVAGE: Cut trees and branches over six inches in diameter into two-foot log lengths and stockpile where directed by Contracting Officer.

3.6 DISPOSAL: Dispose of debris and excess material as specified in Section 01560.

PART 4: MEASUREMENT AND PAYMENT

4.1 SELECTIVE THINNING - VISTA CLEARING: Measurement will be each unit of 1,000 square feet. Payment will be made at the contract unit price.

END

PART 1: GENERAL

1.1 DESCRIPTION: The work of this section consists of excavation, ditchline grading, removal and disposal of excess and unsuitable material, and stripping, stockpiling and placing topsoil.

1.2 QUALITY ASSURANCE: Testing required to determine compliance for the work of this section will be the responsibility of the Government and at the Government's expense. The Contractor shall cooperate by rerouting equipment or by temporarily closing the immediate work area being tested. Areas where test results indicate noncompliance shall be corrected before placing additional material and at no additional expense to the Government.

1.3 CLASSIFICATION: All excavation under this section shall be considered unclassified regardless of the nature of material encountered.

1.4 PROJECT CONDITIONS:

A. Maintain ditches within the limits of construction until final acceptance. Repair areas damaged as a result of storms or construction. Take necessary precautions to prevent the entrance of soils and other materials into streambeds, lakes, or water courses.

B. Protect existing trees, plants, turf and other features designated to remain.

C. Protect excavations by shoring, bracing, sheeting, underpinning, or other methods, as required to prevent cave-ins or loose dirt from entering excavations. Barricade open excavations.

D. Promptly repair damage to adjacent facilities caused by earthwork operations. Cost of repair at Contractor's expense.

F. Promptly notify Contracting Officer of unexpected sub-surface conditions.

G. Protect bottoms of excavations and soil beneath and around foundations from frost and freezing.

H. Grade at excavations to prevent surface water draining into excavated areas.

PART 2: PRODUCTS

2.1 GENERAL:

A. All fill material will be subject to approval by the Contracting Officer.

B. Fill materials: Inert subsoil material free of organic matter, rubbish, debris, and rocks greater than six inches in diameter.

C. Topsoil: Natural, friable, fertile soil characteristic of productive soil in the vicinity, reasonably free of stones, clay lumps, roots, and other foreign matter.

1. Utilize on-site stockpiled topsoil as required to complete the work.

2. Proposed topsoil material shall be acceptable to the Contracting Officer.

D. Other materials required for proper completion of work of this Section: As selected by Contractor and acceptable to Contracting Officer.

E. Bedding Material: Natural gravel, chrushed stone, or sand, meeting the following gradation requirements:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves
3-inch	100
No. 8	10

F. Select Backfill: Fine, readily compactible soil or aggregate material, free from frozen lumps, stones larger than 2 inches, highly plastic clay, and organic or other objectionable material. Excavated material meeting this requirement may be used with approval of Contracting Officer.

PART 3: EXECUTION

3.1 PREPARATION:

A. Establish extent of grading and excavation by area and elevation. Designate and identify datum elevation and project engineering reference points. Set required lines, levels and elevations.

engineering reference points. Set required lines, levels and elevations.

B. Strip topsoil within the construction limits to a depth of four inches (4"). The Contracting Officer will designate locations for stockpiles.

C. Do not cover or enclose work of this Section before obtaining required inspections, tests, and approvals.

3.2 SITE GRADING:

A. Perform grading within contract limits, including adjacent transition areas, to new elevations, levels, profiles, and contours indicated. Provide subgrade surfaces parallel to finished surface grades. Provide uniform levels and slopes between new elevations and existing grades. Provide drainage of the working area at all times.

B. Grade surfaces to prevent ponding and pockets of surface drainage. Provide subgrade surfaces free from irregular surface changes and as follows:

1. Rough grading: Plus or minus 0.10 ft. subgrade tolerance. Finish required will be that ordinarily obtained from either blade-grader or scraper operations.

2. Provide subgrade surface free of exposed boulders or stones exceeding two inches in greatest dimension in seeded areas.

3. Turf areas: Allow for 4" average depth of topsoil at seeded areas.

4. Drainage ditches:

a. Stone lined: Remove vegetation and accumulated organic material by hand.

b. Unlined: Remove vegetation and accumulated organic material and reshape ditches to the profile indicated on the drawings using a motor grader with a trapezoidal blade or a track-hoe with rotating bucket.

C. Grading at existing trees to remain:

1. Perform grading within branch spread of existing trees to remain with care.

2. Cut roots cleanly to depth three inches below proposed finish grade.

3.3 EXCAVATING:

A. Excavate to cross-sections, elevations and grades indicated.

B. Earth excavation shall include the satisfactory removal and disposal of all materials encountered, regardless of the nature of the materials, the condition of the materials at the time they are excavated, or the manner in which they were excavated.

3.4 FILLING, BACKFILLING AND COMPACTING:

A. Obtain inspection and approval of subgrade surfaces by Contracting Officer prior to filling operations. Scarify, dry and compact soft and wet areas; remove and replace unsuitable subgrade materials with an approved compacted fill material. Take corrective measures before placing fill materials. Topsoil not permitted as fill or backfill material.

B. Spread approved fill material uniformly in layers not greater than eight inches of loose thickness over entire fill area.

1. Lift thickness requirements may be modified by Contracting Officer to suit equipment and materials or other conditions when required to assure satisfactory compaction. Lift thickness shall not exceed 8" unless approved by Contracting Officer.

2. Moisture-condition fill material by aerating or watering and thoroughly mix material to obtain moisture content permitting proper compaction.

3. Place and compact each layer of fill to indicated density before placing additional fill material. Repeat filling until proposed grade, profile, or contour is attained.

4. Suspend fill operations when satisfactory results can not be obtained because of environmental or other unsatisfactory site conditions. Do not use muddy or frozen fill materials. Do not place fill material on muddy or frozen subgrade surface.

5. Maintain surface conditions which permit adequate drainage of rain water and prevent ponding of surface water in pockets. When fill placement is interrupted by rain, remove wet surface materials or permit to dry before placing additional fill material.

C. Fill all areas of settlement to proper grade before subsequent construction operations are performed.

D. Compaction:

1. Provide compaction control for all fill and backfill.

2. Compact top 12" of subgrade and each layer of fill or backfill material at seeded and unpaved areas to 90% of maximum dry density at optimum moisture content in accordance with ASTM D698 Standard Proctor Method.

3. Water settling, puddling and jetting of fill and backfill materials as a compaction method are not acceptable.

4. Maintain moisture content of materials during compaction operations within required moisture range to obtain indicated compaction density.

5. Provide adequate equipment to achieve consistent and uniform compaction of fill and backfill materials.

3.5 PIPE CULVERTS:

A. Trench Width: Allow 18 inches of space on each side of pipe.

B. Where rock, hardpan, or other unyielding material is encountered, remove 6 inches of material below pipe grade, 12 inches wider than pipe diameter. Fill with select backfill. Compact to 90 percent of the maximum density.

C. If foundation is unstable at grade established, remove unsuitable material under and around pipe a minimum of one pipe diameter on each side of pipe to depth directed. Replace with select backfill. Compact to 90 percent of the maximum density.

D. Provide a firm foundation of uniform density throughout length of pipe and, if directed, camber in direction parallel to pipe centerline.

E. Place select or granular backfill on each side of pipe in layers not to exceed 6 inches in depth for entire width of trench, and to an elevation 1 foot above the top of the pipe. Uniformly compact with mechanical tampers giving special attention to compaction under pipe haunches. Bring compacted backfill up evenly on each side of pipe to avoid unequal pressure. When backfilling a pipe in a fill section, place and compact backfill a minimum width equal to the pipe diameter or span on each side of the pipe. Compact each layer to 95 percent of the maximum density. Do not permit construction equipment over pipe without adequate protection.

3.6 FINISH GRADING:

A. Uniformly distribute and spread stockpiled topsoil. Provide four inch average depth at seeded areas. Use loose, dry topsoil. Do not use frozen or muddy topsoil. Place during dry weather.

B. Fine grade topsoil eliminating rough and low areas to ensure positive drainage. Maintain levels, profiles and contours of subgrades.

C. Remove stones, roots, weeds and debris while spreading topsoil materials. Rake surface clean of stones one inch or larger in any dimension or all debris. Provide surfaces suitable for soil preparation provided for under seeding and planting work.

D. Manually install topsoil at trees to remain. Avoid damage to root systems.

E. Maintenance:

1. Protect finish graded areas from traffic and erosion. Keep free of trash and debris. Repair and re-establish grades in settled, eroded, and damaged areas.

2. Where completed areas are disturbed by construction operations or adverse weather, scarify, re-shape and compact to required density.

3.7 FIELD QUALITY CONTROL:

A. Contractor shall provide adequate notice, cooperate with, provide access to the work, obtain samples, and assist testing agency and their representatives in execution of their function.

B. When, during process of work, field tests indicate that installed compacted materials do not meet specified requirements, provide additional compaction until specified density is achieved, or remove and replace defective materials with new materials as directed by Contracting Officer. Cost of additional labor and materials to attain specified density at Contractor's expense.

3.8 DISPOSAL OF WASTE MATERIALS:

A. Stockpile, haul from site, and legally dispose of waste materials, including excess excavated materials, rock, trash and debris.

B. Maintain disposal route clear, clean and free of debris.

3.9 CLEANING: Upon completion of earthwork operations, clean areas within contract limits, remove tools and equipment. Provide site clear, clean, free of debris and suitable for site work operations.

PART 4: MEASUREMENT AND PAYMENT

4.1 SITE EXCAVATION: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION:

A. Provide surface of broken stone roads as shown and specified. The work includes:

1. Stripping surface courses to foundation stone layer.

2. Repair of foundation course as necessary.

3. Reinstallation of existing surface material to proper grade and cross-section for middle course.

4. Installation of surface course.

1.2 QUALITY ASSURANCE:

A. Standards

1. Maine Department of Transportation

2. American Society of Testing and Materials (ASTM)

3. American Association of State Highway and Transportation (AASHTO)

4. National Crushed Stone Association (NCSA)

B. Tolerances

1. In-place compacted thickness:

a. Foundation course: As existing.

b. Middle course: Maximum ½" plus, minus 0".

c. Surface course: Maximum ¼" plus, minus 0".

2. Finished surface smoothness:

a. Foundation course: As existing.

b. Middle course: Maximum 3/8" in 10'-0".

c. Surface course: Maximum ¼" in 10'-0", any direction.

1.3 SUBMITTALS:

A. Product data: Submit composition of surface material mixes and identify source of material.

1.4 DELIVERY, STORAGE, AND HANDLING:

A. Store and handle products to prevent damage and deterioration.

1.5 PROJECT CONDITIONS:

A. Grade control: Establish and maintain the required lines and grades, including crown and cross-slopes, for each course during paving operations.

B. Public safety: Provide temporary barricades as required for protection of project work and public safety.

C. Protection of adjacent features from damage, soiling and staining during paving operations.

PART 2: PRODUCTS

2.1 MATERIALS:

A. Foundation course: Broken, blasted ledge rock or "blown ledge," no larger than six inches, no smaller than 4 inches in any dimension.

B. Middle Layer: Existing surface material with addition aggregate as necessary to meet ASTM D2940 standards.

C. Surface course: Granite or trap rock "crusher dust" in two different compositions.

1. Alternate 1:

    100% to pass a ½" screen
    25% to be retained in a 1/8" screen
    12% to pass a #200 sieve.

2. Alternate 2:

    100% to pass a 1" screen
    90-100% to pass a 3/4" screen
    85-95% to pass a ½" screen
    75-85% to pass a ¼" screen
    55-65% to pass a #10 sieve
    35-45% to pass a #40 sieve
    20-30% to pass a #100 sieve
    18-23% to pass a #200 sieve

2.2 EQUIPMENT:

A. Paving equipment such as the Layton Track Paver capable of maintaining line, grade and thickness shown.

B. Compacting equipment: Self-propelled vibratory rollers, minimum 10 ton weight.

C. Hand tools: Rakes, shovels, tampers and other miscellaneous equipment required to complete the work.

PART 3: EXECUTION

3.1 INSPECTION:

A. Examine installation conditions; do not start paving work until unsatisfactory conditions are corrected.

3.2 PREPARATION:

A. Verify with Contracting Officer where repairs to the foundation stones are necessary.

1. Establish centerline and record with offset stakes; remove stones to subgrade, regrade subgrade to the required crown and roll with vibratory roller to 100% of ASTM D698 maximum dry density compaction at elevation indicated.

2. Both the subgrade and reinstalled foundation stones shall conform with the crown or camber of the final road cross-section.

3.3 INSTALLATION: MIDDLE COURSE:

A. Install in single course to a compacted depth as required to obtain elevations as shown.

B. Compact to 100% of ASTM D698 maximim dry density until a uniformly smooth, hard surface, complying with the lines, grades, elevations, and cross-sections shown has been established. Moisture may be added at job site to aid compaction.

3.4 INSTALLATION: SURFACE COURSE:

A. Examine middle course and installation conditions. Do not start surface paving work until unsatisfactory conditions are corrected.

B. Install in single course to a maximum compacted depth of 2 inches.

C. Compact to 100% of ASTM D698 maximim dry density until a uniformly smooth, hard surface, complying with the lines, grades, elevations, and cross-sections shown has been established. Moisture may be added at job site to aid compaction.

D. Use paving machine with two inclined planes and 4 foot rounded section to build crown as shown on the drawings.

3.5 INSTALLATION: GENERAL:

A. Material placement: Place materials in strips not less than 8'-0" wide. After the first strip has been placed and rolled, place all succeeding strips and extend rolling to overlap previous strips. Complete base course for a section before placing surface course materials.

B. Joints: Carefully make joints between old and new pavements, and between successive day's work, to ensure a continuous bond between adjoining work. Construct joints to have the same texture, density, and smoothness as other sections of the asphalt concrete course.

C. All courses shall be sprinkled and rolled as the final step of installation. Rolling shall begin at shoulders; roll longitudinally, and work toward the center to prevent pushing the crown out of line or flattening it.

3.6 PROTECTION: Protect paving from damage due to construction until final acceptance.

3.7 CLEANING: Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris, and equipment. Repair damage resulting from paving operations.

PART 4: MEASUREMENT AND PAYMENT

4.1 BROKEN STONE ROADS: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION: The work of this section consists of furnishing and installing pipe culverts where existing pipes have failed.

1.2 SUBMITTALS: As specified in Section 01300.

1.3 PIPE LENGTH SCHEDULE: Before ordering pipe, Contractor shall verify the pipe lengths required with the Contracting Officer.

PART 2: PRODUCTS

2.1 CULVERTS AND STORM DRAINS:

A. Stone Culverts, Catch basins, Headwalls and Endwalls: See Section 04520, "Masonry Restoration"

B. Replacement Pipe: Reinforced concrete; size to match existing unless otherwise indicated. In no case shall pipes be under 12 inches.

C. Rubber Gaskets for Concrete Pipe: AASHTO M198-75

D. Bedding Material: See Section 02210, "Site Excavation and Grading".

PART 3: EXECUTION

3.1 EXCAVATION: See Section 02210, "Site Excavation and Grading."

3.2 REPLACING PIPE:

A. Remove existing pipe and dispose of as per specifications.

B. Laying Pipe: Begin at downstream end. Lower segment shall be in contact with shaped bedding its full length. Place bell or groove ends of pipe facing upstream.

C. Joining Pipe: Use an approved method of joining concrete pipe sections that ensures ends are fully entered and inner surfaces are flush and even. Follow manufacturer's recommendations for installation of rubber gasket joints.

D. Backfill:

1. See Section 02210, "Site Excavation and Grading."

2. Do not place backfill until structure has been approved by Contracting Officer.

PART 4: MEASUREMENT AND PAYMENT

4.1 STORM DRAINAGE: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION: The work of this section consists of furnishing and installing wood signposts.

1.2 STAINING: See Section 02849, "Exterior Signs".

PART 2: PRODUCTS

2.1 POSTS:

A. Wood: 8" nominal post; round, peeled, white cedar post as shown and specified on NPS drawing NP ACA 8074.

2.2 GRANULAR BACKFILL: Hard, durable particles or fragments of stone, gravel, or other finely divided mineral matter. All particles shall pass a 1-inch square mesh sieve and shall be well graded from coarse to fine.

PART 3: EXECUTION

3.1 INSTALLATION:

A. Excavate hole for signpost to required depth. Embed posts a minimum of 3'-6".

B. Backfill post hole with granular backfill in 3-inch to 4-inch lifts. Thoroughly hand tamp each lift.

3.2 CLEAN-UP: Upon completion of work, remove excess material and debris. Leave area in a clean, acceptable condition.

PART 4: MEASUREMENT AND PAYMENT

4.1 SIGNPOSTS: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION: The work of this section consists of constructing exterior signs as indicated on drawing NPS ACA 8074.

1.2 SUBMITTALS: As specified in Section 01300.

A. Template: Submit one full-size letter layout drawing, showing appropriate letter size and type, and spacing of words and lines.

B. Samples and manufacturer's literature for stain and paint.

1.3 PRODUCT HANDLING: Protect signs by covering and padding when transporting to site. Store all materials off ground, under protective covering, prior to erection.

PART 2: PRODUCTS

2.1 STAIN AND PAINT FOR WOOD:

A. Stain:

1. For posts and sign arms: Cabot's stain or approved equal to match existing.

2. For signs:

a. Acid stain composed of muriatic acid, lamp black, ammonia and water mixed in proportions to match existing.

b. Two finish coats of varnish.

B. Paint for Letters: Flat coat of primer, then yellow enamel exterior paint by Benjamin Moore or approved equal.

2.2 ALPHABET:

A. Alphabet as specified. As per the drawing, the height of the lowercase letters shall be 85 percent of the height of uppercase letters, but the thickness of the letters shall remain 1/4" as shown on the drawing.

2.3 METAL CHAINS, BOLTS and STRAPS: As shown and specified on the drawings.

PART 3: EXECUTION

3.1 SIGNS: Shop fabricate and erect signs as indicated.

3.2 STAIN AND PAINT: All surfaces shall be dry and free of foreign matter and voids. Secure approval of primer coat before applying finish coats. Apply stain and paint to cover all surfaces evenly, without runs, sags, or other defects.

PART 4: MEASUREMENT AND PAYMENT

4.1 EXTERIOR SIGNS: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION: The work of this section consists of soil preparation; seeding, fertilizing, and mulching ditchlines, vista clearing areas, and areas disturbed by construction; and maintenance.

1.2 SUBMITTALS: Submit seed vendor's certification for required grass seed mixture, indicating percentage by weight, and percentages of purity, germination, and weed seed for each grass species.

1.3 PRODUCT HANDLING:

A. Seed: Deliver in acceptable condition in original, unopened containers.

B. Ground Limestone: Deliver in original, unopened containers with identifying mark and analysis attached.

C. Fertilizer: Deliver in original, unopened containers with analysis, type, and trade name attached.

D. Store in manner to prevent wetting and deterioration.

1.4. PROJECT CONDITIONS:

A. Work notification: Notify Contracting Officer at least 7 working days prior to start of seeding operations.

B. Protect existing facilities from damage caused by seeding operations.

C. Perform seeding work only after earthwork has been completed.

D. Provide watering equipment as required.

1.5 GUARANTEE INSPECTION: An inspection will be made as required by the guarantee. Turf areas found to be deficient shall be replanted with same material as originally specified.

PART 2: PRODUCTS

2.1 SEED:

A. Seed: Fresh, clean, and new crop seed mixture.

1. Mixed by an approved method.

2. Composed of the following varieties, mixed to the specified proportions by weight and tested to minimum percentages of purity and germination. Poa annua, bent grass, and noxious weed seed free.

B. Blend:

RATE: 175 lbs. per acre

	Parts	Purity	Minimum Germination
Sheep fescue	85		
Annual ryegrass	5		
Perennial ryegrass	10		

2.2 GROUND LIMESTONE: Agricultural limestone containing minimum of 85 percent calcium carbonate or equivalent; meeting the following gradation: 100 percent passing a 10 mesh sieve; 98 percent a 20 mesh sieve; 55 percent a 60 mesh sieve; and 40 percent a 100 mesh sieve.

2.3 FERTILIZER: FS O-F-241D, granular, or pelleted; complete commercial type with 50 percent of the nitrogen in slowly available form, commercial 10-10-10.

2.4 WATER: Clean, fresh, free from harmful substances.

2.5 MULCH: Clean straw well seasoned before bailing, free from noxious weed seed and other harmful elements. Commercial products may be used with approval.

2.6 TACKIFIER: Liquid concentrate diluted with water forming a transparent three-dimensional film-like crust permeable to water and air and containing no agents toxic to seed germination.

PART 3: EXECUTION

3.1 INSPECTION: Examine finish surfaces, grades, topsoil quality, and depth. Do not start seeding work until unsatisfactory conditions are corrected.

3.2 BED PREPARATION:

A. Limit preparation to areas which will be immediately seeded.

B. Thoroughly loosen soil to a minimum depth of 6 inches; remove rocks, debris, and clods.

C. Grade areas to be seeded to a smooth, free draining, even surface with a loose, moderately coarse texture. Roll and rake, remove ridges, and fill depressions as required to drain. Maintain grading and drainage patterns.

D. Spread fertilizer and limestone evenly and incorporate to full depth by disking or rototilling. The incorporating machine shall pull a drag or other device to keep area smooth.

1. Lime shall be uniformly spread at the rate of 2 tons per acre.

2. Apply fertilizer at a uniform rate of 1,000 lbs. per acre.

3.3 SEEDING:

A. Seed immediately after preparation of bed.

B. Perform seeding operations when the soil is dry and when winds do not exceed 5 miles per hour velocity.

C. Apply seed with a mechanical spreader. Install seed evenly by sowing equal quantities in 2 directions at right angles to each other. Sow uniformly at prescribed rate.

D. After seeding, rake or drag surface of soil lightly to incorporate seed into top 1/8" of soil. Lightly roll immediately after sowing with a 200 to 250-pound hand roller.

3.4 MULCHING: Immediately after rolling, apply mulch uniformly to a depth of 2 inches. Application by mechanical methods is preferred; however, mulch chopped or cut into short pieces will not be acceptable. Anchor straw mulch with liquid tackifier applied uniformly at a rate of 60 gallons per acre.

3.5 WATERING: After mulching, water with a mist spray soaking ground to minimum depth of 2 inches. Until final inspection, water as necessary.

3.6 MAINTENANCE: Maintain seeded areas until a full, uniform stand of grass is achieved and accepted by the Contracting Officer. Repair, rework, and re-seed all areas that have washed out, are eroded, or do not catch. Maintain seeded banks, ditches, medians and fields to the extent of establishment only. Re-grade and re-seed washed out or eroded areas as required until a suitable cover is established.

3.7 CLEAN-UP: Upon completion of work, remove debris and leave area in clean, acceptable condition. Repair damage resulting from seeding operations.

3.8 MOWING: The Contractor shall be responsible for mowing until final acceptance.

3.9 ACCEPTANCE:

A. Inspection to determine acceptance of seeded lawns will be made by the Contracting Officer upon Contractor's request. Provide notification at least 10 working days before requested inspection date.

1. Seeded areas will be acceptable provided all requirements, including maintenance, have been complied with, and a healthy, uniform, close stand of the specified grass is established free of weeds, undesirable grass species, disease and insects.

2. No individual lawn areas shall have bare spots or unacceptable cover totaling more than 2% of the individual areas.

3. Permanent vegetation shall not be considered established until a ground cover is achieved which, in the opinion of the Contracting Officer, is mature enough to control soil erosion satisfactorily and to survive severe weather conditions.

B. Upon acceptance, the Owner will assume lawn maintenance.

PART 4: MEASUREMENT AND PAYMENT

4.1 SEEDING, FERTILIZING, AND MULCHING: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION: The work of this section consists of preparing planting areas, and furnishing and placing fertilizer, mulch, and plant materials.

1.2 QUALITY ASSURANCE:

A. Plant names shall comply with nomenclature of Hortus Third, 1976. Sizing and grading shall be in accordance with ANSI Z60.1-86.

B. Notify Contracting Officer in writing at least 15 days before plant delivery. All plant materials shall be available for inspection at the nursery or collection source before plants are dug. Approval at plant source shall not be considered final acceptance.

1.3 SUBMITTALS: As specified in Section 01300.

A. Notice of Shipment: At time of delivery, submit notice from nursery containing the following: Name and location of shipper; date of shipment; name of commodity; quantity; certificate that material complies with the specifications; size; statement of root pruning, including dates; and statement that plants are acclimated and have been growing outside.

B. Certificates:

1. Inspection certificates required by Government authorities verifying that plants are free from diseases and infestations.

2. Laboratory certified analyses verifying that peat moss and fertilizer comply with specifications.

C. Sample: Mulch, one cubic foot.

D. Planting schedule.

1.4 PRODUCT HANDLING:

A. Delivery:

1. Packaged Materials: Deliver in original, unopened containers showing weight, analysis, and manufacturer.

2. Plant Material: Before digging deciduous trees and shrubs in leaf and evergreen trees for shipping, apply antidesiccant. Carefully pack plants to prevent breaking, damage to bark, branches, and root systems, and root ball cracking. Provide adequate ventilation. Protect roots and balls from sun, drying wind, and frost. Do not drop plants from vehicles. Legibly label plants with correct botanical name and common name.

B. Storage:

1. Place plants not planted on the day of arrival in shaded storage, protected from wind and freezing. Open bundles and separate plants. Heel in bare root plants immediately on delivery and protect roots by puddling or other means to prevent drying. Cover root balls with moist sawdust, wood chips, shredded bark, peat moss, or other approved mulching material. Leave container grown plants in containers until planting. Keep all plants moist.

2. Store packaged materials in dry locations away from contaminants. Separate antidesiccants and pesticides from other landscape materials.

1.5 PROJECT CONDITIONS:

A. Plant during normal season determined by climatic conditions and accepted practices in region of construction.

B. Work notification: Notify Contracting Officer at least seven working days prior to installation of plant material.

C. A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the drawings. In the even that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.

1.6 GUARANTEE:

A. For 12 months from date work is certified as complete, remove deficient plants and replace with same size and quality as originally specified at no additional expense to the Government. Plant replacement plants on dates approved by the Contracting Officer.

B. Remove and immediately replace all plants as determined by the Contracting Officer to be unsatisfactory during the initial planting installation.

PART 2: PRODUCTS

2.1 SOIL MIX: Five parts topsoil, one part peat moss, and ½ lb. plant fertilizer for each cubic yard of mixture. Thoroughly mix.

A. Topsoil: Fertile, friable, natural topsoil of loamy character, without admixture of subsoil material, obtained from a well-drained arable site, reasonably free from clay, lumps, coarse sands, stones, plants, roots, sticks, and other foreign materials, with acidity range of between pH 6.0 and 6.8.

B. Peat Moss: FS Q-P-166e. Natural raw sedge peat, reed peat, or sphagnum moss peat, obtained from fresh water sites, consisting of organic matter of incompletely decomposed plant residues containing a negligible amount of woody matter. Peat shall be shredded to pass a 1/2-inch mesh screen and be conditioned for minimum 6 months after excavation.

C. Fertilizer: Commercial type approved by the Contracting Officer containing 10% nitrogen, 10% phosphoric acid and 10% potash by weight.

2.2 MULCH: Six month old well rotted shredded native hardwood bark mulch not larger than four inches in length and one-half inch in width, free of woodships and sawdust.

2.3 WATER: Clean, fresh, and free from harmful substances.

2.4 ANTIDESICCANT: Wilt-Pruf, by Wilt-Pruf Products, Inc., Greenwich, Connecticut, or approved equal.

2.5 WRAPPING MATERIALS: 4-inch-wide bituminous impregnated tape, or corrugated or crepe paper, specifically manufactured for tree wrapping, resistant to infestation.

2.6 STAKING AND GUYING:

A. Identification Stakes: Standard survey stakes, 1 inch by 2 inches by 18 inches.

B. Rubber Hose: 2-ply fabric-reinforced hose having a minimum inside diameter of 1/2 inch.

C. Guy Wire: Galvanized malleable iron, 10-gauge.

D. Twine: Jute, minimum 2-ply.

E. Bracing Stakes: Between 4 and 10 feet long. Sound, durable, unfinished lumber, capable of withstanding aboveground and underground conditions during guarantee period.

F. Guy Stakes: 30-inch minimum length.

2.7 PLANTS: Typical of species and variety, having a well-developed branch system, vigorous root structure, and balance between height and spread. Plants shall be sound and healthy, free from diseases, infestations, and defects such as disfiguring knots, sunscald, injuries, and bark abrasions.

A. Nursery Grown Stock: At least twice transplanted, grown under similar climatic conditions as location of project. Freshly dug, heeled in, or cold storage plants are not acceptable. Root balls shall be as specified in ANSI Z60.1-86.

B. Root Condition: The Contractor has the option of substituting, at no additional expense to the Government, a higher quality root condition to that shown on the plant list.

C. Dig balled and burlapped palns with firm, natural balls of earh of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Provide ball sizes complying with the latest edition of the "American Standards for Nursery Stock". Cracked or mushroomed balls are not acceptable.

D. Provide tree species that mature at heights over 25'-0" with a signle main trunk. Trees that have the main trunk forming a "Y" shape are not acceptable.

E. Plants larger than those psecified in the plant list may be used wen acceptable to the Landscape Architect.

F. The height of the trees, measured from the crown of the roots to the top of the top branch, shall not be less than the minimum size designated in the plant list.

G. No pruning wounds shall be present with a diameter of more than one inch and such wounds must show vigorous bark on all edges.

H. Shrubs and small plants shall meet the requirements for spread and height indicated in the plant list.

1. The measurements for height shall be taken from the ground level to the average height of the top of the plant and not the longest branch.

2. Single stemmed or thin plants will not be accepted.

3. Side branches shall be generous, well-twigged, and the plant as a whole well-bushed to the ground.

4. Plants shall be in a moist, vigorous condition, free from dead wood, bruises, or other root or branch injuries.

2.8 PESTICIDE SOLUTION: As approved.

2.9 TREE WOUND PAINT: As approved.

PART 3: EXECUTION

3.1 PREPARATION:

A. Stake plants and planting areas as shown. Notify Contracting Officer if rocks or obstructions necessitate relocation.

B. Before excavating, protect existing surrounding turf and planted areas from damage. Barricade existing trees, shrubbery, and beds that are to be preserved.

3.2 PLANTING:

A. Excavation: Excavate to depths and diameters shown. Notify Contracting Officer if conditions exist that may interfere with planting or plant growth. Protect tree and shrub pits and beds from freezing.

B. Order of Planting: In mixed planting areas, plant trees first, followed by large shrubs, low shrubs, seedlings, and then ground covers.

C. Plant Placement:

1. Balled and Burlapped: Set plant on layer of compacted soil mix, plumb and in center of pit or trench, with top of ball at same elevation as adjacent finished landscape grades. Place additional soil mix around base and sides, and work each layer to settle soil mix and eliminate voids and air pockets. When excavation is approximately two-thirds full, water thoroughly before placing remainder of soil mix. Repeat watering until no more is absorbed.

2. Bare Root: Set plant on cushion of soil mix. Spread roots in natural position. Cut damaged roots clean. Carefully work soil mix in layers around roots by hand and puddle with water until layers are completely saturated. Maintain plants plumb while working soil mix around and above roots. Set collar 1 inch below adjacent finish landscape grades.

3. Container Grown: Remove carefully from container to prevent damage to plant and root system. Plant as specified for Balled and Burlapped.

D. Watering: Immediately after planting, thoroughly saturate soil, applying water by open end hose at low pressure. Avoid causing air pockets and injury to roots. If necessary, reset plants to proper grade and position.

E. Antidesiccant: After watering, spray evergreens and deciduous trees and shrubs in leaf with antidesiccant.

F. Water Saucer: Construct shallow circular water saucer around each tree and shrub. To prevent freezing, fill water saucer with soil during winter months.

3.3 GUYING: Drive stakes solidly into ground.

3.4 MULCHING: Immediately after planting, cover tree and shrub pits with a 2-inch layer of mulch.

3.5 WRAPPING: Wrap trees within 4 days of planting after trunks are inspected and approved. Wet tree trunks thoroughly with pesticide solution. Wind tape from base of tree to lowest main branches, overlapping 1-1/2 inches. Tie wrapping with twine at top, bottom, and 2-foot intervals along trunk. Maintain wrapping in place for entire guarantee period, unless otherwise directed by Contracting Officer.

3.6 PRUNING: After plant inspection, neatly prune plants. Limit pruning to minimum necessary to remove injured twigs and branches and to compensate for loss of roots during transplanting. Do not exceed one- third of branching structure. If Contracting Officer directs, paint cuts over 1/2-inch diameter with tree wound paint.

3.7 MAINTENANCE: Water, prune, spray, mulch, weed, and otherwise maintain and protect plants until work is certified as complete.

PART 4: MEASUREMENT AND PAYMENT

4.1 PLANTING: Payment will be made at the contract lump-sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION: The work of this section consists of restoring retaining and breast walls; culverts, catch basins, headwalls and endwalls; stone-lined ditches; and coping stones.

1.2 SUBMITTALS: Stones proposed as replacements.

1.3 NOTIFICATION: Notify Contracting Officer of unexpected conditions.

1.4 QUALITY ASSURANCE: Project mason shall be experienced in restoration of historic stone structures. Careful analysis of existing stone structures shall be made by the mason.

PART 2: PRODUCTS

2.1 STONE: Sound, hard, and well shaped stone. Match existing in size, shape, and general appearance.

A. Retaining/Breast Walls: Stones shall be at least 18 inches thick and 4 feet long.

B. Coping Stones: Stones shall be of a size and shape to match the existing stones in the segment being restored. Their character varies from segment to segment and care shall be taken to select similar stones.

C. Stone-lined Ditches, Headwalls/Endwalls, Culverts and Catch Basins: Stones shall be of a size and shape to match the existing stones in the segment being restored. Their character varies from segment to segment and care shall be taken to select similar stones.

PART 3: EXECUTION

3.1 PREPARATION: Remove foreign material and stones as necessary; rake out all joints a minimum of 1-1/2 inches to sound surface; flush raked out joints and voids with clean water where stone is removed.

3.2 EXECUTION OF REPAIRS:

A. Retaining Walls: Replace loose or missing stones accurately both horizontally and vertically to maintain batter, width and character of existing wall.

B. Coping Stones: Replace or reset stones which have shifted or been dislodged. Where possible use actual stones. Set stones by using existing or drilling new indentations on two opposite sides of stones; then use stone tongs or "dogs" available from the Contracting Officer and a small, truck-mounted crane to put the stones in place. Match alignment and spacing of existing stones.

C. Stone-lined Ditches, Headwalls/Endwalls, Culverts and Catch Basins: Match installation technique for each segment.

PART 4: MEASUREMENT AND PAYMENT

4.1 MASONRY RESTORATION: Payment will be made at the contract lump-sum price.

END

PART 1: GENERAL

1.1 DESCRIPTION:

A. Work of section shall include but not be limited to the following:

1. Cleaning all existing stone surfaces.

2. Cleaning to remove all stains, heavy efflorescence, etc.

B. Related work specified elsewhere:

1. Section 04540: Repointing

1.2 QUALITY ASSURANCES:

A. Testing of Water

1. The Contractor, at his expense, shall engage the services of an independent laboratory that employs, on a full time basis, graduate chemists and maintains equipment for the testing of contents and impurities in water. The independent testing laboratory will be subject to acceptance by the Owner.

2. Testing shall be executed to determine on a regular basis whether there are impurities and foreign substances in the water to be used for cleaning which in itself will be harmful to the stone.

B. Qualifications

1. Work shall be performed by qualified and trained mechanics, skilled in the specialty of stone cleaning and having experience in other installed work comparable in scope, magnitude, similarity of design, and quality equal to this project.

C. Sample Cleaning

1. At the beginning of the Project, the Contractor shall clean sample panels covering examples of all typical surfaces with each of the various proposed cleaning methods or agents. Sample panels shall be of an appropriate size up to approximately 10 square feet and in locations as directed. Sample panels shall be approved prior to proceeding with the work.

2. Completed and approved sample areas shall be protected during the completion of the remainder of the work.

1.4 SUBMITTALS:

A. Product literature: Submit manufacturer's product literature, data sheets, contents of each product as well as printed recommendations for use and applications, and precautions.

B. Store materials as directed by the Owner under cover in a dry and clean location, off the ground. Remove materials that are damaged or otherwise not suitable for installation from the job site and replace with acceptable materials.

1.5 PRODUCT DELIVERY, STORAGE & HANDLING:

A. Environmental Restrictions:

1. Weather: Cleaning of the bridge will not be permitted more than two weeks after the last average frost date in the spring or two weeks before the first average frost date in the autumn.

2. Temperature: Do not clean facades when the ambient temperature is below 40 degrees F on a rising temperature of below 45 degrees F on a falling temperature, unless special provisions are made for heating materials and protecting the work, by providing and maintaining the temperature above 40 degrees F during and for 72 hours subsequent to clenaing.

3. Worker Protection: All work shall be carried out under conditions that ensure protection to workers. Chemicals and reagents shall be used in accordance with manufacturer's printed instructions. Proper respirator equipment, goves and safety equipment, etc. shall be worn during use of organic solvents or blasting.

PART 2: PRODUCTS

2.1 MATERIALS:

A. Where permitted, cleaning detergents, cleaning compounds, liquid solutions and soap powders shall be as recommended by the Contractor and shall be subject to the approval of the COR.

B. Cleaners for use on stone shall be Sure Klean Heavy Duty Cleaner, as produced by ProSoco, Inc., Kansas City, KS 66104, or approved equal. This product shall be diluted with at least three parts water.

C. Cleaners for Use on Stains (Paste and Poultice Application):

1. Iron Stains: Sure Klean ferrous stain remover, diluted with one part water.

2. Oil and Grease Stains: Sure Klean asphalt and tar remover.

3. Stobborn salts and stains in stonework shall be treated with Sure Klean marble poultice mixed with water or organic solvent, or surfactant recipe to be approved by COR.

4. Graffiti Remover: Chemical paint stripper containing organic solvents, Sure Klean 509 paint stripper or equal. Residual graffiti stains shall be removed with "Graffiti Gobber-Paint Remover, Ink Remover, Gum Remover", available from R.G. Enterprises Inc., 6428 Blarney Stone Court, Springfield, Virginia 22152, (703) 589-3564.

D. Cleaning materials shall not contain chemicals that may attach or leave deposits on the stone. Cleaning agents, equipment and methods employed shall in not way damage the stone or other adjoining materails. The process or processes used shall be the best suitable depending on the finish, hardness, and condition of the surface to be cleaned. Cleaning solvents shall be non-injurious to the surfaces upon which they are applied. The methods used shall cause no pitting, erosion or damage to the surfaces.

E. Water

1. Water supply is the responsibility of the Contractor.

2. After testing the available water sources, the Contractor shall follow the chemists or soncerbator's recommendations with regard to treatments and/or filter systems to be employed.

3. From the water sources available provide all required hoses, volves, connections, pumps, nozzles and allother necessary water conveying components to provide water at the bridge where needed.

PART 3: EXECUTION

3.1 INSPECTION:

A. Study the contract drawings and specifications with regard to the work as shown and required under this Section so as to insure its completeness.

B. Prior to commencement of any work of this Section, the Contractor sahll, in company with the COR, inspect all existing surfaces which will be cleaned under this Section in order to ascertain in detail the procedures and mthods which will be utilized in each location for the various kinds of soiling. Commencement of work will be constured as evidence that such inspection has been performed, existing surfaces accepted as being in satisfactory conditions for completion as specified, and agreement as to the scope and nature of each type of work has been reached.

C. Cooperate in the coordination and scheduling of the work of this Section with the work of other sections so as not to delay job progress.

3.2 PROTECTION & PREPARATION:

A. The Contractor shall be deemed to have visited the project site during the bidding period for the purposes of inspecting and ascertaining conditions applicable to stone cleaning work.

B. Protection: Ensure safe passage of persons. Conduct operations to prevent injury to adjoining sturctures, spaces, other faiclities and persons.

C. Any permits required shall be obtained and paid for by the Contractor.

D. Provide and afford all possible protection to plantings and trees from damage by cleaning ingredients.

3.3 CLEANING:

A. It is intended to remove all gross soiling, efflorescence, loose and exfoliating material and such other dirt as is possible without damage to the bridge fabric, all in accordance with an approved sample.

B. Cleaning shall be started after:

1. Sample panels are approved.

2. Protective means and methods are in place.

C. Cleaning shall include the removal of surface dirt and gypsum encrustation, stains and discolorations.

D. Unless specifically noted, the use of sire brushes or steel wood cleaning will not be permitted, nor will high pressurized abrasive, or high water pressure techniques be permitted. The use of abrasive mechanical cleaning will not be permitted: this prohibition includes sanding discs or grit plasters.

E. Cleaning shall commence at the bottom of the bridge and continue progressively up the face of the bridge to the highest grade level, covering the entire area in one stretch before shifting to the next stretch, unless otherwise approved. Each adjacent sretch shall be made in a continuous manner. The process shall be repeated until all dirt, grease or other defacements are removed from the facades, consistent with item A above. The finished surface shall present a uniformly clean appearance.

F. Stone surfaces shall be cleaned with specified chemicals and pressurized water only, and, to avoid water penetration, the Contractor shall take care to minimize the amount of water used. Some areas may require scrubbing or even repeat treatment. Water pressure shall vary according to specific material conditions, but shall never exceed 1,000 psi. All chemicals shall be thoroughloy rinsed from the surface of the masonry. Perform pH tests on masonry srufaces before and after chemical cleaning to determine the amount of rinsing required to remove all chemical residue.

G. General Procedure for Chemical Cleaning:

1. Brush or spray apply Sure Klean heavy duty restoration cleaner (diluted as necessary to obtain the best results without damage to the masonry).

2. Allow to dwell for 5 to 15 minutes depending upon surface.

3. Rinse with pressurized cold water.

4. Repeat if necessary.

H. Special Cleaning

1. On surfaces of heavy encrustation, local cleaning methods can be used subject to the COR's approval. Manual cleaning using hand tools of shisel and hammer will be allowed in specified areas. Care shall be taken as to not chip or damage the existing stone. Tools with 1/4" of material to remain to reduce potential damage to existing stone. Other such methods may also be sued for such purposes if deemed necessary and approved by the COR.

2. Use of grit blasting methods, either dry or wet or otherwise modified shall be permitted and approved by the COR.

3. Before any stain removal treatment is started, thoroughly wet the masonry around the stained area with cler water to rpevent the spread of cleaners and to prevent the development of staining the finish work. Clean spots in the finished work are to be avoided.

I. Oil or Grease Stain Removal:

1. Apply Sure Klean asphalt and tar remover.

2. Allow to dwell for 10 minutes.

3. Rinse with pressurized water.

J. Iron Stain Removal:

1. Brush apply Sure Klean ferrous stain remover.

2. Allow to dwell for 10 minutes.

3. Rinse with pressurized cold water.

4. Repeat if necessary.

5, For stubborn iron stains treat area with poultice containing ferrous stain remover.

K. Should the Contractor wish to modify any cleaning method specified, he shall submit his proposal in writing for consideration and review by the COR. The COR will ahve the right to ask for test samples before final approval. Any such modification or change shall be at no additional cost to the Owner.

L. Finished work shall show no signs of stains, scratches, streaks or runs of discoloration from use of cleaners. Leave all surfaces neat and clean. The appearance of the stone after cleaning and adequate drying time shall be uniformly clean.

3.4 CLEANING

A. During the progress of work, the Contractor shall remove all debris such as sand run-off and flaked paint from the site and surrounding area.

B. Upon completion of all cleaning oeprations, the Contractor shall remove all debris, residue, equipment and containers from the project site and shall elave the project site neat and clean.

C. The Contractor shall have rectified any damage caused by the cleaning operations.

PART 4: MEASUREMENT AND PAYMENT

4.1 STONE CLEANING FOR BRIDGES: Payment will be made at the contract lump sum price.

END

PART 1: GENERAL REQUIREMENTS

1.1 DESCRIPTION:

A. Work of this Section shall be governed by the Contract Documents. Provide materials, labor, equipment and services necessary to furnish, deliver and install all work of this Section as shown on the drawings, as specified herein, and/or as required by the job conditions.

B. All work specified under Stone Cleaning shall be completed before the work of this Section is commenced.

C. The work of this Section shall include, but not be limited to the following:

1. Cutting out and repointing all mortar joints as indicated on plans.

1.2 QUALITY ASSURANCES:

A. Standards

1. The work of this Section shall comply as a minimum requirement to the recommended practices contained in the following standards:

a. "Repointing Mortar Joints in Historic Brick Buildings", Preservation Brief No. 2, by Robert C. Mack, AIA, Technical Preservation Services Division, Office of Archeology and Historic Preservation, U.S. Dept. of the Interior, April 1976.

b. American Society for Testing and Materials (ASTM).

c. Federal Specifications (Fed. Spec.).

d. Unless stipulated otherwise, standards shall be the most recently issued.

B. All work of this Section shall be performed under the constant and direct supervision of a foreman especially skilled and knowledgeable in restoring historic masonry.

C. Work shall be performed by qualified, trained mechanics, skilled in the specialty of pointing stone, having experience in other installed work comparable in scope, magnitude, similarity of design, and quality equal to this Project.

D. Sample Panel

1. Prior to proceeding with the work, the Contractor shall cut out and repoint a 3' x 3' area of the masonry elevation in a location as directed by the COR using the tools, procedures, material, and techniques intended for the entire bridge. Sample area shall indicate methods of cutting out joints, repointing, tooling, mortar color and texture.

2. Sample area shall be inspected by the COR and, if necessary, shall be extended or repeated until the results are satisfactory. After approval, the sample panel shall serve as a standard of the quality required for the work.

3. When approved, the sample area shall be protected as necessary and upon completion of the project shall be part of the finished work.

1.3 SUBMITTALS:

A. The Certificates listed below are required to be submitted by the Contractor to the COR, for review. An omission of an item or items does not relieve the Contractor from this responsibility or from compliance with the Contract Documents, of which this is a part.

1.4 NOTARIZED CERTIFICATES OF COMPLIANCE:

Item No.	Description of Standard
C1	Portland Cement ASTM C-150 Type 1
C2	Lime ASTM C-207 Type S
C3	Aggregate ASTM C-144
C4	Testing of Mortar

1.5 DELIVERY, STORAGE AND HANDLING:

A. Deliver materials to the job site, ready for use in the manufacturer's original and unopened containers and packing, bearing labels as to type of materials, brand name, and manufacturer's name. Delivered materials shall be identical to certificates.

B. Store materials under cover in a dry and clean location, off the ground, and remove materials that are damaged or otherwise not suitable for installation from the job site and replace with acceptable materials.

C. Deliver materials and handle to prevent the inclusion of foreign materials and the damage of materials by water or breakage.

D. Perishable materials shall be properly protected and stored in weather tight structures, with floors raised not less that 12" above the adjoining grade. However, for short intervals of time, cement may be stored on suitable platforms and covered with water proof tarpaulins.

E. Remove unused cement that has hardened or partially set from the site.

F. Store aggregates in clean bins, scows or platforms having hard, clean surfaces. In arranging for storage of aggregates, positive means shall be used to prevent the inclusion of foreign materials. Frozen aggregates or aggregates containing frozen lumps shall be thawed before use. Washed aggregates produced or manipulated by hydraulic methods shall be allowed to drain for at least 12 hours before use.

1.6 JOB CONDITIONS:

A. Environmental Restrictions:

1. Temperature: Do not clean facades when the ambient temperature is below 40°F on a rising temperature or below 45°F on a falling temperature, unless special provisions are made for heating materials and protecting the work, by providing and maintaining the temperature above 40°F during and for 72 hours subsequent to cleaning.

B. Protection:

1. The Contractor shall at all times maintain sufficient protection to prevent damage or spillage onto existing surfaces.

2. It is anticipated that some failure of the existing surface will occur during cleaning. The stone or masonry surface shall be pointed and watertight exterior maintained at all times.

PART 2: PRODUCTS

2.1 MATERIALS:

A. Water: potable, clean and free from injurious amounts of oil, acid, alkali, organic matter or other deleterious substances.

B. Cements:

1. Portland Cement: An approved brand, and in accordance with ASTM C-150, Type 1.

2. Non-Staining Cement: an approved brand white Portland Cement containing no ingredient that will stain other materials with which it comes in contact and shall not contain more than .030 percent by weight of soluble alkali calculated as Na_2O when tested for that property in accordance with the test set forth in Fed. Spec. SS-C 181.

3. The cement shall be the product of one plant, to secure uniformity of color.

4. Wherever the word "Cement" is used in the various Sections of the Specifications, unless otherwise particularly specified, it shall mean Portland Cement.

C. Lime: Hydrated Lime of an approved brand and in accordance with ASTM C-207, Type S.

D. Sand (Fine Aggregate): of an acceptable color and in accordance with ASTM C-144, except as particularly specified herein. Sand shall be graded from coarse to fine. One hundred percent of sand shall pass through No. 12 mesh sieve and no more than 15 to 20 percent through No. 50 mesh sieve.

1. Sand color, size and texture should match the original types of mortar joints as determined by laboratory analysis. (See "Proportioning of Mortar", following).

E. Admixtures:

1. No admixtures will be permitted.

2. No anti-freeze compounds will be permitted.

3. No calcium chloride will be permitted.

F. Samples and Testing:

1. Submission: Before start of work, a 1 pound sample of each type of sand to be used shall be submitted to the COR for review.

2. After acceptance and 24 hours prior to shipment of sand from supply source, the Owner shall be notified, so that necessary tests and authorization for shipment can be made at the time of supply.

3. The testing of sand for gradation and other properties shall conform to requirements of ASTM C-144.

4. The testing of mortar shall conform to the requirements of ASTM C-270, and the average value of specimens tested shall not be less than 85% of the compressive value obtained from the same mix, using the same kind and brand of cementious material and standard Ottawa sand.

2.2 PROPORTIONING OF MORTAR:

A. The proportions and constituents of the mortar shall be as specified below. Chemical test samples of the different mortars shall be obtained by the Contractor as directed by the COR from the existing bridge. These samples shall be submitted to an acceptable testing laboratory to determine the proportioning and matching color of each type of mortar. Upon review of these tests by the COR, the Contractor shall use these test results in making the mortars.

B. Mortar generally shall be in proportion subject to test results and approvals.

1. Mortar for use shall have compressive strength lower than the adjacent stone. Cement and sand shall be of selected colors so that mortar will match as closely as possible the existing mortar after cleaning.

C. Modifications in the proportions of the mortar and/or constituents may be directed by the COR until the Contractor produces a mortar that matches the visual and physical character of the existing mortar.

2.3 MIXING OF MORTAR:

A. The method of measuring materials on the job shall be such that the specified proportions of the mortar materials can be controlled and accurately maintained during the entire progress of the work.

B. Unless otherwise particularly specified, all proportions shall be by volume.

C. Mortar Grout: Mortar for grouting and poured fills shall have the quantity of water increased to produce the consistency required for pouring and shall be continuously stirred to prevent the segregation of the aggregate.

D. Pointing Mortar shall be of as dry a consistency as will produce a mortar sufficiently plastic to be worked into joints.

E. Mortar shall be pre-hydrated by mixing the dry ingredients (cementious materials and aggregate), with only sufficient water to produce a damp mass of such consistency that it will retain its form when pressed into a ball with the hands, but will not flow under the trowel, and allowing the mass to stand for a period of not less than one hour and not more than two hours. After the pre-hydrating period (1 to 2 hours), the mortar shall be removed with the addition of sufficient water to produce satisfactory workability.

PART 3: EXECUTION

3.1 INSPECTION AND PROTECTION:

A. Study the contract drawings and specifications with regard to the work as shown and required under this Section so as to insure its completeness.

B. Prior to commencement of any work of this Section, the Contractor shall, in company with the COR, inspect all existing surfaces which will be worked on under this Section in order to ascertain, in detail, which joints will be pointed, and all other work required under this Section. A standard will also be established for pointing in good condition. Commencement of work will be construed as evidence that such inspection has been performed, existing surfaces accepted as being in satisfactory condition for completion as specified, and agreement as to the scope and nature of each type of work has been reached.

C. Cooperate in the coordination and scheduling of the work of this Section with the work of other Sections so as not to delay job progress.

D. Protection: Properly protect surfaces not being worked on at all times during operations. When rain or snow is imminent, and the work is discontinued, cover and protect all cut out joints not pointed or sealed, and all recently pointed stone for a period of not less than 72 hours after work or until rain or snow ceases, whichever is shorter, with a strong waterproof membrane, well secured in place, or other approved protective methods.

3.2 CUTTING OUT JOINTS:

A. Cut and rake out joints to be pointed or sealed to a minimum depth of ¾" throughout. In addition, wherever mortar is cracked, missing, or unsound, cut joints out until sound material is reached. Joints that are wider than ⅜" shall be cut out to a depth of 1" minimum.

B. Brush joints clean. Clean mortar out to a uniform depth, leaving square corners at back of cut.

C. Flush raked joints with air jet or water under pressure to remove loose particles, dust and debris. Just before pointing, leave joints damp (no free water) to reduce suction of stone.

D. Cutting out old mortar shall be done with <u>hand tools</u> used in the best tradition of the trade. The Contractor shall ensure that:

1. Tools shall be of proper width, so as not to widen the stone joint.

2. Edges of stones shall not be chipped.

3. Corners of stones shall not be rounded or spalled.

4. Should accidental cuts be made in faces of stone, or joints widened, edges chipped, corners rounded, or any other degradation of the quality of the stone work occur, then the Contractor, at no additional costs to the Owner, shall repair or replace such damaged stones, as determined by the COR.

3.3 POINTING:

A. Force mortar into joints with sufficient pressure to insure joint is well packed. Use tool narrower that the joint width to pack mortar solidly into the back of joint. Should the existing joint be more than ¾" in depth, place the new mortar in several layers. Each preceding layer shall be thumb print hard before allowing another layer to be placed. Strike off excess mortar and remove mortar droppings from adjacent surfaces.

B. When the final layer of mortar is thumb print hard, compact mortar joints with pointing tools. Joint profiles shall be made to reproduce original profiles (if such can be determined). When no examples of original joint treatment remain, tool joints to match existing profiles. Tooling of stone joints shall be slightly recessed to avoid thin feather edges.

C. Where existing mortar has been removed (or has fallen out) to a depth greater than 1", these deeper places should be filled first, compacting new mortar in several layers. Once this has been completed, the back of the entire joint shall be filled by applying approximately ¼" of mortar and packing in back and corners of the joint. This application may extend for several feet, but not more than 4'. As soon as the applied mortar has reached thumb print hardness, another layer of mortar of approximately the same thickness shall be applied. Several layers shall be applied until the joint is filled flush with the outer surface of the stone. Allow each layer time to lose much of the water and become stiff before the next layer is applied. When the final layer of mortar is thumb print hard, the joint shall be tooled in a manner to match the appearance of the old mortar.

D. Rate of stiffening shall be controlled by dampening the stone and old mortar before beginning to fill the joint. Free water or excessive dampness in the joint shall be avoided.

E. Recess slightly the final mortar surface on stone with worn, rounded corners to avoid leaving a joint that would be wider visually than the original appearance. Do not leave a feather edge.

3.4 CLEANING:

A. Cleaning: Take precautions against dropping or smearing pointing material. Clean off all pointing material from face of the stone, glass or any other part of the bridge as the work progresses. In the completed work, leave no pointing material beyond the lines of the joint. Insure thorough and neat work.

B. Remove extraneous mortar particles with a bristle brush after the mortar dries, but before it hardens. If mortar has hardened, remove with a wooden paddle.

C. If further cleaning is necessary, it shall be done with plain water and bristle brushes. No chemicals or ferrous tools shall be used.

3.5 REPOINTING:

A. Rake out all stone to stone joints by hand using a chisel ¼" or less in width. Clean all mortar from surfaces within the joint or crack so that the new pointing mortar bonds to the building material, not old mortar. Do not chip or spall edges of the stone. More than on ½" chip per square yard will be unacceptable.

B. Joint depth to be at least 1" (but in all cases rake back to expose sound mortar.)

C. Brush or vacuum all flush joints or cracks to remove all dirt and loose debris.

D. Wet stone, surface dry, prior to pointing.

E. Pack joints and cracks with pointing mortar leaving no voids. Clean mortar from face of masonry and joints. Remove droppings and splashed mortar immediately.

F. Compact mortar joints with pointing tools. Joint profiles shall be made to reproduce original profiles (if such can be determined). When no examples of original joint treatment remain, tool joints to match existing profiles.

G. Keep joints damp until mortar has set.

PART 4: MEASUREMENT AND PAYMENT

4.1 BRIDGE REPOINTING: Payment will be made at the contract lump sum price.

END

APPENDIX

APPENDICE A-1.

LIST OF ABBREVIATIONS USED TO IDENTIFY CORRESPONDENCE

AA	A. Adams
ABC	Arno B. Cammerer
ABM	A. B. Miller
AEC	A. E. Clement
AED	Arthur E. Demaray
AFS	Albion F. Sherman, Editor, The Bar Harbor Times
AHL	A. H. Lynam
AM	Agnes Marshall
B	Bangor Commercial Newspaper
BF	Beatrix Farrand
BH	Buchanan Houston
BHVIA	Bar Harbor Villiage Improvement Association
BLH	Benjamin L. Hadley
BMF	B. M. Fernald
CCL	C. C. Little
CDJ	Chancy D. Joy
CEP	Charles E. Peterson
CFB	Carl F. Brush
Cit	Citizens of Hancock County
CM	Charles Miller
COH	Charles O. Heydt

CPS	Charles P. Simpson
CWE	Charles W. Eliot
CWS	Charles W. Stoughton
CWS	Chas. W. Shea
DC	Duncan Candler
DH	Daniel Hull
DHM	Dave H. Morris
ECC	E. C. Cammerer
EGP	Elizabeth G. Pattee
ERS	Edwin R. Smith
FH	Frederick Hale
FLO	Frederick Law Olmsted
GA	Grosvenor Atterbury
GB	Gist Blair
GBD	George B. Dorr
GCA	George C. Abbott, Chief of Police, Bar Harbor
GET	Guy E. Torrey
GLS	George L. Stebbins
GWP	George W. Pepper
GWR	G. W. Ross
HJS	H. J. Spelman
HLI	Harold L. Ickes
HMA	Horace Marden Albright

IOC	Irving O. Clement
JAP	John A. Peters
JD	Jay Downer
JDRIII	John D. Rockefeller, 3rd.
JDRJ	John D. Rockefeller, Jr.
JEN	John E. Nelson
JJO	John J. O'Brien
JMS	James M. Shea
JMW	Janet M. Warfield
KD	K. Driscoll
LBD	L. B. Deasy (Judge)
LK	L. Kast
LPH	Leonard P. Hall, Jr.
MC	Mr. Cromwell
MSL	Maine State Library
NR	Nelson Rockefeller
OB	Olmsted Brothers
PDS	Paul D. Simpson
PTC	Philip T. Carroll, Town Clerk
RLW	Ray Lyman Wilbur
RWG	Robert W. Gumbel
SBR	Serenus B. Rodick
SC	Sam Candage

SE	Stephen Early
SFR	S. F. Ralston
SRM	Senators & Representatives from Maine
STM	Stephen T. Mather
SW	S. Work
TCH	Thomas C. Higgins
TV	Thomas Vint
W&S	Wyman & Simpson, Inc.
WBC	W.B. Carter
WGH	Walters G. Hill
WJT	William Jay Turner
WL	Rev. William Lawrence
WRM	William R. McAlpin
WRP	W. R. Pearsall
WS	Walworth Simpson
WWB	William Welles Bosworth

APPENDICE A-2

CORRESPONDENCE FROM ACADIA NATIONAL PARK
Acadia: Carriage Roads

Date	From	To	Subject
			Letter about closing one of two C.C.C. Camps in Acadia National Park.
			C.C.C. in Maine-A Pictorial History by Jon A. Schlenker-Outline, List of Camps & Other Info.
1/5/24	ECC	GBD	Opposition to the roads and bridges and upcoming meetings.
1/8/24	JAP	JEN	Green Mountain Road-interference and cessation of work-telegram.
1/8/24	JAP	FH	Green Mountain Road-interference and cessation of work-telegram.
1/8/24	JAP	BMF	Green Mountain Road-ask Interior Dept. to change no plans-telegram.
1/10/24	GBD	AEC	Motor road connecting Great Pond Hill to Bubble Pond-government work & Road-trail west of Jordan Pond connecting at northern end of Southwest Pass with the Southwest Valley Road.
2/15/24	Cit	SRM	Ask Interior Department not to stop building of road & signed by 20 residents.
2/25/24	BC		Editorial about Senator Pepper's objection to Eagle Lake-Green Mountain Road.
3/10/24	BF	STM	Approval of continuation of road building program for development of Lafayette National Park.
3/10/24	BF	GET	Opposition of road building program approved by Interior Dept-encloses letter to take to Washington for hearing.
3/17/24	GWP	JAP	His intent to urge upon Secretary of Interior the appointment of representative body to check up on Mr. Dorr's activities.

APPENDICE A-2

CORRESPONDENCE FROM ACADIA NATIONAL PARK
Acadia: Carriage Roads

Date	From	To	Subject
3/19/24		MC	National Park Service's road building program and Senator Pepper's objections.
7/18/24	GBD	STM	Map of roads in Lafayette National Park-motor & horse roads-debate over National Park Service's road building program.
7/25/24	SW	GBD	Map & Blueprint showing roads in Lafayette National Park-motor use, carriages, & horses.
5/16/25		AED	National Park Service's road building program.
10/5/30	CCL	RLW	CCL feels that unique features of Park are being destroyed by road building done by JDRJ.
10/26/31	PDS	JDRJ	Sewer and water pipe lines for Jordan Pond underpass.
7/12/33	ABM	JDRJ	Survey plans for Roads at Mount Desert.
7/12/33	ABM	JDRJ	Mount Desert Surveys (proposed motor road).
3/14/35	JDRJ	HLI	Motor Road & horse roads (proposal by JDRJ to deed all lands to Gov't to for development program of Acadia National Park).
5/25/35	GBD	CM	Planting of oaks in Gorge opposite the Tarn.
7/25/35	HLI	JDRJ	Motor Road & horse roads (agreement between National Park Service & JDRJ).
7/27/35	ABC	HJS	Motor Road & horse roads.
8/8/35	SE	JJO	CCC-moral standards on decline since CCC came to Acadia.
8/16/35	JDRJ	GBD	Gravel Pit on Ocean Drive.
8/21/35	JDRJ	GBD	Gravel Pit on Ocean Drive (drainage system).

APPENDICE A-2

CORRESPONDENCE FROM ACADIA NATIONAL PARK
Acadia: Carriage Roads

Date	From	To	Subject
8/26/35	GBD	JDRJ	Gravel Pit on Ocean Drive.
8/29/35	GCA	GBD	C.C.C. Camp-154th Camp-complaints and criticism from summer & permanent residents-conduct of men from camp been excellent.
9/9/35	ABM	JDRJ	Motor Road to Mountain Road (brief mention of horse roads).
9/16/35	PTC		C.C.C. Camps.
9/23/35	GBD	AED	C.C.C. Camps, Cancer research laboratory on land previously used for University of Maine Summer School; Dr. Little's changed attitude against the Rockefeller Road Program.
9/26/35	BLH		Gravel Pit on Ocean Drive (shovel operator).
10/1/35	JDRJ	HLI	Motor Road & horse roads (changes to map; agreement between NPS and JDRJ).
10/3/35	GBD	EGP	Brief History of Hancock Co. Trustees of Public Reservations.
10/17/35	JDRJ	ABC	Motor Road & Master Plan for Acadia (survey material).
10/23/35	JDRJ	GBD	Horse Roads and work car signs.
11/13/35	JDRJ	GBD	Ocean Drive and Horse Roads (work car signs).
11/18/35	BLH	GBD	Horse Roads and work car signs.
11/18/35	GBD	JDRJ	Horse Roads (gates & use of roads by motorists).
11/19/35	JDRJ	GBD	Old Corkscrew Hill Road (brief mention of horse roads).
12/30/35	GBD	SBR	Horse roads.
1/27/36	JDRJ	GBD	Horse Roads (cars traveling).

APPENDICE A-2

CORRESPONDENCE FROM ACADIA NATIONAL PARK
Acadia: Carriage Roads

Date	From	To	Subject
1/27/36	JDRJ	GBD	Horse Roads (cars traveling).
12/14/37	LPH	BLH	Carriage Roads-possible article.
1/12/49	NBD	JDRJ	Carriage roads at Acadia-bicycling-Mr. Breeze's report.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
12/8/16	JDRJ	AEC	Thank you letter explaining bill.
12/11/16	JDRJ	AEC	Question about work on the Barr Hill.
12/19/16	JDRJ	AEC	Work to be under the heading of "Jordan Pond Crossing Job".
1/1/17	CPS	JDRJ	Concerning the road and pond.
1/6/17	AEC	JDRJ	Secretary says accounts will be up-to-date shortly.
1/15/17	CPS	JDRJ	Progress at Seal Harbor
1/19/17	JDRJ	CPS	Progress of road at Seal Harbor.
1/23/17	CPS	JDRJ	Progress report.
3/23/17	AEC	JDRJ	Secretary makes correction to price of catch basin covers.
4/18/17	CPS	JDRJ	Progress report.
10/5/17	JDRJ	CPS	Purchased property on Brown Mountain.
11/17			Memorandum covering the several roads surveyed and agreed upon at Seal Harbor in November, 1917.
11/19/17	JDRJ	CWE	Jesuits Field at Somes Sound & morals of American soldiers in France.
12/15/17	AEC	JDRJ	Coping on bridge.
12/19/17	JDRJ	AEC	Mr. Rockefeller's opinion to the coping stones.
12/19/17	JDRJ	CPS	Work to be done on different roads.
12/24/17	AEC	JDRJ	Progress about Barr Hill and Gardiner Road.
2/8/18	JDRJ	GBD	Motor Roads & Bridle Path (reservation lands).

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
2/16/18	JDRJ	GBD	Bridle Path (requests permission to build road from Reservation) & Motor Roads.
2/28/18	GBD	JDRJ	Telegram - Submit surveyor's plan of work intended and specifications.
3/12/18	GBD	JDRJ	Roads & Bridle Paths (on reservation lands).
3/14/18	JDRJ	GBD	Letter not sent regarding permission by Trustees of Public Reservations.
3/18/18	GBD	JDRJ	Road through Reservation.
3/19/18	JDRJ	AEC	Seal Harbor voted to pay $3/day to common labor.
3/25/18	AEC	JDRJ	Will try to keep wages down.
5/26/18	JDRJ	AEC	Try not to use any automobiles on the road; catch basins; upkeep this summer.
6/18/18	JDRJ	AEC	Mistake in the gates and he wants a progress report.
7/19/18	AEC	COH	Error on time slips.
8/5/18	JDRJ	WWB	Roads & Request for design of masonry bridge.
8/21/18	WWB	JDRJ	Drawing of masonry bridge design.
8/28/18		WWB	Thanks for letter & drawings of masonry bridge design & request return of drawing of stone bridge drawn by WBB many years earlier.
9/21/18		AEC	Memorandum of work to be done.
9/23/18	CPS	JDRJ	Harbor Brook Road, Lines of Jordan Property.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
9/24/18	AEC		Contract & Specifications for Road at Seal Harbor.
9/24/18	JDRJ	AEC	Confirm verbal agreement for construction of road from Gardiner-Mitchell Hill Road to Brown Mountain Road (bridle path)-copy of specifications & contract enclosed.
9/25/18	JDRJ	AEC	Specifications & Contract for Gardiner-Mitchell Hill Road to Brown Mountain Road (contract does not include bridge across Little Harbor Brook).
10/16/18	COH	CPS	Little Harbor Brook Road.
10/19/18	COH	AEC	Payment of bills.
11/17/18	CPS	JDRJ	Finished center line on Asticou-Jordan Pond Road and northern Mitchell Hill Road No. 2.
11/26/18	AEC	JDRJ	Completed most of the items on the memorandum. Response to letter of November 9.
12/17/18	JDRJ	AEC	Bridle Path.
1/15/19	AEC	JDRJ	Little Harbor Brook Road.
1/17/19	JDRJ	AEC	Little Harbor Brook Road.
1/17/19	JDRJ	CPS	Little Harbor Brook Road & Bridle Path.
1/21/19	JDRJ	AEC	Telegram expressing sympathy of loss.
1/22/19	CPS	JDRJ	Little Harbor Brook Road.
1/25/19	JDRJ	CPS	Little Harbor Brook Road.
2/13/19	JDRJ	AEC	Returning soldiers looking for work.
2/14/19	JDRJ	CPS	Little Brook Harbor Road.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
2/17/19	CPS	JDRJ	Bridle Path.
2/21/19	JDRJ	CPS	Bridle Path & Little Harbor Brook Road.
3/18/19	JDRJ	CPS	Profile of balance of Little Harbor Brook Road connecting with Main Asticou-Jordan Pond Road.
3/25/19	CPS	JDRJ	Little Harbor Brook Road-profile.
3/29/19	JDRJ	CPS	Little Harbor Brook Bridge & saddle path.
4/2/19	CPS	JDRJ	Little Harbor Brook Road-blueprint of final section.
4/7/19	CPS	JDRJ	Little Harbor Brook Bridge.
4/15/19	JDRJ	COH	Little Harbor Brook Bridge.
4/15/19	JDRJ	CPS	Little Harbor Brook Bridge.
4/16/19	WB	JDRJ	Little Harbor Brook Bridge.
4/16/19	JDRJ	CPS	Little Harbor Brook Road.
4/16/19	JDRJ	AEC	Asking where a station is on the new road as the limit of his contract.
4/22/19	JDRJ	AEC	Little Harbor Brook Bridge.
4/28/19	AEC	JDRJ	Thanks for sympathy; will supply his milk for this season.
5/12/19	JDRJ	AEC	Little Harbor Brook Road (horse road).
6/12/19	COH	CPS	Little Harbor Brook Bridge.
6/17/19	CPS	COH	Little Harbor Brook Bridge.
7/31/19	COH	JDRJ	List of payments made to Mr. Clement.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
8/30/19	JDRJ	CPS	Requesting information for bridges.
10/2/19	CWE	JDRJ	Praising the beauty of the roads.
10/2/19	SC	JDRJ	Jordan Pond Dam Bridge.
10/2/19	SC	JDRJ	Deer Brook Bridge.
10/25/19	AEC	JDRJ	Little Harbor Brook Road.
10/28/19		AEC	Little Harbor Brook Road & Redfield Hill Road.
10/30/19	JDRJ	CPS	Want to know Mr. Dorr's reaction after being over the Asticou-Jordan Pond Road.
11/19/19	JDRJ	GBD	Comments on suggestions made regarding Jordan Pond-Asticou Road.
12/18/19	JDRJ	SC	Jordan Pond Dam Bridge.
1/2/20	GBD	JDRJ	Pictures he had taken.
1/2/20	GBD	JDRJ	Suggestions for the roads.
1/30/20	JDRJ	GBD	Signs to prohibit automobiles.
2/24/20	GBD	JDRJ	Signs to prohibit automobiles.
2/27/20		JDRJ	Received letter of 2/13.
7/22/20	GBD	JDRJ	Submit plans for approval to Director and Assistant Director of NPS.
8/30/20	COH	JDRJ	Brown Mountain Road (contracts with Mr. Joy).
8/30/20	COH	JDRJ	Little Harbor Brook Road (contracts with Mr. Clement).

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
9/10/20	AEC	JDRJ	Fees for building roads.
10/18/20	RWG		Rent on boarding house.
3/17/21	AEC	JDRJ	Keeping people off road till it is ready so it doesn't get destroyed.
5/28/21	JDRJ	GBD	Possibility of an article to explain plans for the national park.
8/1/21	JDRJ	PDS	Bubble Pond Survey.
8/1/21	JDRJ	PDS	Jordan-Sargent Mountain Survey.
8/1/21	JDRJ	PDS	Jordan Pond-Eagle Lake Survey.
8/1/21	JDRJ	PDS	Summary of three letters, copies sent to GBD.
8/1/21	JDRJ	GBD	Submitting plans for federal approval.
8/2/21	JDRJ	PDS	Items that need to be done.
8/8/21		JDRJ	Memo about road contracts with Clement & Joy.
6/14/22	WS	JDRJ	Health of CPS.
6/22/22	JDRJ	PDS	Work for CPS.
7/6/22	GBD	JDRJ	Everything progressing favorable with NPS.
7/12/22	JDRJ	GBD	Proposal to donate money to connect National Park to Bar Harbor-2 copies.
7/15/22	JDRJ	GBD	Road on west side of Jordan Pond (possible contract with Clement).
7/15/22	GBD	AEC	Agreement for construction of road on West Side of Jordan Pond in Lafayette National Park.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
7/25/22	JDRJ	GBD	Concerning contract for construction of road on West Side of Jordan Pond in Lafayette National Park.
8/3/22	GBD	JDRJ	Concerning contract for Road on West Side of Jordan Pond.
			Specifications for a Horse Road on Mount Desert Island-goes with letter of 9/21/22 to AEC.
8/14/22	JDRJ	GBD	Comments on a memorandum attached about the roads.
9/21/22	JDRJ	CPS	Gave $500 as an expression of friendship.
9/21/22		AEC	Concerning construction of road on West Side of Jordan Pond.
9/22/22	JDRJ	PDS	Salary and work.
9/22/22	JDRJ	Mrs. CPS	Work when CPS feels like it.
9/22/22	JDRJ	AHL	Concerning construction of road on West Side of Jordan Pond; Mr. Rockefeller encloses draft of possible letter from Mr. Dorr to Mr. Clement and copy of suggested specifications.
10/2/22	CPS	JDRJ	Thanks for expression of friendship.
10/3/22	GBD	JDRJ	Road on West Side of Jordan Pond-rockslide work.
10/6/22	JDRJ	GBD	Road on West Side of Jordan Pond-rock slide.
10/9/22	GBD	AEC	Concerning agreement for Road on West side of Jordan Pond-specifications included.
10/11/22	JDRJ	AEC	Road on West Side of Jordan Pond.
5/18/23	JDRJ	SC	Asking him to get stone for Bridges on road around the west side of Sargent Mountain and south side of Little Brown Mountain.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
5/25/23			Specification for the Bridges on Jordan-Sargent Mountain Road at Waterfall Bridge Site and at Hemlock Bridge Site.
5/28/23	WRP	JDRJ	Specifications for Jordan-Sargent Mountain & Hemlock Bridge.
5/29/23	WRP	SC	Specifications for Jordan-Sargent Mountain & Hemlock Bridge.
5/29/23	WRP	PDS	Specifications for Jordan-Sargent Mountain & Hemlock Bridge-2 copies.
5/29/23	WRP	JDRJ	Bridges-drainage.
5/31/23	WRP	JDRJ	Bridges-drainage & construction.
6/5/23	SC	JDRJ	Hemlock Bridge.
6/7/23	SC	JDRJ	Hemlock Bridge.
6/7/23	JDRJ	WRP	Bridges-drainage.
6/8/23	RWG	WWB	Hemlock Bridge.
6/9/23	AHL	JDRJ	Employment of Mr. Hill, assistant and helper employed by NPS, paid by JDRJ.
6/15/23	JDRJ	PDS	Hemlock Bridge.
6/15/23	JDRJ	SC	Hemlock Bridge.
6/18/23	SC	JDRJ	Hemlock Bridge.
6/19/23	JDRJ	PDS	Telegram re: Hemlock Bridge.
6/19/23	PDS	JDRJ	Telegram re: Hemlock Bridge.
6/19/23	PDS	JDRJ	Hemlock Bridge.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
6/20/23	PDS	JDRJ	Hemlock Bridge.
6/20/23	RWG	JDRJ	Hemlock Bridge.
6/21/23	JDRJ	GBD	Interested in Dorr's proposal to cross Eagle Lake Road on the west side of Eagle Lake with a tunnel.
6/21/23	JDRJ	PDS	Cost of Hemlock Bridge.
6/21/23	BWC	JDRJ	Hemlock Bridge.
6/22/23	PDS	JDRJ	Hemlock Bridge.
6/23/23	JDRJ	SC	Hemlock Bridge.
6/23/23	JDRJ	PDS	Hemlock Bridge.
8/16/23	COH	BW&SC	Charge for compressor for Hemlock Bridge.
9/5/23	COH	BH	Budget for Hill's work is exhausted.
9/11/23			Memorandum-Decisions by Simpson, Hill and Rockefeller.
11/2/23	SC	JDRJ	Hemlock Bridge.
12/13/23	JDRJ	SC	Waterfall Bridge.
12/24/23	JDRJ	CPS	Personal letter of friendship.
12/24/23	PDS	JDRJ	Hemlock Bridge.
12/31/23	JDRJ	PDS	Hemlock Bridge.
1/16/24	CEO	WBC	Hemlock Bridge.
2/21/24	JDRJ	SC	Hemlock Bridge.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
3/24/24	JDRJ	GBD	Pledge of $25,000 to complete the Jordan-Sargent Mountain Road (portion on park land).
6/14/24	COH	PDS	Hemlock Bridge.
6/15/24	SC	JDRJ	Hemlock Bridge.
6/18/24	COH	PDS	Hemlock Bridge.
6/23/24	PDS	COH	Hemlock Bridge.
8/12/24	COH	JDRJ	Hemlock Bridge.
8/14/24	COH	JDRJ	Travel arrangement for Mr. Ralston.
8/21/24	JDRJ	COH	Hemlock Bridge.
8/23/24	COH	JDRJ	Hemlock and Waterfall Bridge.
8/24/24	COH	WWB	Waterfall Bridge.
9/25/24	JDRJ	PDS	Waterfall Bridge.
9/27/24	COH	PDS	Waterfall Bridge.
9/30/24	JDRJ	SFR	Buying ice from Mr. Eddy.
10/2/24	WWB	RG	Waterfall Bridge.
11/11/24	JDRJ	HMA	Yellowstone Park-roadside cleanup.
11/18/24	SFR	JDRJ	Photos of Hemlock Bridge.
12/8/24	GBD	JDRJ	Future road plans.
12/24/24	JDRJ	PDS	Work for Mr. Hill to do.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
1/20/25	JDRJ	SC	Waterfall Bridge.
1/30/25	SC	JDRJ	Waterfall Bridge.
2/4/25	SFR	JDRJ	Work is shut down on bridge (Waterfall?) estimate 70% completed.
2/4/25	JDRJ	SC	Waterfall Bridge.
2/16/25	SW	JDRJ	Waterfall Bridge.
4/14/25	SFR	JDRJ	Drainage problems.
5/9/25	SFR	JDRJ	Work delegated to several people.
5/12/25	STM	GBD	Deer Brook Bridge.
6/18/25	PDS	JDRJ	Deer Brook Bridge.
6/21/25	JDRJ	SC	Deer Brook Bridge.
6/23/25	WWB	RWG	Deer Brook Bridge.
7/1/25	SC	JDRJ	Jordan Pond Dam Bridge.
7/1/25	SC	JDRJ	Deer Brook Bridge.
7/15/25	JDRJ	RG	Waterfall Bridge completed.
7/17/25	RWG	JDRJ	Deer Brook Bridge.
7/17/25	JDRJ	CDJ	Jordan-Sargent Mountain Road, Bridges, Bridle Path, & Tennis Courts.
7/23/25	JDRJ	AHL	Mr. Hill continues in employment by Lafayette National Park to look after road planning and construction.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
7/29/25	JDRJ	WRP	Hadlock Brook Bridge.
7/29/25	JDRJ	WWB	Hadlock Brook Bridge.
8/17/25	JDRJ	SC	Deer Brook Bridge.
8/18/25	WRP	JDRJ	Hadlock Brook Bridge.
10/2/25	JDRJ	CPS	Friendly personal note.
10/7/25	JDRJ	WRP	Eagle Lake Bridge.
10/13/25	SFR	COH	Deer Brook Bridge.
12/22/25	COH	SFR	Hadlock Brook Bridge.
12/24/25	WRP	RWG	Eagle Lake Bridge.
12/26/25	SFR	COH	Chasm Brook Bridge.
12/29/25	COH	JDRJ	Deer Brook Bridge.
12/31/25	JDRJ	SC	Hadlock Brook Bridge.
1/4/26	COH	JDRJ	Trying to keep Mr. Hill as the planner of the roads.
1/4/26	SC	JDRJ	Hadlock Brook Bridge.
1/12/26	SRF	JDRJ	Giving report of work done which he asked for.
1/13/26	JDRJ	PDS	Hadlock Brook Bridge.
1/20/26	JDRJ	SFR	Work to be done on carriages and automobiles.
1/20/26	JDRJ	SFR	Keeping up on all the work being done.
1/26/26	AA	WRP	Chasm Brook Bridge.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
1/29/26	SFR	JDRJ	Keeping Mr. Rockefeller informed of all work and progress.
2/1/26	AHL	COH	Work on Clement road to be done in same manner as for the Automobile Road and Carriage Road.
2/8/26	WRP	JDRJ	Chasm Brook Bridge.
2/20/26	SFR	JDRJ	Hadlock Brook Bridge.
3/12/26	JDRJ	PDS	Hadlock Brook Bridge.
4/8/26	AEC	JDRJ	Mountain Road-Letter about discharge and circumstances that occurred at time doing slide work.
5/6/26	JDRJ	SC	Chasm Brook Bridge.
5/6/26	JDRJ	AEC	Satisfaction with Mr. Clement's road.
6/24/26	COH	JDRJ	Hadlock Brook Bridge.
8/9/26			Statement of Expenditures for Bubble Pond Bridge.
8/13/26	JDRJ	SC	Hadlock Brook Bridge.
8/26/26	COH	SFR	Final Bill for Hadlock Brook Bridge.
8/27/26	SC		Estimate for Chasm Brook Bridge.
9/16/26	ABC	JDRJ	Recalls meeting with secretary.
9/16/26			Selectmen of Bar Harbor. Vote to construct Eagle Lake Bridge.
9/22/26	ABC	JDRJ	Bubble Pond Bridge.
9/28/26	JDRJ	ABC	Bubble Pond Bridge.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
10/6/26	JDRJ	ABC	Bubble Pond Bridge.
10/16/26	ABC	JDRJ	Bubble Pond Bridge.
10/21/26	JDRJ	WWB	Eagle Lake Bridge.
10/21/26	JDRJ	CDJ	Mountain Road & Bridle Path.
11/8/26	AA	SFR	Bubble Pond Bridge.
11/22/26	JDRJ	SFR	Bubble Pond Bridge.
11/24/26	SFR	COH	Names of the Bridges.
11/24/26	SFR	JDRJ	Eagle Lake Bridge.
11/29/26	JDRJ	ABC	Bubble Pond Bridge.
11/29/26	JDRJ	SFR	Bubble Pond Bridge.
11/29/26	JDRJ	PDS	Eagle Lake Bridge.
11/29/26	JDRJ	SFR	Bubble Pond Bridge.
12/3/26	ABC	JDRJ	Bubble Pond Bridge.
12/3/26	DH/TV	Dir.NPS	Bubble Pond Bridge.
12/7/26	PDS	JDRJ	Dimensions for Eagle Lake Bridge.
12/29/26	SFR	JDRJ	Current work done and being done, also cost of Eagle Lake Bridge.
2/3/27	ABC	JDRJ	Bubble Pond Bridge.
3/26/27	JDRJ	SFR	Secretary of the Interior had deferred his decision till May, not hopeful.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
5/8/27	PDS	JDRJ	Simpson's salary and cost of living.
5/10/27	RWG	JDRJ	Simpson salary.
5/13/27	PDS	JDRJ	Location of roads.
5/16/27	GBD	JDRJ	Bubble Pond Horse Road.
5/17/27	JDRJ	PDS	Response to 5/13/27 letter - location of roads.
5/17/27	JDRJ	GBD	Roads around Paradise Hill and Duck Brook.
5/24/27	JDRJ	PDS	Simpson Salary.
6/3/27	SFR	JDRJ	Work on the roads.
6/9/27	JDRJ	SFR	Automobile road at Bubble Pond.
6/13/27	JDRJ	GBD	Response to 5/16/27 letter.
8/18/27	WL	JDRJ	Bubble Pond Roads & Gradual Development of the island.
8/19/27			Bridges built by B. W. Candage-Estimates and total paid.
		CE	Letter not sent-Plan for development of Mount Desert Island.
8/24/27	JDRJ	SC	Eagle Lake Bridge.
9/3/27	JDRJ	ABC	JDRJ's feeling about Village Improvement Societies plan for development of Mount Desert Island.
9/14/27	AA	JDRJ	Bubble Pond Bridge.
9/14/27	JDRJ	AA	Bubble Pond Bridge.
9/20/27	JDRJ	ABC	Bubble Pond Bridge.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
9/28/27	JDRJ	PDS	Bubble Pond Bridge.
10/6/27	JDRJ	ABC	ABC's report on Plan for development of park.
10/10/27	JDRJ	ABC	Report on Plan for development of park, horse Road on East Side of Eagle Lake, & Eagle Lake Bridge.
10/15/27	ABC	PDS	Bubble Pond Bridge.
10/15/27	ABC	JDRJ	Bubble Pond Bridge.
10/26/27	GB	DHM	Secretary of the Interior's view that no action be taken until BHVIA committee meets.
10/29/27	ABC	JDRJ	Discussing meeting of Committee of the Bar Harbor Village Improvement Assoc. set for 11/15/27.
11/2/27	AA	PDS	Bubble Pond Bridge.
11/3/27	JDRJ	CPS	Completion of Jordan-Sargent Mountain Road; Bonus for CPS.
11/4/27	AA	PDS	Bubble Pond Bridge.
11/7/27	SFR	JDRJ	Progress of the work.
11/9/27	PDS	JDRJ	Bubble Pond Bridge.
11/9/27	SFR	JDRJ	Bubble Pond Bridge.
11/10/27	CPS	JDRJ	Appreciation for his bonus and friendship.
11/11/27	BF	JDRJ	Coping at Eagle Lake Bridge, Planting Bank Behind Mr. Ralston's house with Viburnum dentatum.
11/14/27	JDRJ	PDS	Bubble Pond Bridge.
11/15/27			Meeting of the Committee of the Bar Harbor Village

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
			Improvement Association on Conservation for Mount Desert Island. Construction of the proposed road from Jordan Pond House around the east side of Triad & Pemetic Mountains to Bubble Pond was approved & proposed road around the head of Eagle Lake was approved.
11/16/27	JDRJ	SFR	He wants to know the progress of path through his land to the champlain.
11/17/27	SFR	JDRJ	Bubble Pond Bridge.
11/18/27	SFR		Bubble Pond Bridge.
11/21/27	SFR	JDRJ	Response to 11/16/27 letter.
12/9/27	SFR	JDRJ	Unable to finish Jordan-Sargent Mountain Road yet. Progress of other roads.
12/15/27	JDRJ	PDS	Bubble Pond Bridge.
12/15/27	JDRJ	ABC	Horse road on east side of Eagle Lake.
12/16/27	JDRJ	ABC	Cadillac Mountain Road, Bubble Pond Roads, & Eagle Lake Road.
12/16/27	JDRJ	DHM	Eagle Lake Road (horse road).
12/19/27	ABC	JDRJ	Eagle Lake Road (horse road).
12/23/27	JDRJ	ABC	Horse road on east side of Eagle Lake Road.
12/31/27	PDS	JDRJ	Alternative road layout.
1/3/28	ABC	JDRJ	Eagle Lake Road (horse road).
1/12/28	ABC	JDRJ	Eagle Lake Road (horse road).

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
1/26/28	ABC	JDRJ	Eagle Lake Road (horse road).
3/15/28	JDRJ	SFR	Work to be done in Spring; Bubble Pond.
3/17/28	JDRJ	SFR	Bubble Pond Bridge.
3/21/28	ABC	GBD	Carriage roads, Bubble Pond Road & Old Roberts Road.
3/21/28	ABC	JDRJ	Horse road (replacing Old Roberts Road).
3/22/28	SFR	JDRJ	Bubble Pond Bridge.
3/26/28	SFR	JDRJ	Eagle Lake Bridge.
4/5/28	ABC	PB	Bubble Pond Bridge.
4/17/28	AHL	COH	Need money to pay statement of Hulls Cove Carriage Road.
4/18/28	JDRJ	GBD	Bubble Pond Bridge.
5/7/28	COH	SFR	Mr. Ralston accident.
5/8/28	AHL	COH	Distance across reservation.
5/21/28	SFR	COH	Accident.
6/14/28	AM	COH	Funds for Bubble Pond Bridge.
6/18/28	SFR	JDRJ	Bubble Pond Bridge.
6/22/28	JDRJ	SFR	Response to 6/18/28 letter.
6/22/28	AHL	JDRJ	Hull's Cove Carriage Road.
6/27/28	SFR	JDRJ	Bubble Pond Bridge.
8/11/28	COH	JDRJ	Bubble Pond Bridge.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
8/23/28	AM	COH	Bubble Pond and Hull's Cove Roads.
8/25/28	AM	COH	Expenditures for Hull's Cove Section 1 and estimate for section 1 and 15.
9/1/28	ABC	JDRJ	Congressman Cramton's visit-praise for road & bridge design & roadside cleanup & healing of scars.
9/17/28	JDRJ	AHL	Bubble Pond Bridge & related horse roads.
10/8/28	CWS	JDRJ	Duck Brook Bridge.
10/10/28	GB	JDRJ	Report of Mr. Eliot & thanks for work on Mount Desert Island.
10/10/28	ABC	JDRJ	Congressman Cramton's visit-impressed with work on horse and motor roads; funds for expansion of park.
10/26/28	BF	JDRJ	Service road, wall lines, imperial yellow tiles, work on steps, excavation in Beaver Meadow Pool, & trail from Bubble Pond to Beaver Meadow Pool.
11/27/28	PSD	IOC	Bubble Pond Bridge.
11/27/28	JDRJ	AHL	Bridge & Eddy work-telegram.
11/27/28	JDRJ	AHL	Bridge & work on Eddy property (blasting & well building.
12/8/28	ABC	JDRJ	Proposed road up Green Mountain; extension of park boundaries & renaming park; funds appropriation; Mr. Albright's appointment.
12/27/28	GBD	JDRJ	Bubble Pond.
12/27/28	JDRJ	PDS	Duck Brook Bridge.
12/28/28	PB	JDRJ	Sketch of Gateposts for Duck Brook Bridge.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
1/4/29	JDRJ	CWS	Design Jordan Pond Road Bridge.
1/4/29	JDRJ	ABM	Send PDS Blueprint of Sleepy Hollow Road Bridge.
2/2/29	BF	JDRJ	Road Notes-planting notes and suggestions.
3/5/29	CWS	JDRJ	Sketch of Jordan Pond Bridge.
4/1/29	PDS	JDRJ	Progress of roads and bridges.
4/15/29	CAH	JDRJ	Discussion of bill from Mr. Lynam.
4/24/29	SFR	JDRJ	Duck Brook Bridge.
5/16/29	JDRJ	BF	Bridges.
5/22/29	BF	JDRJ	Bridge Notes-Bridges & Culverts.
5/23/29	AHL	JDRJ	Duck Brook Bridge.
5/28/29	JDRJ	SFR	Bridges - General.
6/4/29	BF	JDRJ	Road Planting going well, Duck Brook Bridge-Planting, & Garden Work.
6/7/29	JDRJ	PDS	Simpson's salary.
6/13/29	JDRJ	BF	Work on roads gratifying, & Chinese Gardens.
6/27/29	RWG	CWS	Two Bridge Costs.
8/5/29	JDRJ	CWS	New design for Eagle Lake Brook Bridge.
8/30/29	JDRJ	GBD	Use of Landscape Architect.
9/3/29	GBD	JDRJ	Landscape Architect's tasks and salary.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
10/2/29	BF	JDRJ	Road Notes.
1/22/30	JDRJ	SFR	Mr. Ralston's responsibilities.
3/29/30	BF	JDRJ	Garden, Tiling Roof House, Tree Moving, Beaver Pool, Notes on Planting, & Paradise Hill Road.
5/16/30	GA	JDRJ	Eagle Lake Site schemes.
6/10/30	HMA	JDRJ	Visit to Acadia National Park (brief discussion of carriage roads).
6/12/30	JDRJ	FLO	Mr. Olmsted's salary.
6/12/30	JDRJ	HMA	Proposed Motor Road, Proposed Bar Harbor Horse Road, & Amphitheatre Road.
6/14/30	FLO	JDRJ	Fees for services.
6/16/30	HMA	JDRJ	Motor Road, Amphitheatre Road, & Bar Harbor Horse Road.
6/18/30	JDRJ	HMA	Thank you note & glad enjoyed Acadia National Park.
6/20/30	JDRJ	HMA	Proposed Motor Roads, Proposed Carriage Roads, & Amphitheatre horseroad.
6/27/30	JDRJ	HMA	Proposed motor and horse roads-offer to build roads without expense to NPS; mentions that F. L. Olmsted has spent much time in laying out & studying roads.
6/31/30	ABC	GBD	Color plan of the program of motor & horse roads within Acadia National Park.
7/11/30	FLO	JDRJ	Proposed Park Motor Road.
7/31/30	ABC	GBD	Plan of roads for motor and horse-drawn vehicular traffic.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
8/19/30	JDRJ	CWS	Sending engineering data for bridges.
8/21/30	JDRJ	ABC	No publicity about road plan posted in Park office; suggests mention projects to Mr. Elliott.
8/22/30	ABM	JDRJ	West Branch Bridge.
8/29/30	JDRJ	ECC	Road plan-asks for early decision by Secretary; story of roads be deferred one week-story not be published until Gov't taken action on lands & road construction.
9/11/30	JDRJ	CWS	Importance of the bridges.
9/26/30			Memorandum - Property at the North End of Eagle Lake.
9/27/30	AA	CWS	Amphitheatre Bridge.
9/29/30	JDRJ	SFR	Amphitheatre Road Bridges Construction.
9/30/30	ABC	CWS	West Branch Bridge.
10/1/30	ABM	SFR	Recommending Italian stone mason to help in bridge construction in Maine.
10/2/30	JDRJ	SFR	Jordan Pond Road Bridge.
10/2/30	JDRJ	ABC	Public protest to road program; Ogden land.
10/3/30	JDRJ	SDR	Italian stone mason to help with bridge construction in Maine & plan of bridge for Mr. Walls' road.
10/16/30	ABC	JDRJ	West Branch Bridge.
10/22/30	AA	CWS	West Branch Bridge.
11/4/30	BF	JDRJ	Road notes (planting notes & suggestions).

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
11/25/30	GA	JDRJ	Progress report; Eagle Lake Lodge.
12/1/30	JDRJ	SFR	Road jobs being shut down.
12/8/30	SFR	JDRJ	Amphitheatre Road Bridges.
1/5/31	JDRJ	SFR	Forestry work.
2/7/31	JDRJ	PDS	Agreement with Simpson regarding salary.
2/31			Mention payments to Stoughton for "Tarn" bridge on Mt. Desert.
2/31 & 5/31			Sheet stating where blueprints are & what they show.
3/17/31			Statement for bridges 5 & 6 on PH estate.
4 & 5/31	BF	JDRJ	Road Notes (4/17, 5/16, 5/18, & 5/19, 1931)- planting notes & suggestions.
5/11/31	JDRJ	SFR	Taking care of the area around the spring trail.
6/19/31	SFR	COH	West Branch Bridge.
6/23/31	CWS	RWG	Sending prints of bridges to Rockefeller.
7/11/31	BF	JDRJ	Road Notes (planting notes & suggestions).
7/16/31	CWS	JDRJ	Half-Arch Bridge.
7/21/31	JDRJ	BF	Appreciation for her help in planting, planting at Sargeant Mountain, & planting at old beaver pool at Eagle Lake.
7/30/31	RWG	CWS	Costs and estimates of bridges.
7/31/31	BF	JDRJ	Road Notes (planting notes & suggestions).

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
8/7/31	JDRJ	PDS	Half-Arch Bridge.
8/23/31	BF	JDRJ	Road Notes (planting notes & suggestions).
9/2/31	JDRJ	SFR	Several matters that need attention; Mr. Hill; Several roads; Forestry; Monuments.
9/7/31	JDRJ	SFR	Jordan Pond Road Bridge
9/10/31	RWG	JDRJ	Experiment regarding height of coach box seats.
9/14/31	JDRJ	SC	Jordan Pond Road Bridge.
9/14/31	JDRJ	SFR	Jordan Pond Road Bridge.
9/15/31	BWC	JDRJ	Jordan Pond Road Bridge.
9/21/31	SFR	JDRJ	Jordan Pond Road Bridge.
9/21/31	JDRJ	SFR	Jordan Pond Road Bridge.
9/24/31			Jordan Pond Road Bridge.
9/28/31	SFR	JDRJ	Jordan Pond Road Bridge.
9/30/31	JDRJ	SFR	Jordan Pond Road Bridge.
10/1/31	JDRJ	SFR	Southwest Valley Road; Forestry.
10/3/31	SFR	W&S	Memorandum of Agreement for Jordan Pond Road Bridge.
10/5/31	BF	JDRJ	Road Notes (planting notes & suggestions).
10/10/31	BF	JDRJ	Road Notes (planting notes & suggestions).
10/12/31	BF	JDRJ	Plants; Trees; Walks.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
10/18/31	BF	JDRJ	Barr Hill White Pine Blister Rust, Road Drive-partial review of them follow soon, & Stone Wall of Jordan Pond Lodge House.
10/27/31	JDRJ	HMA	Teton National Park-trail & path design; motor roads in Teton National Park.
10/27/31	CEP	HMA	CEP's report on recent trip to Acadia; Gatehouses and Lodges, Cadillac Mountain Road & parking area, Tea House, Park day labor cleanup, & Schoodic Survey.
10/27/31	JDRJ	BF	Mrs. Rockefeller's Garden (Chinese monument), list of materials for road planting, road notes & suggestions, Teahouse at end of Eagle Lake, Aunt Betty's Pond Road-Trimming of Branches & Grading of Banks, & Muck from side of Jordan Pond Lodge House.
10/28/31	JDRJ	BF	Aunt Betty's Pond Road (grading).
10/28/31	HMA	JDRJ	Cadillac Mountain Road & Proposed Schoodic Head road; Colonial Parkway & Williamsburg.
11/6/31	JDRJ	HMA	Peterson's report & Williamsburg Problem.
11/10/31	BF	JDRJ	Road Notes (planting notes & suggestions).
11/11/31	BF	JDRJ	Road Notes (planting notes & suggestions).
12/5/31	GA	JDRJ	Tree planting and planting around Brown Mountain Lodge.
12/8/31	JDRJ	GA	Have Mrs. Farrand take charge of planting.
12/10/31	JDRJ	AFS	Appreciated newspaper article entitled "Working on the New Gate Lodges".
12/22/31	RWG	CWS	Status of some of the bridges.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
12/28/31	JDRJ	SFR	Work for engineers
1/11/32	WS	RWG	Jordan Pond Road Bridge.
2/29/32	JDRJ	SFR	Bridge for Barr Hill-Jordan Pond Road Bridge Path
3/3/32	JDRJ	SFR	Forestry work.
3/7/32	JDRJ	SFR	Amphitheatre road forestry work; garden.
3/7/32	SFR	JDRJ	Forestry work.
3/10/32	SRF	JDRJ	Forestry work.
3/12/32	SFR	JDRJ	Wages per day for common labor.
3/14/32	JDRJ	SFR	Forestry work.
3/14/32	JDRJ	SFR	Wages for common labor.
3/25/32	SFR	JDRJ	Wages for common labor.
3/26/32	JDRJ	SFR	Reduction of wages.
3/29/32	JDRJ	SFR	Reduction of wages put into effect.
3/29/32			Second Contract-Jordan Pond Road Bridge.
4/5/32	JDRJ	SFR	Half-Arch Bridge.
5/10/32	BF	JDRJ	Planting & Grading suggestions (Jordan Pond Lodge & Brown Mountain Lodge).
5/17/32	BF	JDRJ	Road Notes-planting.
5/26/32	JDRJ	BF	Planting around Brown Mountain Lodge & Aunt Betty's Pond Road; appreciation for help.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
5/27/32	JDRJ	GA	Gate Lodges.
6/3/32	BF	JDRJ	Planting around Jordan Pond & Brown Mountain Lodges & on Aunt Betty's Pond Road.
6/11/32	SFR	RWG	Jordan Pond Road Bridge.
6/13/32	HMA	JDRJ	Cadillac Mountain Road; Boathouse at Eagle Lake.
6/15/32	JDRJ	HMA	Cadillac Mountain Road; Boathouse at Eagle Lake.
7/25/32	LK	JDRJ	Water Supply.
7/27/32	JDRJ	LK	Water Supply.
7/27/32	RWG	JDRJ	Bids on Stanley Brook Bridge.
8/2/32	JDRJ	GA	Jordan Pond Gate Lodge.
8/11/32	AHL	JDRJ	Water Supply.
8/19/32	WL	LBD	Mr. Rockefeller's offer (to build new road on eastern part of Island) made to the Interior Department-(Mr. Lawrence's response to it).
9/5/32	JDRJ	CWS	Information about bridges.
9/5/32	WL	JDRJ	Letter to Judge Deasy written by WL.
9/6/32	CWS	JDRJ	Information about bridges.
9/7/32	JDRJ	WL	Letter to Judge Deasy written by WL.
9/8/32	JDRJ	CWS	Information about bridges.
9/10/32	CWS	JDRJ	Appreciation for work done in connection with development of town & island; Eagle Lake Tea House project.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
9/24/32	JDRJ	ABC	Homans house; radio removal.
10/5/32	JDRJ	SFR	Entrance signs; gates; hunting.
10/13/32	BF	JDRJ	Road Notes.
10/21/32	JDRJ	SC	Stanley Brook Bridge.
10/21/32	JDRJ	SFR	Authorize him to build Stanley Brook Bridge.
10/26/32	JDRJ	SFR	Top soil; beavers.
10/26/32	JD	JDRJ	Concessions.
11/29/32	GA	JDRJ	Planting Notes of Mrs. Farrand & Planting for Jordan Pond Lodge.
2/18/33	HMA	JDRJ	Interior Dept. Bill is going to President.
5/1/33	JDRJ	PDS	Icy Hill Road & horse crossing.
6/1/33	HMA	JDRJ	Cadillac Mountain; Radio Station Site; Mr. Olmsted explain horse & motor roads; Teahouse site; Second Gatehouse.
6/6/33	WS	JDRJ	Stanley Brook Bridge.
7/5/33	JDRJ	ABM	Survey plans for Roads at Mount Desert (horse drives).
7/31/33	JDRJ	WS	Stanley Brook Bridge.
9/20/33			Trip to Seal Harbor to check Stanley Brook Bridge.
9/29/33	JDRJ	JDRIII	Wages.
10/10/33	JDRJ	HMA	Best wishes as Albright is no longer director of NPS.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
10/28/33	HMA	JDRJ	Appreciation to JDRJ for letter of 10/10/33 praising Albright.
12/15/33	JDRJ	WGH	Plans for paths along ocean shore front.
12/18/33	WGH	JDRJ	Plans for paths.
1/3/34	RWG	JDRJ	Stanley Brook Bridge.
1/8/34	JDRJ	SFR	Balance compared to estimate of Stanley Brook Bridge.
6/3/34	SFR	JDRJ	Work being done.
6/6/34	JDRJ	SFR	Comments about several roads and Mr. Joy's employment.
6/22/34	FLO	PDS	Roads; paving; retaining walls; culverts; superelevation.
8/11/34	JDRJ	FLO	Stanley Brook Road-bridges.
9/28/34	PDS	JDRJ	Stanley Brook Road-bridges.
11/5/34	SFR	JDRJ	Work that is shut down.
11/11/34			Rockefeller Roads (Hulls Cove Carriage Road).
11/19/34	BF	JDRJ	Tree Transplanting (Stanley Brook Road).
1/11/35	JDRJ	PDS	Stanley Brook Road-bridges.
1/11/35	JDRJ	PDS	Stanley Brook Road-bridges (telegram).
1/12/35	PDS	JDRJ	Stanley Brook Road-bridges.
1/14/35	PDS	JDRJ	Stanley Brook Road (2 copies)-bridges.
1/18/35	JDRJ	PDS	Stanley Brook Road-bridges.
1/21/35	PDS	JDRJ	Stanley Brook Road (2 copies)-bridges.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
1/31/35	JDRJ	PDS	Stanley Brook Road-bridges.
4/18/35	GA	JDRJ	Acadia Park Lodge.
4/24/35	JMW	GA	Rockefeller's still abroad.
6/11/35	JDRJ	GA	Appreciate article on Acadia Park Lodge.
7/25/35	HLI	JDRJ	Motor Road & horse roads (agreement between NPS and JDRJ).
9/6/35	RWG	JDRJ	Mr. Hill appointed assistant engineer would be superintendent of Eagle Lake Camp.
10/1/35	JDRJ	HLI	Motor Road & horse roads (changes to map; agreement between NPS and JDRJ).
10/29/35	RWG	Acct.	Take Mr. Hill off payroll.
11/12/35	WGH	JDRJ	Blister Rust Pruning.
11/15/35	JDRJ	SFR	Stanley Brook Road.
12/2/35	JDRJ	SFR	Stanley Brook Road.
2/1/36	TV	FLO	Kebo Brook Valley.
2/6/36	FLO	JDRJ	Letter from TV; He has confidence in Vint
2/26/36	JDRJ	ABC	Kebo Valley.
4/21/36	FLO	JDRJ	Kebo Mountain Road.
11/13/36	HMA	JDRJ	Mentions article in New York Papers abt road builing & road-side improvement; statement regang parkway-Colonia Parkway; Jackson Hold project.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
12/1/36	JDRJ	HMA	Roadside beautification; statement regarding parkways.
12/30/37		LPH	Rockefeller Carriage Road System-history of Carriage Road System.
7/18/38	JDRJ	HMA	Mr. Dorr's properties & Proposed horse road in Kebo Valley.
1/6/39	PDS	JDRJ	Day Mountain Road & staking out of horse roads in Kebo Brook area.
5/25/39	JDRJ	PDS	End of Mr. Simpson's engineering services; because they are finished with the Day Mountain Road.
6/2/39	PDS	JDRJ	Understands that at the end of the season Rockefeller will not need his services anymore.
12/21/39	JDRJ	ABC	Gate Lodges; Offering them to the park.
12/28/39			Memorandum for Mr. Keebler. Mr. Simpson is to be continued till 1940. Half to Rockefeller and half to the park.
1/31/40	GA	JDRJ	Lodges.
4/23/40	JDRJ	PDS	Gate House Tenants.
8/29/40	GLS	JDRJ	Easements.
8/30/40	GLS	JDRJ	Deed to shore path.
11/12/43	JDRJ	HMA	Deer Situation in Acadia National Park.
3/9/48		JDRJ	Aunt Betty's Pond Road.
6/30/48	JAP	JDRJ	Dorr Memorial.
7/6/48	JDRJ	JAP	Response to 6/30/48 letter regarding Dorr Memorial.

APPENDICE A-3.

CORRESPONDENCE FROM ROCKEFELLER ARCHIVE CENTER
Acadia: Carriage Roads

Date	From	To	Subject
12/13/50	ERS	JDRJ	Hancock County Trustees of Public Reservations.
1/10/51	JDRJ	ERS	Response to 12/13/50 letter regarding Hancock County Trustees of Public Reservation.
1/17/51	ERS	JDRJ	Thanks for 1/10/51 letter.
5/8/53	JDRJ	HMA	Fire damage clean up work at Acadia.

APPENDICE A-4.

CORRESPONDENCE FROM SIMPSONS
Acadia: Carriage Roads

Date	From	To	Subject
5/24/23	JDRJ	AEC	Manure Pit and Planting Space between the Stable and New Road.
5/24/23	JDRJ	PDS	Manure Pit at Stable of Eyrie.
9/15/23	AHL	PDS	Expenditures for automobile road.
11/1/23	JDRJ	GBD	Eagle Lake-Bubble Pond Road.
2/23/24	JDRJ	PDS	Landscape and forestry work between Bubble Pond & the Beaver Dam; tractor for Bar Harbor work; steam shovel.
2/29/24	PDS	JDRJ	Disposal of waste material on Eyrie Drive.
3/5/24	JDRJ	PDS	Disposal of waste material on Eyrie Drive.
3/18/24	PDS	JDRJ	Disposal of waste material on Eyrie Drive; Jordan-Sargent Mountain road.
3/26/24	PDS	JDRJ	Waste material on Eyrie Drive-blasting rock.
3/27/24	JDRJ	PDS	Jordan-Sargent Mountain Road-Chasm Brook.
10/26/26	WWB	JDRJ	Eagle Lake Road Bridge.
11/1/26	PDS	JDRJ	Bridge-change of width.
11/4/26		PDS	Copy of WWB's letter to JDRJ with blueprint.
11/8/26	JDRJ	PDS	Bridge-clearance for coach & widening bridge.
12/22/26	JDRJ	PDS	Motor roads & Horse roads.
6/11/27	PDS	JDRJ	Motor road-heavy vehicles traveling on it.
8/12/27	JDRJ	PDS	Mr. Jordan's land on Jordan Pond Road.

APPENDICE A-4.

CORRESPONDENCE FROM SIMPSONS
Acadia: Carriage Roads

Date	From	To	Subject
6/28/28	PDS	JDRJ	Thank you for good wishes & nice present.
2/6/29	ABM	PDS	Bridge (pipes & water main).
5/22/29	CPS	CWS	Putting dates on bridges.
6/5/29	CPS	CWS	Bridges; Duck Brook Bridge estimates.
10/2/29	JDRJ	PDS	Wildwood Farm Road, Jordan Pond Road, & Stanley Brook Road.
12/30/29	ABM	PDS	Power, light, & telephone service for Ocean Drive, Otter Creek, & Eagle Lake Road; Brief mention of a Horse Road Map PDS drew.
1/7/30	PDS	JDRJ	Aunt Betty's Pond Road; Gilmore Meadow.
2/21/30	JDRJ	PDS	Routes A, B, & C; study of possible horse roads on Day Mountain; Motor Road Extension.
5/26/30	JDRJ	PDS	Eagle Lake walls & Jordan Pond Road.
5/28/30	GA	PDS	Acknowledgement of letter & blueprints.
6/19/30	PDS	JDRJ	Giant Slide Brook-Telegram.
6/20/30	JDRJ	PDS	Motor Road & Horse Roads.
6/20/30	JDRJ	PDS	Aunt Betty's Pond Road (bridge).
6/21/30	PDS	JDRJ	Tracings of proposed land exchange with Miss Sturges & portion of Mr. Stotesbury's garage lot needed; Crossing of Giant Slide Brook on Aunt Betty's Pond Road.
8/14/30	GA	PDS	Proposed Eagle Lake Lodge.
8/29/30	OB	PDS	Requesting map of JDRJ Pocantico Hills Estate.

APPENDICE A-4.

CORRESPONDENCE FROM SIMPSONS
Acadia: Carriage Roads

Date	From	To	Subject
9/2/30	GA	PDS	Proposed Eagle Lake Lodge-Telegram.
9/2/30	PDS	GA	Proposed Eagle Lake Lodge.
9/5/30	PDS	OB	Sending map of JDRJ Pocantico Hills Estate.
11/13/30	CFB	PDS	Pavement for roads & form for submitting samples to laboratory.
12/5/30	JDRJ	PDS	Asks for project update.
12/7/30	PDS	JDRJ	Project Update.
12/10/30	JDRJ	PDS	Jordan Pond Lodge & Horse Roads.
12/12/30	PDS	JDRJ	Proposed lodge house at Jordan Pond.
12/30/30	JDRJ	PDS	Horse Roads.
1/2/31	PDS	JDRJ	Horse Roads.
1/6/31	JDRJ	PDS	Horse Roads.
1/19/31	PDS	JDRJ	Amphitheatre Bridge at Little Harbor Brook Crossing.
1/19/31	GA	PDS	Brown Mountain Road Gate Lodge & Jordan Pond Gate Lodge.
1/21/31	PDS	GA	Gate Keeper's Lodges at Jordan Pond.
1/31/31	JDRJ	PDS	Proposed Amphitheatre Bridge.
3/2/31	JDRJ	PDS	Paradise Hill Horse Road.
3/13/31	GA	PDS	Property lines for two lodges.
3/13/31	PDS	JDRJ	Road Outlet-Horse Road.

APPENDICE A-4.

CORRESPONDENCE FROM SIMPSONS
Acadia: Carriage Roads

Date	From	To	Subject
3/19/31	PDS	GA	Return of blueprints.
3/21/31	JDRJ	PDS	Road Outlet-Horse Road.
3/27/31	PDS	JDRJ	Road Outlet-Horse Road.
4/2/31	GA	PDS	Lodge No. 1.
4/6/31	JDRJ	PDS	Aunt Betty's Pond Road.
4/13/31	PDS	JDRJ	Aunt Betty's Pond Road & Bridle Path.
4/17/31	PDS	GA	Gate Keeper's Lodge No. 1.
5/5/31	PDS	JDRJ	Blueprints of Eyrie.
5/5/31	GA	PDS	Brown Mountain Gate Lodge.
5/5/31	PDS	JDRJ	Amphitheatre Road bridge-Little Harbor Brook.
5/7/31	PDS	GA	Lodge construction.
5/15/31	GA	SFR	Lodge construction.
5/17/31	PDS	GWR	PDS telling GWR that there are no employment opportunities at this time.
7/10/31	GA	PDS	Brown Mountain Lodge & Gate.
7/25/31	PDS	GA	Brown Mountain Gate Lodge.
7/30/31	PDS	CWS	Jordan Pond Road Bridge.
8/7/31	JDRJ	PDS	Jordan Pond Highway Bridge & Mr. Walls' road.
8/24/31	GA	JDRJ	Lodge construction.

APPENDICE A-4.

CORRESPONDENCE FROM SIMPSONS
Acadia: Carriage Roads

Date	From	To	Subject
8/26/	GA	PDS	Lodge construction.
9/8/31	GA	PDS	Brown Mountain Lodge.
9/15/31	JDRJ	PDS	Clearance for horse road under a bridge.
9/18/31	GA	SFR	Proposed roadway to Garage & paths at Jordan Pond Lodge.
9/23/31	PDS	JDRJ	Horse Roads.
9/26/31	W&S	SFR	Bid for Jordan Pond Road Bridge #4.
9/28/31	GA	PDS	Lodge construction.
9/29/31	PDS	GA	Lodge construction.
10/1/31	GA	PDS	Lodge construction.
10/2/31	GA	PDS	Lodge construction.
10/7/31	GA	PDS	Lodge Construction.
10/10/31	PDS	GA	Lodge Construction.
10/16/31		CWS	Asking for prints of plans for Bridge No. 4 on Jordan Pond Road.
10/23/31	JDRJ	PDS	Asking about waterpipes under the underpass in Jordan Pond Road.
10/26/31	FLO	JDRJ	Proposed causeway across Otter Creek Cove.
10/29/31	DC	PDS	Asking PDS for contour plan of knoll at end of alley in garden.
11/18/31	JDRJ	SFR	Brown Mountain Road (change in grade).
12/23/31	JDRJ	PDS	Stanley Brook Road connection to Jordan Pond highway at

APPENDICE A-4.

CORRESPONDENCE FROM SIMPSONS
Acadia: Carriage Roads

Date	From	To	Subject
			Wildwood Farm Road.
12/31/31	PDS	CWS	Bridge Site No. 5.
3/11/32	TCH	PDS	Asks PDS to keep him in mind for a job w/ engineering or construction forces.
7/22/32	PDS	CWS	Cliff Bridge & Stanley Brook Motor Road Crossings.
8/22/32	PDS	OB	Stanley Brook Motor Road.
2/10/33	JDRJ	PDS	Stanley Brook Motor Road, Day Mountain Road, & Icy Hill Road.
10/19/33	JDRJ	PDS	Motor Road.
6/11/34	PDS	JDRJ	Aunt Betty's Pond Road.
6/11/34	FLO	PDS	Stanley Brook Road-Telegram.
6/11/34	WJT	PDS	Giant Slide Trail (prohibition of horseback riding on the Asticou-Jordan Pond trail).
6/12/34	PDS	FLO	Stanley Brook Road-Telegram.
6/22/34	PDS	WJT	Jordan-Sargeant Mountain Road (prohibiting horseback riding on the Asticou-Jordan Pond trail).
6/30/34	JDRJ	PDS	Stanley Brook Road-bridges.
7/9/34	JDRJ	PDS	Aunt Betty's Pond Road.
7/15/34	PDS	JDRJ	Aunt Betty's Pond Road (brook crossing)-2 copies.
8/10/34	OB	JDRJ	Stanley Brook Road-bridges.
8/24/34	JDRJ	PDS	Stanley Brook Road-bridges (2 copies of first page).

APPENDICE A-4.

CORRESPONDENCE FROM SIMPSONS
Acadia: Carriage Roads

Date	From	To	Subject
8/28/34		JDRJ	Stanley Brook Road Bridges.
9/10/34	JDRJ	PDS	Stanley Brook Road (Mr. Zach's visit).
9/13/34	PDS	JDRJ	Stanley Brook Road (Mr. Zach's visit).
9/13/34	JDRJ	PDS	Horse Roads & Motor Road.
3/25/35	CWS	JDRJ	Tracings of stone work.
7/27/35	PDS	JDRJ	Day Mountain Road.
1/3/36	JDRJ	PDS	Boundary line from Hunters Brook Beach to east Park line west of Jordan stream.
3/25/36	OB	PDS	Stanley Brook Road.
5/29/36	JDRJ	PDS	Motor Road.
7/2/36	PDS	JMS	Reference letter for Mr. Howard E. Elliott.
9/26/36	PDS	JDRJ	Upland Road near Wabenaki, Day Mountain Road, & Icy Hill Road.
11/5/36	JDRJ	PDS	Winter waterpipe for McAlpin property.
12/1/36	PDS	JDRJ	Signs & Posts for horse roads.
12/9/36	JDRJ	PDS	Signs & Posts for horse roads.
1/8/37	JDRJ	WRM	Boundary line at south end of Wabenaki Gardens.
1/15/37	JDRJ	PDS	Road sign question & vacation for PDS.
1/16/37	JDRJ	PDS	Warrant Committee & Town Meeting-JDRJ offer two pieces land for Seal Harbor Village Green.

APPENDICE A-4.

CORRESPONDENCE FROM SIMPSONS
Acadia: Carriage Roads

Date	From	To	Subject
1/21/37	PDS	JDRJ	Carpenter property.
1/28/37	JDRJ	PDS	Boundary lines of Wabenaki Stable Lot.
1/28/37	JDRJ	PDS	Park Horse Roads.
2/4/37	JDRJ	PDS	Carpenter property.
2/6/37	PDS	JDRJ	Boundary lines of portion of Wabenaki Stable Lot owned by Mr. William R. McAlpin.
3/9/37	JDRJ	PDS	Inquiring about camping site in Black Woods west of Otter Creek Inlet.
3/17/37	PDS	JDRJ	Proposed camp site in Black Woods area of Otter Creek inlet.
7/6/37	PDS	RWG	PDS time on projects.
7/27/37	PDS	JDRJ	Upland Road near Wabenaki.
9/29/37	PDS	JDRJ	Horse Roads.
9/30/37	PDS	NR	Boat house and lot at Islesford.
10/13/37	JDRJ	PDS	Park Motor Road, Schooner Head Road, & Gorge Road.
10/27/37	PDS	JDRJ	"The Anchorage" (Blueprints).
11/23/37	JDRJ	PDS	Motor Road.
12/29/37	JDRJ	PDS	Icy Hill Road.
1/8/38	PDS	JDRJ	Icy Hill Road & Sargeant Drive.
1/11/38	PDS	JDRJ	Wildwood Farm Extension of the Motor Road (and related horse roads).

APPENDICE A-4.

CORRESPONDENCE FROM SIMPSONS
Acadia: Carriage Roads

Date	From	To	Subject
1/14/38	JDRJ	PDS	Park Motor Road Extension through the Wildwood Farm Property.
5/21/38	PDS	HMA	Wildwood Farm Extension Road.
9/28/38	JDRJ	PDS	Day Mountain Road-horse road.
10/7/38	PDS	JDRJ	Day Mountain Road & possible bridle path on Day Mountain Road.
12/30/38	JDRJ	PDS	Day Mountain Road & Asking about progress of horse roads in Kebo Brook area.
			Day Mountain Summit Road (estimates).
1/9/39	JDRJ	PDS	Icy Hill Road-asks PDS to oversee construction.
1/25/39	JDRJ	PDS	Icy Hill Road Contract.
1/28/39	PDS	JDRJ	Icy Hill Road, New County Road & Sea Cliff Drive.
2/4/39	PDS	JDRJ	New Wildwood Farm Road (widening cut) & Seal Harbor Road (guard rails or coping?).
2/19/39	PDS	JDRJ	Weather conditions affecting construction progress; setting bounds on the roads; staking horse roads.
2/13/42	JDRJ	PDS	Mr. Simpson's award of life membership in the American Society of Civil Engineers.
2/7/51	JDRJ	PDS	Mr. Simpson's illness.

APPENDICE A-5.

LIST OF SOURCES - INDIVIDUALS

Eliot, Charles W. Interview by William D. Rieley, 1988. Rieley & Associates, Charlottesville, Virginia. Interviewed Charles Eliot in connection with his Grandfather's involvement with Acadia National Park and his report "The Future of Mt. Desert Island" published 1938.

McNichols, Ken. Conversation with William D. Rieley, 8 April 1988. Rieley & Associates, Charlottesville, Virginia. Mr. McNichols is the Executive Director of Iowa Limestone Producers Association. He gave information about materials for the roads. He qualified his comments by saying that his experience was limited to limestone areas.

Peterson, Charles W. Interview by William D. Rieley, 4 April 1988. Rieley & Associates, Charlottesville, Virginia. Interviewed Charles W. Peterson in connection with his early work at Acadia National Park and his meeting with Rockefeller.

Peterson, Charles W. Interview with Ann Roberts, William D. Rieley, Charles Peterson and Hilda, 15 April 1988 in Philadelphia. Interviewed Charles W. Peterson in connection with his early work at Acadia National Park and his meeting with Rockefeller.

Simpson, Mr. and Mrs. Charles P. Interviews with authors about the roles of their father and grandfather in the engineering of the carriage roads. See also correspondence.

APPENDICE A-6.

LIST OF SOURCES - INSTITUTIONS

American Institute of Architects

Biographies of Grosvenor Atterbury (architect of gate lodges), William Welles Bosworth (bridge architect), Charles W. Stoughton (bridge architect), and Charles E. Peterson (NPS landscape architect.

American Society of Landscape Architects

Biographies of Beatrix Farrand, Charles Eliot and Frederick Law Olmsted, Jr.

Bar Harbor Historical Society

Information on Bar Harbor in the late 1800's and early 1900's, and on carriages and buckboards used on Mount Desert Island.

Central Park Conservancy

Information on bridges at Central Park used as prototypes for bridges at Acadia

Fenton, Chapman, Fenton, Smith & Kane

Rockfeller real estate transactions on Mount Desert Island.

Jefferson Madison Regional Library - Charlottesville, Virginia

Wheeling, Kenneth Edward. *Horse Drawn Vehicles at the Shelburne Museum.* Shelburne, Vermont: The Shelburne Museum, 1974. Description of different carts and how they were driven. It also talks about Shelburne Farms and what can be seen there.

General information on carriages at the turn of the century.

Library of Congress

Committee on the Public Lands, House of Representatives. "Construction of Roads, etc., in National Parks and Monuments." 7 February 1924. Debate regarding the construction and maintenance of roads in national parks and monuments.

Records of Frederick Law Olmsted's and Olmsted Brothers' firm (with the exception of drawings).

Maine State Law Library and Archives

Census records for road and bridge builders on Mount Desert Island.

An Auto-Less Summer Resort. A letter to citizens against the automobile on Mount Desert Island.

Igleheart, Elizabeth. "Frederick Law Olmsted." *A Biographical Dictionary of Architects in Maine*. Volume V, No. 16. 1988. A biography of Mr. Olmsted's life and his contributions.

Maine. Senate. *Reported by Majority from Committee on Judiciary and ordered printed under joint rules*. 11 March 1915. An act permitting the use of automobiles in the town of Mount Desert. Also list of people opposed to automobiles.

Shettleworth, Earle G., Jr. "A Preliminary Historical Checklist of Landscape Architects in Maine." *A Biographical Dictionary of Architects in Maine*. Volume 4, Special Supplement, 1987. List of Landscape Architects in Maine and their contributions.

Vaughan, William W. *Northeast Harbor Reminiscences*. White & Horne Company, 1930. A resident writes of memories of Mt. Desert Island. He states in one section that many people did not like the roads Mr. Rockefeller built.

National Commission on Fine Arts

Reports on meetings where bridge designs for Acadia National Park were reviewed.

National Park Service - Acadia National Park
(See also correspondence.)

Drawings for carriage roads and bridges.

Abrell, Diana F. *A Guide to the Carriage Roads in and Near Acadia National Park.* Mount Desert, Me: Diana F. Abrell, Publisher, 1985. Description of the carriage roads and how they came about. Also describes 11 different loops for walking.

"Bicycling at Acadia." How to accommodate bicycling at Acadia and what would need to be done to make the carriage roads suitable.

Breeze, Benjamin L. *A Land Status Study of Acadia National Park, Mount Desert Island, Maine.* Prepared for the United States Department of the Interior, National Park Service, 20 August 1942. The different uses for the land on Mount Desert Island. Recreation identified as the most favorable one.

"Bridge Reconstruction Work Takes Top Prize in U.S. DOT Competition." 15 Nov. 1977. Information regarding the Eagle Lake Bridge and its first place award in the U.S. Department of Transportation competition.

"Designer of Carriage Roads dies." 25 January 1968. Brief summary of Walters G. Hill's life.

"Earlier Christmas." Picture of Duck Brook Bridge Road Crew and short article on the work.

Eliot, Charles W., II. *The Future of Mount Desert Island.* A Report to the Plan Committee Bar Harbor Village Improvement Association. Bar Harbor Village Improvement Association, 1928. Use of the carriage roads as a second means of recreational enjoyment. Arguments in favor and against more carriage roads.

Hubler, Harold A. "A Service in Remembrance and Appreciation of John D. Rockefeller, Jr." 31 July 1960. A remembrance of the contributions Mr. Rockefeller made during his lifetime, especially to National Parks.

"John D. Rockefeller's Creed." *Bits & Pieces.* Volume 1, No. 6.:2-4. Description of Rockefeller's beliefs.

Layton, Victor J. "Mt. Desert Island's Granite Heritage." *Down East.* June 1982. Use of granite for the bridges and gatehouses. Skilled workmen involved in each step of the construction. The end result was bridges and gatehouses that would last and look as though nature had put them where they now stand.

Letter from G. Dorr - Outlining several things he would like done to the "Great Meadow" which is the land he gave to the government.

Report of Committee on Protection of Town of Mount Desert against Automobiles. 26 February 1915. Different views about Automobiles on Mount Desert Island and who held those views.

Scanlon, Jack. "Editor Takes 'Wonderful' Safari to Maine to Tell How Contractor Overcome Obstacles to New Span." *Bangor Daily News.* (December 1951): 8-9. How the contractors overcame many serious obstacles in bringing one of the motor road bridges into reality.

Tilden, Freeman. "Park of Land and Sea." Mr. Rockefeller's connection to the carriage roads and all his contributions. Also includes information about the 1947 fire.

U.S. Department of the Interior. National Park Service. *Bicycling at Acadia.* n.d. A study regarding conversion of certain carriage roads into bicycle paths.

U.S. Department of the Interior. National Park Service. *Circular of General Information Regarding Acadia National Park, Maine.* n.d. The different attractions in Acadia National Park and rules and regulations.

U.S. Department of the Interior. National Park Service. *General Information Regarding Acadia National Park, Maine.* Washington, D.C.: U.S. Government Printing Office, 1933. General park information about Acadia as far as facilities, costs and rules and regulations.

U.S. Department of the Interior. National Park Service. *General Information Regarding Acadia National Park, Maine.* Washington, D.C.: U.S. Government Printing Office, 1934. General information for tourist interested in visiting Acadia.

U.S. Department of the Interior. National Park Service. Acadia National Park, Maine, n.d. Historic events and beginning of Acadia National Park.

U.S. Department of the Interior. National Park Service. *Rules and Regulations Lafayette National Park.* Washington, D.C.: U.S. Government Printing Office, 1921. Information about Mount Desert Island from who discovered it to how the national park was established and has grown. Also tells some specific rules and regulations for the park and some of the things that can be seen in the park.

Untitled. Description of the carriage roads and how they were designed.

National Park Service - Blue Ridge Parkway

Vista clearing designs for the parkway.

National Park Service - Denver Service Center

Drawings on microfilm of Acadia National Park's carriage roads

National Park Service - Harper's Ferry, West Virginia

Personnel records of Park Service landscape architects involved at Acadia National Park

National Park Service - North Atlantic Regional Office

Drawings of roads at Acadia National Park

Rieley & Associates

Annese, Domenico. *"The Impact of Parkways on Development in Westchester County, New York City, and the Metropolitan New York Region."* Paper read at conference on parkways, Roanoke, Virginia, 9 September 1987. The development of many parkways in Westchester County, New York City and the Metropolitan New York Region. The many people that influenced the parkways and how the parkways progressed.

"Gardening on Mount Desert Island.," *GCA Bulletin*, August, 1991:2-7. Challenges people faced when planning, planting and growing gardens on Mount Desert Island.

Howland, Benjamin C. *An Attitude.* The importance of landscape architects working well with engineers when constructing a road, especially in parks.

Howland, Benjamin C. *Park Roads and Parkways.* 24 December 1981. Discusses different park and road designers with the Park Service.

Hubbard, Henry Vincent. "The Designer in National Parks: Preservation and Enhancement of Natural Scenery." *Landscape Architecture* 38, no. 2 (January 1948):58-60. Gives definitions of a designer and his role in national parks.

"John D. Rockefeller, Junior, Lover of Order and Excellence." *Landscape Architecture* 28, no. 3. (April 1938): 136-143. Contributions made to National Parks and natural beauty.

Koehring Company History. 1 October 1980. The history of the Koehring Company and road building equipment.

Krueger, C. E. *Policy & Guidelines for the Design and Construction of Park Roads.* [Draft]. 16 July 1967. Park roads are primarily for pleasure driving. Important considerations when designing park roads for pleasure driving.

Pond, Bremer W. "Fifty Years in Retrospect: Brief Account of the Origin and Development of the ASLA." *Landscape Architecture* 40, no. 2. (January 1950):59-66. The origin and development of the American Society of Landscape Architects from 1898 to 1949.

Porter, Harry. "Introduction to Landscape Architecture." Lecture at University of Virginia, Charlottesville, Virginia, 21 October 1975. History of landscape architecture and landscape architects.

Sixty-Fifth Anniversary. National Park Service. 25 August 1981. The directors of the National Park Service. How the National Park Service became involved in the state parks.

Souther, John & Co. Exclusive Manufacturers of the Otis Patent Steam Excavator, with O.S. Chapman's Improvements, Also Dredges and Contractors' Machinery, etc. Works on A Street, South Boston, Office, No. 1 Pemberton Square, Boston, Mass. The success and history of John Souther & Co.

Winterberg, Ed. Wildwood Stables, ANP, Maine. Letter to Roxanne S. Brouse with Rieley & Associates. 29 Feb. 1988. Summary of the roads they use and how they maintain them.

<u>Rockefeller Archive Center</u>
(See also correspondence.)

Construction drawings for bridges; construction photographs; maps which illustrate planning of carriage roads.

Bridle Path Committee of the Northeast Harbor Village Improvement Society. Discusses the work done on the Hadlock Bridle Path and the path they want to build. They would like contributions. Treasurer's report.

Chamberlain, Allen. "President Eliot's Gift of a Park." *Boston Evening Transcript.* 1 January 1916. Group of summer residents, lead by Harvard's President Eliot have preserved and acquired 6-7,000 acres of the hills in easternmost section of island with the intention of making a gift to government for National Park.

Gleason, Herbert W. "Distinguished Specialists remove Obstructions in Lafayette Park Auto Road Case." *Boston Evening Transcript.* 9 August 1924. Protests from summer residents regarding building of Auto Road (plan approved by Dept. of Interior, 1922) causes a review of construction by Secretary of Interior, Work, and Director of Parks, Mather. Both give general approval to Superintendent Dorr.

Labor and Capital. *News.* Waco, Texas. 20 January 1917. Rockefeller states labor and capital are naturally partners not enemies.

Map of Carriage Roads and names of the roads from point to point.

"No Automobile for John D. Rockefeller, Jr., But With A Pair of Spanking Blackhorses He Drives To Work Each Day; He's Lover of Out-of-Doors Life." Newspaper Article. New York. n.d. Mr. Rockefeller's mode of transportation to work.

Road Contracts - Seal Harbor

"Roadsters, 'Little Prince' and 'Prince Charming'." Newspaper Article. New York. n.d. Article on Rockefeller's horse and carriage ride to work.

Rockefeller, John D., Jr. Address presented at the Opening of Fort Tryon Park, New York. 12 October 1935. Expresses the enjoyment he has received while he owned the property and hopes future generations will receive the same pleasure.

Rockefeller, John D., Jr. Extract From Remarks at a Lunch Given by Mr. Harold H. Swift. Chicago, Illinois. 25 September 1942. Talks about seeing the miracle of Spring and rebirth of nature. Also the characteristics of some of the early founders of America.

Rockefeller, John D., Jr. "Making a Living or Making a Life." Sermon given at Euclid Avenue Baptist Church, Cleveland, Ohio. 7 May 1927. The difference between making a living at your job or making a life.

Rockefeller, John D., Jr. Remarks at the Opening of the Cloisters. 10 May 1938. Acknowledges everyone's contribution to the Cloisters and the enjoyment everyone will receive by seeing and being around The Cloisters.

Rockefeller may Bridge Hudson. *Herald.* 29 January 1917. Possibility of Rockefeller bridging Hudson to connect the Interstate Park with the park system of this city.

Specifications for a road at Seal Harbor, Maine, Unsigned.

Specifications for Bubble Pond Bridge, Lafayette National Park.

Trails of the Rockefeller State Park Preserve Pocantico Hills, New York. Names, lengths and description of trails. Information about the preserve.

Seal Harbor Library

An Appeal for Protection of the Town of Mount Desert Against Automobiles. A request for donations to help the committee fight so that automobiles will not be allowed into the Town of Mount Desert.

Bates, Waldron, Edward L. Rand, and Herbert Jacques. *A Path Guide of Mount Desert Island Maine.* Mount Desert Island Maine: The Village Improvement Societies, 1915. Guidelines for use with description of trails organized by area. List of height of mountains on Mt. Desert. Section on mushroom. Photos.

Burt, Frank H. *Mount Desert's Mountain Railway.* Boston, Mass.: Appalachian Mountain Club, 1943. A cog railway was built up Green Mountain making 4 trips a day. Failed on Mt. Desert, locomotives sold to the Mt. Washington Railway.

Carter, Lyda B. "Early History of Seal Harbor." January, 1959. Details of founding of Seal Harbor, first settlers. Establishment of school house, Seaside Inn, library. Arrival of automobiles and the Rockefeller's purchase of 'The Eyrie.'

Dr. C. E. Herter Cottage, Seal Harbor, 1900-1908. Small newspaper clippings and pictures of Dr. Herter's cottage.

Dunham, Edward K. "Early Years of the Seal Harbor Village Improvement Society." 20 August 1980. History of society covering the years 1900-1950 as a means of inspiring new ideas for the present.

E. C. Bodman Cottage, Seal Harbor, 1900-1902. Short notes about Mr. Bodman's cottage from several newspapers.

Ernesto G. Fabbri Cottage, Bar Harbor, 1904. Description of Mr. Fabbri's house.

"Paths and Trails of Northeast Harbor and Vicinity." Roads and Paths Committee, Northeast Harbor Village Improvement Society. 10 August 1914. Description of trails including entry points, terrain, signs, length and views.

Peabody, Harold and Charles H. Grandgent. *Walks on Mount Desert Island Maine.* Boston, Mass.: 1928. General guidelines, notes and descriptions of a number of walks. Photos, list of mountain heights, list of books on history, geology, flora & fauna of Mt. Desert Island.

Seal Harbor Village Improvement Society. *1st Annual Report.* Bar Harbor, Maine: W. H. Sherman, Book and Job Printer, April 1901. First President Richard M. Hoe, reports from Roads and Path Committee and Tree Planting. Tree Planting: no actual work. Road and Paths: watered roads for dust control, co-operating with Bar Harbor in general care of island path system. Desire improvement and extension of boardwalk, sidewalks, street lamps. By-laws and treasurer's report.

Seal Harbor Village Improvement Society. *3rd Annual Report.* Bar Harbor, Maine: W. H. Sherman, Book and Job Printer, April 1903. President Prof. S.F. Clarke, reports from committees, executive re: street sprinkling and village clean up, roads and paths, cutting new paths, wild flowers, and shrubs. Also includes treasurer's report.

Seal Harbor Village Improvement Society. *5th Annual Report.* Bar Harbor, Maine: W. H. Sherman, Book and Job Printer, April 1905. President Rev. John S. Penman. Reports from committees re: street sprinkling, paths, care of Village, garbage removal and improvement of the road and brook between the hotels including new channel for brook, widening road, new bridge.

Seal Harbor Village Improvement Society. *9th Annual Report.* Bar Harbor, Maine: W. H. Sherman, Book and Job Printer, April 1909. Report from President Frank H. Damrosch and committees discussing street sprinkling, care of village, garbage removal, upkeep of paths and tree plantings.

Seal Harbor Village Improvement Society. *10th Annual Report.* Bar Harbor, Maine: W. H. Sherman, Book and Job Printer, April 1910. Reports from President Frank H. Damrosch and committees discussing street sprinkling, care of village, drinking fountain, garbage removal and path maintenance.

Seal Harbor Village Improvement Society. *12th Annual Report.* Bar Harbor, Maine: W. H. Sherman, Book and Job Printer, April 1912. Reports from President F. P Prichard discuss street sprinkling, care of village, public reservations, garbage removal, paths, and fly traps.

Seal Harbor Village Improvement Society. *13th Annual Report.* Bar Harbor, Maine: W. H. Sherman, Book and Job Printer, April 1913. Reports from President W. T. Sedgwick and committees discuss new building for Neighborhood Hall, effort to maintain embargo upon automobiles, the invasion of the spruce bud moth, and fly and mosquito control.

Seal Harbor Village Improvement Society. *14th Annual Report.* Bar Harbor, Maine: W. H. Sherman, Book and Job Printer, April 1914. Reports from President W. T. Sedgwick and the Executive Committee discuss the Neighborhood Hall, the establishment of a committee on insect pests and the sprinkling of streets.

Seal Harbor Village Improvement Society. *16th Annual Report.* Bar Harbor, Maine: W. H. Sherman, Book and Job Printer, April 1916. Reports from President Joseph Allen and Committees discuss new construction of trails, New Path Guide issued, plans made to improve signs and expenditures made for path upkeep, sprinkling streets, clean up and garbage removal.

Seal Harbor Village Improvement Society. *17th Annual Report.* Bar Harbor, Maine: W. H. Sherman, Book and Job Printer, April 1917. Reports from President Frank Damrosch and committees discuss mountain area of island designated a National Monument, improvements to trails.

Seal Harbor Village Improvement Society. *19th Annual Report.* Bar Harbor, Maine: W. H. Sherman, Book and Job Printer, April 1919. Reports from President Richard M. Hoe and committees discuss destruction of Neighborhood Hall by fire and determination to rebuild, the creation of Lafayette National Park, and war conditions putting limit on expenditures.

Seal Harbor Village Improvement Society. *21st Annual Report.* Bar Harbor, Maine: W. H. Sherman, Book and Job Printer, April 1921. Reports from President Richard M. Hoe and committees discuss appointments of delegates from Seal Harbor, Bar Harbor, N.E. Harbor and S.W. Harbor Societies to consult with the custodian of the Lafayette National Park, Village Green donated by Mr. Rockefeller, and Mr. Thomas McIntire's appointment as superintendent of paths.

Seal Harbor Village Improvement Society. *22nd Annual Report.* Bar Harbor, Maine: W. H. Sherman, Book and Job Printer, April 1922. Reports from President Joseph Allen and committees discuss trails and roads, support given for securing Daylight Savings for the whole island, call for better access to park through boat landings, securing shoreline for public trust and donation of benches for Village Green.

Seal Harbor Village Improvement Society. *28th Annual Report.* Bar Harbor, Maine: W. H. Sherman, Book and Job Printer, April 1928. President Ellery C. Stowell and committee reports discuss location of tourist camps and the restriction of cottage building, publication of "Illustrated Handbook of the Flowers of Mt. Desert Island" and "Walks on Mt. Desert Island", improvements to trails and Village Green and first outdoor Christmas celebration at Village Green.

Seal Harbor Village Improvement Society. *29th Annual Report.* Bar Harbor, Maine: W. H. Sherman, Book and Job Printer, April 1929. Report from President and various committees, the two primary ones being The Village Green and Roads and Paths. Activities: reconstruction of Bubble Pond Path ($767.50) new trail from Jordan Pond and Nature Trail (with plant labels) at Jordan Pond. Description of <u>Acadia National Park</u> including extent of motor road and list of additional publications of interest.

Smyth, Herbert Weir. "Automobiles: The Mount Desert Town Meeting." *Bar Harbor Life*. 23 August 1913. Poem regarding the voting down of the allowance of autos in Mt. Desert Towns (NE & Seal Harbors).

Stebbins, George L. Random notes on the early history and development as a summer resort of Mount Desert Island and particularly Seal Harbor. August 1938. Covers the discovery of the Island, first settlers, and summer cottages, heyday of hotel life at Bar Harbor, and organization of Hancock County Trustees of Public Reservations.

Study for House at Seal Harbor, 1907. Pictures of Houses and part of the index.

University of Virginia - Fine Arts Library

Pencil Points. "Living Architecture." Volume VI, No. 1. Jan. 1925. How architecture changes with history and the importance of trying to create living architecture. Author gives three examples of living architecture.

Pencil Points. "Master Draftsmen, IX: Welles Bosworth." Volume VI, No. 1. Jan. 1925. Mr. Bosworth's ability as a draftsman and his drawings. Also includes illustrations.

Placzek, Aloif, ed. *Macmillan Encyclopedia of Architects*. New York: The Free Press Division of Macmillan Publishing Company, 1982.:161-162. Brief biography of Bosworth.

Withey, Henry F. and Elsie Rathburn Withey. *Biographical Dictionary of American Architects (Deceased)*. Los Angeles: New Age Publishing Company, 1956. pg. 576-577. Biography of several architects.

APPENDICE A-7.

LIST OF SOURCES - NEWSPAPERS

Articles in newspaper, *SummerTimes*, Fall 1986. General information gathered about the park, towns and education.

Fernald, O. H., D.D. "Nomenclature of Mount Desert." *Mt. Desert Herald*. 21 March 1890.

Gold, Allan R. "Down East, the Traffic Is Way Up." *Mount Desert Journal*. n.d. The problem of too many tourists and cars on Mount Desert Island, especially during August.

Kozak, Anne. "Park Leaders Support Road Plans." *Bar Harbor Times*. 30 May 1991. Secretary of the Interior and Director of the National Park Service visit Acadia to determine what needs to be done to restore and maintain Acadia. They also present a $25,000 grant to help fund the new Acadia Youth Conservation Corps.

Lyons, Lewis M. "John D. Rockefeller Lives with Villagers in His May Vacation Trips to Mt. Desert Island." *Boston Sunday Globe*. 2 June 1929. Rockefeller's summer visits to Mt. Desert Island and the impact he has made.

"Mt. Desert Bars The Auto." 29 September 1913. Summer residents and natives of the town of Mount Desert decided to keep the motor car off their roads.

O'Neil, Gladys. "Acadia Stone Bridges Link Past and Future." *The Bar Harbor Times*. 23 April 1987. The bridges on the Paradise Hill Road have a varied history. The Duck Brook Automobile Bridge is described in detail.

"The Carriage Paths . . . And Granite Bridges." *The Journal of Friends of Acadia* 1, no. 1.:4-5. The history of the carriage paths and granite bridges and the contributions Mr. Rockefeller made.

Turkel, Tux. "Acadia Bears Scars of Neglect; Park Chief Pleads for Funds." *Maine Sunday Telegram*. 14 May 1989. Damage that has been done over the years because of lack of maintenance.

"Varied Uses for Effective Dust Retardant Detailed In New Witco Brochure." *South Hard Hat News*. Second Issue. April.: 14. A dust retardant now can be used in many different areas.

APPENDICE A-8.

LIST OF SOURCES - AERIAL PHOTOGRAPHS

Sources:	Purchased:
Mr. Bob Foss James W. Sewall Company P.O. Box 433 Old Town, Maine 04468	4 photos dated 4/23/85 Line 10N #1-4 Bar Harbor
University of California, Santa Barbara Map and Imagery Laboratory Santa Barbara, California 93106	71 photos dated 11-11-47
Ms. Rea Mueller Department of the Interior U.S. Geological Survey Reston, ESIC 507 National Center Reston, Virginia 22092	14 photos dated 5/56
Support Section, N/CG236 Nautical Charting Division National Ocean Service, NOAA Rockville, Maryland 20852	49 photos dated 1944

APPENDIX B-1.

GLOSSARY OF BRIDGE TERMINOLOGY

ABUTMENT. Substructure supporting the end of a span, sometimes including a portion for retaining or supporting the approach embankment; for a masonry bridge, the structural component is composed of solid masonry or masonry-faced concrete and it counteracts the lateral thrust of the arch.

ARCH. A structure which carries loads by producing vertical and horizontal components at its supports. Specific types adapted to bridge construction derive their names from the shape of the curve, the support conditions, or the type of construction.

ARCH BARREL. The barrel vault portion of the structure, visible on the intradosal plane, which forms the basis of the bridge superstructure; an arch ring which extends the width of the structure.

ARCH RIB. Arch ring used in unfilled and open spandrel arch construction for reinforced concrete bridges.

ARCH RING. The outer course of stone or brick, forming the basis of the arch structure, visible on the elevation as the voussoirs.

ARRIS. Sharp edge produced by two edges meeting.

ASHLAR. Masonry composed of hewn blocks, with edges worked square and surfaces dressed, laid in horizontal courses with vertical joints.

BALUSTRADE. A concrete or stone railing system which includes rails and balusters (vertical members); serves as protection for vehicles and pedestrians at the edge of a bridge.

BEAM. A structural member which receives and transmits stresses induced by externally applied loads, deriving its strength from the development of internal bending or flexural stresses; the member can be supported at its ends or at intermediate points.

BEARING. Portion of bridge which seats superstructure to substructure; sometimes refers to a device at the ends of beams which is placed on top of the substructure (pier or abutment) and upon which the beam rests. They can be fixed or expansion bearings.

BEARING SEAT. Top of masonry substructure supporting bridge bearing.

BELT COURSE. A horizontal band of masonry, generally narrower than other courses, extending across the facade of a structure; may be flush or projecting.

BROKEN RANGE MASONRY. Masonry in which courses are not continuous throughout the wall.

BUTTRESS. A bracket-like wall, projecting from or built against another wall, to reinforce it; buttress strengthens or stiffens wall and may be integral with it or built against it.

CANTILEVER. A structural member which projects beyond its supporting wall or column and is supported at one end only.

CAPSTONE. Topmost stone of a masonry column, or one of a series forming the upper course of the parapet.

CENTERING. Temporary structure which supports the masonry while the arch ring is being constructed.

CLOSED SPANDREL WALL. A masonry or concrete wall which encloses the fill material within the body of the bridge superstructure.

COMPRESSION. Type of stress involving pressing together.

CONTINUOUS SPAN. A superstructure designed to extend continuously over one or more intermediate supports.

COPING. Topmost course of a masonry wall or pier.

CORBEL. Projecting course or portion of masonry serving a structural ornamental function.

CORBELLED ARCH. Masonry arch built by uniformly projecting courses from each side, each course projecting slightly outward from the one below, until they meet at the crown; no arch action is produced; also called a false arch.

COURSED RUBBLE. Masonry consisting of roughly dressed rubble (unsquared stones) laid in deep, approximate courses.

DECK. The portion of a bridge which provides direct support for vehicular and/or pedestrian use.

DRAFTED STONE. Stones on which the face is surrounded by a chisel draft with the surface inside left rough.

DRESSED STONE. Stone that has been worked to the desired shape and to a finished face. The finished surface may be worked in a wide variety of treatments.

ELLIPTICAL ARCH. An arch in which the intrados is part of an ellipse.

EFFLORESCENCE. White deposit on brick, stone or concrete masonry brought to the surface by moisture in the masonry.

EXTRADOS. The curve defining the surface of the arch ring which bounds the outer extremity of the voussoirs.

FALSE ARCH. See corbelled arch.

FALSEWORK. A temporary wooden or metal framework built to support a structure during its construction and until it becomes self-supporting.

FILL. Material, usually soil, used to raise or change the surface contour of an area, to construct an embankment, or to be placed within a stone or concrete arch bridge.

FIXED ARCH. An arch which, if fixed against rotation at both its supports, may be built of stone or concrete.

FLOOR BEAM. A horizontal member located transverse to the bridge axis.

FOOTING. The enlarged lower portion of a substructure, which distributes the structure load either to the earth or to supporting piles. Generally found below the surface of the ground and not visible.

FOUNDATION. Supporting portion of structure upon which the substructure rests.

GIRDER. Any large beam, especially if built of steel plates, which acts as primary support, usually receiving loads from floor beams and stringers.

HINGED ARCH. An arch which is supported by a pinned connection either at each end support (two-hinged) and/or a pin located near mid-span.

HUMPBACK. A descriptive term applied to bridges in which the deck and/or parapet are curved and peak at the mid-point; the crest is created by grades beginning at the approach roadways from both directions and terminating at the bridge mid-point; also known as a camelback.

INTRADOS. Curve defining the interior surface, or underside, of the arch.

JOINT. The space between individual stones in a stone masonry bridge usually filled with mortar; in concrete bridges, a division in the continuity of the concrete, produced in predetermined locations during construction.

KEYSTONE. The central stone of an arch ring, located at the crown of the arch.

LAGGINGS. Temporary formwork composed of ribs connected by narrow planks which support the arch intrados temporarily during construction of the bridge arch.

LATERAL BRACING. The bracing portion of a structure perpendicular to its longitudinal axis, intended to resist lateral movement and deformation resulting from wind and lateral vibration.

LIVE LOAD. An external load such as traffic which is applied to a bridge; may also accompanied by vibration or movement affecting its intensity.

MASONRY. A general term applied to structures built of stone, brick, and concrete, known correspondingly as stone, brick or concrete masonry.

MULTI-CENTERED ARCH. Arch in which the intrados is defined by two or more arcs of differing radii.

OBELISK. A monumental, tapered masonry shaft, ornamental in nature, usually monolithic and terminating in a pyramidal tip.

ONE-HINGED ARCH. See Hinged Arch.

OPEN SPANDREL WALL. An unfilled spandrel where the arch ring receives its load through interior spandrel walls, ports, columns or transverse walls.

PARAPET. A low wall along the outside edge of a bridge deck which extends longitudinally along the bridge. Sometimes ornamental in appearance, its purpose is to prevent vehicles and pedestrians from falling off the edge of the bridge. Usually, balustrades are considered an ornamental type of parapet.

PIER. Stone, concrete, brick, steel or wood structure which supports the ends of the superstructure spans of a multiple span bridge at an intermediate location between its abutments.

PILE. A linear member driven into the earth to carry loads through weak soil strata to a depth capable of supporting the structure and its applied loads; may be timber, steel, concrete, or composite material.

PITCH-FACED STONE. Stones on which the arris is clearly defined by a line beyond which the rock is cut away to give an edge which is approximately true.

PLINTH COURSE. Course forming the base of abutments, piers, parapets, or retaining walls, and projecting beyond the face of the structure.

POST. Sometimes used synonymously for "column". located perpendicular to the bridge deck; may be structurally functional and resist compressive stresses, or ornamental in nature.

PYLONS. A large monumental post usually marking the portal to a bridge or forming part of gateway.

RANGE MASONRY. Masonry in which a course is the same thickness throughout.

RANDOM MASONRY. Masonry which is not laid in courses.

REINFORCED CONCRETE. Concrete designed to incorporate steel reinforcing bars which supply tensile strength to the structure; unreinforced concrete is known as plain concrete, and consists of mass concrete which can resist compressive stresses only.

RIB. Projecting member supporting a curved shape or panel, sometimes ornamental.

RISE. Vertical distance between the highest part of the intrados and the plane of the spring lines.

RUBBLE. Masonry composed of unsquared stone, in unworked condition, varying in size.

QUARRY-FACED STONE. Stones in which the faces are left untouched as they come from the quarry.

SEGMENTAL ARCH. Arch in which the intrados is less than a semi-circle.

SIMPLE SPAN. Bridge span supported at its end and restrained at the supports only against vertical movement; ends are free to rotate.

SKEW BRIDGE. When the longitudinal axis of a bridge is not perpendicular to the substructure.

SKEW ANGLE. Acute angle between the longitudinal axis of the bridge and the axis of the substructure.

SKEWBACK. The inclined surface or joint upon which the end of the arch rests.

SPANDREL. The area between the extrados and the roadway.

SPANDREL WALL. Wall built on an arch, in the spandrel area, to contain spandrel fill and/or support the floor system and applied loads.

SPRING LINE. Inner edge of the skewback; horizontal, transverse line along the face of an abutment or pier where the intrados begins.

SQUARE STONE MASONRY. Stones which are roughly squared and roughly dressed on beds and joints; three subdivisions of this category are quarry-faced stone, pitch-faced stone and drafted stones (see corresponding entries).

STRUT. A general term applying to a member acting to resist compressive stress.

SUBSTRUCTURE. The abutments, piers and related components built to support the spans of a bridge superstructure.

SUPERSTRUCTURE. Portion of a bridge structure which primarily receives and supports live loads and in turn transfers them to the substructure.

SUSPENDER. Vertical rod connecting a member at one end and the bridge floor system at the other, transferring loads from the road to the main structural member.

TENSION. Type of stress involving an action which pulls apart.

THREE-HINGED ARCH. See Hinged Arch.

TIE. A member, usually a rod or bar, which functions to resist tension.

TIED ARCH. An arch in which the lateral thrust is resisted by horizontal ties connecting the ends of the arch ribs.

TWO-HINGED ARCH. See Hinged Arch.

UNCOURSED RUBBLE. Masonry composed of unsquared stones laid without any attempt at regular courses.

UNSQUARED STONE. Stone which is used as it comes from a quarry, without other preparation other than the removal of very acute angles and excessive projections.

VOUSSOIRS. Bricks or truncated wedge-shaped stones comprising an arch ring.

WING WALLS. The retaining wall extension of an abutment intended to retain the side slope materials of an approach roadway embankment.

APPENDICE B-2.

GLOSSARY OF ROAD TERMINOLOGY

ALIGNMENT. The projected line along which a road is designed or is built.

BACKFILL. Earth or other material used to replace material removed during construction, such as in pipeline and culvert trenches and behind retaining walls.

BASE. The artificial foundation on which the wearing "coat" of a pavement rests.

BINDER. The screenings, or soil, used to bind a macadam road together.

BOX CULVERT. A small culvert with an opening of rectangular shape. Originally such culverts had rubble masonry sidewalls for the sides, cobble pavement for the bottom and slabs of stone ("coverstones"), resting on the sidewalls, for the top.

BREAST WALL. A wall designed to support the natural grade above a cut section.

BROKEN STONE. Stone that has passed through a rock crusher. When it has not been screened into different sizes, it is called "run of crusher," or "crusher run". The smallest size, generally ½" or ¼" down to dust is called "screenings".

CATCH BASIN. A receptacle, with a sediment bowl or sump, for diverting surface water to a subsurface pipe.

CENTER LINE. The survey line in the center of a road, or similar project.

CIRCULAR CURVE. An arc of constant radius common to two tangents.

COMPACTION. The densification of a soil by a mechanical process.

CONTOUR LINE. An imaginary line, or its representation on a map, following all points at the same elevation above or below a given datum.

CROSS-SECTION. Transverse profile of the roadway.

CROWN. The arch or camber of the surface of a road or street; the transverse profile of a roadway.

CULVERT. A waterway under a roadway, smaller than a bridge.

CUT SECTION (or cut). That part of the ground surface which, when graded, is lower than the original ground.

DATUM. A horizontal reference plane used as a basis for computing elevations.

ELEVATION. (a) The altitude relative to a given datum. (b) A scale drawing of the upright parts of a structure.

EMBANKMENT. The volume of material deposited on the original ground surface or above the subgrade.

EROSION. Detachment and movement of soil or rock fragments by water, wind, ice or gravity.

EXCAVATION. The volume of material removed below the original ground surface.

FILL SECTION (or fill). That part of the ground surface which, when graded, is higher than the original ground.

FOUNDATION. The base which supports the wearing coat of a pavement.

GRADE. The rate of percent of rise or fall of the longitudinal profile of a road. A 1% grade means a rise of 1 foot vertical in 100 feet horizontal. Grade is also a verb, meaning to excavate or fill to grade lines.

GRADER. A "road machine" having a steel blade for levelling, scraping or "drifting" earth.

GRADE SEPARATION. A bridge separating roadways.

GRADIENT. The degree of inclination of a surface, road, or pipe, usually expressed in percent.

GRADING. Modification of the ground surface by cuts and/or fills. Fine or finish grading is light or thin grading to finish a prepared earth surface.

GUTTER. An artificially surfaced and generally shallow waterway, usually provided at the sides of a roadway for carrying surface drainage.

INLET. An arrangement for conveying surface wear to an underdrain.

INTERSECTION. An at-grade junction of two or more roads.

MACADAM. A pavement made of graded sizes of broken stone held together by the mineral colloids of the stone.

METAL. The broken stone used for macadam; often called "road metal".

OUTLET. Point of water disposal from a stream, river, lake, tidewater, or artificial drain.

PAVEMENT. A floor-like covering built upon the soil to form a firm, unyielding roadway for wheeled vehicles and animals. Every pavement has three functions to perform: (1) Distributing concentrated wheel loads over the earth subgrade: (2) Roofing the earth subgrade to prevent its saturation with water, and (3) Giving a hard, clean, smooth (but not slippery) surface that reduces friction. Pavements generally consist of two parts, (a) a "base" which performs the function of distributing the wheel load, and (b) a wearing coat which sheds rain and provides a durable, smooth surface.

PLAN. The proposed horizontal alignment.

PROFILE. The line of intersection of a vertical plane with the earth's surface; ordinarily applied to the longitudinal profile of the ground over which a road is to be built. The transverse profile is the cross-section.

RADIUS. The distance from an arc to a common perpendicular point; the ground distance from a compass point to the curve.

RAVEL. When the stones of a macadam road are displaced by traffic, it is said to "ravel".

RETAINING WALL. A wall built to support an embankment.

RUNOFF. That part of precipitation carried off from the area on which it falls. Also, the rate of surface discharge of the above. (The ration of the runoff to precipitation is a coefficient, expressed as a decimal.)

SCREENINGS. The fine product of a rock crusher usually from dust up to 1/2" to 3/4" in size.

SHAPING. The process of giving the final finishing to a subgrade, including the rolling of the subgrade.

SHOULDER. The portion of roadway between the edge of the hardened wearing course and the ditch or embankment.

SLOPE. The face of an embankment or cut section. Any ground whose surface makes an angle with the horizontal plane.

SLOPE STAKE. A stake set to mark the toe of a "fill" (embankment) or the top outer edge of a "cut" (excavation).

SPIRAL CURVE. A curve of gradually decreasing radius beginning at a point on the tangent and ending at a circular curve.

SUBGRADE. The graded surface of the soil upon which a pavement rests.

SUPERELEVATION. The rate of rise of the outside edge of pavement to compensate for centrifugal force of a moving vehicle.

TANGENT. A straight road segment connecting two curves.

TELFORD. A pavement consisting of a base, or "bottoming" of large stones set on edge, supporting a wearing coat of ordinary macadam.

VERTICAL CURVE. A parabolic curve connecting two vertical tangents; usually a curve on a profile.

WATERSHED. Region or area contributing to the supply of a stream or lake. (Also drainage basin or catchment area.)

APPENDICE C.

NARRATIVE DESCRIPTIONS

Jordan Stream Roads

The Jordan Stream road (16-23 and 23-24) and the Jordan Stream bridle path (15-23) were among the earliest carriage roads built. They were designed by Charles P. Simpson and built by Rockefeller's first road builders, Alanson E. Clement and Chauncey D. Joy. The bridle path was the first construction done on land owned by the Trustees for Public Reservations under an agreement made with Rockefeller in 1915. The remaining construction was done on land owned by Rockefeller and eventually donated to the National Park Service. The roads directly connected The Eyrie (Rockefeller's home) to the Jordan Pond House.

The bridle path, while now considered part of the carriage road system, was built to a different specification. It is 12 feet instead of 16 feet wide. It also has several wooden bridges as its route takes it across the Jordan Stream several times. Railings are missing on some of these bridges, several culverts need immediate attention (clogged or silted in), and many coping stones are missing. The carriage road from Jordan Pond House to the Cobblestone bridge is regularly used by the concessionaire. It is in reasonably good condition.

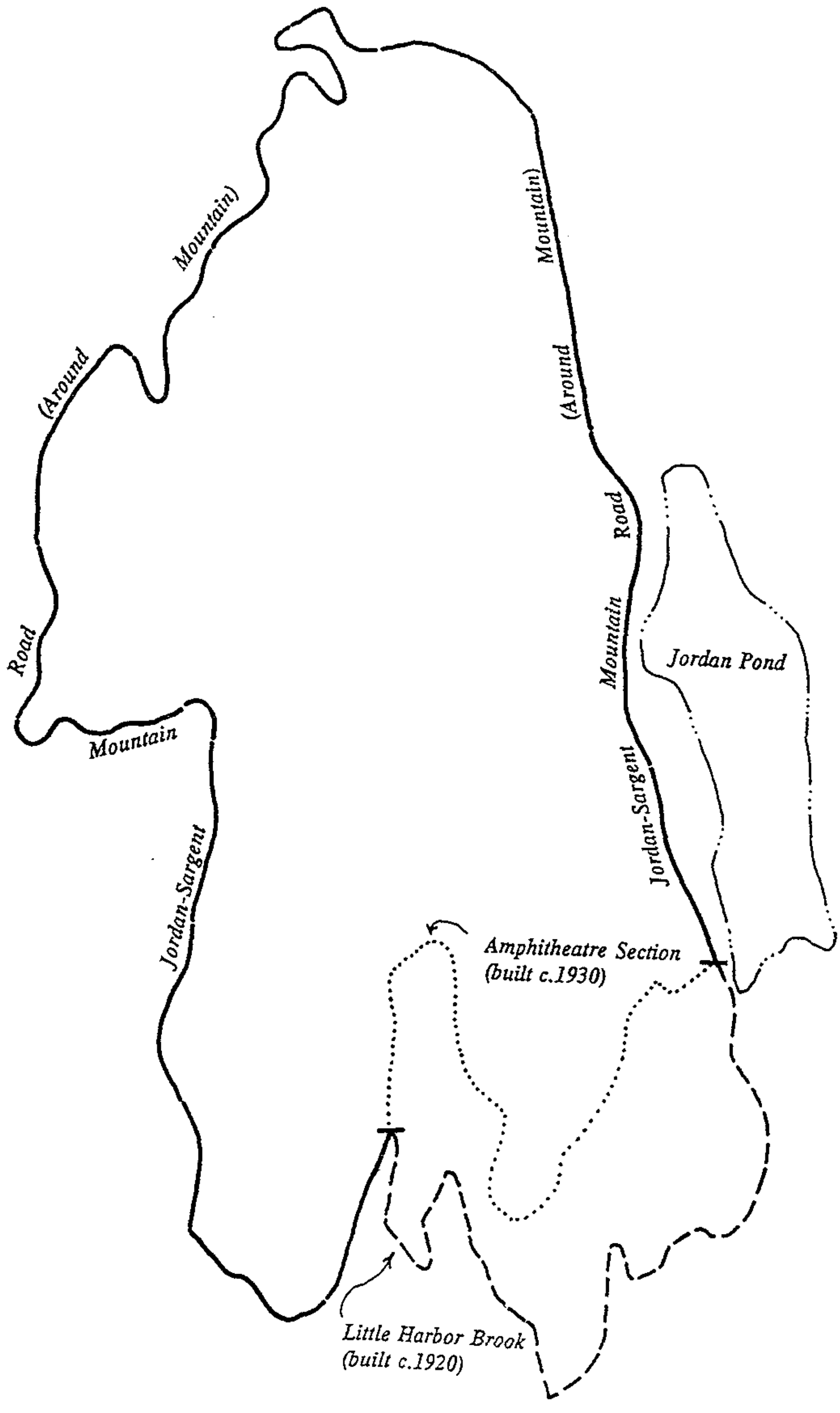
Asticou-Jordan Pond Road

The Asticou-Jordan Pond Road (19-20, 21-14, 21-22, 20-22 and 20-21) was for Rockefeller the centerpiece of the southern end of the system. It connects the Jordan Pond House to Brown Mountain Road. In 1918 when Rockefeller was ready to begin construction, the route he selected was on property owned by the Trustees for Public Reservations, with the exception of the property where the road would end at Asticou which was owned by Rockefeller. In his original proposal, the road was to begin at the southwest corner of Jordan Pond, go around the southern end of Jordan Mountain and then north into the Amphitheater Valley, across Little Harbor Brook and then around the southern end of Cedar Swamp Mountain to the Brown Mountain Road at Asticou. A controversy arose, however, regarding building roads in the Amphitheater Valley. Rockefeller elected to postpone that construction, therefore, and proposed an alternate route, the Little Harbor Brook road. (See attached sketch.)

The Little Harbor Brook bridge was built on this section. It was designed by Bosworth and engineered by Charles P. Simpson and then revised at Rockefeller's request to resemble the Gap Stowe bridge in Central Park. B.W. Candage, a local contractor, built it. A.E. Clement started building the road at the Jordan Stream end; Chauncey D. Joy stated at Brown Mountain road. Rockefeller continued this system of two crews working from each end of the road to the middle throughout the construction of the system.

In 1919, anticipating the construction of the Amphitheater section, the Jordan Pond Dam Bridge was built, again by Candage. That section, however, (14-21) was not built until the early 1930's in deference to the opposition. It included three bridges designed by Stoughton: the West Branch, Cliffside and The Amphitheater. Charles Simpson has done structural drawings for the West Branch in 1919; Stoughton finished the design. Since by this time this property was part of the park, all three bridges were reviewed and approved by the Fine Arts Commission. The road was built by Rockefeller's crews with Ralston as superintendent. Again, a crew started at each end and they met in the middle. Therefore, the West Branch and Amphitheater bridges were finished first and the Cliffside last.

Section 19-20 does not have as many beautiful views as the rest of the road and is not in good condition; foundation stones are beginning to show in many places on the road. Section 20-22 is very low-lying and in many instances the ditches and culverts are not clear or functioning adequately. In 1990, the National Park Service undertook construction on Section 20-21 which included surface repair, work on the drainage system and vista clearing. Because it includes two bridges and is close to the Jordan Pond House, Section 14-21 is popular with visitors. The drainage system for this section needs attention and there is a good deal of surface erosion.



(Around
Mountain)
Road
Mountain
Jordan-Sargent
(Around
Mountain)
Road
Mountain
Jordan-Sargent
Jordan Pond
Amphitheatre Section
(built c.1930)
Little Harbor Brook
(built c.1920)

Jordan-Sargent Mountain Road
Aunt Betty's Pond Road

In 1922, the Park Service agreed to let Rockefeller build a segment (10-14; 14-15) in anticipation of making a circuit "around the mountain." This segment, in conjunction with a segment of Aunt Betty's Pond road (9-11; 11-10) also served to connect the carriage road system to the existing system of motor roads. Bar Harbor, then, gained more direct carriage access.

A.E. Clement began at the southwest corner of Jordan Pond on land already owned by the Park just past the Jordan Pond Dam bridge. Chauncey Joy began on Rockefeller's property at Brown Mountain Road just north of where the gatehouse now stands. A third team, under the direction of Edgar M. Walls began at Eagle Lake Road and worked south to join the others (9-11; 11-10). Mr. Walls was a Rockefeller employee and supervised by Rockefeller's estate superintendent. Both Joy and Clement continued as independent contractors.

Since Clement's segment was within the Park, his work was directed by a committee which included Rockefeller's attorney, engineer and estate superintendent. The road went through a rock slide which made the work arduous, the progress slow, and the cost high. Clement also had trouble working with the Committee. This segment turned out to be the last he built. It remains today one of the most interesting roads: the rock slide and retaining walls are dramatic and unique; there are also excellent views of Jordan Pond and Pemetic Mountain. The drainage system is functioning well.

The Jordan-Sargent Mountain circuit included four bridges, all of which were built by S.W. Candage and designed by Bosworth: Hemlock, Waterfall, Deer Brook and Chasm Brook. Again, because they were on Park land, the bridges at Deer Brook and Chasm Brook were reviewed and approved by the Park Service prior to construction.

The road building project, like the one in the Amphitheater, aroused opposition from those on the island who opposed the construction. This time, however, Rockefeller (and Dorr) elected to meet the opposition head on rather than postpone the project. They prevailed and the roads were finished in 1926.

Concurrent with the construction of the Jordan-Sargent Mountain Road, Joy built the Hadlock Brook bridle path. It included the Hadlock Brook bridge built by Candage and designed by Bosworth in the same pattern as the Little Harbor Brook bridge.

Section 10-12 includes some of the most spectacular views available on the carriages roads. Looking west toward Somes Sound, the views are perhaps more interesting because the road curves a great deal and thus they are surprising. The shrubbery at the higher elevations is more diverse and dense. The road surface is in very bad condition and very soft.

The Aunt Betty's Pond section of the roads is in average condition. There are nice views alongside the pond, though some clearing could be done. Vegetation along the roadsides is getting heavy. (There is a particularly nice crop of lowbush blueberries.)

Eagle Lake Road

Most of the historical information found pertained to the east side of the circuit around Eagle Lake. There was an existing horse road (Old Roberts Road) in that location when the project was being discussed in 1927. One alternative was to closely follow this route on the assumption that gaining public approval would be easier. Rockefeller, however, preferred the route at a higher elevation because he felt it offered a better view of the lake. The views today, however, are mostly obscured by vegetation.

One bridge is located on the loop. It was designed by William Welles Bosworth and built by B.W. Candage. Although both the town of Bar Harbor and Rockefeller's engineer recommended that the bridge be 27 feet wide to accommodate automobile traffic, Rockefeller insisted it be built at 21 feet wide. This necessitated widening it in 1974.

There is also a triple culvert along the east side of the lake at Beaver Meadow Pool. Much of Beatrix Farrand's attention was concentrated here in developing appropriate plantings.

The surface of the entire loop is in good condition, though there are a few spots which need attention. It is popular with both bikers and some hikers, though the six-mile loop is a healthy walk. On the west side, the views through the evergreens to the lake are beautiful; views are scarce on the south side and, as mentioned before, on the east side.

Bubble Pond Road

The Bubble Pond Road (16-17; 17-7) connected the Jordan Pond House to the Day Mountain roads and Bubble Pond. Work by two of Rockefeller's own crews, under the direction of his superintendent, Ralston, began in 1928. One foreman, Walls, began at the Jordan Pond entrance; another, Driscoll, completed the road to Bubble Pond and went north to Eagle Lake. The road on the west side of Bubble Pond was described to Driscoll as a "bridle path" which meant it was built to a different standard than the carriage roads.

The road includes one bridge at Bubble Pond. Rockefeller submitted another William Welles Bosworth design to the Park Service in 1926. By this time, however, the Park Service's own design offices had developed sufficiently that design work was being done in house. The Park Service (and the Fine Arts Commission) rejected Bosworth's design in favor of a "more rustic" one prepared by Daniel Hull, an architect in the Landscape Engineering Division. Rockefeller funded the bridge, but it was built under Park Service supervision by a foreman named Pringle Borthwick, a Philadelphia mason.

Beatrix Farrand completed the job by making extensive planting recommendations for the area around the bridge.

The Bubble Pond road today is in very bad condition, especially along the west side of the pond where the road was built as a bridle path. No drainage structures were installed here and the road has suffered as a result. There are also several rugged areas where the foundation stones are exposed. Both bike and foot travel is hazardous. The drainage system needs attention: culverts have displaced stones or are clogged and there is standing water in ditches.

Hull's Cove and Paradise Hill Roads

These roads were completed in 1929 by Rockefeller's crews. Ralston, the superintendent, assigned two foremen, Emery and Stover, to the work. There is much correspondence between Rockefeller and Beatrix Farrand related both to the vistas and the planting along these roads. The views of Frenchman's Bay are excellent. Rockefeller considered it the "grand northern terminus" of his road system.

Duck Brook bridge is located here. It was designed by Charles W. Stoughton and built by Pringle Borthwick. It is the most sophisticated of the Acadia bridges.

The roads are in good condition, with no foundation stones showing through the surface. There were instances of standing water, no doubt the result of the low-lying, flat landscape through which the roads pass.

Barr Hill-Day Mountain Road

The Barr Hill/Day Mountain road (29-38), the loop around Day Mountain (36-37-38), and the summit to the top of Day Mountain were the last carriage roads built on Mount Desert Island by Rockefeller. Three bridges are included on these roads. The two on the Barr Hill/Day Mountain road, less than a mile apart, are the Stanley Brook bridge and the Jordan Pond Road bridge. The Stanley Brook carries a carriage road across a brook, the Seaside Trail to the Jordan Pond House, and the park loop road. It was designed by Charles Stoughton and built by Rockefeller's own crews under the direction of his superintendent, S.F. Ralston. The other carries the Jordan Pond Road (a local street) across the carriage road. It, too, was designed by Stoughton, but was built by Wyman and Simpson. This Simpson was Walworth, the son and brother of two of the roads' engineers. Beatrix Farrand *recommended extensive plantings for both these bridges and her notes still exist.* The third bridge crosses the park loop road and connects the Bubble Pond carriage road to the Day Mountain roads. It was designed and built by the National Park Service and was the seventeenth and last bridge built for the carriage roads.

The Day Mountain summit road is the only carriage road which reaches the apex of a mountain. It is used by a concessionaire for buckboard rides to see the sunset. The road twists and curves down the mountain with beautiful views to the south, east and west along the way. It is in good condition. The drainage is functioning efficiently and the coping stones are a good size, consistent, and nicely aligned. The surface is soft, however, and may not be good for bikes.

The east side of the loop around the mountain has some beautiful views to the south and east. There are also views of the loop road which could be screened, as well as a direct view of the summit road. The drainage system is generally in fair condition; there are a few instances in which displaced stones from culverts are creating drainage/erosion problems. The west side of the loop (into which the Barr Hill Road connects) does not have many views. Some of the eroded surfaces here make bike travel difficult. The culverts and drainage system are generally in good condition, however. This section is mostly wooded on both sides.

APPENDICE D.

REPRESENTATIVE DATABASE REPORTS

9/09/93

Items

Section: CR1-2
Subsection: a
FHWA Route: 488

Historic Name: Paradise Hill Road
Modern Name: Witch Hole Pond Loop

			Length
Number of Coping Stone Sections	:	1	205
Number of Crown	:	1	1016
Number of Culvert (Metal)	:	5	0
Number of Ditch (Unlined)	:	2	868
Number of Documented Vista	:	2	0
Number of Intersection	:	2	0
Number of Roadway (Broken Stone)	:	1	1016
Number of Surface	:	1	1016

Acadia National Park
Carriage Roads

Section: CR1-2
Subsection: a
FHWA Route: 488

Historic Name: Paradise Hill Road
Modern Name: Witch Hole Pond Loop

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
6780	Crown	0	1016	1016	A	3
6781	Surface	0	1016	1016	A	4
679	Roadway (Broken Stone)	0	1016	1016	A	
380	Intersection	0	0	0	R	2
2351	Ditch (Unlined)	0	298	298	L	1
354	Coping Stone Sections	10	215	205	R	1
1802	Culvert (Metal)	125	125	0	A	3
1802	Culvert (Metal)	192	192	0	A	2
9003	Documented Vista	200	200	0	R	50
2351	Ditch (Unlined)	225	795	570	R	2
1802	Culvert (Metal)	468	468	0	A	4
1802	Culvert (Metal)	850	850	0	A	3
380	Intersection	1015	1015	0	A	2
1802	Culvert (Metal)	1016	1016	0	A	2
9003	Documented Vista	1500	1500	0	A	50
	Total Weighted Priority:					129

HOW WERE THESE #'S DERIVED?
WHAT DO THEY MEAN?
ALL SECTIONS.

9/09/93

Items

Section: CR2-3
Subsection: a
FHWA Route: 488

Historic Name: Paradise Hill Road
Modern Name: Witch Hole Pond Loop

			Length
Number of Coping Stone Sections	:	3	794
Number of Crown	:	2	1215
Number of Culvert (Metal)	:	4	0
Number of Ditch (Unlined)	:	3	1544
Number of Intersection	:	2	0
Number of Photographic Vista	:	2	0
Number of Roadway (Broken Stone)	:	1	1216
Number of Sign	:	6	0
Number of Surface	:	1	1216

Acadia National Park
Carriage Roads

Section: CR2-3
Subsection: a
FHWA Route: 488

Historic Name: Paradise Hill Road
Modern Name: Witch Hole Pond Loop

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	1216	1216	A	
380	Intersection	0	0	0	A	2
700	Sign	0	0	0	A	2
700	Sign	0	0	0	A	2
700	Sign	0	0	0	A	2
2351	Ditch (Unlined)	0	1216	1216	L	5
354	Coping Stone Sections	0	85	85	R	1
6781	Surface	0	1216	1216	A	5
6780	Crown	0	590	590	A	2
9004	Photographic Vista	50	50	0	R	50
354	Coping Stone Sections	155	825	670	R	4
1802	Culvert (Metal)	166	166	0	A	3
9004	Photographic Vista	450	450	0	R	50
1802	Culvert (Metal)	510	510	0	A	1
6780	Crown	591	1216	625	A	3
1802	Culvert (Metal)	760	760	0	A	3
2351	Ditch (Unlined)	825	1053	228	R	1
354	Coping Stone Sections	1077	1116	39	R	0
2351	Ditch (Unlined)	1116	1216	100	R	0
1802	Culvert (Metal)	1195	1195	0	A	2
380	Intersection	1216	1216	0	A	2
700	Sign	1216	1216	0	A	2
700	Sign	1216	1216	0	A	2
700	Sign	1216	1216	0	A	2

Total Weighted Priority: 145

9/09/93

Items

Section: CR3-1
Subsection: a
FHWA Route: 488

Historic Name: Paradise Hill Road
Modern Name: Witch Hole Pond Loop

			Length
Number of Coping Stone Sections	:	7	2717
Number of Crown	:	1	4624
Number of Culvert (Metal)	:	9	0
Number of Ditch (Unlined)	:	5	3875
Number of Documented Vista	:	2	0
Number of Roadway (Broken Stone)	:	1	4617
Number of Sign	:	1	0
Number of Surface	:	3	4623

Acadia National Park
Carriage Roads

Section: CR3-1 Historic Name: Paradise Hill Road
Subsection: a Modern Name: Witch Hole Pond Loop
FHWA Route: 488

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	4617	4617	A	
6781	Surface	0	1049	1049	A	4
6780	Crown	0	4624	4624	A	13
1802	Culvert (Metal)	933	933	0	A	2
6781	Surface	1050	2610	1560	A	3
9003	Documented Vista	1100	1100	0	R	50
2351	Ditch (Unlined)	1140	1625	485	L	2
354	Coping Stone Sections	1350	1470	120	R	1
1802	Culvert (Metal)	1465	1465	0	A	3
2351	Ditch (Unlined)	1494	1625	131	R	0
354	Coping Stone Sections	1625	1925	300	R	2
354	Coping Stone Sections	1625	1720	95	L	1
1802	Culvert (Metal)	1692	1692	0	A	2
2351	Ditch (Unlined)	1720	4624	2904	L	11
1802	Culvert (Metal)	1900	1900	0	A	2
2351	Ditch (Unlined)	1920	2150	230	R	1
9003	Documented Vista	2000	2000	0	R	50
354	Coping Stone Sections	2150	2485	335	R	2
1802	Culvert (Metal)	2280	2280	0	A	3
1802	Culvert (Metal)	2450	2450	0	A	4
2351	Ditch (Unlined)	2485	2610	125	R	0
354	Coping Stone Sections	2610	2650	40	R	0
6781	Surface	2610	4624	2014	A	8
354	Coping Stone Sections	2690	3277	587	R	3
1802	Culvert (Metal)	3180	3180	0	A	2
354	Coping Stone Sections	3377	4617	1240	R	9
1802	Culvert (Metal)	3400	3400	0	A	3
1802	Culvert (Metal)	3624	3624	0	A	2
700	Sign	4617	4617	0	R	2

Total Weighted Priority: 185

9/09/93 Items

Section: CR4-2
Subsection: a
FHWA Route: 488

Historic Name: Hull's Cove Road
Modern Name: Witch Hole Pond Loop

		Length
Number of Coping Stone Sections	: 16	3468
Number of Crown	: 1	5280
Number of Culvert (Metal)	: 12	0
Number of Culvert (Stone)	: 1	0
Number of Ditch (Unlined)	: 12	6301
Number of Photographic Vista	: 1	0
Number of Roadway (Broken Stone)	: 1	5280
Number of Surface	: 1	5280

Acadia National Park
Carriage Roads

Section: CR4-2 Historic Name: Hull's Cove Road
Subsection: a Modern Name: Witch Hole Pond Loop
FHWA Route: 488

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	5280	5280	A	15
6781	Surface	0	5280	5280	A	30
354	Coping Stone Sections	0	164	164	L	1
2351	Ditch (Unlined)	57	806	749	R	3
1802	Culvert (Metal)	102	102	0	A	2
354	Coping Stone Sections	202	570	368	L	3
1802	Culvert (Metal)	228	228	0	A	3
2351	Ditch (Unlined)	689	778	89	L	0
354	Coping Stone Sections	778	916	138	L	1
354	Coping Stone Sections	806	916	110	R	1
1802	Culvert (Metal)	831	831	0	A	3
2351	Ditch (Unlined)	916	1611	695	L	3
2351	Ditch (Unlined)	916	1067	151	R	1
354	Coping Stone Sections	1115	1666	551	R	3
1802	Culvert (Metal)	1137	1137	0	A	3
1802	Culvert (Metal)	1325	1325	0	A	2
354	Coping Stone Sections	1611	1655	44	L	0
1802	Culvert (Metal)	1638	1638	0	A	1
354	Coping Stone Sections	1655	1887	232	L	1
2351	Ditch (Unlined)	1666	1788	122	R	0
354	Coping Stone Sections	1804	1844	40	R	0
1802	Culvert (Metal)	1828	1828	0	A	2
2351	Ditch (Unlined)	1844	2533	689	R	3
2351	Ditch (Unlined)	1887	2932	1045	L	4
354	Coping Stone Sections	2533	2802	269	R	2
1802	Culvert (Metal)	2559	2559	0	A	2
1802	Culvert (Metal)	2705	2705	0	A	4
354	Coping Stone Sections	2920	3121	201	R	2
354	Coping Stone Sections	2932	3006	74	L	0
1802	Culvert (Metal)	2981	2981	0	A	2
2351	Ditch (Unlined)	3030	3882	852	L	3
2351	Ditch (Unlined)	3207	3456	249	R	1
354	Coping Stone Sections	3456	4087	631	R	4
9004	Photographic Vista	3500	3500	0	R	50
354	Coping Stone Sections	3882	4072	190	L	1
1803	Culvert (Stone)	3983	3983	0	A	4
2351	Ditch (Unlined)	4087	4403	316	R	1
2351	Ditch (Unlined)	4087	5280	1193	L	5
1802	Culvert (Metal)	4403	4403	0	A	1
354	Coping Stone Sections	4619	4910	291	R	2
1802	Culvert (Metal)	4778	4778	0	A	4
2351	Ditch (Unlined)	4910	5061	151	R	1
354	Coping Stone Sections	5061	5137	76	R	0
354	Coping Stone Sections	5191	5280	89	R	1

Total Weighted Priority: 173

9/09/93 Items

Section: CR4-2 Historic Name: Hull's Cove Road
Subsection: b Modern Name: Witch Hole Pond Loop
FHWA Route: 488

			Length
Number of Coping Stone Sections	:	1	165
Number of Crown	:	1	315
Number of Culvert (Metal)	:	1	0
Number of Ditch (Unlined)	:	1	315
Number of Roadway (Broken Stone)	:	1	315
Number of Surface	:	1	315

Acadia National Park
Carriage Roads

Section: CR4-2
Subsection: b
FHWA Route: 488

Historic Name: Hull's Cove Road
Modern Name: Witch Hole Pond Loop

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	315	315	A	
6780	Crown	0	315	315	A	1
354	Coping Stone Sections	0	165	165	R	1
2351	Ditch (Unlined)	0	315	315	L	1
6781	Surface	0	315	315	A	2
1802	Culvert (Metal)	147	147	0	A	3
	Total Weighted Priority:					8

9/09/93 Items

Section: CR5-3 Historic Name: Hull's Cove Road
Subsection: a Modern Name: Witch Hole Pond Loop
FHWA Route: 488

			Length
Number of Bridge (Stone)	:	1	0
Number of Coping Stone Sections	:	13	4225
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	13	0
Number of Culvert (Stone)	:	1	0
Number of Ditch (Unlined)	:	5	5253
Number of Documented Vista	:	4	0
Number of Intersection	:	2	0
Number of Photographic Vista	:	3	0
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	2	5279

Acadia National Park
Carriage Roads

Section: CR5-3 Historic Name: Hull's Cove Road
Subsection: a Modern Name: Witch Hole Pond Loop
FHWA Route: 488

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
380	Intersection	0	0	0	A	2
56	Bridge (Stone)	0	0	0	A	40
679	Roadway (Broken Stone)	0	5280	5280	A	
2351	Ditch (Unlined)	0	2850	2850	L	11
6781	Surface	0	1000	1000	A	6
6780	Crown	0	5280	5280	A	20
354	Coping Stone Sections	105	750	645	R	5
1802	Culvert (Metal)	263	263	0	A	2
1802	Culvert (Metal)	478	478	0	A	2
1802	Culvert (Metal)	670	670	0	A	2
354	Coping Stone Sections	812	1039	227	R	1
9003	Documented Vista	900	900	0	A	50
1802	Culvert (Metal)	975	975	0	A	2
6781	Surface	1001	5280	4279	A	24
1802	Culvert (Metal)	1233	1233	0	A	2
9004	Photographic Vista	1290	1290	0	R	50
354	Coping Stone Sections	1327	2081	754	R	3
354	Coping Stone Sections	1447	1500	53	L	0
1802	Culvert (Metal)	1480	1480	0	A	2
1802	Culvert (Metal)	1480	1480	0	A	2
9003	Documented Vista	1500	1500	0	R	50
1802	Culvert (Metal)	1667	1667	0	A	3
9003	Documented Vista	1750	1750	0	R	50
1802	Culvert (Metal)	1901	1901	0	A	2
354	Coping Stone Sections	2140	2725	585	R	6
9004	Photographic Vista	2290	2290	0	R	50
9004	Photographic Vista	2454	2454	0	R	50
354	Coping Stone Sections	2851	2980	129	R	1
354	Coping Stone Sections	2884	2995	111	L	1
1802	Culvert (Stone)	2932	2932	0	A	4
2351	Ditch (Unlined)	2960	4350	1390	R	5
9003	Documented Vista	3250	3250	0	L	50
1802	Culvert (Metal)	3366	3366	0	A	3
354	Coping Stone Sections	3550	4032	482	L	2
1802	Culvert (Metal)	3577	3577	0	A	3
354	Coping Stone Sections	3775	3944	169	R	1
2351	Ditch (Unlined)	4032	4750	718	L	2
354	Coping Stone Sections	4360	4625	265	R	1
1802	Culvert (Metal)	4506	4506	0	A	2
2351	Ditch (Unlined)	4625	4735	110	R	0
354	Coping Stone Sections	4740	5280	540	R	3
354	Coping Stone Sections	4740	4827	87	L	0
1802	Culvert (Metal)	4770	4770	0	A	3
2351	Ditch (Unlined)	4820	5005	185	L	1
354	Coping Stone Sections	5102	5280	178	L	1
380	Intersection	5306	5306	0	A	2

Total Weighted Priority: 521

9/09/93

Items

Section: CR5-4
Subsection: a
FHWA Route: 487

Historic Name: Hull's Cove Road
Modern Name: Witch Hole Pond Loop

			Length
Number of Coping Stone Sections	:	15	2554
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	10	0
Number of Ditch (Unlined)	:	14	6275
Number of Documented Vista	:	2	0
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	6	5300

Acadia National Park
Carriage Roads

Section: CR5-4 Historic Name: Hull's Cove Road
Subsection: a Modern Name: Witch Hole Pond Loop
FHWA Route: 487

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6781	Surface	0	1356	1356	A	10
354	Coping Stone Sections	0	334	334	L	3
2351	Ditch (Unlined)	0	95	95	R	0
6780	Crown	0	5280	5280	A	25
354	Coping Stone Sections	95	283	188	R	1
9003	Documented Vista	250	250	0	A	50
9003	Documented Vista	250	250	0	L	50
1802	Culvert (Metal)	428	428	0	A	3
2351	Ditch (Unlined)	428	874	446	L	2
1802	Culvert (Metal)	611	611	0	A	2
354	Coping Stone Sections	874	1175	301	L	2
354	Coping Stone Sections	955	1175	220	R	2
1802	Culvert (Metal)	982	982	0	A	3
1802	Culvert (Metal)	1102	1102	0	A	3
2351	Ditch (Unlined)	1175	1457	282	L	1
2351	Ditch (Unlined)	1175	2011	836	R	3
6781	Surface	1356	2266	910	A	9
1802	Culvert (Metal)	1452	1452	0	A	1
354	Coping Stone Sections	1457	1516	59	L	1
2351	Ditch (Unlined)	1768	1949	181	L	1
354	Coping Stone Sections	1949	2080	131	L	1
354	Coping Stone Sections	2011	2110	99	R	1
1802	Culvert (Metal)	2055	2055	0	A	2
2351	Ditch (Unlined)	2110	2266	156	R	1
2351	Ditch (Unlined)	2144	2266	122	L	0
354	Coping Stone Sections	2266	2361	95	R	1
354	Coping Stone Sections	2266	2376	110	L	1
6781	Surface	2266	3621	1355	A	10
1802	Culvert (Metal)	2309	2309	0	A	3
2351	Ditch (Unlined)	2361	2559	198	R	1
2351	Ditch (Unlined)	2376	2559	183	L	1
354	Coping Stone Sections	2559	2635	76	R	1
354	Coping Stone Sections	2559	2864	305	L	2
1802	Culvert (Metal)	2605	2605	0	A	2
2351	Ditch (Unlined)	2635	3218	583	R	2
2351	Ditch (Unlined)	2893	3816	923	L	3
354	Coping Stone Sections	3191	3491	300	L	3
354	Coping Stone Sections	3218	3311	93	R	1
1802	Culvert (Metal)	3245	3245	0	A	1
2351	Ditch (Unlined)	3311	5280	1969	R	7
2351	Ditch (Unlined)	3471	3518	47	L	0
354	Coping Stone Sections	3518	3708	190	L	1
6781	Surface	3621	3814	193	A	1
6781	Surface	3814	4491	677	A	5
354	Coping Stone Sections	3933	3986	53	L	0
6781	Surface	4471	5280	809	A	8
2351	Ditch (Unlined)	5026	5280	254	L	1
1802	Culvert (Metal)	5140	5140	0	A	2
	Total Weighted Priority:					234

9/09/93

Items

Section: CR5-4
Subsection: b
FHWA Route: 487

Historic Name: Hull's Cove Road
Modern Name: Witch Hole Pond Loop

			Length
Number of Crown	:	2	388
Number of Culvert (Metal)	:	1	0
Number of Ditch (Unlined)	:	2	408
Number of Intersection	:	3	0
Number of Roadway (Broken Stone)	:	1	370
Number of Sign	:	2	0
Number of Surface	:	2	388

Acadia National Park
Carriage Roads

Section: CR5-4   Historic Name: Hull's Cove Road
Subsection: b   Modern Name: Witch Hole Pond Loop
FHWA Route: 487

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	370	370	A	
6780	Crown	0	184	184	A	1
6781	Surface	0	204	204	A	2
6780	Crown	0	204	204	A	1
2351	Ditch (Unlined)	0	204	204	L	1
2351	Ditch (Unlined)	0	204	204	L	1
6781	Surface	0	184	184	A	1
700	Sign	15	15	0	A	2
1802	Culvert (Metal)	76	76	0	A	2
700	Sign	82	82	0	A	2
380	Intersection	144	144	0	A	2
380	Intersection	184	184	0	A	2
380	Intersection	204	204	0	A	2
	Total Weighted Priority:					18

9/09/93 Items

Section: CR6-4
Subsection: a
FHWA Route: 487

Historic Name: Hull's Cove Road
Modern Name: Witch Hole Pond Loop

			Length
Number of Bridge (Stone)	:	1	0
Number of Coping Stone Sections	:	13	1763
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	19	0
Number of Ditch (Unlined)	:	14	7081
Number of Documented Vista	:	1	0
Number of Photographic Vista	:	1	0
Number of Roadway (Broken Stone)	:	1	5280
Number of Sign	:	3	0
Number of Surface	:	1	5280

Acadia National Park
Carriage Roads

Section: CR6-4 Historic Name: Hull's Cove Road
Subsection: a Modern Name: Witch Hole Pond Loop
FHWA Route: 487

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	5280	5280	A	15
6781	Surface	0	5280	5280	A	30
2351	Ditch (Unlined)	0	1712	1712	L	6
56	Bridge (Stone)	118	118	0	A	40
700	Sign	164	164	0	L	2
700	Sign	164	164	0	L	2
700	Sign	164	164	0	L	2
1802	Culvert (Metal)	382	382	0	A	4
1802	Culvert (Metal)	544	544	0	A	3
1802	Culvert (Metal)	764	764	0	A	2
1802	Culvert (Metal)	934	934	0	A	2
1802	Culvert (Metal)	1047	1047	0	A	2
1802	Culvert (Metal)	1246	1246	0	A	3
2351	Ditch (Unlined)	1300	2328	1028	R	4
1802	Culvert (Metal)	1422	1422	0	A	1
354	Coping Stone Sections	1712	1845	133	L	1
1802	Culvert (Metal)	1746	1746	0	A	2
2351	Ditch (Unlined)	1869	2345	476	L	2
9003	Documented Vista	2000	2000	0	L	50
354	Coping Stone Sections	2328	2430	102	R	1
354	Coping Stone Sections	2345	2421	76	L	0
1802	Culvert (Metal)	2375	2375	0	A	1
2351	Ditch (Unlined)	2430	2634	204	R	1
2351	Ditch (Unlined)	2491	2583	92	L	0
354	Coping Stone Sections	2604	2758	154	L	1
354	Coping Stone Sections	2634	2698	64	R	0
1802	Culvert (Metal)	2666	2666	0	A	3
1802	Culvert (Metal)	2750	2750	0	A	2
2351	Ditch (Unlined)	2758	3276	518	L	2
2351	Ditch (Unlined)	2758	3276	518	R	2
1802	Culvert (Metal)	3042	3042	0	A	3
354	Coping Stone Sections	3290	3345	55	L	0
354	Coping Stone Sections	3290	3345	55	R	0
1802	Culvert (Metal)	3298	3298	0	A	3
1802	Culvert (Metal)	3340	3340	0	A	3
2351	Ditch (Unlined)	3350	3655	305	R	1
2351	Ditch (Unlined)	3465	3626	161	L	1
354	Coping Stone Sections	3626	3996	370	L	3
354	Coping Stone Sections	3655	3827	172	R	1
1802	Culvert (Metal)	3715	3715	0	A	4
2351	Ditch (Unlined)	3827	4330	503	R	2
2351	Ditch (Unlined)	3996	4160	164	L	1
354	Coping Stone Sections	4185	4435	250	L	1
1802	Culvert (Metal)	4191	4191	0	A	3
354	Coping Stone Sections	4330	4420	90	R	1
1802	Culvert (Metal)	4400	4400	0	A	2
2351	Ditch (Unlined)	4420	5280	860	R	3
2351	Ditch (Unlined)	4435	4945	510	L	2
9004	Photographic Vista	4576	4576	0	L	50
354	Coping Stone Sections	4945	5085	140	L	1
1802	Culvert (Metal)	5077	5077	0	A	1
354	Coping Stone Sections	5138	5240	102	L	1
1802	Culvert (Metal)	5240	5240	0	A	1

Acadia National Park
Carriage Roads

Section: CR6-4 Historic Name: Hull's Cove Road
Subsection: a Modern Name: Witch Hole Pond Loop
FHWA Route: 487

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
2351	Ditch (Unlined)	5250	5280	30	L	0
	Total Weighted Priority:					274

9/09/93 Items

Section: CR6-4
Subsection: b
FHWA Route: 487

Historic Name: Hull's Cove Road
Modern Name: Witch Hole Pond Loop

			Length
Number of Coping Stone Sections	:	2	315
Number of Crown	:	1	783
Number of Culvert (Metal)	:	4	0
Number of Ditch (Unlined)	:	3	1195
Number of Photographic Vista	:	1	0
Number of Roadway (Broken Stone)	:	1	783
Number of Surface	:	1	783

Acadia National Park
Carriage Roads

Section: CR6-4
Subsection: b
FHWA Route: 487

Historic Name: Hull's Cove Road
Modern Name: Witch Hole Pond Loop

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	783	783	A	
6780	Crown	0	783	783	A	2
6781	Surface	0	783	783	A	4
2351	Ditch (Unlined)	0	240	240	L	1
2351	Ditch (Unlined)	0	749	749	R	3
1802	Culvert (Metal)	94	94	0	A	1
9004	Photographic Vista	240	240	0	L	50
354	Coping Stone Sections	240	521	281	L	2
1802	Culvert (Metal)	313	313	0	A	1
1802	Culvert (Metal)	399	399	0	A	1
2351	Ditch (Unlined)	543	749	206	L	1
1802	Culvert (Metal)	610	610	0	A	2
354	Coping Stone Sections	749	783	34	L	0
	Total Weighted Priority:					69

9/09/93

Items

Section: CR6-7
Subsection: a
FHWA Route: 490

Historic Name: East Side Eagle Lake Road
Modern Name: Eagle Lake Loop

			Length
Number of Construction Documents	:	1	5280
Number of Coping Stone Sections	:	9	1588
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	6	0
Number of Culvert (Stone)	:	1	0
Number of Culvert Bridge	:	2	0
Number of Ditch (Unlined)	:	13	6243
Number of Intersection	:	1	0
Number of Photographic Vista	:	1	3
Number of Roadway (Broken Stone)	:	1	5280
Number of Screening Needed	:	1	0
Number of Surface	:	1	5280
Number of Trail	:	1	0

Acadia National Park
Carriage Roads

Section: CR6-7
Subsection: a
FHWA Route: 490

Historic Name: East Side Eagle Lake Road
Modern Name: Eagle Lake Loop

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6781	Surface	0	5280	5280	A	20
6780	Crown	0	5280	5280	A	15
1000	Construction Documents	0	5280	5280	A	40
9004	Photographic Vista	46	49	3	R	50
2351	Ditch (Unlined)	49	222	173	L	1
2351	Ditch (Unlined)	412	755	343	L	2
2351	Ditch (Unlined)	412	755	343	R	2
1057	Trail	788	788	0	A	2
2351	Ditch (Unlined)	1088	1469	381	L	1
2351	Ditch (Unlined)	1159	1447	288	R	1
354	Coping Stone Sections	1447	1539	92	R	1
354	Coping Stone Sections	1469	1530	61	L	0
1802	Culvert (Metal)	1496	1496	0	A	2
2351	Ditch (Unlined)	1530	1846	316	L	1
354	Coping Stone Sections	1707	1707	0	R	0
354	Coping Stone Sections	1846	2158	312	L	2
354	Coping Stone Sections	1915	2155	240	R	2
380	Intersection	1979	1979	0	A	2
9001	Screening Needed	1979	1979	0	R	10
1804	Culvert Bridge	2024	2024	0	A	10
1804	Culvert Bridge	2097	2097	0	A	10
2351	Ditch (Unlined)	2158	3125	967	L	4
2351	Ditch (Unlined)	2175	2962	787	R	3
354	Coping Stone Sections	2962	3173	211	R	1
1803	Culvert (Stone)	3289	3289	0	L	8
2351	Ditch (Unlined)	3354	3588	234	L	1
2351	Ditch (Unlined)	3354	3588	234	R	1
1802	Culvert (Metal)	3687	3687	0	A	3
2351	Ditch (Unlined)	3692	4039	347	L	2
1802	Culvert (Metal)	3870	3870	0	A	2
354	Coping Stone Sections	4011	4271	260	R	1
354	Coping Stone Sections	4039	4227	188	L	1
2351	Ditch (Unlined)	4227	5280	1053	L	4
2351	Ditch (Unlined)	4279	5056	777	R	3
1802	Culvert (Metal)	4570	4570	0	A	3
1802	Culvert (Metal)	4771	4771	0	A	3
354	Coping Stone Sections	5056	5280	224	R	1
1802	Culvert (Metal)	5180	5180	0	A	3

Total Weighted Priority: 218

9/09/93

Items

Section: CR6-7
Subsection: b
FHWA Route: 490

Historic Name: East Side Eagle Lake Road
Modern Name: Eagle Lake Loop

			Length
Number of Channel	:	3	0
Number of Construction Documents	:	2	6494
Number of Coping Stone Sections	:	9	2395
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	19	0
Number of Culvert Bridge	:	1	0
Number of Ditch (Diversion)	:	1	68
Number of Ditch (Stone Lined)	:	1	834
Number of Ditch (Unlined)	:	12	7217
Number of Documented Vista	:	2	0
Number of Photographic Vista	:	4	0
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	1	5280

Acadia National Park
Carriage Roads

Section: CR6-7 Historic Name: East Side Eagle Lake Road
Subsection: b Modern Name: Eagle Lake Loop
FHWA Route: 490

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6781	Surface	0	5280	5280	A	20
6780	Crown	0	5280	5280	A	10
2351	Ditch (Unlined)	0	135	135	L	1
354	Coping Stone Sections	0	94	94	R	1
1000	Construction Documents	0	5280	5280	A	40
2351	Ditch (Unlined)	94	298	204	R	1
1802	Culvert (Metal)	140	140	0	A	2
2351	Ditch (Unlined)	145	550	405	L	2
354	Coping Stone Sections	298	550	252	R	1
9003	Documented Vista	300	300	0	L	50
1802	Culvert (Metal)	439	439	0	A	3
2351	Ditch (Unlined)	550	892	342	R	1
2351	Ditch (Unlined)	550	2248	1698	L	6
354	Coping Stone Sections	892	1535	643	R	4
1802	Culvert (Metal)	964	964	0	A	2
1802	Culvert (Metal)	993	993	0	A	3
9004	Photographic Vista	1275	1275	0	R	50
1802	Culvert (Metal)	1496	1496	0	A	3
2351	Ditch (Unlined)	1535	1711	176	R	1
354	Coping Stone Sections	1711	1935	224	R	1
1802	Culvert (Metal)	1803	1803	0	A	2
1802	Culvert (Metal)	1931	1931	0	A	3
2351	Ditch (Unlined)	1935	2248	313	R	1
1802	Culvert (Metal)	2154	2154	0	A	2
2354	Channel	2154	2154	0	L	10
9003	Documented Vista	2200	2200	0	L	50
354	Coping Stone Sections	2248	2448	200	R	1
2352	Ditch (Stone Lined)	2248	3082	834	L	5
1802	Culvert (Metal)	2301	2301	0	A	3
2351	Ditch (Unlined)	2448	2710	262	R	1
2353	Ditch (Diversion)	2568	2636	68	L	0
1802	Culvert (Metal)	2568	2568	0	A	2
354	Coping Stone Sections	2710	3202	492	R	3
1802	Culvert (Metal)	2717	2717	0	A	3
1802	Culvert (Metal)	2950	2950	0	A	3
2354	Channel	2950	2950	0	L	15
1802	Culvert (Metal)	2992	2992	0	A	4
2354	Channel	2992	2992	0	L	20
9004	Photographic Vista	3082	3082	0	R	50
1802	Culvert (Metal)	3143	3143	0	A	3
354	Coping Stone Sections	3186	3397	211	L	1
2351	Ditch (Unlined)	3202	3288	86	R	0
354	Coping Stone Sections	3288	3414	126	R	1
1802	Culvert (Metal)	3288	3288	0	A	3
2351	Ditch (Unlined)	3397	5280	1883	L	7
2351	Ditch (Unlined)	3414	3482	68	R	0
354	Coping Stone Sections	3482	3635	153	R	1
9004	Photographic Vista	3550	3550	0	R	50
2351	Ditch (Unlined)	3635	5280	1645	R	6
1804	Culvert Bridge	3648	3648	0	A	10
1802	Culvert (Metal)	3718	3718	0	A	3
1802	Culvert (Metal)	3897	3897	0	A	4
1000	Construction Documents	4066	5280	1214	A	9

Acadia National Park
Carriage Roads

Section: CR6-7 Historic Name: East Side Eagle Lake Road
Subsection: b Modern Name: Eagle Lake Loop
FHWA Route: 490

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
1802	Culvert (Metal)	4074	4074	0	A	3
1802	Culvert (Metal)	4309	4309	0	A	4
9004	Photographic Vista	4817	4817	0	L	50

Total Weighted Priority: 535

9/09/93

Items

Section: CR6-7
Subsection: c
FHWA Route: 490

Historic Name: East Side Eagle Lake Road
Modern Name: Eagle Lake Loop

			Length
Number of Construction Documents	:	2	486
Number of Crown	:	1	386
Number of Culvert Bridge	:	1	0
Number of Ditch (Unlined)	:	2	136
Number of Roadway (Broken Stone)	:	1	386
Number of Surface	:	1	386

Acadia National Park
Carriage Roads

Section: CR6-7 Historic Name: East Side Eagle Lake Road
Subsection: c Modern Name: Eagle Lake Loop
FHWA Route: 490

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	386	386	A	
6780	Crown	0	386	386	A	1
6781	Surface	0	386	386	A	1
2351	Ditch (Unlined)	0	36	36	R	0
2351	Ditch (Unlined)	0	100	100	L	0
1000	Construction Documents	0	100	100	A	1
1000	Construction Documents	0	386	386	A	3
1804	Culvert Bridge	245	245	0	A	10
	Total Weighted Priority:					17

Section: CR6-9 Historic Name: West Side Eagle Lake Road
Subsection: a Modern Name: Eagle Lake Loop
FHWA Route: 490

			Length
Number of Coping Stone Sections	:	1	23
Number of Crown	:	1	437
Number of Culvert (Metal)	:	3	0
Number of Ditch (Unlined)	:	2	327
Number of Intersection	:	1	0
Number of Roadway (Broken Stone)	:	1	437
Number of Sign	:	1	0
Number of Surface	:	1	437
Number of Trail	:	1	0

Acadia National Park
Carriage Roads

Section: CR6-9
Subsection: a
FHWA Route: 490

Historic Name: West Side Eagle Lake Road
Modern Name: Eagle Lake Loop

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	437	437	A	
2351	Ditch (Unlined)	0	216	216	R	1
6781	Surface	0	437	437	A	2
6780	Crown	0	437	437	A	2
1802	Culvert (Metal)	39	39	0	R	4
1057	Trail	52	52	0	A	2
1802	Culvert (Metal)	216	216	0	A	2
2351	Ditch (Unlined)	313	424	111	R	0
700	Sign	386	386	0	R	2
354	Coping Stone Sections	414	437	23	L	0
1802	Culvert (Metal)	424	424	0	A	2
380	Intersection	437	437	0	R	2
	Total Weighted Priority:					19

9/09/93

Items

Section: CR7-8
Subsection: a
FHWA Route: 490

Historic Name: Bubble Pond Road
Modern Name: Eagle Lake Loop

			Length
Number of Coping Stone Sections	:	8	2795
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	16	0
Number of Culvert (Stone)	:	3	0
Number of Ditch (Stone Lined)	:	3	2815
Number of Ditch (Unlined)	:	9	4433
Number of Intersection	:	1	0
Number of Photographic Vista	:	2	0
Number of Roadway (Broken Stone)	:	1	5280
Number of Sign	:	3	0
Number of Surface	:	3	5279
Number of Trail	:	1	0

Acadia National Park
Carriage Roads

Section: CR7-8 Historic Name: Bubble Pond Road
Subsection: a Modern Name: Eagle Lake Loop
FHWA Route: 490

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	5280	5280	A	15
2351	Ditch (Unlined)	0	82	82	L	0
380	Intersection	0	0	0	A	2
700	Sign	0	0	0	A	2
700	Sign	0	0	0	A	2
700	Sign	0	0	0	A	2
6781	Surface	0	776	776	A	3
1802	Culvert (Metal)	82	82	0	A	1
2351	Ditch (Stone Lined)	104	367	263	L	1
1057	Trail	174	174	0	A	2
2351	Ditch (Unlined)	174	260	86	R	0
354	Coping Stone Sections	286	900	614	R	5
1802	Culvert (Metal)	367	367	0	A	3
2351	Ditch (Unlined)	367	2110	1743	L	5
9004	Photographic Vista	480	480	0	R	50
1803	Culvert (Stone)	480	480	0	A	2
1802	Culvert (Metal)	777	777	0	A	1
6781	Surface	777	5102	4325	A	16
354	Coping Stone Sections	1090	1281	191	R	1
1802	Culvert (Metal)	1153	1153	0	A	1
354	Coping Stone Sections	1621	1890	269	R	2
1802	Culvert (Metal)	1764	1764	0	A	2
354	Coping Stone Sections	1811	1890	79	L	0
1803	Culvert (Stone)	1853	1853	0	A	2
2351	Ditch (Unlined)	1890	2110	220	R	1
1802	Culvert (Metal)	1994	1994	0	A	2
1802	Culvert (Metal)	2110	2110	0	A	2
2352	Ditch (Stone Lined)	2110	4600	2490	L	24
2351	Ditch (Unlined)	2167	2582	415	R	2
1802	Culvert (Metal)	2341	2341	0	A	2
9004	Photographic Vista	2461	2461	0	A	50
1802	Culvert (Metal)	2461	2461	0	A	2
354	Coping Stone Sections	2582	3041	459	R	3
1802	Culvert (Metal)	2734	2734	0	A	1
1802	Culvert (Metal)	3041	3041	0	A	2
2351	Ditch (Unlined)	3041	3695	654	R	2
1802	Culvert (Metal)	3370	3370	0	A	2
354	Coping Stone Sections	3577	3816	239	L	1
354	Coping Stone Sections	3577	3837	260	R	1
1803	Culvert (Stone)	3695	3695	0	A	2
2351	Ditch (Unlined)	3837	4207	370	R	1
1802	Culvert (Metal)	4207	4207	0	A	2
2351	Ditch (Unlined)	4351	4596	245	R	1
354	Coping Stone Sections	4596	5280	684	R	4
2351	Ditch (Unlined)	4600	5218	618	L	2
1802	Culvert (Metal)	4675	4675	0	A	2
1802	Culvert (Metal)	5001	5001	0	A	2
6781	Surface	5102	5280	178	A	1
2351	Ditch (Stone Lined)	5218	5280	62	L	0
1802	Culvert (Metal)	5235	5235	0	A	1

Total Weighted Priority: 235

9/09/93 Items

Section: CR7-8
Subsection: b
FHWA Route: 490

Historic Name: Bubble Pond Road
Modern Name: Eagle Lake Loop

			Length
Number of Construction Documents	:	1	2800
Number of Coping Stone Sections	:	1	240
Number of Crown	:	1	3833
Number of Culvert (Metal)	:	7	0
Number of Ditch (Stone Lined)	:	1	405
Number of Ditch (Unlined)	:	4	6214
Number of Documented Vista	:	1	0
Number of Intersection	:	2	0
Number of Photographic Vista	:	2	0
Number of Retaining Wall	:	1	167
Number of Roadway (Broken Stone)	:	1	3833
Number of Surface	:	1	3996
Number of Trail	:	1	0

Acadia National Park
Carriage Roads

Section: CR7-8 Historic Name: Bubble Pond Road
Subsection: b Modern Name: Eagle Lake Loop
FHWA Route: 490

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	3833	3833	A	
6780	Crown	0	3833	3833	A	15
6781	Surface	0	3996	3996	A	23
2351	Ditch (Unlined)	0	286	286	L	1
1802	Culvert (Metal)	224	224	0	A	2
2351	Ditch (Unlined)	286	1030	744	L	2
1802	Culvert (Metal)	426	426	0	A	2
9003	Documented Vista	750	750	0	L	50
1802	Culvert (Metal)	847	847	0	A	2
9004	Photographic Vista	1030	1030	0	R	50
1802	Culvert (Metal)	1030	1030	0	A	3
2352	Ditch (Stone Lined)	1030	1435	405	L	2
2351	Ditch (Unlined)	1030	3996	2966	R	11
1000	Construction Documents	1033	3833	2800	A	21
905	Retaining Wall	1250	1417	167	R	1
1057	Trail	1435	1435	0	A	2
2351	Ditch (Unlined)	1435	3653	2218	L	6
1802	Culvert (Metal)	1746	1746	0	A	3
9004	Photographic Vista	2077	2077	0	R	50
1802	Culvert (Metal)	2346	2346	0	A	2
1802	Culvert (Metal)	2779	2779	0	A	2
354	Coping Stone Sections	3653	3893	240	L	1
380	Intersection	3833	3833	0	R	2
380	Intersection	3996	3996	0	L	2
	Total Weighted Priority:					255

9/09/93

Items

Section: CR9-8
Subsection: a
FHWA Route: 490

Historic Name: West Side Eagle Lake Road
Modern Name: Eagle Lake Loop

			Length
Number of Coping Stone Sections	:	8	4376
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	15	296
Number of Culvert (Stone)	:	1	0
Number of Ditch (Unlined)	:	7	5242
Number of Documented Vista	:	1	0
Number of Roadway (Broken Stone)	:	1	5280
Number of Sign	:	2	0
Number of Surface	:	1	5280
Number of Trail	:	1	0

Acadia National Park
Carriage Roads

Section: CR9-8 Historic Name: West Side Eagle Lake Road
Subsection: a Modern Name: Eagle Lake Loop
FHWA Route: 490

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6781	Surface	0	5280	5280	A	20
6780	Crown	0	5280	5280	A	15
354	Coping Stone Sections	0	676	676	L	3
700	Sign	36	36	0	L	2
2351	Ditch (Unlined)	88	942	854	R	3
1802	Culvert (Metal)	109	109	0	A	2
700	Sign	134	134	0	L	2
1802	Culvert (Metal)	277	277	0	A	2
1057	Trail	594	594	0	A	2
1802	Culvert (Metal)	613	613	0	A	1
354	Coping Stone Sections	742	1233	491	L	2
2351	Ditch (Unlined)	942	1033	91	R	0
1802	Culvert (Metal)	952	952	0	A	1
2351	Ditch (Unlined)	983	1500	517	R	2
1802	Culvert (Metal)	1115	1115	0	A	3
1803	Culvert (Stone)	1164	1164	0	A	2
354	Coping Stone Sections	1233	1500	267	R	2
1802	Culvert (Metal)	1353	1353	0	A	3
2351	Ditch (Unlined)	1500	1700	200	R	1
1802	Culvert (Metal)	1539	1835	296	A	3
354	Coping Stone Sections	1576	2087	511	L	3
2351	Ditch (Unlined)	1700	2705	1005	R	3
1802	Culvert (Metal)	1888	1888	0	A	1
354	Coping Stone Sections	2131	3138	1007	L	6
1802	Culvert (Metal)	2216	2216	0	A	2
1802	Culvert (Metal)	2491	2491	0	A	2
2351	Ditch (Unlined)	2705	2941	236	R	1
2351	Ditch (Unlined)	2941	5280	2339	R	7
354	Coping Stone Sections	3236	3759	523	L	3
1802	Culvert (Metal)	3323	3323	0	A	4
9003	Documented Vista	3500	3500	0	R	50
1802	Culvert (Metal)	3658	3658	0	A	2
1802	Culvert (Metal)	4019	4019	0	A	3
354	Coping Stone Sections	4161	4546	385	L	2
1802	Culvert (Metal)	4312	4312	0	A	2
354	Coping Stone Sections	4764	5280	516	L	2
1802	Culvert (Metal)	5039	5039	0	A	2

Total Weighted Priority: 166

9/09/93

Items

Section: CR9-8
Subsection: b
FHWA Route: 490

Historic Name: West Side Eagle Lake Road
Modern Name: Eagle Lake Loop

			Length
Number of Coping Stone Sections	:	8	1975
Number of Crown	:	1	4835
Number of Culvert (Metal)	:	11	0
Number of Culvert (Stone)	:	3	0
Number of Ditch (Unlined)	:	8	4957
Number of Roadway (Broken Stone)	:	1	4835
Number of Surface	:	4	4835
Number of Trail	:	1	0

Acadia National Park
Carriage Roads

Section: CR9-8 Historic Name: West Side Eagle Lake Road
Subsection: b Modern Name: Eagle Lake Loop
FHWA Route: 490

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	4835	4835	A	
354	Coping Stone Sections	0	111	111	L	0
2351	Ditch (Unlined)	0	786	786	R	2
6781	Surface	0	1861	1861	A	7
6780	Crown	0	4835	4835	A	18
1802	Culvert (Metal)	53	53	0	A	4
354	Coping Stone Sections	190	254	64	L	0
1802	Culvert (Metal)	626	626	0	A	2
1057	Trail	626	626	0	A	2
1803	Culvert (Stone)	786	786	0	A	2
2351	Ditch (Unlined)	786	1808	1022	L	4
2351	Ditch (Unlined)	786	1123	337	R	1
354	Coping Stone Sections	1153	1247	94	R	1
1802	Culvert (Metal)	1186	1186	0	A	2
354	Coping Stone Sections	1311	1675	364	R	3
1802	Culvert (Metal)	1576	1576	0	A	2
354	Coping Stone Sections	1743	2505	762	R	4
1803	Culvert (Stone)	1808	1808	0	A	2
2351	Ditch (Unlined)	1808	2899	1091	L	3
6781	Surface	1861	3857	1996	A	11
354	Coping Stone Sections	2899	3019	120	A	1
1803	Culvert (Stone)	2978	2978	0	A	2
2351	Ditch (Unlined)	3019	3361	342	R	1
1802	Culvert (Metal)	3226	3226	0	A	3
354	Coping Stone Sections	3361	3589	228	R	1
1802	Culvert (Metal)	3404	3404	0	A	2
2351	Ditch (Unlined)	3456	3618	162	L	1
1802	Culvert (Metal)	3517	3517	0	A	5
2351	Ditch (Unlined)	3618	4603	985	L	3
6781	Surface	3857	4183	326	A	3
1802	Culvert (Metal)	3899	3899	0	A	2
1802	Culvert (Metal)	4183	4183	0	A	2
6781	Surface	4183	4835	652	A	5
1802	Culvert (Metal)	4304	4304	0	A	2
1802	Culvert (Metal)	4448	4448	0	A	3
354	Coping Stone Sections	4603	4835	232	R	2
2351	Ditch (Unlined)	4603	4835	232	L	1

Total Weighted Priority: 111

9/09/93 Items

Section: CR9-11
Subsection: a
FHWA Route: 495

Historic Name: Aunt Betty's Pond Road
Modern Name: Aunt Betty's Pond Loop

			Length
Number of Construction Documents	:	1	5280
Number of Coping Stone Sections	:	13	2831
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	6	0
Number of Culvert Bridge	:	1	0
Number of Ditch (Unlined)	:	11	7681
Number of Documented Vista	:	1	0
Number of Photographic Vista	:	2	0
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	1	5280
Number of Trail	:	1	0

Acadia National Park
Carriage Roads

Section: CR9-11 Historic Name: Aunt Betty's Pond Road
Subsection: a Modern Name: Aunt Betty's Pond Loop
FHWA Route: 495

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	5280	5280	A	20
6781	Surface	0	5280	5280	A	40
1000	Construction Documents	0	5280	5280	A	40
2351	Ditch (Unlined)	10	171	161	R	1
2351	Ditch (Unlined)	56	500	444	L	2
354	Coping Stone Sections	171	327	156	R	0
2351	Ditch (Unlined)	327	1538	1211	R	5
354	Coping Stone Sections	500	1136	636	L	1
1057	Trail	1010	1010	0	A	2
2351	Ditch (Unlined)	1213	1342	129	L	0
354	Coping Stone Sections	1342	1703	361	L	2
354	Coping Stone Sections	1538	1672	134	R	1
1804	Culvert Bridge	1568	1568	0	A	20
2351	Ditch (Unlined)	1672	3870	2198	R	8
1802	Culvert (Metal)	1703	1703	0	A	4
2351	Ditch (Unlined)	1709	1963	254	L	1
1802	Culvert (Metal)	1963	1963	0	A	4
354	Coping Stone Sections	2140	2297	157	L	1
1802	Culvert (Metal)	2207	2207	0	A	3
2351	Ditch (Unlined)	2297	2568	271	L	1
354	Coping Stone Sections	2568	2746	178	L	1
9003	Documented Vista	2600	2600	0	L	50
2351	Ditch (Unlined)	2746	2958	212	L	1
2351	Ditch (Unlined)	3050	3125	75	L	0
354	Coping Stone Sections	3135	3690	555	L	3
1802	Culvert (Metal)	3150	3150	0	A	2
354	Coping Stone Sections	3860	3917	57	L	0
354	Coping Stone Sections	3870	3917	47	R	0
1802	Culvert (Metal)	3882	3882	0	A	3
2351	Ditch (Unlined)	3917	5280	1363	R	5
2351	Ditch (Unlined)	3917	5280	1363	L	5
9004	Photographic Vista	4145	4145	0	L	50
354	Coping Stone Sections	4227	4392	165	L	0
354	Coping Stone Sections	4667	4818	151	L	1
1802	Culvert (Metal)	4762	4762	0	A	1
354	Coping Stone Sections	4913	4973	60	L	0
9004	Photographic Vista	5002	5002	0	A	50
354	Coping Stone Sections	5106	5280	174	L	1

Total Weighted Priority: 330

9/09/93

Items

Section: CR9-11
Subsection: b
FHWA Route: 495

Historic Name: Aunt Betty's Pond Road
Modern Name: Aunt Betty's Pond Loop

			Length
Number of Construction Documents	:	1	5280
Number of Coping Stone Sections	:	9	829
Number of Crown	:	1	5280
Number of Culvert (Concrete)	:	1	0
Number of Culvert (Metal)	:	7	0
Number of Ditch (Stone Lined)	:	1	317
Number of Ditch (Unlined)	:	9	6915
Number of Documented Vista	:	2	0
Number of Photographic Vista	:	1	0
Number of Retaining Wall	:	1	10
Number of Roadway (Broken Stone)	:	1	5280
Number of Screening Needed	:	1	0
Number of Surface	:	3	5280

Acadia National Park
Carriage Roads

Section: CR9-11   Historic Name: Aunt Betty's Pond Road
Subsection: b   Modern Name: Aunt Betty's Pond Loop
FHWA Route: 495

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	5280	5280	A	20
6781	Surface	0	1788	1788	A	14
354	Coping Stone Sections	0	27	27	L	0
2351	Ditch (Unlined)	0	2750	2750	R	10
1000	Construction Documents	0	5280	5280	A	40
9004	Photographic Vista	27	27	0	L	50
354	Coping Stone Sections	165	242	77	L	0
1802	Culvert (Metal)	202	202	0	A	2
2351	Ditch (Unlined)	313	1424	1111	L	4
1802	Culvert (Metal)	984	984	0	A	3
9001	Screening Needed	1350	1350	0	R	10
354	Coping Stone Sections	1424	1551	127	L	1
1802	Culvert (Metal)	1519	1519	0	A	1
2351	Ditch (Unlined)	1762	2137	375	L	1
6781	Surface	1788	2200	412	A	4
354	Coping Stone Sections	2137	2199	62	L	0
1802	Culvert (Metal)	2166	2166	0	A	1
6781	Surface	2200	5280	3080	A	23
354	Coping Stone Sections	2311	2451	140	L	1
1802	Culvert (Metal)	2440	2440	0	A	3
2351	Ditch (Unlined)	2750	2820	70	L	0
2352	Ditch (Stone Lined)	2750	3067	317	R	2
354	Coping Stone Sections	2851	2956	105	L	1
9003	Documented Vista	3000	3000	0	A	50
354	Coping Stone Sections	3032	3170	138	L	0
1802	Culvert (Metal)	3067	3067	0	A	1
2351	Ditch (Unlined)	3067	3326	259	R	1
2351	Ditch (Unlined)	3196	3560	364	L	1
905	Retaining Wall	3422	3432	10	L	0
1802	Culvert (Metal)	3565	3565	0	A	2
1803	Culvert (Concrete)	3800	3800	0	A	2
2351	Ditch (Unlined)	4082	5078	996	R	4
2351	Ditch (Unlined)	4082	4459	377	L	1
354	Coping Stone Sections	4459	4494	35	L	0
354	Coping Stone Sections	4549	4667	118	L	1
2351	Ditch (Unlined)	4667	5280	613	L	2
9003	Documented Vista	5050	5050	0	L	50
	Total Weighted Priority:					309

9/09/93

Items

Section: CR9-11
Subsection: c
FHWA Route: 495

Historic Name: Aunt Betty's Pond Road
Modern Name: Aunt Betty's Pond Loop

			Length
Number of Construction Documents	:	1	1140
Number of Coping Stone Sections	:	3	440
Number of Crown	:	1	2823
Number of Culvert (Metal)	:	4	0
Number of Culvert Bridge	:	1	0
Number of Ditch (Unlined)	:	7	4049
Number of Documented Vista	:	1	0
Number of Photographic Vista	:	1	0
Number of Roadway (Broken Stone)	:	1	2823
Number of Surface	:	1	2823

Acadia National Park
Carriage Roads

Section: CR9-11 Historic Name: Aunt Betty's Pond Road
Subsection: c Modern Name: Aunt Betty's Pond Loop
FHWA Route: 495

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	2823	2823	A	
6780	Crown	0	2823	2823	A	11
6781	Surface	0	2823	2823	A	21
2351	Ditch (Unlined)	0	766	766	L	3
1000	Construction Documents	0	1140	1140	A	9
9004	Photographic Vista	382	382	0	A	50
2351	Ditch (Unlined)	382	651	269	R	1
9003	Documented Vista	500	500	0	A	50
1802	Culvert (Metal)	651	651	0	A	3
354	Coping Stone Sections	728	942	214	R	1
354	Coping Stone Sections	766	912	146	L	1
1804	Culvert Bridge	785	785	0	A	10
2351	Ditch (Unlined)	912	2823	1911	L	7
2351	Ditch (Unlined)	1120	1210	90	R	0
354	Coping Stone Sections	1210	1290	80	R	0
1802	Culvert (Metal)	1224	1224	0	A	2
2351	Ditch (Unlined)	1290	1492	202	R	1
1802	Culvert (Metal)	1492	1492	0	A	1
2351	Ditch (Unlined)	1670	1781	111	R	0
1802	Culvert (Metal)	1893	1893	0	A	1
2351	Ditch (Unlined)	2045	2745	700	R	3
	Total Weighted Priority:					175

9/09/93

Items

Section: CR10a-8
Subsection: a
FHWA Route: 485

Historic Name: Aunt Betty's Pond Road
Modern Name: Aunt Betty's Pond Loop

			Length
Number of Coping Stone Sections	:	2	142
Number of Crown	:	1	1012
Number of Culvert (Metal)	:	4	0
Number of Ditch (Unlined)	:	3	918
Number of Intersection	:	2	0
Number of Roadway (Broken Stone)	:	1	1012
Number of Sign	:	6	0
Number of Surface	:	1	1012

Acadia National Park
Carriage Roads

Section: CR10a-8 Historic Name: Aunt Betty's Pond Road
Subsection: a Modern Name: Aunt Betty's Pond Loop
FHWA Route: 485

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	1012	1012	A	
6781	Surface	0	1012	1012	A	4
6780	Crown	0	1012	1012	A	3
354	Coping Stone Sections	0	85	85	L	1
1802	Culvert (Metal)	55	55	0	A	4
700	Sign	183	183	0	A	2
700	Sign	183	183	0	A	2
700	Sign	183	183	0	A	2
2351	Ditch (Unlined)	291	634	343	L	1
2351	Ditch (Unlined)	291	866	575	R	2
1802	Culvert (Metal)	610	610	0	A	3
1802	Culvert (Metal)	802	802	0	A	2
2351	Ditch (Unlined)	802	802	0	L	0
380	Intersection	927	927	0	A	2
1802	Culvert (Metal)	955	955	0	A	3
354	Coping Stone Sections	955	1012	57	L	0
380	Intersection	1012	1012	0	A	2
700	Sign	1012	1012	0	A	2
700	Sign	1012	1012	0	A	2
700	Sign	1012	1012	0	A	2
	Total Weighted Priority:					39

9/09/93 Items

Section: CR10a-10b Historic Name: Jordan-Sargent Mountain Road
Subsection: a Modern Name: Around Mountain Loop
FHWA Route:

			Length
Number of Crown	:	1	1425
Number of Culvert (Metal)	:	1	0
Number of Intersection	:	1	0
Number of Roadway (Broken Stone)	:	1	1425
Number of Surface	:	4	1393

Acadia National Park
Carriage Roads

Section: CR10a-10b Historic Name: Jordan-Sargent Mountain Road
Subsection: a Modern Name: Around Mountain Loop
FHWA Route:

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	1425	1425	A	
6780	Crown	0	1425	1425	A	4
6781	Surface	0	1012	1012	A	4
6781	Surface	0	121	121	A	0
6781	Surface	0	188	188	A	1
6781	Surface	0	72	72	A	0
1802	Culvert (Metal)	31	31	0	A	4
380	Intersection	183	183	0	L	2
	Total Weighted Priority:					16

9/09/93

Items

Section: CR10b-12
Subsection: a
FHWA Route: 483

Historic Name: Jordan-Sargent Mountain Road
Modern Name: Around Mountain Loop

			Length
Number of Bridge (Stone)	:	1	0
Number of Channel	:	2	0
Number of Coping Stone Sections	:	9	4256
Number of Crown	:	1	5280
Number of Culvert (Stone)	:	13	0
Number of Culvert Bridge	:	2	0
Number of Ditch (Stone Lined)	:	1	321
Number of Ditch (Unlined)	:	5	4947
Number of Intersection	:	1	0
Number of Photographic Vista	:	2	0
Number of Retaining Wall	:	1	321
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	3	5280

Acadia National Park
Carriage Roads

Section: CR10b-12 Historic Name: Jordan-Sargent Mountain Road
Subsection: a Modern Name: Around Mountain Loop
FHWA Route: 483

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6781	Surface	0	1593	1593	A	9
2351	Ditch (Unlined)	0	1161	1161	L	4
6780	Crown	0	5280	5280	A	15
354	Coping Stone Sections	192	349	157	R	0
1803	Culvert (Stone)	297	297	0	A	2
354	Coping Stone Sections	545	918	373	R	1
1803	Culvert (Stone)	574	574	0	A	2
9004	Photographic Vista	965	965	0	R	50
354	Coping Stone Sections	1025	1149	124	R	0
1803	Culvert (Stone)	1034	1034	0	A	2
2354	Channel	1034	1034	0	L	5
2352	Ditch (Stone Lined)	1161	1482	321	L	1
905	Retaining Wall	1161	1482	321	L	1
2354	Channel	1205	1205	0	L	15
354	Coping Stone Sections	1482	2343	861	R	2
2351	Ditch (Unlined)	1482	3225	1743	L	7
6781	Surface	1593	2472	879	A	7
1803	Culvert (Stone)	1593	1593	0	A	2
1803	Culvert (Stone)	1975	1975	0	A	2
1803	Culvert (Stone)	2227	2227	0	A	6
380	Intersection	2300	2300	0	R	2
56	Bridge (Stone)	2427	2427	0	A	40
354	Coping Stone Sections	2472	4096	1624	R	6
6781	Surface	2472	5280	2808	A	27
1803	Culvert (Stone)	2550	2550	0	A	4
1803	Culvert (Stone)	2866	2866	0	A	2
2351	Ditch (Unlined)	3225	4015	790	L	4
1803	Culvert (Stone)	3405	3405	0	A	2
1804	Culvert Bridge	3834	3834	0	A	20
354	Coping Stone Sections	4015	4063	48	L	0
1803	Culvert (Stone)	4041	4041	0	A	2
2351	Ditch (Unlined)	4063	4132	69	L	0
2351	Ditch (Unlined)	4096	5280	1184	R	4
354	Coping Stone Sections	4132	4220	88	L	0
1803	Culvert (Stone)	4180	4180	0	A	2
1803	Culvert (Stone)	4220	4220	0	A	2
354	Coping Stone Sections	4220	4700	480	L	1
1804	Culvert Bridge	4414	4414	0	A	10
9004	Photographic Vista	4710	4710	0	A	50
354	Coping Stone Sections	4779	5280	501	L	2
1803	Culvert (Stone)	5032	5032	0	A	2

Total Weighted Priority: 316

9/09/93

Items

Section: CR10b-12
Subsection: b
FHWA Route: 483

Historic Name: Jordan-Sargent Mountain Road
Modern Name: Around Mountain Loop

			Length
Number of Construction Documents	:	2	6980
Number of Coping Stone Sections	:	11	3629
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	3	0
Number of Culvert (Stone)	:	5	0
Number of Culvert Bridge	:	3	0
Number of Ditch (Stone Lined)	:	1	85
Number of Ditch (Unlined)	:	11	7516
Number of Documented Vista	:	1	0
Number of Intersection	:	1	0
Number of Photographic Vista	:	3	0
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	1	5280

Acadia National Park
Carriage Roads

Section: CR10b-12 Historic Name: Jordan-Sargent Mountain Road
Subsection: b Modern Name: Around Mountain Loop
FHWA Route: 483

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
9004	Photographic Vista	0	0	0	R	50
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	5280	5280	A	15
6781	Surface	0	5280	5280	A	50
2351	Ditch (Unlined)	0	1415	1415	R	5
354	Coping Stone Sections	0	465	465	L	1
1000	Construction Documents	0	5280	5280	A	40
2351	Ditch (Unlined)	465	1223	758	L	3
354	Coping Stone Sections	710	1355	645	R	1
1803	Culvert (Stone)	1075	1075	0	A	2
1000	Construction Documents	1100	2800	1700	A	13
354	Coping Stone Sections	1223	1355	132	L	0
1804	Culvert Bridge	1266	1266	0	A	20
2351	Ditch (Unlined)	1335	1415	80	L	0
354	Coping Stone Sections	1415	1487	72	L	0
354	Coping Stone Sections	1415	1527	112	R	0
1804	Culvert Bridge	1450	1450	0	A	20
2351	Ditch (Unlined)	1487	2700	1213	L	5
2351	Ditch (Unlined)	1527	2680	1153	R	4
9004	Photographic Vista	1601	1601	0	R	50
1802	Culvert (Metal)	2545	2545	0	A	2
354	Coping Stone Sections	2680	3293	613	R	3
2352	Ditch (Stone Lined)	2700	2785	85	L	1
1802	Culvert (Metal)	2785	2785	0	A	2
2351	Ditch (Unlined)	2790	3175	385	L	1
1802	Culvert (Metal)	2994	2994	0	A	1
354	Coping Stone Sections	3175	3233	58	L	0
1804	Culvert Bridge	3198	3198	0	A	10
2351	Ditch (Unlined)	3233	5280	2047	L	8
2351	Ditch (Unlined)	3293	3441	148	R	1
9004	Photographic Vista	3330	3330	0	R	50
354	Coping Stone Sections	3441	3985	544	R	1
9003	Documented Vista	3500	3500	0	R	50
1803	Culvert (Stone)	3515	3515	0	A	2
1803	Culvert (Stone)	3794	3794	0	A	4
2351	Ditch (Unlined)	3985	4191	206	R	1
380	Intersection	4159	4159	0	A	2
354	Coping Stone Sections	4191	4260	69	R	0
2351	Ditch (Unlined)	4250	4310	60	R	0
354	Coping Stone Sections	4310	4364	54	R	0
2351	Ditch (Unlined)	4364	4415	51	R	0
354	Coping Stone Sections	4415	5280	865	R	2
1803	Culvert (Stone)	4819	4819	0	A	2
1803	Culvert (Stone)	5098	5098	0	A	2

Total Weighted Priority: 425

9/09/93

Items

Section: CR10b-12
Subsection: c
FHWA Route: 483

Historic Name: Jordan-Sargent Mountain Road
Modern Name: Around Mountain Loop

			Length
Number of Construction Documents	:	2	4200
Number of Coping Stone Sections	:	5	2184
Number of Crown	:	1	5280
Number of Culvert (Stone)	:	11	0
Number of Ditch (Unlined)	:	4	5305
Number of Intersection	:	1	0
Number of Photographic Vista	:	1	0
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	3	5280

Acadia National Park
Carriage Roads

Section: CR10b-12 Historic Name: Jordan-Sargent Mountain Road
Subsection: c Modern Name: Around Mountain Loop
FHWA Route: 483

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	5280	5280	A	15
6781	Surface	0	300	300	A	3
354	Coping Stone Sections	0	737	737	R	1
2351	Ditch (Unlined)	0	1122	1122	L	4
1000	Construction Documents	0	2800	2800	A	21
1803	Culvert (Stone)	269	269	0	A	6
6781	Surface	300	900	600	A	5
1803	Culvert (Stone)	722	722	0	A	2
6781	Surface	900	5280	4380	A	41
354	Coping Stone Sections	962	1360	398	R	1
354	Coping Stone Sections	1122	1290	168	L	0
380	Intersection	1166	1166	0	A	2
1803	Culvert (Stone)	1200	1200	0	A	2
2351	Ditch (Unlined)	1290	3703	2413	L	9
2351	Ditch (Unlined)	1394	1627	233	R	1
354	Coping Stone Sections	1627	2468	841	R	2
9004	Photographic Vista	2050	2050	0	A	50
1803	Culvert (Stone)	2663	2663	0	A	2
1000	Construction Documents	2800	4200	1400	A	11
1803	Culvert (Stone)	3110	3110	0	A	2
354	Coping Stone Sections	3703	3743	40	L	0
1803	Culvert (Stone)	3719	3719	0	A	2
2351	Ditch (Unlined)	3743	5280	1537	L	6
1803	Culvert (Stone)	4189	4189	0	A	4
1803	Culvert (Stone)	4429	4429	0	A	6
1803	Culvert (Stone)	4756	4756	0	A	2
1803	Culvert (Stone)	4995	4995	0	A	4
1803	Culvert (Stone)	5236	5236	0	A	8

Total Weighted Priority: 212

9/09/93 Items

Section: CR10b-12 Historic Name: Jordan-Sargent Mountain Road
Subsection: d Modern Name: Around Mountain Loop
FHWA Route: 483

			Length
Number of Channel	:	1	0
Number of Coping Stone Sections	:	5	2904
Number of Crown	:	1	3206
Number of Culvert (Metal)	:	1	0
Number of Culvert (Stone)	:	3	0
Number of Culvert Bridge	:	1	0
Number of Ditch (Unlined)	:	3	3082
Number of Intersection	:	1	0
Number of Photographic Vista	:	1	0
Number of Retaining Wall	:	1	70
Number of Roadway (Broken Stone)	:	1	3206
Number of Surface	:	1	3206

Acadia National Park
Carriage Roads

Section: CR10b-12 Historic Name: Jordan-Sargent Mountain Road
Subsection: d Modern Name: Around Mountain Loop
FHWA Route: 483

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	3206	3206	A	
6780	Crown	0	3206	3206	A	9
6781	Surface	0	3206	3206	A	24
354	Coping Stone Sections	0	396	396	R	1
2351	Ditch (Unlined)	0	538	538	L	2
1803	Culvert (Stone)	277	277	0	A	2
354	Coping Stone Sections	525	1681	1156	R	2
354	Coping Stone Sections	538	592	54	L	0
1804	Culvert Bridge	565	565	0	A	10
2351	Ditch (Unlined)	592	1800	1208	L	5
1803	Culvert (Stone)	902	902	0	A	4
2354	Channel	902	902	0	L	10
1803	Culvert (Stone)	1415	1415	0	A	6
905	Retaining Wall	1800	1870	70	L	0
354	Coping Stone Sections	1800	2290	490	R	1
2351	Ditch (Unlined)	1870	3206	1336	L	5
354	Coping Stone Sections	2372	3180	808	R	2
1802	Culvert (Metal)	2490	2490	0	A	1
9004	Photographic Vista	2675	2675	0	A	50
380	Intersection	2805	2805	0	A	2
	Total Weighted Priority:					136

9/09/93

Items

Section: CR10a-14
Subsection: a
FHWA Route: 483

Historic Name: Jordan-Sargent Mountain Road
Modern Name: Around Mountain Loop

			Length
Number of Bridge (Stone)	:	1	0
Number of Channel	:	3	0
Number of Construction Documents	:	1	0
Number of Coping Stone Sections	:	1	4605
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	7	0
Number of Culvert (Stone)	:	11	0
Number of Ditch (Stone Lined)	:	2	1492
Number of Ditch (Unlined)	:	4	3867
Number of Documented Vista	:	1	0
Number of Photographic Vista	:	2	0
Number of Retaining Wall	:	6	1954
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	2	5280
Number of Trail	:	1	0

Acadia National Park
Carriage Roads

Section: CR10a-14 Historic Name: Jordan-Sargent Mountain Road
Subsection: a Modern Name: Around Mountain Loop
FHWA Route: 483

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6781	Surface	0	923	923	A	5
6780	Crown	0	5280	5280	A	15
2351	Ditch (Unlined)	0	1210	1210	R	5
2351	Ditch (Unlined)	71	150	79	L	0
1802	Culvert (Metal)	336	336	0	A	3
2354	Channel	574	574	0	R	20
354	Coping Stone Sections	675	5280	4605	L	9
905	Retaining Wall	754	1766	1012	R	4
1803	Culvert (Stone)	876	876	0	A	4
9004	Photographic Vista	923	923	0	L	50
6781	Surface	923	5280	4357	A	33
2351	Ditch (Unlined)	1210	1420	210	R	1
1803	Culvert (Stone)	1242	1242	0	A	2
1803	Culvert (Stone)	1420	1420	0	A	4
2352	Ditch (Stone Lined)	1420	1983	563	R	5
1803	Culvert (Stone)	1660	1660	0	A	4
2351	Ditch (Unlined)	1983	4351	2368	R	9
9004	Photographic Vista	2309	2309	0	L	50
1802	Culvert (Metal)	2309	2309	0	A	1
9003	Documented Vista	2550	2550	0	L	50
1803	Culvert (Stone)	2624	2624	0	A	2
1803	Culvert (Stone)	3084	3084	0	A	4
1803	Culvert (Stone)	3326	3326	0	A	4
905	Retaining Wall	3426	3465	39	R	0
1803	Culvert (Stone)	3465	3465	0	A	6
905	Retaining Wall	3610	3637	27	R	0
1802	Culvert (Metal)	3895	3895	0	A	3
1802	Culvert (Metal)	4023	4023	0	A	3
56	Bridge (Stone)	4062	4062	0	A	40
1000	Construction Documents	4062	4062	0	A	40
1803	Culvert (Stone)	4177	4177	0	A	2
2354	Channel	4177	4177	0	R	5
1057	Trail	4177	4177	0	A	2
1803	Culvert (Stone)	4321	4321	0	A	2
2352	Ditch (Stone Lined)	4351	5280	929	R	7
905	Retaining Wall	4351	4449	98	R	0
1802	Culvert (Metal)	4449	4449	0	A	0
1802	Culvert (Metal)	4692	4692	0	A	1
905	Retaining Wall	4692	5280	588	R	2
1803	Culvert (Stone)	4692	4692	0	R	4
2354	Channel	4692	4692	0	R	10
905	Retaining Wall	5090	5280	190	L	0
1802	Culvert (Metal)	5119	5119	0	A	2

Total Weighted Priority: 414

9/09/93

Items

Section: CR10a-14
Subsection: b
FHWA Route: 483

Historic Name: Jordan-Sargent Mountain Road
Modern Name: Around Mountain Loop

			Length
Number of Channel	:	1	0
Number of Coping Stone Sections	:	10	3267
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	8	0
Number of Culvert (Stone)	:	6	0
Number of Ditch (Stone Lined)	:	1	2194
Number of Ditch (Unlined)	:	4	3024
Number of Documented Vista	:	2	0
Number of Retaining Wall	:	1	2194
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	1	5280

Acadia National Park
Carriage Roads

Section: CR10a-14 Historic Name: Jordan-Sargent Mountain Road
Subsection: b Modern Name: Around Mountain Loop
FHWA Route: 483

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	5280	5280	A	15
905	Retaining Wall	0	2194	2194	R	12
6781	Surface	0	5280	5280	A	40
2352	Ditch (Stone Lined)	0	2194	2194	R	17
354	Coping Stone Sections	0	1989	1989	L	4
1803	Culvert (Stone)	410	410	0	A	2
1802	Culvert (Metal)	868	868	0	A	2
354	Coping Stone Sections	1989	2194	205	L	1
1802	Culvert (Metal)	2023	2023	0	A	3
2351	Ditch (Unlined)	2194	2709	515	R	2
1802	Culvert (Metal)	2285	2285	0	A	3
354	Coping Stone Sections	2330	2515	185	L	1
1803	Culvert (Stone)	2414	2414	0	A	2
2354	Channel	2414	2414	0	R	5
1803	Culvert (Stone)	2497	2497	0	A	2
1802	Culvert (Metal)	2598	2598	0	A	3
2351	Ditch (Unlined)	2709	2809	100	R	0
9003	Documented Vista	2800	2800	0	L	50
2351	Ditch (Unlined)	2809	3106	297	R	1
354	Coping Stone Sections	3067	3168	101	L	1
354	Coping Stone Sections	3106	3168	62	R	0
1803	Culvert (Stone)	3136	3136	0	A	2
2351	Ditch (Unlined)	3168	5280	2112	R	8
1802	Culvert (Metal)	3478	3478	0	A	3
354	Coping Stone Sections	3870	4035	165	L	1
1802	Culvert (Metal)	3901	3901	0	A	4
9003	Documented Vista	4100	4100	0	A	50
1802	Culvert (Metal)	4159	4159	0	A	2
354	Coping Stone Sections	4220	4352	132	L	1
354	Coping Stone Sections	4418	4479	61	L	1
1803	Culvert (Stone)	4469	4469	0	A	6
354	Coping Stone Sections	4615	4788	173	L	2
1803	Culvert (Stone)	4685	4685	0	A	4
1802	Culvert (Metal)	4988	4988	0	A	4
354	Coping Stone Sections	5086	5280	194	L	1
	Total Weighted Priority:					256

9/09/93

Items

Section: CR10a-14 Historic Name: Jordan-Sargent Mountain Road
Subsection: c Modern Name: Around Mountain Loop
FHWA Route: 483

			Length
Number of Coping Stone Sections	:	1	318
Number of Crown	:	1	318
Number of Culvert (Metal)	:	2	0
Number of Ditch (Unlined)	:	1	289
Number of Roadway (Broken Stone)	:	1	318
Number of Surface	:	1	318

Acadia National Park
Carriage Roads

Section: CR10a-14 Historic Name: Jordan-Sargent Mountain Road
Subsection: c Modern Name: Around Mountain Loop
FHWA Route: 483

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	318	318	A	
6780	Crown	0	318	318	A	1
6781	Surface	0	318	318	A	2
2351	Ditch (Unlined)	0	289	289	R	1
354	Coping Stone Sections	0	318	318	L	2
1802	Culvert (Metal)	8	8	0	A	4
1802	Culvert (Metal)	222	222	0	A	4
	Total Weighted Priority:					14

9/09/93

Items

Section: CR11-10
Subsection: a
FHWA Route: 491

Historic Name: Aunt Betty's Pond Road
Modern Name: Aunt Betty's Pond Loop

			Length
Number of Construction Documents	:	1	2390
Number of Coping Stone Sections	:	9	2214
Number of Crown	:	1	5280
Number of Culvert (Concrete)	:	4	0
Number of Culvert (Metal)	:	8	0
Number of Culvert Bridge	:	6	0
Number of Ditch (Unlined)	:	18	6614
Number of Photographic Vista	:	4	0
Number of Retaining Wall	:	5	381
Number of Roadway (Broken Stone)	:	1	5280
Number of Sign	:	3	0
Number of Surface	:	10	5279

Acadia National Park
Carriage Roads

Section: CR11-10 Historic Name: Aunt Betty's Pond Road
Subsection: a Modern Name: Aunt Betty's Pond Loop
FHWA Route: 491

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	5280	5280	A	20
700	Sign	0	0	0	A	2
700	Sign	0	0	0	A	2
700	Sign	0	0	0	A	2
2351	Ditch (Unlined)	0	382	382	L	1
6781	Surface	0	587	587	A	3
1000	Construction Documents	0	2390	2390	A	18
2351	Ditch (Unlined)	76	382	306	R	1
1802	Culvert (Metal)	200	200	0	A	2
9004	Photographic Vista	382	382	0	R	50
354	Coping Stone Sections	382	448	66	R	1
354	Coping Stone Sections	382	448	66	L	1
2351	Ditch (Unlined)	448	650	202	L	1
2351	Ditch (Unlined)	448	650	202	R	1
6781	Surface	587	822	235	A	2
354	Coping Stone Sections	650	861	211	L	1
354	Coping Stone Sections	650	914	264	R	2
2351	Ditch (Unlined)	735	2334	1599	L	6
6781	Surface	822	1548	726	A	4
2351	Ditch (Unlined)	914	1096	182	R	1
1802	Culvert (Metal)	1096	1096	0	A	2
905	Retaining Wall	1154	1297	143	L	0
354	Coping Stone Sections	1248	1576	328	R	2
9004	Photographic Vista	1283	1283	0	R	50
1801	Culvert (Concrete)	1467	1467	0	A	1
6781	Surface	1548	2815	1267	A	10
2351	Ditch (Unlined)	1576	1698	122	R	0
354	Coping Stone Sections	1698	1784	86	R	0
2351	Ditch (Unlined)	1784	2000	216	R	1
354	Coping Stone Sections	2000	2085	85	R	0
2351	Ditch (Unlined)	2085	2250	165	R	1
1802	Culvert (Metal)	2283	2283	0	A	1
2351	Ditch (Unlined)	2454	4254	1800	L	7
1802	Culvert (Metal)	2454	2454	0	A	3
2351	Ditch (Unlined)	2505	2682	177	R	1
1801	Culvert (Concrete)	2682	2682	0	A	2
354	Coping Stone Sections	2682	2846	164	R	1
6781	Surface	2815	2883	68	A	1
1801	Culvert (Concrete)	2880	2880	0	A	4
354	Coping Stone Sections	2883	3827	944	R	5
6781	Surface	2883	3240	357	A	3
9004	Photographic Vista	3172	3172	0	R	50
1802	Culvert (Metal)	3172	3172	0	A	2
6781	Surface	3241	3880	639	A	6
1802	Culvert (Metal)	3575	3575	0	A	4
1801	Culvert (Concrete)	3727	3727	0	A	5
2351	Ditch (Unlined)	3827	3975	148	R	1
9004	Photographic Vista	3880	3880	0	A	50
6781	Surface	3880	4330	450	A	3
1802	Culvert (Metal)	3975	3975	0	A	4
905	Retaining Wall	4015	4056	41	R	0
905	Retaining Wall	4035	4097	62	L	0
1804	Culvert Bridge	4254	4254	0	A	10

Acadia National Park
Carriage Roads

Section: CR11-10 Historic Name: Aunt Betty's Pond Road
Subsection: a Modern Name: Aunt Betty's Pond Loop
FHWA Route: 491

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
2351	Ditch (Unlined)	4254	4481	227	R	1
2351	Ditch (Unlined)	4298	4677	379	L	1
905	Retaining Wall	4303	4403	100	R	0
6781	Surface	4330	4481	151	A	1
905	Retaining Wall	4346	4381	35	L	0
1804	Culvert Bridge	4481	4481	0	A	10
6781	Surface	4481	5280	799	A	6
1804	Culvert Bridge	4641	4641	0	A	10
2351	Ditch (Unlined)	4648	4759	111	R	0
1804	Culvert Bridge	4762	4762	0	A	10
2351	Ditch (Unlined)	4767	4846	79	L	0
1802	Culvert (Metal)	4846	4846	0	A	4
1804	Culvert Bridge	4881	4881	0	A	10
2351	Ditch (Unlined)	4894	5026	132	R	1
1804	Culvert Bridge	5030	5030	0	A	10
2351	Ditch (Unlined)	5095	5280	185	L	1

Total Weighted Priority: 416

9/09/93 Items

Section: CR11-10 Historic Name: Aunt Betty's Pond Road
Subsection: b Modern Name: Aunt Betty's Pond Loop
FHWA Route: 491

			Length
Number of Crown	:	1	788
Number of Culvert (Metal)	:	2	0
Number of Ditch (Unlined)	:	2	739
Number of Intersection	:	1	0
Number of Roadway (Broken Stone)	:	1	788
Number of Surface	:	1	788

Acadia National Park
Carriage Roads

Section: CR11-10 Historic Name: Aunt Betty's Pond Road
Subsection: b Modern Name: Aunt Betty's Pond Loop
FHWA Route: 491

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	788	788	A	
6780	Crown	0	788	788	A	3
2351	Ditch (Unlined)	0	453	453	L	2
6781	Surface	0	788	788	A	7
1802	Culvert (Metal)	375	375	0	A	3
2351	Ditch (Unlined)	502	788	286	L	1
1802	Culvert (Metal)	706	706	0	A	4
380	Intersection	788	788	0	A	2

Total Weighted Priority: 23

9/09/93

Items

Section: CR12-13
Subsection: a
FHWA Route: 495

Historic Name: Aunt Betty's Pond Road
Modern Name: Giant Slide Loop

			Length
Number of Construction Documents	:	1	1200
Number of Coping Stone Sections	:	2	919
Number of Crown	:	1	1202
Number of Culvert (Metal)	:	2	0
Number of Ditch (Unlined)	:	2	1279
Number of Photographic Vista	:	1	0
Number of Roadway (Broken Stone)	:	1	1202
Number of Sign	:	1	0
Number of Surface	:	1	1202

Acadia National Park
Carriage Roads

Section: CR12-13 Historic Name: Aunt Betty's Pond
Subsection: a Modern Name: Giant Slide Loop
FHWA Route: 495

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
9004	Photographic Vista	0	0	0	A	50
679	Roadway (Broken Stone)	0	1202	1202	A	
6780	Crown	0	1202	1202	A	6
700	Sign	0	0	0	R	2
6781	Surface	0	1202	1202	A	11
354	Coping Stone Sections	0	824	824	L	2
1000	Construction Documents	0	1200	1200	A	9
2351	Ditch (Unlined)	25	1202	1177	R	4
1802	Culvert (Metal)	515	515	0	A	3
1802	Culvert (Metal)	795	795	0	A	2
354	Coping Stone Sections	960	1055	95	L	0
2351	Ditch (Unlined)	1100	1202	102	L	0
	Total Weighted Priority:					90

9/09/93 Items

Section: CR13-11 Historic Name: Aunt Betty's Pond Road
Subsection: a Modern Name: Giant Slide Loop
FHWA Route: 495

			Length
Number of Channel	:	1	0
Number of Construction Documents	:	2	10560
Number of Coping Stone Sections	:	12	3539
Number of Crown	:	2	5280
Number of Culvert (Metal)	:	9	0
Number of Culvert Bridge	:	2	0
Number of Ditch (Diversion)	:	1	199
Number of Ditch (Stone Lined)	:	5	1409
Number of Ditch (Unlined)	:	7	1738
Number of Intersection	:	1	0
Number of Photographic Vista	:	1	0
Number of Retaining Wall	:	2	93
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	6	5280

Acadia National Park
Carriage Roads

Section: CR13-11 Historic Name: Aunt Betty's Pond Road
Subsection: a Modern Name: Giant Slide Loop
FHWA Route: 495

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	3002	3002	A	14
6781	Surface	0	1205	1205	A	9
1000	Construction Documents	0	5280	5280	A	40
1000	Construction Documents	0	5280	5280	A	40
2352	Ditch (Stone Lined)	16	136	120	R	0
1802	Culvert (Metal)	136	136	0	A	2
2351	Ditch (Unlined)	136	249	113	R	0
2352	Ditch (Stone Lined)	249	1020	771	R	4
380	Intersection	340	340	0	L	2
1802	Culvert (Metal)	451	451	0	A	2
354	Coping Stone Sections	1005	1147	142	L	1
2351	Ditch (Unlined)	1020	1287	267	R	1
1802	Culvert (Metal)	1059	1059	0	A	5
6781	Surface	1205	2733	1528	A	14
1802	Culvert (Metal)	1251	1251	0	A	4
2352	Ditch (Stone Lined)	1287	1558	271	R	2
354	Coping Stone Sections	1287	1363	76	L	0
9004	Photographic Vista	1453	1453	0	L	50
905	Retaining Wall	1553	1560	7	R	0
354	Coping Stone Sections	1560	2008	448	L	3
1802	Culvert (Metal)	1695	1695	0	A	2
2352	Ditch (Stone Lined)	1772	1969	197	R	1
354	Coping Stone Sections	1870	1969	99	R	0
2354	Channel	1890	1890	0	R	10
1804	Culvert Bridge	1931	1931	0	A	10
2351	Ditch (Unlined)	1969	2214	245	R	1
354	Coping Stone Sections	2163	2282	119	L	1
2352	Ditch (Stone Lined)	2214	2264	50	R	0
905	Retaining Wall	2264	2350	86	R	0
2351	Ditch (Unlined)	2264	2347	83	R	0
354	Coping Stone Sections	2350	2601	251	L	1
2353	Ditch (Diversion)	2350	2549	199	R	1
354	Coping Stone Sections	2437	2591	154	R	1
1802	Culvert (Metal)	2549	2549	0	A	2
2351	Ditch (Unlined)	2549	3143	594	R	2
2351	Ditch (Unlined)	2549	2665	116	L	0
354	Coping Stone Sections	2665	3060	395	L	1
6781	Surface	2733	2835	102	A	1
6781	Surface	2835	3002	167	A	2
354	Coping Stone Sections	2959	3131	172	R	0
6780	Crown	3002	5280	2278	A	9
6781	Surface	3002	3989	987	A	7
1804	Culvert Bridge	3026	3026	0	A	10
2351	Ditch (Unlined)	3028	3348	320	L	1
354	Coping Stone Sections	3446	3710	264	L	1
1802	Culvert (Metal)	3602	3602	0	A	2
354	Coping Stone Sections	3779	4032	253	L	1
6781	Surface	3989	5280	1291	A	12
354	Coping Stone Sections	4114	5280	1166	L	4
1802	Culvert (Metal)	4314	4314	0	A	2
1802	Culvert (Metal)	4857	4857	0	A	1

Acadia National Park
Carriage Roads

Section: CR13-11 Historic Name: Aunt Betty's Pond Road
Subsection: a Modern Name: Giant Slide Loop
FHWA Route: 495

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
	Total Weighted Priority:					282

9/09/93

Items

Section: CR13-11
Subsection: b
FHWA Route: 495

Historic Name: Aunt Betty's Pond Road
Modern Name: Giant Slide Loop

			Length
Number of Channel	:	2	0
Number of Construction Documents	:	2	10560
Number of Coping Stone Sections	:	10	1600
Number of Crown	:	1	5280
Number of Culvert (Concrete)	:	4	0
Number of Culvert (Metal)	:	3	0
Number of Culvert Bridge	:	3	0
Number of Ditch (Stone Lined)	:	3	760
Number of Ditch (Unlined)	:	5	5878
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	2	5280
Number of Trail	:	1	0

Acadia National Park
Carriage Roads

Section: CR13-11 Historic Name: Aunt Betty's Pond Road
Subsection: b Modern Name: Giant Slide Loop
FHWA Route: 495

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	5280	5280	A	25
6781	Surface	0	3711	3711	A	35
354	Coping Stone Sections	0	263	263	L	1
2351	Ditch (Unlined)	0	3143	3143	R	12
1000	Construction Documents	0	5280	5280	A	40
1000	Construction Documents	0	5280	5280	A	40
354	Coping Stone Sections	330	762	432	L	2
1802	Culvert (Metal)	615	615	0	A	1
2351	Ditch (Unlined)	1108	1560	452	L	2
1802	Culvert (Metal)	1245	1245	0	A	3
1804	Culvert Bridge	1560	1560	0	A	10
354	Coping Stone Sections	1560	1670	110	R	0
354	Coping Stone Sections	1560	1651	91	L	0
354	Coping Stone Sections	2352	2557	205	R	1
354	Coping Stone Sections	2352	2577	225	L	1
2351	Ditch (Unlined)	2409	3893	1484	L	6
1802	Culvert (Metal)	2409	2409	0	A	2
1801	Culvert (Concrete)	2758	2758	0	A	1
2354	Channel	2758	2758	0	R	5
1801	Culvert (Concrete)	3143	3143	0	A	1
2352	Ditch (Stone Lined)	3143	3785	642	R	5
6781	Surface	3711	5280	1569	A	12
354	Coping Stone Sections	3755	3844	89	L	0
354	Coping Stone Sections	3769	3844	75	R	0
1804	Culvert Bridge	3785	3785	0	A	10
2354	Channel	3844	3844	0	R	10
1057	Trail	4320	4320	0	A	2
1801	Culvert (Concrete)	4363	4363	0	A	2
2351	Ditch (Unlined)	4363	4433	70	R	0
2352	Ditch (Stone Lined)	4433	4495	62	R	0
2351	Ditch (Unlined)	4495	5224	729	R	3
1801	Culvert (Concrete)	4737	4737	0	A	2
354	Coping Stone Sections	5034	5089	55	R	0
354	Coping Stone Sections	5034	5089	55	L	0
1804	Culvert Bridge	5061	5061	0	A	10
2352	Ditch (Stone Lined)	5224	5280	56	R	0

Total Weighted Priority: 245

9/09/93

Items

Section: CR13-11
Subsection: c
FHWA Route: 495

Historic Name: Aunt Betty's Pond Road
Modern Name: Giant Slide Loop

			Length
Number of Channel	:	3	0
Number of Construction Documents	:	2	6220
Number of Coping Stone Sections	:	3	212
Number of Crown	:	1	5279
Number of Culvert (Concrete)	:	13	0
Number of Ditch (Stone Lined)	:	3	3295
Number of Ditch (Unlined)	:	3	2645
Number of Photographic Vista	:	1	0
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	6	5280

Acadia National Park
Carriage Roads

Section: CR13-11 Historic Name: Aunt Betty's Pond Road
Subsection: c Modern Name: Giant Slide Loop
FHWA Route: 495

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6781	Surface	0	2592	2592	A	20
2352	Ditch (Stone Lined)	0	2541	2541	R	19
1000	Construction Documents	0	5280	5280	A	40
1000	Construction Documents	0	940	940	A	7
6780	Crown	1	5280	5279	A	25
1801	Culvert (Concrete)	156	156	0	A	2
1801	Culvert (Concrete)	584	584	0	A	2
354	Coping Stone Sections	762	833	71	R	0
354	Coping Stone Sections	762	812	50	L	0
1801	Culvert (Concrete)	786	786	0	A	1
2351	Ditch (Unlined)	812	1083	271	L	1
1801	Culvert (Concrete)	1120	1120	0	A	3
1801	Culvert (Concrete)	1420	1420	0	A	3
2354	Channel	1420	1420	0	R	10
1801	Culvert (Concrete)	1670	1670	0	A	3
2354	Channel	1670	1670	0	R	15
2354	Channel	1874	1874	0	R	15
1801	Culvert (Concrete)	2029	2029	0	A	3
9004	Photographic Vista	2366	2366	0	A	50
1801	Culvert (Concrete)	2592	2592	0	A	2
2352	Ditch (Stone Lined)	2592	2637	45	R	0
6781	Surface	2592	2745	153	A	1
2351	Ditch (Unlined)	2592	4054	1462	R	7
6781	Surface	2745	2861	116	A	1
6781	Surface	2861	4064	1203	A	9
1801	Culvert (Concrete)	2861	2861	0	A	3
1801	Culvert (Concrete)	3171	3171	0	A	3
1801	Culvert (Concrete)	3282	3282	0	A	3
2351	Ditch (Unlined)	3282	4194	912	L	3
354	Coping Stone Sections	4002	4093	91	R	0
1801	Culvert (Concrete)	4054	4054	0	A	1
6781	Surface	4064	4113	49	A	0
6781	Surface	4113	5280	1167	A	9
2352	Ditch (Stone Lined)	4194	4903	709	L	5
1801	Culvert (Concrete)	4878	4878	0	A	2

Total Weighted Priority: 271

9/09/93

Items

Section: CR13-11
Subsection: d
FHWA Route: 495

Historic Name: Aunt Betty's Pond Road
Modern Name: Giant Slide Loop

			Length
Number of Construction Documents	:	1	1616
Number of Coping Stone Sections	:	5	802
Number of Crown	:	1	1616
Number of Culvert (Concrete)	:	1	0
Number of Culvert Bridge	:	1	0
Number of Ditch (Unlined)	:	1	1293
Number of Documented Vista	:	1	0
Number of Roadway (Broken Stone)	:	1	1616
Number of Surface	:	2	1615

Acadia National Park
Carriage Roads

Section: CR13-11 Historic Name: Aunt Betty's Pond Road
Subsection: d Modern Name: Giant Slide Loop
FHWA Route: 495

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	1616	1616	A	
6780	Crown	0	1616	1616	A	8
2351	Ditch (Unlined)	0	1293	1293	L	5
6781	Surface	0	1043	1043	A	6
1000	Construction Documents	0	1616	1616	A	12
354	Coping Stone Sections	41	246	205	R	1
354	Coping Stone Sections	304	458	154	R	1
354	Coping Stone Sections	357	458	101	L	0
1801	Culvert (Concrete)	711	711	0	A	3
354	Coping Stone Sections	844	1044	200	R	1
354	Coping Stone Sections	920	1062	142	L	1
6781	Surface	1044	1616	572	A	3
1804	Culvert Bridge	1383	1383	0	A	10
9003	Documented Vista	1400	1400	0	L	50
	Total Weighted Priority:					100

9/09/93

Items

Section: CR13-18 Historic Name: Hadlock Bridle Path
Subsection: a Modern Name: Hadlock Brook Loop
FHWA Route: 496

			Length
Number of Bridge (Stone)	:	1	0
Number of Coping Stone Sections	:	10	2038
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	16	0
Number of Ditch (Stone Lined)	:	2	130
Number of Ditch (Unlined)	:	2	5148
Number of Documented Vista	:	1	0
Number of Photographic Vista	:	1	0
Number of Roadway (Broken Stone)	:	1	5280
Number of Sign	:	2	0
Number of Surface	:	8	5280
Number of Trail	:	3	0

Acadia National Park
Carriage Roads

Section: CR13-18 Historic Name: Hadlock Bridle Path
Subsection: a Modern Name: Hadlock Brook Loop
FHWA Route: 496

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6781	Surface	0	2089	2089	A	16
6780	Crown	0	5280	5280	A	20
700	Sign	2	2	0	A	2
700	Sign	2	2	0	A	2
2352	Ditch (Stone Lined)	2	82	80	L	1
1802	Culvert (Metal)	57	57	0	A	1
354	Coping Stone Sections	82	233	151	R	0
2351	Ditch (Unlined)	82	1650	1568	L	7
1802	Culvert (Metal)	353	353	0	A	1
354	Coping Stone Sections	471	491	20	R	0
354	Coping Stone Sections	526	926	400	R	1
1802	Culvert (Metal)	667	667	0	A	2
1802	Culvert (Metal)	926	926	0	A	1
1057	Trail	960	960	0	A	2
354	Coping Stone Sections	1121	1345	224	R	0
1802	Culvert (Metal)	1203	1203	0	A	4
354	Coping Stone Sections	1416	1537	121	R	0
1802	Culvert (Metal)	1452	1452	0	A	1
354	Coping Stone Sections	1650	1660	10	R	0
1802	Culvert (Metal)	1650	1650	0	A	5
1057	Trail	1650	1650	0	A	2
1803	Ditch (Stone Lined)	1650	1700	50	L	0
2351	Ditch (Unlined)	1700	5280	3580	L	17
1802	Culvert (Metal)	1700	1700	0	L	1
1057	Trail	1820	1820	0	A	2
6781	Surface	2089	2453	364	A	3
1802	Culvert (Metal)	2149	2149	0	A	5
6781	Surface	2453	2807	354	A	3
354	Coping Stone Sections	2453	2931	478	R	3
6781	Surface	2807	3371	564	A	5
9003	Documented Vista	3100	3100	0	L	50
56	Bridge (Stone)	3371	3371	0	A	40
6781	Surface	3371	3729	358	A	2
1802	Culvert (Metal)	3653	3653	0	A	5
6781	Surface	3729	4453	724	A	7
1802	Culvert (Metal)	3861	3861	0	A	3
354	Coping Stone Sections	4053	4393	340	R	1
1802	Culvert (Metal)	4133	4133	0	A	1
1802	Culvert (Metal)	4323	4323	0	A	3
6781	Surface	4453	4861	408	A	3
354	Coping Stone Sections	4493	4711	218	R	1
1802	Culvert (Metal)	4513	4513	0	A	3
9004	Photographic Vista	4573	4573	0	R	50
354	Coping Stone Sections	4835	4911	76	R	0
6781	Surface	4861	5280	419	A	4
1802	Culvert (Metal)	5011	5011	0	A	3
1802	Culvert (Metal)	5149	5149	0	A	3

Total Weighted Priority: 288

9/09/93

Items

Section: CR13-18
Subsection: b
FHWA Route: 496

Historic Name: Hadlock Bridle Path
Modern Name: Hadlock Brook Loop

			Length
Number of Coping Stone Sections	:	3	184
Number of Crown	:	2	2707
Number of Culvert (Metal)	:	9	0
Number of Ditch (Unlined)	:	3	2525
Number of Intersection	:	1	0
Number of Roadway (Broken Stone)	:	1	2708
Number of Sign	:	2	0
Number of Surface	:	5	2707

Acadia National Park
Carriage Roads

Section: CR13-18 Historic Name: Hadlock Bridle Path
Subsection: b Modern Name: Hadlock Brook Loop
FHWA Route: 496

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	2708	2708	A	
2351	Ditch (Unlined)	0	251	251	L	1
6781	Surface	1	146	145	A	1
6780	Crown	1	1336	1335	A	6
6781	Surface	146	335	189	A	2
354	Coping Stone Sections	251	352	101	L	0
354	Coping Stone Sections	251	312	61	R	0
1802	Culvert (Metal)	265	265	0	A	2
1802	Culvert (Metal)	293	293	0	A	2
6781	Surface	335	1336	1001	A	9
2351	Ditch (Unlined)	422	1633	1211	R	5
1802	Culvert (Metal)	856	856	0	A	5
1802	Culvert (Metal)	1216	1216	0	A	5
6781	Surface	1336	1419	83	A	1
6780	Crown	1336	2708	1372	A	5
6781	Surface	1419	2708	1289	A	12
1802	Culvert (Metal)	1633	1633	0	A	5
2351	Ditch (Unlined)	1633	2696	1063	L	5
1802	Culvert (Metal)	1738	1738	0	A	5
1802	Culvert (Metal)	2453	2453	0	A	5
1802	Culvert (Metal)	2672	2672	0	A	2
354	Coping Stone Sections	2674	2696	22	R	0
1802	Culvert (Metal)	2696	2696	0	A	2
700	Sign	2708	2708	0	A	2
700	Sign	2708	2708	0	A	2
380	Intersection	2708	2708	0	A	2
	Total Weighted Priority:					88

9/09/93

Items

Section: CR14-21
Subsection: a
FHWA Route: 483

Historic Name: Jordan-Sargent Mountain Road
Modern Name: Around Moutain Loop

			Length
Number of Bridge (Stone)	:	2	0
Number of Construction Documents	:	4	7030
Number of Coping Stone Sections	:	11	4309
Number of Crown	:	1	5315
Number of Culvert (Concrete)	:	1	0
Number of Culvert (Metal)	:	8	0
Number of Culvert (Stone)	:	6	0
Number of Ditch (Stone Lined)	:	1	740
Number of Ditch (Unlined)	:	4	3922
Number of Intersection	:	2	0
Number of Photographic Vista	:	7	0
Number of Retaining Wall	:	3	2046
Number of Roadway (Broken Stone)	:	1	5315
Number of Sign	:	5	0
Number of Surface	:	5	5315

Acadia National Park
Carriage Roads

Section: CR14-21 Historic Name: Jordan-Sargent Mountain Road
Subsection: a Modern Name: Around Moutain Loop
FHWA Route: 483

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5315	5315	A	
380	Intersection	0	0	0	R	2
2351	Ditch (Unlined)	0	1026	1026	R	4
700	Sign	0	0	0	A	2
700	Sign	0	0	0	A	2
700	Sign	0			A	
6781	Surface	0	848	848	A	6
6780	Crown	0	5315	5315	A	20
354	Coping Stone Sections	125	355	230	L	1
1803	Culvert (Stone)	165	165	0	A	4
1803	Culvert (Stone)	275	275	0	A	4
354	Coping Stone Sections	355	395	40	L	0
354	Coping Stone Sections	395	475	80	L	0
354	Coping Stone Sections	535	1026	491	L	3
9004	Photographic Vista	820	820	0	L	50
6781	Surface	848	1848	1000	A	9
56	Bridge (Stone)	1102	1102	0	A	40
1000	Construction Documents	1102	1102	0	A	40
2351	Ditch (Unlined)	1177	1609	432	R	2
354	Coping Stone Sections	1177	1530	353	L	2
905	Retaining Wall	1177	2385	1208	L	7
1000	Construction Documents	1200	5315	4115	A	31
1802	Culvert (Metal)	1257	1257	0	A	2
1802	Culvert (Metal)	1470	1470	0	A	2
354	Coping Stone Sections	1609	1700	91	R	1
354	Coping Stone Sections	1625	2620	995	L	6
1803	Culvert (Stone)	1655	1655	0	A	2
6781	Surface	1848	2448	600	A	5
2351	Ditch (Unlined)	1875	3742	1867	R	7
9004	Photographic Vista	1960	1960	0	L	50
1802	Culvert (Metal)	2054	2054	0	A	2
1802	Culvert (Metal)	2116	2116	0	A	2
9004	Photographic Vista	2160	2160	0	L	50
9004	Photographic Vista	2285	2285	0	L	50
1802	Culvert (Metal)	2400	2400	0	A	2
1000	Construction Documents	2400	5315	2915	A	22
6781	Surface	2448	2948	500	A	5
1802	Culvert (Metal)	2620	2620	0	A	3
9004	Photographic Vista	2656	2656	0	L	50
354	Coping Stone Sections	2735	3742	1007	L	4
1802	Culvert (Metal)	2875	2875	0	A	3
6781	Surface	2948	5315	2367	A	18
1802	Culvert (Metal)	3255	3255	0	A	5
905	Retaining Wall	3618	3742	124	R	0
9004	Photographic Vista	3785	3785	0	L	50
56	Bridge (Stone)	3837	3837	0	A	40
2351	Ditch (Unlined)	3978	4575	597	R	2
905	Retaining Wall	3978	4692	714	R	3
354	Coping Stone Sections	3978	4150	172	L	1
1000	Construction Documents	3978	3978	0	A	40
9004	Photographic Vista	4180	4180	0	L	50
1803	Culvert (Stone)	4225	4225	0	A	10
354	Coping Stone Sections	4240	4550	310	L	2
1803	Culvert (Stone)	4383	4383	0	A	2

Acadia National Park
Carriage Roads

Section: CR14-21 Historic Name: Jordan-Sargent Mountain Road
Subsection: a Modern Name: Around Moutain Loop
FHWA Route: 483

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
2352	Ditch (Stone Lined)	4575	5315	740	R	4
354	Coping Stone Sections	4620	5160	540	L	3
1803	Culvert (Stone)	4625	4625	0	A	2
1801	Culvert (Concrete)	5110	5110	0	A	2
380	Intersection	5315	5315	0	A	2
700	Sign	5315	5315	0	R	2
700	Sign	5315	5315	0	R	2
	Total Weighted Priority:					737

9/09/93 Items

Section: CR15-14 Historic Name: Jordan Pond Road
Subsection: a Modern Name: Jordan Stream Loop
FHWA Route: 484

			Length
Number of Bridge (Stone)	:	1	0
Number of Coping Stone Sections	:	3	347
Number of Crown	:	1	1260
Number of Culvert (Metal)	:	4	0
Number of Ditch (Unlined)	:	2	1215
Number of Intersection	:	1	0
Number of Photographic Vista	:	1	0
Number of Roadway (Broken Stone)	:	1	1260
Number of Surface	:	1	1260
Number of Trail	:	1	0

Acadia National Park
Carriage Roads

Section: CR15-14 Historic Name: Jordan Pond Road
Subsection: a Modern Name: Jordan Stream Loop
FHWA Route: 484

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	1260	1260	A	
6781	Surface	0	1260	1260	A	10
6780	Crown	0	1260	1260	A	5
2351	Ditch (Unlined)	0	580	580	R	2
1802	Culvert (Metal)	40	40	0	A	5
1057	Trail	330	330	0	A	2
1802	Culvert (Metal)	440	440	0	A	5
1802	Culvert (Metal)	540	540	0	A	4
56	Bridge (Stone)	587	587	0	A	40
2351	Ditch (Unlined)	625	1260	635	L	2
354	Coping Stone Sections	746	868	122	R	0
9004	Photographic Vista	850	850	0	R	50
354	Coping Stone Sections	941	1051	110	R	1
1802	Culvert (Metal)	1035	1035	0	A	3
354	Coping Stone Sections	1145	1260	115	R	1
380	Intersection	1260	1260	0	L	2

Total Weighted Priority: 132

1260
1031
225

~~42~~+00

424+25
- 5+87
430+~~0~~2

587

9/09/93

Items

Section: CR15-23
Subsection: a
FHWA Route: 494

Historic Name: Bridle Path
Modern Name: Jordan Stream Loop

			Length
Number of Bridge (Wooden)	:	3	0
Number of Coping Stone Sections	:	7	1140
Number of Crown	:	1	3138
Number of Culvert (Metal)	:	10	0
Number of Ditch (Unlined)	:	1	104
Number of Intersection	:	2	0
Number of Roadway (Broken Stone)	:	1	3138
Number of Sign	:	5	0
Number of Surface	:	2	3138

Acadia National Park
Carriage Roads

Section: CR15-23 Historic Name: Bridle Path
Subsection: a Modern Name: Jordan Stream Loop
FHWA Route: 494

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	3138	3138	A	
6780	Crown	0	3138	3138	A	9
380	Intersection	0	0	0	A	2
700	Sign	0	0	0	A	2
700	Sign	0	0	0	A	2
700	Sign	0	0	0	A	2
354	Coping Stone Sections	0	425	425	L	4
6781	Surface	0	800	800	A	6
1056	Bridge (Wooden)	80	80	0	A	10
1802	Culvert (Metal)	425	425	0	A	5
354	Coping Stone Sections	450	650	200	L	2
1056	Bridge (Wooden)	653	653	0	A	20
1056	Bridge (Wooden)	676	676	0	A	10
354	Coping Stone Sections	685	856	171	R	1
6781	Surface	800	3138	2338	A	13
354	Coping Stone Sections	1047	1105	58	R	0
1802	Culvert (Metal)	1100	1100	0	A	5
2351	Ditch (Unlined)	1110	1214	104	L	0
354	Coping Stone Sections	1186	1372	186	L	1
1802	Culvert (Metal)	1440	1440	0	A	4
1802	Culvert (Metal)	1601	1601	0	A	5
1802	Culvert (Metal)	1672	1672	0	A	4
1802	Culvert (Metal)	1883	1883	0	A	4
1802	Culvert (Metal)	2175	2175	0	A	4
1802	Culvert (Metal)	2265	2265	0	A	3
354	Coping Stone Sections	2375	2425	50	L	0
354	Coping Stone Sections	2375	2425	50	R	0
1802	Culvert (Metal)	2400	2400	0	A	4
1802	Culvert (Metal)	2868	2868	0	A	5
380	Intersection	3138	3138	0	L	2
700	Sign	3138	3138	0	A	2
700	Sign	3138	3138	0	A	2

Total Weighted Priority: 135

9/09/93

Items

Section: CR16-15
Subsection: a
FHWA Route: 484

Historic Name: Jordan Pond Road
Modern Name: Jordan Stream Loop

			Length
Number of Coping Stone Sections	:	1	40
Number of Crown	:	1	808
Number of Culvert (Metal)	:	1	0
Number of Ditch (Unlined)	:	1	808
Number of Intersection	:	2	0
Number of Roadway (Broken Stone)	:	1	808
Number of Sign	:	3	0
Number of Surface	:	1	808

Acadia National Park
Carriage Roads

Section: CR16-15 Historic Name: Jordan Pond Road
Subsection: a Modern Name: Jordan Stream Loop
FHWA Route: 484

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	808	808	A	
700	Sign	0	0	0	A	2
700	Sign	0	0	0	A	2
380	Intersection	0	0	0	A	2
700	Sign	0	0	0	A	2
354	Coping Stone Sections	0	40	40	L	0
6780	Crown	0	808	808	A	3
6781	Surface	0	808	808	A	5
2351	Ditch (Unlined)	0	808	808	R	3
1802	Culvert (Metal)	65	65	0	A	4
380	Intersection	808	808	0	L	2
	Total Weighted Priority:					25

9/09/93 Items

Section: CR16-17 Historic Name: Bubble Pond Road
Subsection: a Modern Name: Jordan-Bubble Pond Loop
FHWA Route: 486

			Length
Number of Construction Documents	:	2	8052
Number of Coping Stone Sections	:	5	2557
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	7	0
Number of Culvert (Stone)	:	4	0
Number of Ditch (Stone Lined)	:	6	1423
Number of Ditch (Unlined)	:	11	4892
Number of Gate	:	2	0
Number of Intersection	:	1	0
Number of Photographic Vista	:	1	0
Number of Retaining Wall	:	4	1384
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	6	5280
Number of Trail	:	2	0

Acadia National Park
Carriage Roads

Section: CR16-17 Historic Name: Bubble Pond Road
Subsection: a Modern Name: Jordan-Bubble Pond Loop
FHWA Route: 486

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6781	Surface	0	96	96	A	1
6780	Crown	0	5280	5280	A	25
1000	Construction Documents	0	5280	5280	A	40
1057	Trail	96	96	0	A	2
6781	Surface	96	415	319	A	2
990	Gate	189	189	0	A	2
380	Intersection	266	266	0	A	2
990	Gate	351	351	0	A	2
1802	Culvert (Metal)	411	411	0	A	3
6781	Surface	415	2583	2168	A	12
2351	Ditch (Unlined)	415	725	310	R	1
2351	Ditch (Unlined)	415	1296	881	L	3
2351	Ditch (Unlined)	838	1673	835	R	3
1802	Culvert (Metal)	1247	1247	0	A	3
2352	Ditch (Stone Lined)	1296	1434	138	L	1
2351	Ditch (Unlined)	1563	1673	110	L	0
1803	Culvert (Stone)	1673	1673	0	A	2
2352	Ditch (Stone Lined)	1673	1784	111	A	1
2351	Ditch (Unlined)	1784	1860	76	R	0
2351	Ditch (Unlined)	1784	2198	414	L	2
354	Coping Stone Sections	1860	2016	156	R	1
1802	Culvert (Metal)	1907	1907	0	A	2
354	Coping Stone Sections	2075	2139	64	R	0
1802	Culvert (Metal)	2139	2139	0	A	3
2351	Ditch (Unlined)	2139	2489	350	R	1
2351	Ditch (Unlined)	2198	2605	407	L	2
905	Retaining Wall	2250	2605	355	L	2
1802	Culvert (Metal)	2489	2489	0	A	4
354	Coping Stone Sections	2489	3045	556	R	3
1000	Construction Documents	2508	5280	2772	A	21
6781	Surface	2583	3098	515	A	5
2351	Ditch (Unlined)	2605	2996	391	L	1
1802	Culvert (Metal)	2792	2792	0	A	3
2352	Ditch (Stone Lined)	2996	3605	609	L	5
9004	Photographic Vista	3098	3098	0	R	50
6781	Surface	3098	4820	1722	A	13
2352	Ditch (Stone Lined)	3200	3605	405	R	3
354	Coping Stone Sections	3605	3711	106	L	0
354	Coping Stone Sections	3605	5280	1675	R	6
1803	Culvert (Stone)	3630	3630	0	A	2
1803	Ditch (Stone Lined)	3711	3760	49	L	0
2351	Ditch (Unlined)	3760	4574	814	L	3
1802	Culvert (Metal)	3972	3972	0	A	1
905	Retaining Wall	3972	4371	399	R	1
1057	Trail	4434	4434	0	A	2
905	Retaining Wall	4434	4773	339	R	1
2352	Ditch (Stone Lined)	4574	4685	111	L	1
1803	Culvert (Stone)	4685	4685	0	A	2
905	Retaining Wall	4685	4976	291	L	2
6781	Surface	4820	5280	460	A	4
2351	Ditch (Unlined)	4976	5280	304	L	1
1803	Culvert (Stone)	5108	5108	0	A	2

Acadia National Park
Carriage Roads

Section: CR16-17 Historic Name: Bubble Pond Road
Subsection: a Modern Name: Jordan-Bubble Pond Loop
FHWA Route: 486

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
	Total Weighted Priority:					256

9/09/93 Items

Section: CR16-17 Historic Name: Bubble Pond Road
Subsection: b Modern Name: Jordan-Bubble Pond Loop
FHWA Route: 486

			Length
Number of Channel	:	1	0
Number of Construction Documents	:	3	2254
Number of Coping Stone Sections	:	1	1118
Number of Crown	:	1	1398
Number of Culvert (Metal)	:	1	0
Number of Culvert (Stone)	:	1	0
Number of Ditch (Unlined)	:	3	667
Number of Retaining Wall	:	4	1371
Number of Roadway (Broken Stone)	:	1	1398
Number of Screening Needed	:	1	0
Number of Sign	:	1	0
Number of Surface	:	2	1398
Number of Trail	:	1	0

Acadia National Park
Carriage Roads

Section: CR16-17 Historic Name: Bubble Pond Road
Subsection: b Modern Name: Jordan-Bubble Pond Loop
FHWA Route: 486

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	1398	1398	A	
2351	Ditch (Unlined)	0	461	461	L	2
354	Coping Stone Sections	0	1118	1118	R	4
6781	Surface	0	951	951	A	9
6780	Crown	0	1398	1398	A	7
1000	Construction Documents	0	428	428	A	3
1000	Construction Documents	0	1398	1398	A	11
905	Retaining Wall	32	528	496	R	1
905	Retaining Wall	461	552	91	L	1
2351	Ditch (Unlined)	552	614	62	L	0
1803	Culvert (Stone)	614	614	0	A	2
2354	Channel	614	614	0	L	15
905	Retaining Wall	614	758	144	L	1
2351	Ditch (Unlined)	614	758	144	L	1
9001	Screening Needed	701	701	0	R	10
905	Retaining Wall	758	1398	640	L	5
6781	Surface	951	1398	447	A	3
1000	Construction Documents	970	1398	428	A	3
700	Sign	1398	1398	0	L	2
1802	Culvert (Metal)	1398	1398	0	A	5
1057	Trail	1398	1398	0	A	2
	Total Weighted Priority:					86

9/09/93

Items

Section: CR17-7
Subsection: a
FHWA Route: 486

Historic Name: Bubble Pond Road
Modern Name: Jordan-Bubble Pond Loop

			Length
Number of Construction Documents	:	4	5072
Number of Coping Stone Sections	:	11	3914
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	13	0
Number of Culvert (Stone)	:	6	0
Number of Ditch (Stone Lined)	:	1	59
Number of Ditch (Unlined)	:	7	5039
Number of Photographic Vista	:	3	0
Number of Retaining Wall	:	5	701
Number of Roadway (Broken Stone)	:	1	5280
Number of Screening Needed	:	1	0
Number of Surface	:	5	5278
Number of Trail	:	1	0
Number of Turnout	:	1	0

Acadia National Park
Carriage Roads

Section: CR17-7 Historic Name: Bubble Pond Road
Subsection: a Modern Name: Jordan-Bubble Pond Loop
FHWA Route: 486

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	5280	5280	A	20
905	Retaining Wall	0	274	274	L	1
6781	Surface	0	148	148	A	1
2351	Ditch (Unlined)	0	376	376	L	1
1000	Construction Documents	0	2400	2400	A	18
1000	Construction Documents	0	522	522	A	4
354	Coping Stone Sections	20	32	12	R	0
6781	Surface	148	3452	3304	A	31
354	Coping Stone Sections	167	445	278	R	2
9001	Screening Needed	167	167	0	R	10
354	Coping Stone Sections	376	445	69	L	0
1803	Culvert (Stone)	412	412	0	A	2
905	Retaining Wall	445	553	108	L	0
2351	Ditch (Unlined)	445	510	65	R	0
1802	Culvert (Metal)	578	578	0	A	2
905	Retaining Wall	601	609	8	L	0
354	Coping Stone Sections	645	793	148	R	1
2351	Ditch (Unlined)	909	999	90	L	0
354	Coping Stone Sections	909	1104	195	R	1
1000	Construction Documents	922	2222	1300	A	10
1803	Culvert (Stone)	971	971	0	A	2
905	Retaining Wall	999	1163	164	L	0
354	Coping Stone Sections	1150	2375	1225	R	5
354	Coping Stone Sections	1163	1357	194	L	2
1058	Turnout	1295	1295	0	L	2
2351	Ditch (Unlined)	1362	1542	180	L	1
905	Retaining Wall	1395	1542	147	L	1
2352	Ditch (Stone Lined)	1542	1601	59	L	0
1802	Culvert (Metal)	1601	1601	0	A	2
2351	Ditch (Unlined)	1601	5280	3679	L	14
1803	Culvert (Stone)	1753	1753	0	A	4
1803	Culvert (Stone)	1813	1813	0	A	2
1802	Culvert (Metal)	2042	2042	0	A	2
9004	Photographic Vista	2115	2115	0	A	50
1802	Culvert (Metal)	2244	2244	0	A	2
1000	Construction Documents	2322	3172	850	A	6
1802	Culvert (Metal)	2437	2437	0	A	2
354	Coping Stone Sections	2564	3179	615	R	3
1802	Culvert (Metal)	2677	2677	0	A	2
1802	Culvert (Metal)	2989	2989	0	A	2
1802	Culvert (Metal)	3179	3179	0	A	2
354	Coping Stone Sections	3319	3378	59	R	0
1803	Culvert (Stone)	3362	3362	0	A	4
1057	Trail	3362	3362	0	A	2
2351	Ditch (Unlined)	3378	3876	498	R	2
6781	Surface	3453	3936	483	A	5
354	Coping Stone Sections	3876	4823	947	R	4
9004	Photographic Vista	3937	3937	0	A	50
1802	Culvert (Metal)	3937	3937	0	A	2
6781	Surface	3937	4098	161	A	1
9004	Photographic Vista	4098	4098	0	R	50
6781	Surface	4098	5280	1182	A	11
1802	Culvert (Metal)	4280	4280	0	A	2

Acadia National Park
Carriage Roads

Section: CR17-7 Historic Name: Bubble Pond Road
Subsection: a Modern Name: Jordan-Bubble Pond Loop
FHWA Route: 486

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
1802	Culvert (Metal)	4404	4404	0	A	2
1802	Culvert (Metal)	4579	4579	0	A	4
1802	Culvert (Metal)	4787	4787	0	A	3
2351	Ditch (Unlined)	4851	5002	151	R	1
354	Coping Stone Sections	5002	5174	172	R	1
1803	Culvert (Stone)	5056	5056	0	A	2
	Total Weighted Priority:					357

9/09/93

Items

Section: CR17-7
Subsection: b
FHWA Route: 486

Historic Name: Bubble Pond Road
Modern Name: Jordan-Bubble Pond Loop

			Length
Number of Channel	:	11	0
Number of Construction Documents	:	2	5438
Number of Coping Stone Sections	:	3	319
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	17	0
Number of Culvert (Stone)	:	2	0
Number of Ditch (Unlined)	:	4	6097
Number of Photographic Vista	:	1	0
Number of Retaining Wall	:	3	4235
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	1	5280
Number of Trail	:	1	0

Acadia National Park
Carriage Roads

Section: CR17-7 Historic Name: Bubble Pond Road
Subsection: b Modern Name: Jordan-Bubble Pond Loop
FHWA Route: 486

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	5280	5280	A	25
2351	Ditch (Unlined)	0	5280	5280	L	25
6781	Surface	0	5280	5280	A	50
1000	Construction Documents	0	3300	3300	A	25
354	Coping Stone Sections	5	124	119	R	1
1802	Culvert (Metal)	54	54	0	A	2
2351	Ditch (Unlined)	124	243	119	R	0
354	Coping Stone Sections	243	340	97	R	1
1802	Culvert (Metal)	315	315	0	A	2
23251	Ditch (Unlined)	340	645	305	R	1
1802	Culvert (Metal)	645	645	0	A	2
905	Retaining Wall	697	939	242	L	1
1802	Culvert (Metal)	939	939	0	A	3
1057	Trail	950	950	0	A	2
1802	Culvert (Metal)	950	950	0	A	3
1802	Culvert (Metal)	1191	1191	0	A	2
1803	Culvert (Stone)	1479	1479	0	A	2
2354	Channel	1479	1479	0	L	10
2354	Channel	1479	1479	0	R	10
1802	Culvert (Metal)	1690	1690	0	A	2
2354	Channel	1690	1690	0	L	10
2354	Channel	1690	1690	0	R	10
1802	Culvert (Metal)	2082	2082	0	A	2
354	Coping Stone Sections	2131	2234	103	R	0
1802	Culvert (Metal)	2234	2234	0	A	3
1802	Culvert (Metal)	2457	2457	0	A	3
2351	Ditch (Unlined)	2457	2850	393	R	1
905	Retaining Wall	2780	5280	2500	L	9
1802	Culvert (Metal)	2850	2850	0	A	2
1802	Culvert (Metal)	2938	2938	0	A	3
2354	Channel	2938	2938	0	L	10
2354	Channel	2938	2938	0	R	10
1000	Construction Documents	3142	5280	2138	A	16
1802	Culvert (Metal)	3579	3579	0	A	3
2354	Channel	3579	3579	0	L	10
2354	Channel	3579	3579	0	R	10
1803	Culvert (Stone)	3664	3664	0	A	2
905	Retaining Wall	3787	5280	1493	L	6
1802	Culvert (Metal)	3854	3854	0	A	2
2354	Channel	3854	3854	0	L	10
2354	Channel	3854	3854	0	R	10
9004	Photographic Vista	4139	4139	0	R	50
1802	Culvert (Metal)	4424	4424	0	A	4
1802	Culvert (Metal)	4649	4649	0	A	3
2354	Channel	4649	4649	0	A	10
1802	Culvert (Metal)	5022	5022	0	A	3

Total Weighted Priority: 372

9/09/93

Items

Section: CR17-7
Subsection: c
FHWA Route: 486

Historic Name: Bubble Pond Road
Modern Name: Jordan-Bubble Pond Loop

			Length
Number of Bridge (Stone)	:	1	0
Number of Construction Documents	:	4	5186
Number of Coping Stone Sections	:	4	594
Number of Crown	:	2	5280
Number of Culvert (Concrete)	:	1	0
Number of Culvert (Metal)	:	7	0
Number of Ditch (Unlined)	:	6	2675
Number of Documented Vista	:	2	0
Number of Intersection	:	3	0
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	3	5280

Acadia National Park
Carriage Roads

Section: CR17-7 Historic Name: Bubble Pond Road
Subsection: c Modern Name: Jordan-Bubble Pond Loop
FHWA Route: 486

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	3326	3326	A	16
6781	Surface	0	3556	3556	A	34
2351	Ditch (Unlined)	0	116	116	L	0
1000	Construction Documents	0	62	62	A	0
2351	Ditch (Unlined)	312	394	82	L	0
1000	Construction Documents	2556	5280	2724	A	21
2351	Ditch (Unlined)	2696	3556	860	L	3
1000	Construction Documents	2756	5156	2400	A	18
354	Coping Stone Sections	2849	3110	261	R	1
1802	Culvert (Metal)	2983	2983	0	A	2
2351	Ditch (Unlined)	3110	3351	241	R	1
6780	Crown	3326	5280	1954	A	7
9003	Documented Vista	3350	3350	0	A	50
1802	Culvert (Metal)	3351	3351	0	A	2
6781	Surface	3556	3935	379	A	3
56	Bridge (Stone)	3556	3556	0	A	40
1000	Construction Documents	3566	3566	0	A	40
354	Coping Stone Sections	3598	3672	74	L	1
9003	Documented Vista	3700	3700	0	A	50
354	Coping Stone Sections	3869	3937	68	L	0
380	Intersection	3879	3879	0	A	2
1801	Culvert (Concrete)	3925	3925	0	A	2
6781	Surface	3935	5280	1345	A	8
354	Coping Stone Sections	3937	4128	191	L	1
380	Intersection	3949	3949	0	A	2
380	Intersection	4013	4013	0	A	2
2351	Ditch (Unlined)	4055	5280	1225	R	5
1802	Culvert (Metal)	4070	4070	0	A	5
1802	Culvert (Metal)	4451	4451 20"	0	A	3
1802	Culvert (Metal)	4725	4725	0	A	1
1802	Culvert (Metal)	4744 49	4744	0	A	3
1802	Culvert (~~Metal~~)	5049	5049	0	A	3
2351	Ditch (Unlined)	5129	5280	151	L	1

Total Weighted Priority: 327

5280
5049
131

131
+210
441

9/09/93 Items

Section: CR17-7
Subsection: d
FHWA Route: 486

Historic Name: Bubble Pond Road
Modern Name: Jordan-Bubble Pond Loop

			Length
Number of Construction Documents	:	1	345
Number of Crown	:	1	345
Number of Culvert (Metal)	:	1	0
Number of Ditch (Unlined)	:	2	690
Number of Roadway (Broken Stone)	:	1	345
Number of Surface	:	1	345

Acadia National Park
Carriage Roads

Section: CR17-7 Historic Name: Bubble Pond Road
Subsection: d Modern Name: Jordan-Bubble Pond Loop
FHWA Route: 486

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	345	345	A	
6780	Crown	0	345	345	A	1
6781	Surface	0	345	345	A	2
2351	Ditch (Unlined)	0	345	345	R	1
2351	Ditch (Unlined)	0	345	345	L	1
1000	Construction Documents	0	345	345	A	3
1802	Culvert (Metal)	210	210	0	A	5
	Total Weighted Priority:					13

9/09/93 Items

Section: CR18-192 Historic Name: Jordan-Sargent Mountain Road
Subsection: a Modern Name: Hadlock Brook Loop
FHWA Route:

			Length
Number of Coping Stone Sections	:	4	558
Number of Crown	:	2	2006
Number of Ditch (Unlined)	:	1	315
Number of Intersection	:	2	0
Number of Roadway (Broken Stone)	:	1	2006
Number of Surface	:	1	2006

Acadia National Park
Carriage Roads

Section: CR18-192 Historic Name: Jordan-Sargent Mountain Road
Subsection: a Modern Name: Hadlock Brook Loop
FHWA Route:

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	2006	2006	A	
6780	Crown	0	1162	1162	A	3
6781	Surface	0	2006	2006	A	11
380	Intersection	0	0	0	R	2
6780	Crown	1162	2006	844	A	3
354	Coping Stone Sections	1180	1305	125	R	1
2351	Ditch (Unlined)	1180	1495	315	L	1
354	Coping Stone Sections	1280	1495	215	L	2
354	Coping Stone Sections	1357	1495	138	R	1
380	Intersection	1938	1938	0	A	2
354	Coping Stone Sections	1938	2018	80	A	1
	Total Weighted Priority:					27

9/09/93

Items

Section: CR19-12
Subsection: a
FHWA Route: 483

Historic Name: Jordan-Sargent Mountain Road
Modern Name: Around Mountain Road

			Length
Number of Construction Documents	:	2	4280
Number of Coping Stone Sections	:	4	4857
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	16	0
Number of Culvert (Stone)	:	6	0
Number of Ditch (Diversion)	:	1	18
Number of Ditch (Unlined)	:	3	5200
Number of Photographic Vista	:	1	0
Number of Retaining Wall	:	1	30
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	1	5280

Acadia National Park
Carriage Roads

Section: CR19-12 Historic Name: Jordan-Sargent Mountain Road
Subsection: a Modern Name: Around Mountain Road
FHWA Route: 483

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	5280	5280	A	20
6781	Surface	0	5280	5280	A	40
354	Coping Stone Sections	0	72	72	L	0
2351	Ditch (Unlined)	0	4273	4273	R	16
1000	Construction Documents	0	3700	3700	A	28
1802	Culvert (Metal)	65	65	0	A	2
1802	Culvert (Metal)	269	269	0	A	2
354	Coping Stone Sections	480	800	320	L	1
1802	Culvert (Metal)	543	543	0	A	4
1802	Culvert (Metal)	706	706	0	A	1
354	Coping Stone Sections	895	5280	4385	L	8
1803	Culvert (Stone)	957	957	0	A	2
2353	Ditch (Diversion)	973	991	18	R	0
1803	Culvert (Stone)	1289	1289	0	A	2
1803	Culvert (Stone)	1540	1540	0	A	2
9004	Photographic Vista	1740	1740	0	L	50
1802	Culvert (Metal)	1855	1855	0	A	4
1802	Culvert (Metal)	2110	2110	0	A	4
1802	Culvert (Metal)	2162	2162	0	A	5
1802	Culvert (Metal)	2420	2420	0	A	3
1802	Culvert (Metal)	2570	2570	0	A	4
1803	Culvert (Stone)	2763	2763	0	A	10
1803	Culvert (Stone)	2965	2965	0	A	2
1802	Culvert (Metal)	3094	3094	0	A	3
1802	Culvert (Metal)	3411	3411	0	A	4
1802	Culvert (Metal)	3661	3661	0	A	1
1802	Culvert (Metal)	3864	3864	0	A	2
1802	Culvert (Metal)	4273	4273	0	A	2
2351	Ditch (Unlined)	4273	4549	276	R	1
1802	Culvert (Metal)	4549	4549	0	A	3
2351	Ditch (Unlined)	4549	5200	651	R	2
905	Retaining Wall	4660	4690	30	L	0
1000	Construction Documents	4700	5280	580	A	4
1802	Culvert (Metal)	4879	4879	0	A	2
354	Coping Stone Sections	5200	5280	80	R	0
1803	Culvert (Stone)	5220	5220	0	A	2
	Total Weighted Priority:					238

9/09/93 Items

Section: CR19-12 Historic Name: Jordan-Sargent Mountain Road
Subsection: b Modern Name: Around Mountain Road
FHWA Route: 483

			Length
Number of Bridge (Stone)	:	2	0
Number of Channel	:	2	0
Number of Construction Documents	:	4	4500
Number of Coping Stone Sections	:	3	3554
Number of Crown	:	1	4220
Number of Culvert (Metal)	:	12	0
Number of Culvert (Stone)	:	3	0
Number of Ditch (Stone Lined)	:	2	395
Number of Ditch (Unlined)	:	2	1174
Number of Documented Vista	:	2	0
Number of Intersection	:	3	0
Number of Photographic Vista	:	4	0
Number of Roadway (Broken Stone)	:	1	4220
Number of Surface	:	1	4220

Acadia National Park
Carriage Roads

Section: CR19-12 Historic Name: Jordan-Sargent Mountain Road
Subsection: b Modern Name: Around Mountain Road
FHWA Route: 483

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	4220	4220	A	
6780	Crown	0	4220	4220	A	16
6781	Surface	0	4220	4220	A	32
354	Coping Stone Sections	0	1280	1280	L	5
2351	Ditch (Unlined)	0	720	720	R	3
1000	Construction Documents	0	420	420	A	3
1802	Culvert (Metal)	156	156	0	A	3
9004	Photographic Vista	222	222	0	A	50
1802	Culvert (Metal)	337	337	0	A	4
9003	Documented Vista	500	500	0	L	50
1802	Culvert (Metal)	562	562	0	A	3
2352	Ditch (Stone Lined)	720	772	52	R	0
1802	Culvert (Metal)	772	772	0	A	3
1802	Culvert (Metal)	972	972	0	R	2
2354	Channel	972	972	0	R	10
2352	Ditch (Stone Lined)	972	1315	343	R	2
1000	Construction Documents	1200	5280	4080	A	31
1803	Culvert (Stone)	1242	1242	0	R	2
2354	Channel	1242	1242	0	R	5
56	Bridge (Stone)	1390	1390	0	A	40
1000	Construction Documents	1390	1390	0	A	40
380	Intersection	1465	1465	0	A	2
1802	Culvert (Metal)	1742	1742	0	A	4
380	Intersection	1745	1745	0	A	2
56	Bridge (Stone)	1825	1825	0	A	40
1000	Construction Documents	1825	1825	0	A	40
1803	Culvert (Stone)	1955	1955	0	A	4
354	Coping Stone Sections	2003	4220	2217	L	8
1802	Culvert (Metal)	2164	2164	0	A	3
9004	Photographic Vista	2375	2375	0	A	50
1802	Culvert (Metal)	2399	2399	0	A	4
1802	Culvert (Metal)	2590	2590	0	A	4
9004	Photographic Vista	2760	2760	0	A	50
1802	Culvert (Metal)	2826	2826	0	A	2
9003	Documented Vista	2900	2900	0	L	50
9004	Photographic Vista	3480	3480	0	L	50
380	Intersection	3555	3555	0	A	2
354	Coping Stone Sections	3709	3766	57	R	0
1803	Culvert (Stone)	3745	3745	0	A	2
2351	Ditch (Unlined)	3766	4220	454	R	2
1802	Culvert (Metal)	3912	3912	0	A	1
1802	Culvert (Metal)	4220	4220	0	A	1

Total Weighted Priority: 625

9/09/93

Items

Section: CR19-18
Subsection: a
FHWA Route:

Historic Name: Jordan-Sargent Mountain Road
Modern Name: Hadlock Brook Loop

			Length
Number of Coping Stone Sections	:	2	163
Number of Crown	:	2	1182
Number of Culvert (Metal)	:	2	0
Number of Culvert (Stone)	:	1	0
Number of Ditch (Unlined)	:	2	2259
Number of Intersection	:	1	0
Number of Roadway (Broken Stone)	:	1	1182
Number of Surface	:	2	1182

Acadia National Park
Carriage Roads

Section: CR19-18 Historic Name: Jordan-Sargent Mountain Road
Subsection: a Modern Name: Hadlock Brook Loop
FHWA Route:

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	1182	1182	A	
354	Coping Stone Sections	0	105	105	L	1
6781	Surface	0	239	239	A	1
6780	Crown	0	641	641	A	2
2351	Ditch (Unlined)	0	1182	1182	R	3
354	Coping Stone Sections	47	105	58	R	0
1803	Culvert (Stone)	65	65	0	A	2
2351	Ditch (Unlined)	105	1182	1077	L	3
6781	Surface	239	1182	943	A	7
1802	Culvert (Metal)	641	641	0	A	3
6780	Crown	641	1182	541	A	2
1802	Culvert (Metal)	933	933	0	A	4
380	Intersection	1182	1182	0	L	2

Total Weighted Priority: 31

9/09/93

Items

Section: CR20-19
Subsection: a
FHWA Route: 483

Historic Name: Jordan-Sargent Mtn.Rd-Amp.Sec
Modern Name: Around Mountain Loop

			Length
Number of Coping Stone Sections	:	10	4530
Number of Crown	:	2	4715
Number of Culvert (Metal)	:	5	0
Number of Culvert (PVC)	:	2	0
Number of Culvert (Stone)	:	7	0
Number of Ditch (Stone Lined)	:	1	350
Number of Ditch (Unlined)	:	2	3453
Number of Intersection	:	1	0
Number of Retaining Wall	:	2	418
Number of Roadway (Broken Stone)	:	1	4715
Number of Sign	:	3	0
Number of Surface	:	5	4715
Number of Trail	:	1	0

Acadia National Park
Carriage Roads

Section: CR20-19 Historic Name: Jordan-Sargent Mtn.Rd-Amp.Sec
Subsection: a Modern Name: Around Mountain Loop
FHWA Route: 483

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	4715	4715	A	
905	Retaining Wall	0	68	68	R	0
6781	Surface	0	1053	1053	A	4
2351	Ditch (Unlined)	0	1150	1150	R	3
6780	Crown	0	1053	1053	A	3
354	Coping Stone Sections	51	890	839	L	2
1805	Culvert (PVC)	68	68	0	A	2
1803	Culvert (Stone)	408	408	0	A	2
1803	Culvert (Stone)	549	549	0	A	2
1805	Culvert (PVC)	721	721	0	A	2
1802	Culvert (Metal)	859	859	0	A	3
1803	Culvert (Stone)	1053	1053	0	A	2
6781	Surface	1053	1430	377	A	3
6780	Crown	1053	4715	3662	A	17
2352	Ditch (Stone Lined)	1150	1500	350	L	2
905	Retaining Wall	1150	1500	350	L	1
354	Coping Stone Sections	1150	1500	350	L	1
1803	Culvert (Stone)	1344	1344	0	A	2
6781	Surface	1430	3370	1940	A	18
2351	Ditch (Unlined)	1500	3803	2303	R	9
354	Coping Stone Sections	1590	2251	661	L	4
1802	Culvert (Metal)	2221	2221	0	A	2
1802	Culvert (Metal)	2422	2422	0	A	3
354	Coping Stone Sections	2524	2675	151	L	0
354	Coping Stone Sections	2780	2962	182	L	1
1057	Trail	2855	2855	0	A	2
354	Coping Stone Sections	3003	3106	103	A	0
1803	Culvert (Stone)	3023	3023	0	A	2
354	Coping Stone Sections	3251	4715	1464	L	6
6781	Surface	3370	3737	367	A	3
1802	Culvert (Metal)	3481	3481	0	A	1
6781	Surface	3737	4715	978	A	9
54	Coping Stone Sections	3803	3857	54	R	0
354	Coping Stone Sections	3952	4022	70	R	1
1803	Culvert (Stone)	3999	3999	0	A	4
354	Coping Stone Sections	4044	4700	656	R	5
1802	Culvert (Metal)	4151	4151	0	A	3
1803	Culvert (Stone)	4708	4708	0	A	4
380	Intersection	4715	4715	0	A	2
700	Sign	4715	4715	0	A	2
700	Sign	4715	4715	0	A	2
700	Sign	4715	4715	0	A	2

Total Weighted Priority: 135

9/09/93 Items

Section: CR21-20 Historic Name: Asticou-Jordan Pond-Amph. Road
Subsection: a Modern Name: Amphitheater Loop
FHWA Route: 483

			Length
Number of Bridge (Stone)	:	1	0
Number of Construction Documents	:	4	5041
Number of Coping Stone Sections	:	4	4489
Number of Culvert (Concrete)	:	8	0
Number of Culvert (Stone)	:	1	0
Number of Ditch (Unlined)	:	3	4963
Number of Intersection	:	1	0
Number of Retaining Wall	:	6	792
Number of Roadway (Broken Stone)	:	1	5280

Acadia National Park
Carriage Roads

Section: CR21-20 Historic Name: Asticou-Jordan Pond-Amph. Road
Subsection: a Modern Name: Amphitheater Loop
FHWA Route: 483

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
1000	Construction Documents	0	3092	3092	A	23
679	Roadway (Broken Stone)	0	5280	5280	A	
380	Intersection	0	0	0	L	2
354	Coping Stone Sections	0	1901	1901	L	11
2351	Ditch (Unlined)	0	3485	3485	R	10
905	Retaining Wall	1056	1214	158	L	1
1803	Culvert (Stone)	1214	1214	0	A	6
905	Retaining Wall	1320	1373	53	R	0
1801	Culvert (Concrete)	1742	1742	0	A	3
354	Coping Stone Sections	2059	3485	1426	L	8
1801	Culvert (Concrete)	2798	2798	0	A	3
905	Retaining Wall	2904	2957	53	R	0
1801	Culvert (Concrete)	3115	3115	0	A	3
1801	Culvert (Concrete)	3379	3379	0	A	3
1000	Construction Documents	3485	3696	211	A	2
56	Bridge (Stone)	3590	3590	0	A	60
2351	Ditch (Unlined)	3696	4224	528	R	2
1000	Construction Documents	3736	5280	1544	A	12
1801	Culvert (Concrete)	3749	3749	0	A	3
354	Coping Stone Sections	4224	5280	1056	L	6
354	Coping Stone Sections	4224	4330	106	R	1
1801	Culvert (Concrete)	4277	4277	0	A	3
2351	Ditch (Unlined)	4330	5280	950	R	3
905	Retaining Wall	4330	4330	0	R	30
905	Retaining Wall	4382	4541	159	R	1
1801	Culvert (Concrete)	4541	4541	0	A	3
905	Retaining Wall	4805	5174	369	R	2
1801	Culvert (Concrete)	4910	4910	0	A	3
1000	Construction Documents	5086	5280	194	A	1
	Total Weighted Priority:					204

9/09/93 Items

Section: CR21-20 Historic Name: Asticou-Jordan Pond-Amph. Road
Subsection: b Modern Name: Amphitheater Loop
FHWA Route: 483

			Length
Number of Construction Documents	:	2	2112
Number of Coping Stone Sections	:	1	1056
Number of Culvert (Concrete)	:	2	0
Number of Ditch (Unlined)	:	1	1056
Number of Intersection	:	1	0
Number of Retaining Wall	:	2	158
Number of Roadway (Broken Stone)	:	1	1056

Acadia National Park
Carriage Roads

Section: CR21-20 Historic Name: Asticou-Jordan Pond-Amph. Road
Subsection: b Modern Name: Amphitheater Loop
FHWA Route: 483

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
1000	Construction Documents	0	1056	1056	A	8
1000	Construction Documents	0	1056	1056	A	8
679	Roadway (Broken Stone)	0	1056	1056	A	
354	Coping Stone Sections	0	1056	1056	L	6
2351	Ditch (Unlined)	0	1056	1056	R	3
905	Retaining Wall	53	211	158	R	1
1801	Culvert (Concrete)	211	211	0	A	3
1801	Culvert (Concrete)	792	792	0	A	3
905	Retaining Wall	1056	1056	0	R	30
308	Intersection	1056	1056	0	L	2
	Total Weighted Priority:					64

9/09/93 Items

Section: CR21-22 Historic Name: Gardiner-Mitchell Hill-Jordan Pond Ro
Subsection: a Modern Name: Jordan Stream Loop
FHWA Route: 492

			Length
Number of Construction Documents	:	2	3711
Number of Coping Stone Sections	:	3	2141
Number of Crown	:	1	2061
Number of Culvert (Metal)	:	3	0
Number of Culvert (Stone)	:	1	0
Number of Ditch (Unlined)	:	3	1408
Number of Intersection	:	2	0
Number of Roadway (Broken Stone)	:	1	2061
Number of Surface	:	2	2061
Number of Trail	:	2	0

Acadia National Park
Carriage Roads

Section: CR21-22 Historic Name: Gardiner-Mitchell Hill-Jordan Pond Road
Subsection: a Modern Name: Jordan Stream Loop
FHWA Route: 492

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	2061	2061	A	
6780	Crown	0	2061	2061	A	8
380	Intersection	0	0	0	A	2
354	Coping Stone Sections	0	0	0	R	0
6781	Surface	0	830	830	A	6
354	Coping Stone Sections	0	2061	2061	R	8
1000	Construction Documents	0	2061	2061	A	16
2351	Ditch (Unlined)	50	375	325	L	1
2351	Ditch (Unlined)	53	375	322	L	1
354	Coping Stone Sections	375	455	80	L	0
1000	Construction Documents	411	2061	1650	A	13
1803	Culvert (Stone)	415	415	0	A	2
1802	Culvert (Metal)	733	733	0	A	1
6781	Surface	830	2061	1231	A	7
1057	Trail	996	996	0	A	2
1802	Culvert (Metal)	996	996	0	A	2
1802	Culvert (Metal)	1194	1194	0	A	3
2351	Ditch (Unlined)	1300	2061	761	R	3
1057	Trail	1311	1311	0	A	2
380	Intersection	2061	2061	0	A	2

Total Weighted Priority: 79

9/09/93

Items

Section: CR22-20
Subsection: a
FHWA Route: 493

Historic Name: Asticou-Jordan Pond Rd.
Modern Name: Amphitheatre Loop

			Length
Number of Bridge (Stone)	:	1	0
Number of Coping Stone Sections	:	6	3074
Number of Crown	:	1	5280
Number of Culvert (Metal)	:	12	0
Number of Culvert (Stone)	:	13	0
Number of Ditch (Diversion)	:	2	185
Number of Ditch (Unlined)	:	5	4440
Number of Retaining Wall	:	1	174
Number of Roadway (Broken Stone)	:	1	5280
Number of Sign	:	3	0
Number of Surface	:	10	5280
Number of Trail	:	1	0

Acadia National Park
Carriage Roads

Section: CR22-20 Historic Name: Asticou-Jordan Pond Rd.
Subsection: a Modern Name: Amphitheatre Loop
FHWA Route: 493

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
700	Sign	0	0	0	A	2
700	Sign	0	0	0	A	2
700	Sign	0	0	0	A	2
2351	Ditch (Unlined)	0	1222	1222	R	6
6780	Crown	0	5280	5280	A	20
6781	Surface	0	387	387	A	2
354	Coping Stone Sections	25	465	440	L	1
1803	Culvert (Stone)	331	331	0	A	2
6781	Surface	387	604	217	A	2
1803	Culvert (Stone)	523	523	0	A	4
1057	Trail	560	560	0	A	2
6781	Surface	604	1460	856	A	5
354	Coping Stone Sections	645	1258	613	L	2
1803	Culvert (Stone)	748	748	0	A	4
354	Coping Stone Sections	1222	1258	36	R	0
1802	Culvert (Metal)	1241	1241	0	A	3
1803	Culvert (Stone)	1310	1310	0	A	6
1802	Culvert (Metal)	1418	1418	0	A	2
6781	Surface	1460	2480	1020	A	8
1803	Culvert (Stone)	1486	1486	0	A	10
1802	Culvert (Metal)	1525	1525	0	A	5
1802	Culvert (Metal)	1592	1592	0	A	5
1802	Culvert (Metal)	1658	1658	0	A	5
1802	Culvert (Metal)	1733	1733	0	A	5
1802	Culvert (Metal)	1777	1777	0	A	5
56	Bridge (Stone)	1938	1938	0	A	40
2351	Ditch (Unlined)	2038	2038	0	L	0
6781	Surface	2480	3423	943	A	9
2351	Ditch (Unlined)	2512	2806	294	R	1
1802	Culvert (Metal)	2623	2623	0	A	5
2353	Ditch (Diversion)	2626	2710	84	R	0
354	Coping Stone Sections	2675	4440	1765	L	7
2353	Ditch (Diversion)	2705	2806	101	R	0
1803	Culvert (Stone)	2806	2806	0	A	4
2351	Ditch (Unlined)	2806	5179	2373	R	9
1803	Culvert (Stone)	3103	3103	0	A	4
1803	Culvert (Stone)	3194	3194	0	A	4
1803	Culvert (Stone)	3257	3257	0	A	2
1803	Culvert (Stone)	3336	3336	0	A	2
6781	Surface	3423	3959	536	A	3
1803	Culvert (Stone)	3484	3484	0	A	2
1803	Culvert (Stone)	3736	3736	0	A	2
6781	Surface	3959	4091	132	A	1
1803	Culvert (Stone)	4034	4034	0	A	6
6781	Surface	4091	4353	262	A	2
1802	Culvert (Metal)	4140	4140	0	A	3
905	Retaining Wall	4233	4407	174	L	1
6781	Surface	4353	4521	168	A	1
354	Coping Stone Sections	4521	4729	208	L	1
6781	Surface	4521	5280	759	A	7
1802	Culvert (Metal)	4682	4682	0	A	3
2351	Ditch (Unlined)	4729	5280	551	L	3
1802	Culvert (Metal)	4777	4777	0	R	3

9/09/93

Items

Section: CR22-20 Historic Name: Asticou-Jordan Pond Road
Subsection: b Modern Name: Amphitheatre Loop
FHWA Route: 493

			Length
Number of Coping Stone Sections	:	2	1113
Number of Crown	:	1	1169
Number of Culvert (Metal)	:	1	0
Number of Culvert (Stone)	:	2	0
Number of Ditch (Unlined)	:	1	1169
Number of Intersection	:	1	0
Number of Roadway (Broken Stone)	:	1	1169
Number of Sign	:	1	0
Number of Surface	:	1	1169

Acadia National Park
Carriage Roads

Section: CR22-20 Historic Name: Asticou-Jordan Pond Rd.
Subsection: a Modern Name: Amphitheatre Loop
FHWA Route: 493

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
1802	Culvert (Metal)	5179	5179	0	A	3
354	Coping Stone Sections	5268	5280	12	R	0
	Total Weighted Priority:					239

Acadia National Park
Carriage Roads

Section: CR22-20 Historic Name: Asticou-Jordan Pond Road
Subsection: b Modern Name: Amphitheatre Loop
FHWA Route: 493

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	1169	1169	A	
6781	Surface	0	1169	1169	A	9
6780	Crown	0	1169	1169	A	4
2351	Ditch (Unlined)	0	1169	1169	L	4
354	Coping Stone Sections	9	633	624	R	2
1803	Culvert (Stone)	610	610	0	A	4
354	Coping Stone Sections	680	1169	489	R	2
1803	Culvert (Stone)	1042	1042	0	A	4
1802	Culvert (Metal)	1101	1101	0	A	3
700	Sign	1149	1149	0	A	2
380	Intersection	1169	1169	0	A	2
	Total Weighted Priority:					37

9/09/93 Items

Section: CR23-24 Historic Name: Gardiner-Mitchell Hill-Jordan Pond Ro
Subsection: a Modern Name: Jordan Stream Loop
FHWA Route: 494

			Length
Number of Coping Stone Sections	:	1	553
Number of Crown	:	1	563
Number of Culvert (Metal)	:	3	0
Number of Ditch (Unlined)	:	1	553
Number of Intersection	:	1	0
Number of Roadway (Broken Stone)	:	1	563
Number of Surface	:	1	563

Acadia National Park
Carriage Roads

Section: CR23-24 Historic Name: Gardiner-Mitchell Hill-Jordan Pond Road
Subsection: a Modern Name: Jordan Stream Loop
FHWA Route: 494

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	563	563	A	
380	Intersection	0	0	0	A	2
6781	Surface	0	563	563	A	2
6780	Crown	0	563	563	A	2
1802	Culvert (Metal)	10	10	0	A	5
354	Coping Stone Sections	10	563	553	R	3
2351	Ditch (Unlined)	10	563	553	L	3
1802	Culvert (Metal)	240	240	0	A	3
1802	Culvert (Metal)	420	420	0	A	3
	Total Weighted Priority:					23

9/09/93 Items

Section: CR23-25 Historic Name: Gardiner-Mitchell Hill-Jordan Pond Ro
Subsection: a Modern Name: Jordan Stream Loop
FHWA Route:

			Length
Number of Coping Stone Sections	:	2	506
Number of Crown	:	1	927
Number of Culvert (Metal)	:	3	0
Number of Ditch (Unlined)	:	1	900
Number of Intersection	:	2	0
Number of Roadway (Broken Stone)	:	1	927
Number of Sign	:	1	0
Number of Surface	:	1	927

Acadia National Park
Carriage Roads

Section: CR23-25 Historic Name: Gardiner-Mitchell Hill-Jordan Pond Road
Subsection: a Modern Name: Jordan Stream Loop
FHWA Route:

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
6780	Crown	0	927	927	A	4
6781	Surface	0	927	927	A	5
679	Roadway (Broken Stone)	0	927	927	A	
380	Intersection	0	0	0	L	2
354	Coping Stone Sections	0	290	290	L	3
2351	Ditch (Unlined)	0	900	900	R	3
1802	Culvert (Metal)	372	372	0	A	5
354	Coping Stone Sections	556	772	216	L	1
1802	Culvert (Metal)	709	709	0	A	3
1802	Culvert (Metal)	772	772	0	A	5
380	Intersection	927	927	0	A	2
700	Sign	927	927	0	A	2
	Total Weighted Priority:					35

9/09/93 Items

Section: CR25-16 Historic Name: Jordan Pond Road
Subsection: a Modern Name: Jordan Stream Loop
FHWA Route:

			Length
Number of Coping Stone Sections	:	4	631
Number of Crown	:	1	1602
Number of Culvert (Metal)	:	3	0
Number of Ditch (Unlined)	:	1	1692
Number of Intersection	:	2	0
Number of Roadway (Broken Stone)	:	1	1602
Number of Surface	:	1	1602

Acadia National Park
Carriage Roads

Section: CR25-16 Historic Name: Jordan Pond Road
Subsection: a Modern Name: Jordan Stream Loop
FHWA Route:

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
380	Intersection	0	0	0	L	2
2351	Ditch (Unlined)	0	1692	1692	R	6
6781	Surface	0	1602	1602	A	6
6780	Crown	0	1602	1602	A	5
679	Roadway (Broken Stone)	0	1602	1602	A	
354	Coping Stone Sections	33	78	45	L	0
1802	Culvert (Metal)	33	33	0	A	3
354	Coping Stone Sections	286	350	64	L	0
1802	Culvert (Metal)	423	423	0	A	4
1802	Culvert (Metal)	536	536	0	A	5
354	Coping Stone Sections	750	1230	480	L	3
354	Coping Stone Sections	1560	1602	42	L	0
380	Intersection	1602	1602	0	R	2
	Total Weighted Priority:					37

Section: CR29-30
Subsection: a
FHWA Route:

Historic Name: Barr Hill-Day Mountain Road
Modern Name: Redfield Hill Loop

			Length
Number of Bridge (Stone)	:	2	0
Number of Intersection	:	4	0

Acadia National Park
Carriage Roads

Section: CR29-30 Historic Name: Barr Hill-Day Mountain Road
Subsection: a Modern Name: Redfield Hill Loop
FHWA Route:

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
380	Intersection	0	0	0	A	2
380	Intersection	0	0	0	A	2
56	Bridge (Stone)	87	87	0	A	40
56	Bridge (Stone)	896	896	0	A	40
380	Intersection	942	942	0	A	2
380	Intersection	1487	1487	0	A	2

Total Weighted Priority: 88

Section: CR29a-29 Historic Name: Barr Hill-Day Mountain Road
Subsection: a Modern Name: Redfield Hill Loop
FHWA Route:

			Length
Number of Gate	:	2	0

Acadia National Park
Carriage Roads

Section: CR29a-29 Historic Name: Barr Hill-Day Mountain Road
Subsection: a Modern Name: Redfield Hill Loop
FHWA Route:

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
990	Gate	0	0	0	A	2
990	Gate	760	760	0	A	2
	Total Weighted Priority:					4

9/09/93

Items

Section: CR36-17 Historic Name: Day Mountain Loop Road
Subsection: a Modern Name: Day Mountain Loop
FHWA Route:

			Length
Number of Coping Stone Sections	:	9	4344
Number of Crown	:	1	5280
Number of Culvert (Concrete)	:	12	0
Number of Ditch (Stone Lined)	:	2	247
Number of Ditch (Unlined)	:	6	5233
Number of Intersection	:	1	0
Number of Photographic Vista	:	7	0
Number of Retaining Wall	:	11	1448
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	5	5280

Acadia National Park
Carriage Roads

Section: CR36-17 Historic Name: Day Mountain Loop Road
Subsection: a Modern Name: Day Mountain Loop
FHWA Route:

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6780	Crown	0	5280	5280	A	20
2351	Ditch (Unlined)	0	94	94	L	0
6781	Surface	0	1247	1247	A	9
354	Coping Stone Sections	94	189	95	L	0
380	Intersection	119	119	0	A	2
354	Coping Stone Sections	119	536	417	R	2
1801	Culvert (Concrete)	165	165	0	A	1
2351	Ditch (Unlined)	189	481	292	L	1
1801	Culvert (Concrete)	454	454	0	A	1
2352	Ditch (Stone Lined)	481	650	169	L	1
2351	Ditch (Unlined)	650	735	85	L	0
2351	Ditch (Unlined)	650	829	179	R	1
1803	Culvert (Concrete)	751	751	0	A	2
2352	Ditch (Stone Lined)	751	829	78	L	0
2351	Ditch (Unlined)	829	5280	4451	L	17
354	Coping Stone Sections	903	974	71	R	0
354	Coping Stone Sections	1042	1477	435	R	2
1801	Culvert (Concrete)	1099	1099	0	A	1
905	Retaining Wall	1099	1400	301	R	1
9004	Photographic Vista	1247	1247	0	R	50
6781	Surface	1247	4423	3176	A	30
1801	Culvert (Concrete)	1289	1289	0	A	1
905	Retaining Wall	1289	1339	50	L	0
354	Coping Stone Sections	1523	2310	787	R	1
1801	Culvert (Concrete)	1715	1715	0	A	1
9004	Photographic Vista	1816	1816	0	R	50
905	Retaining Wall	2188	2239	51	L	0
905	Retaining Wall	2188	2239	51	L	0
2351	Ditch (Unlined)	2344	2476	132	R	0
9004	Photographic Vista	2422	2422	0	A	50
9004	Photographic Vista	2505	2505	0	A	50
354	Coping Stone Sections	2505	3144	639	R	2
9004	Photographic Vista	2890	2890	0	L	50
905	Retaining Wall	2890	3011	121	L	0
1801	Culvert (Concrete)	3144	3144	0	A	2
354	Coping Stone Sections	3216	4104	888	R	3
1801	Culvert (Concrete)	3251	3251	0	A	2
905	Retaining Wall	3440	3568	128	L	0
1801	Culvert (Concrete)	3519	3519	0	A	1
905	Retaining Wall	3708	3922	214	L	0
9004	Photographic Vista	3803	3803	0	A	50
905	Retaining Wall	4018	4353	335	L	1
9004	Photographic Vista	4155	4155	0	A	50
354	Coping Stone Sections	4155	4218	63	R	0
354	Coping Stone Sections	4331	5280	949	R	2
905	Retaining Wall	4392	4497	105	R	0
6781	Surface	4423	4700	277	A	2
905	Retaining Wall	4532	4562	30	R	0
1801	Culvert (Concrete)	4555	4555	0	A	1
6781	Surface	4700	5211	511	A	5
905	Retaining Wall	4855	4917	62	L	0
1801	Culvert (Concrete)	4998	4998	0	A	1
1801	Culvert (Concrete)	5201	5201	0	A	1

Acadia National Park
Carriage Roads

Section: CR36-17 Historic Name: Day Mountain Loop Road
Subsection: a Modern Name: Day Mountain Loop
FHWA Route:

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
6781	Surface	5211	5280	69	A	1
	Total Weighted Priority:					472

9/09/93 Items

Section: CR36-17 Historic Name: Day Mountain Loop Road
Subsection: b Modern Name: Day Mountain Loop
FHWA Route:

			Length
Number of Bridge (Stone)	:	1	0
Number of Coping Stone Sections	:	6	2192
Number of Crown	:	1	2877
Number of Culvert (Concrete)	:	5	0
Number of Ditch (Unlined)	:	2	3043
Number of Intersection	:	2	0
Number of Retaining Wall	:	2	940
Number of Roadway (Broken Stone)	:	1	2877
Number of Surface	:	1	2877

Acadia National Park
Carriage Roads

Section: CR36-17 Historic Name: Day Mountain Loop Road
Subsection: b Modern Name: Day Mountain Loop
FHWA Route:

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	2877	2877	A	
6781	Surface	0	2877	2877	A	22
6780	Crown	0	2877	2877	A	11
354	Coping Stone Sections	0	391	391	R	1
2351	Ditch (Unlined)	0	2877	2877	L	11
354	Coping Stone Sections	468	605	137	R	1
1801	Culvert (Concrete)	484	484	0	A	3
354	Coping Stone Sections	715	927	212	R	0
354	Coping Stone Sections	1086	1209	123	R	0
1801	Culvert (Concrete)	1168	1168	0	A	1
2351	Ditch (Unlined)	1209	1375	166	R	0
354	Coping Stone Sections	1375	2628	1253	R	2
1801	Culvert (Concrete)	1670	1670	0	A	2
1801	Culvert (Concrete)	1915	1915	0	A	1
905	Retaining Wall	1964	2741	777	L	1
905	Retaining Wall	2083	2246	163	R	1
1801	Culvert (Concrete)	2158	2158	0	A	1
354	Coping Stone Sections	2665	2741	76	R	0
380	Intersection	2741	2741	0	A	2
56	Bridge (Stone)	2816	2816	0	A	40
380	Intersection	2877	2877	0	A	2

Total Weighted Priority: 103

9/09/93

Items

Section: CR36-38
Subsection: a
FHWA Route:

Historic Name: Day Mountain Loop Road
Modern Name: Day Mountain Loop

			Length
Number of Coping Stone Sections	:	7	1645
Number of Crown	:	1	3371
Number of Culvert (Concrete)	:	11	0
Number of Ditch (Unlined)	:	4	3461
Number of Intersection	:	3	0
Number of Retaining Wall	:	5	2336
Number of Roadway (Broken Stone)	:	1	3357
Number of Surface	:	2	3371
Number of Trail	:	1	0

Acadia National Park
Carriage Roads

Section: CR36-38 Historic Name: Day Mountain Loop Road
Subsection: a Modern Name: Day Mountain Loop
FHWA Route:

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	3357	3357	A	
6780	Crown	0	3371	3371	A	16
6781	Surface	0	2557	2557	A	15
354	Coping Stone Sections	0	260	260	L	0
1057	Trail	61	61	0	A	2
2351	Ditch (Unlined)	156	2685	2529	R	10
380	Intersection	156	156	0	A	2
354	Coping Stone Sections	318	487	169	L	0
1801	Culvert (Concrete)	387	387	0	A	4
905	Retaining Wall	595	619	24	R	0
354	Coping Stone Sections	619	909	290	L	1
905	Retaining Wall	624	1836	1212	R	9
1801	Culvert (Concrete)	649	649	0	A	2
1801	Culvert (Concrete)	909	909	0	A	3
905	Retaining Wall	1069	1088	19	R	0
905	Retaining Wall	1260	1624	364	R	2
2351	Ditch (Unlined)	1305	1551	246	L	1
1801	Culvert (Concrete)	1551	1551	0	A	2
1801	Culvert (Concrete)	1787	1787	0	A	2
354	Coping Stone Sections	1859	2368	509	L	2
1801	Culvert (Concrete)	2209	2209	0	A	2
354	Coping Stone Sections	2405	2581	176	L	1
1801	Culvert (Concrete)	2465	2465	0	A	3
905	Retaining Wall	2557	3274	717	R	4
6781	Surface	2557	3371	814	A	8
1801	Culvert (Concrete)	2610	2610	0	A	3
354	Coping Stone Sections	2629	2685	56	A	0
2351	Ditch (Unlined)	2685	3274	589	R	2
354	Coping Stone Sections	2785	2970	185	L	1
1801	Culvert (Concrete)	3024	3024	0	A	2
1801	Culvert (Concrete)	3177	3177	0	A	2
380	Intersection	3177	3177	0	A	2
1801	Culvert (Concrete)	3274	3274	0	A	3
2351	Ditch (Unlined)	3274	3371	97	R	0
380	Intersection	3357	3357	0	A	2

Total Weighted Priority: 107

9/09/93

Items

Section: CR38-37
Subsection: a
FHWA Route:

Historic Name: Day Mountain Loop Road
Modern Name: Day Mountain Loop

			Length
Number of Coping Stone Sections	:	3	2490
Number of Crown	:	1	2609
Number of Culvert (Concrete)	:	9	0
Number of Ditch (Unlined)	:	4	2791
Number of Retaining Wall	:	4	889
Number of Roadway (Broken Stone)	:	1	2651
Number of Surface	:	2	2609

Acadia National Park
Carriage Roads

Section: CR38-37 Historic Name: Day Mountain Loop Road
Subsection: a Modern Name: Day Mountain Loop
FHWA Route:

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	2651	2651	A	
6781	Surface	0	820	820	A	6
2351	Ditch (Unlined)	0	97	97	R	0
6780	Crown	0	2609	2609	A	12
905	Retaining Wall	116	213	97	R	0
2351	Ditch (Unlined)	116	1329	1213	R	3
354	Coping Stone Sections	183	632	449	L	2
1801	Culvert (Concrete)	213	213	0	A	5
1801	Culvert (Concrete)	394	394	0	A	5
354	Coping Stone Sections	681	2074	1393	L	5
1801	Culvert (Concrete)	820	820	0	A	4
6781	Surface	820	2609	1789	A	17
1801	Culvert (Concrete)	1224	1224	0	A	2
2351	Ditch (Unlined)	1329	1478	149	R	1
2351	Ditch (Unlined)	1478	2810	1332	R	4
1801	Culvert (Concrete)	1572	1572	0	A	3
905	Retaining Wall	1769	1828	59	R	0
1801	Culvert (Concrete)	1838	1838	0	A	5
905	Retaining Wall	1868	2356	488	R	3
354	Coping Stone Sections	2003	2651	648	L	2
1801	Culvert (Concrete)	2088	2088	0	A	2
1801	Culvert (Concrete)	2372	2372	0	A	4
905	Retaining Wall	2406	2651	245	R	1
1801	Culvert (Concrete)	2609	2609	0	A	4
	Total Weighted Priority:					92

9/09/93 Items

Section: CR39-36 Historic Name: Day Mountain Summit Road
Subsection: a Modern Name: Day Mountain Loop
FHWA Route:

			Length
Number of Coping Stone Sections	:	11	4700
Number of Crown	:	1	5280
Number of Culvert (Concrete)	:	14	0
Number of Ditch (Unlined)	:	6	4900
Number of Intersection	:	1	0
Number of Photographic Vista	:	3	0
Number of Retaining Wall	:	1	52
Number of Roadway (Broken Stone)	:	1	5280
Number of Surface	:	1	5280

Acadia National Park
Carriage Roads

Section: CR39-36 Historic Name: Day Mountain Summit Road
Subsection: a Modern Name: Day Mountain Loop
FHWA Route:

Data Code	Description	Miles Begin	Miles End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	5280	5280	A	
6781	Surface	0	5280	5280	A	40
354	Coping Stone Sections	0	261	261	R	0
6780	Crown	0	5280	5280	A	40
2351	Ditch (Unlined)	36	385	349	L	1
1801	Culvert (Concrete)	48	48	0	A	1
9004	Photographic Vista	415	415	0	R	50
2351	Ditch (Unlined)	415	2409	1994	R	6
354	Coping Stone Sections	415	776	361	L	1
380	Intersection	689	689	0	A	2
1801	Culvert (Concrete)	731	731	0	A	2
1801	Culvert (Concrete)	952	952	0	A	1
354	Coping Stone Sections	1010	1288	278	L	1
354	Coping Stone Sections	1338	2237	899	L	3
1801	Culvert (Concrete)	1363	1363	0	A	2
1801	Culvert (Concrete)	1513	1513	0	A	3
1801	Culvert (Concrete)	1799	1799	0	A	3
1801	Culvert (Concrete)	2029	2029	0	A	1
354	Coping Stone Sections	2388	2960	572	L	1
354	Coping Stone Sections	2409	2504	95	R	0
2351	Ditch (Unlined)	2543	2960	417	R	1
1801	Culvert (Concrete)	2854	2854	0	A	1
354	Coping Stone Sections	2960	3046	86	R	0
1801	Culvert (Concrete)	3005	3005	0	A	2
2351	Ditch (Unlined)	3050	3150	100	L	0
354	Coping Stone Sections	3136	4683	1547	R	3
354	Coping Stone Sections	3193	3341	148	L	0
905	Retaining Wall	3285	3337	52	R	0
1801	Culvert (Concrete)	3307	3307	0	L	3
2351	Ditch (Unlined)	3341	5000	1659	L	6
9004	Photographic Vista	3580	3580	0	R	50
1801	Culvert (Concrete)	3580	3580	0	A	3
1801	Culvert (Concrete)	3794	3794	0	A	2
1801	Culvert (Concrete)	4120	4120	0	A	2
9004	Photographic Vista	4639	4639	0	L	50
354	Coping Stone Sections	4714	4899	185	R	0
1801	Culvert (Concrete)	4840	4840	0	A	1
2351	Ditch (Unlined)	4899	5280	381	R	1
354	Coping Stone Sections	5012	5280	268	L	1
	Total Weighted Priority:					286

9/09/93 Items

Section: CR39-36 Historic Name: Day Mountain Summit Road
Subsection: b Modern Name: Day Mountain Loop
FHWA Route:

			Length
Number of Coping Stone Sections	:	4	1871
Number of Crown	:	1	2305
Number of Culvert (Concrete)	:	7	0
Number of Ditch (Unlined)	:	1	2205
Number of Retaining Wall	:	1	47
Number of Roadway (Broken Stone)	:	1	2305
Number of Surface	:	1	2305

Acadia National Park
Carriage Roads

Section: CR39-36 Historic Name: Day Mountain Summit Road
Subsection: b Modern Name: Day Mountain Loop
FHWA Route:

Data Code	Description	Miles Begin	End	Length	Side	Weighted Priority
679	Roadway (Broken Stone)	0	2305	2305	A	
6781	Surface	0	2305	2305	A	17
354	Coping Stone Sections	0	793	793	L	2
2351	Ditch (Unlined)	0	2205	2205	R	8
6780	Crown	0	2305	2305	A	29
1801	Culvert (Concrete)	211	211	0	A	1
1801	Culvert (Concrete)	489	489	0	A	1
1801	Culvert (Concrete)	784	784	0	A	1
354	Coping Stone Sections	877	1637	760	L	1
1801	Culvert (Concrete)	945	945	0	A	1
1801	Culvert (Concrete)	1329	1329	0	A	1
905	Retaining Wall	1380	1427	47	R	0
1801	Culvert (Concrete)	1588	1588	0	A	1
354	Coping Stone Sections	1720	1833	113	L	0
354	Coping Stone Sections	1959	2164	205	L	0
1801	Culvert (Concrete)	2061	2061	0	A	1

Total Weighted Priority: 65

APPENDICE E.

IMMEDIATE ACTION ITEMS

June 14, 1992

MEMORANDUM

To: Mike Williams and Jim Vekasi, Acadia National Park

From: Will Rieley, Rieley & Associates

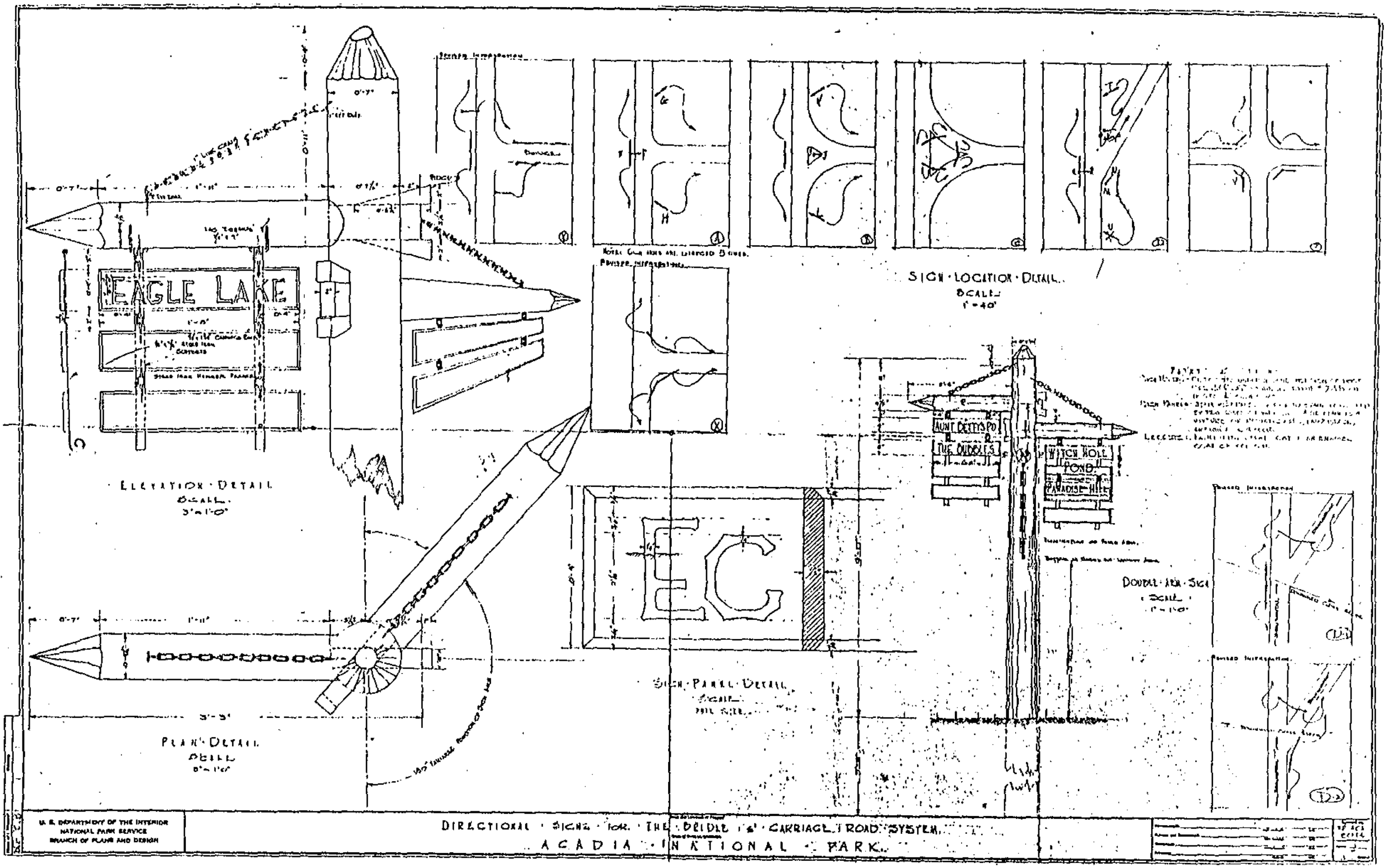
Re: **Immediate Action Items Noted on the Carriage Roads**

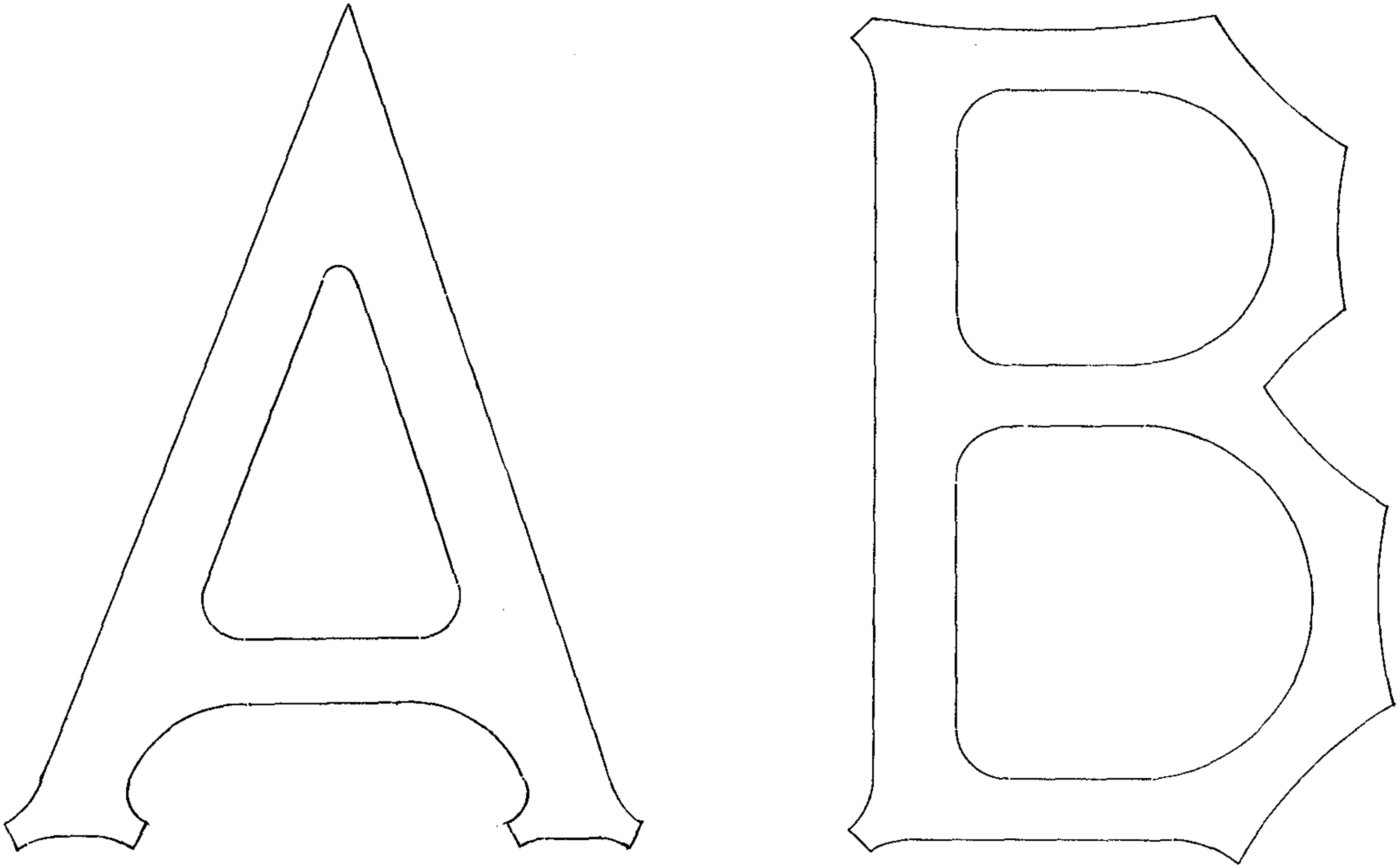
Section	Location		
3-2	890	R	Ditch filled in.
3-2	4923		L Standing water in ditch.
3-2	5003	A	Foundation stones exposed.
3-2	5420	R	Standing water in ditch.
5-3	765	L	Ditch filled in.
5-3	1140	A	Foundation stones exposed.
5-3	1200-1270	R	Missing coping stone section.
5-3	1500-3000	R	Surface erosion.
5-3	1618	L	Ditch filled in.
5-3	1745	A	Surface erosion.
5-3	2795	A	Surface erosion.
5-3	2798	L	Ditch filled in.
5-3	3167	A	Foundation stones exposed.
5-3	3545	A	Foundation stones exposed.
5-3	3618	A	Foundation stones exposed.
5-3	4155-4240	A	Foundation stones exposed.
5-3	4679	L	Ditch filled in.
6-4	2842	R	Brush piled in ditch.
9-8a	799	R	Blocked ditch.
9-8b	3954	A	Culvert exposed on road; open & damaged.
9-11	1788	A	Severe surface erosion.
10-12c	2169	L	Fallen rock in ditch.
11-10a	4894		Erosion due to fallen tree at bridge.
13-11	681		Stones fallen in ditch.
13-11	1363		Drainage in road.
13-11b	85		Vegetation on shoulder.
13-11b	432		Timbers in ditch.
13-11b	3598		Drainage across road; stones exposed.
13-18	1188	L	Road erosion; filled ditch.
13-18	1585		Clogged ditch; severe road erosion.
13-18	1650		Severe erosion.
13-18b	753		Ruts in road; standing water.
13-18b	2412		Ruts in road; standing water.

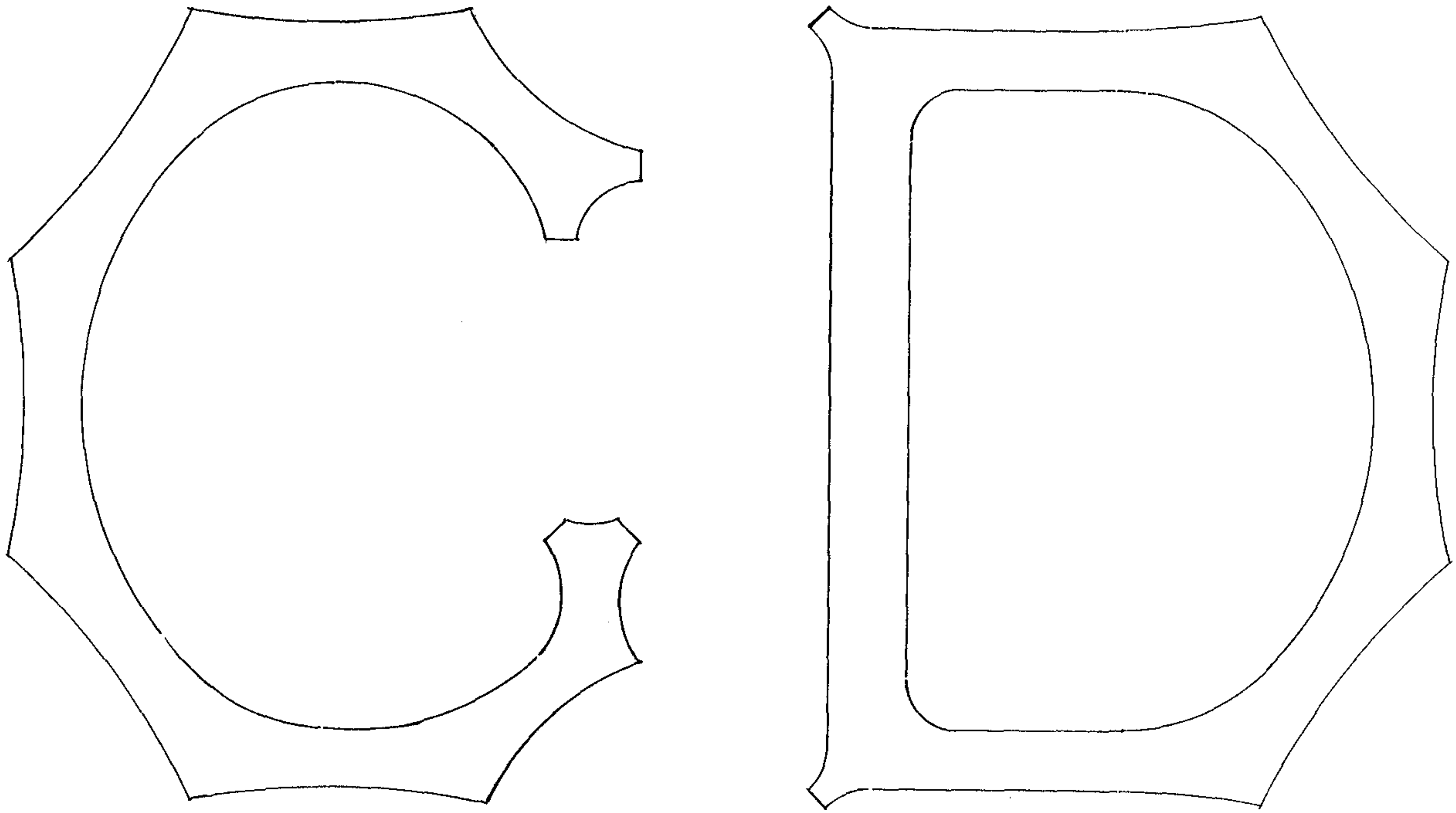
14-21	5200	R	Failed ditch.
14-21	3230		L Culvert needs clearing.
14-21	2745		L Ditch filled with leaves.
15-14	15	A	Surface erosion.
15-14	15	L	Ditch failure.
15-23	0-20	A	Severe surface erosion.
15-23	510	A	Severe surface erosion.
15-23	590-650	A	Severe erosion.
15-23	714	L	No ditch left.
15-23	800	A	Surface erosion.
15-23	1632	L	Low area; poor drainage.
15-23	1782	A	High shoulders.
16-17	921		Clogged ditch.
16-17	4666	L	Clogged ditch eroding road.
16-17	4820		Ditch clogged with gravel; road eroded.
16-17b	461	L	Retaining wall collapsing into ditch.
17-7	745		Clogged ditch causing road erosion.
17-7	3654		Standing water in ditch.
17-7b	820		Retaining wall cave in.
17-7b	2966		Bad ditch blockage.
17-7b	3034		Serious road erosion.
17-7b	3546		Inlet clogged.
17-7c	81		Stream through road.
19-12a	4115	R	Standing water; clear debris.
19-18	933		Culvert clogged at inlet.
22-20	512	L	Stone in ditch.
23-25	685	R	Standing water in ditch.
36-17	1816	L	Stone blocking ditch.
36-37	522	R	Stones fallen into ditch.
36-37	558	R	Stones fallen into ditch.
36-37	2405	R	Tree down in ditch.
37-17	213	R	Inlet completely covered.
37-17	394	R	Inlet completely covered.
37-17	1838	R	Silted in.

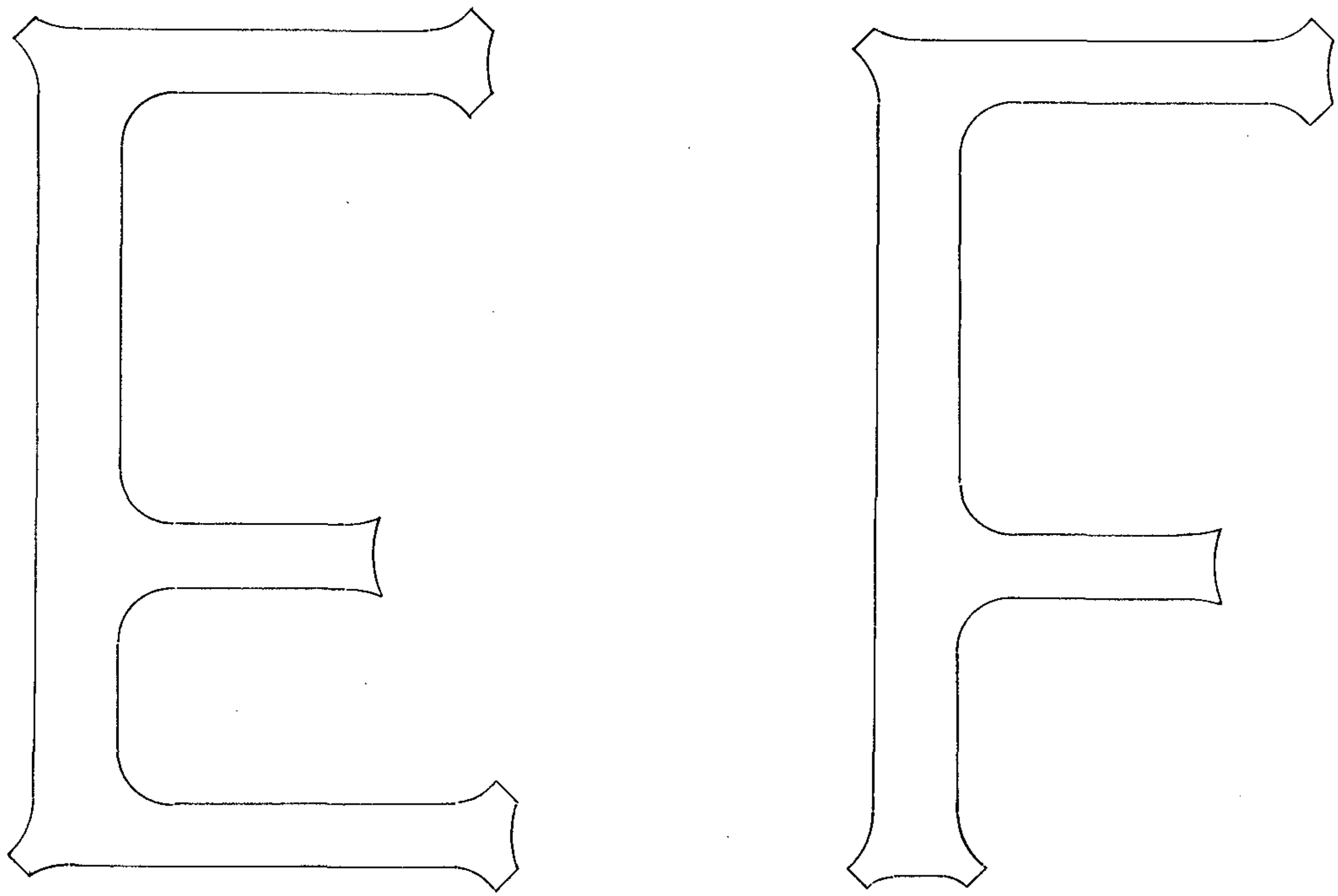
APPENDICE F.

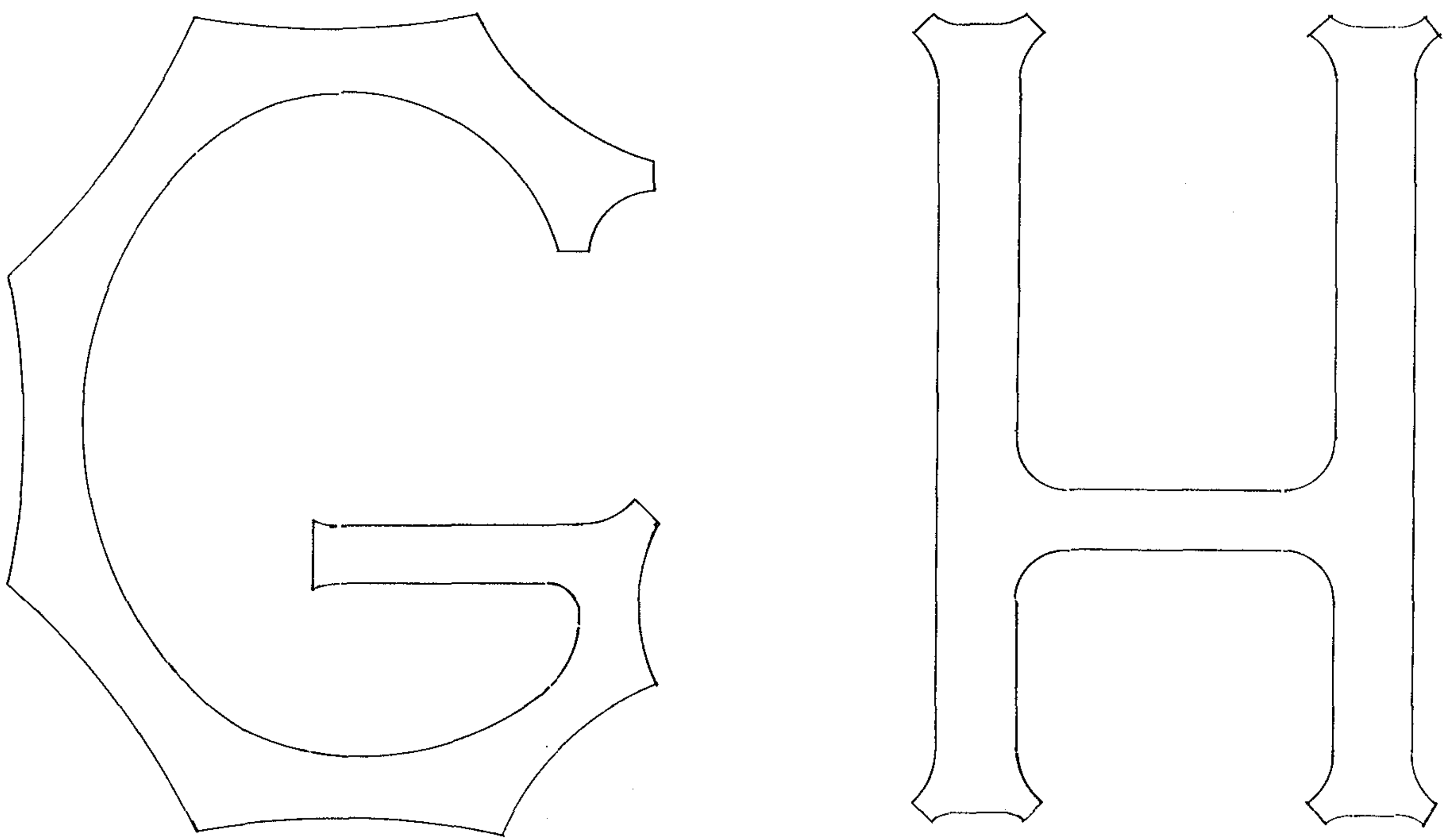
SIGNS AND ALPHABET

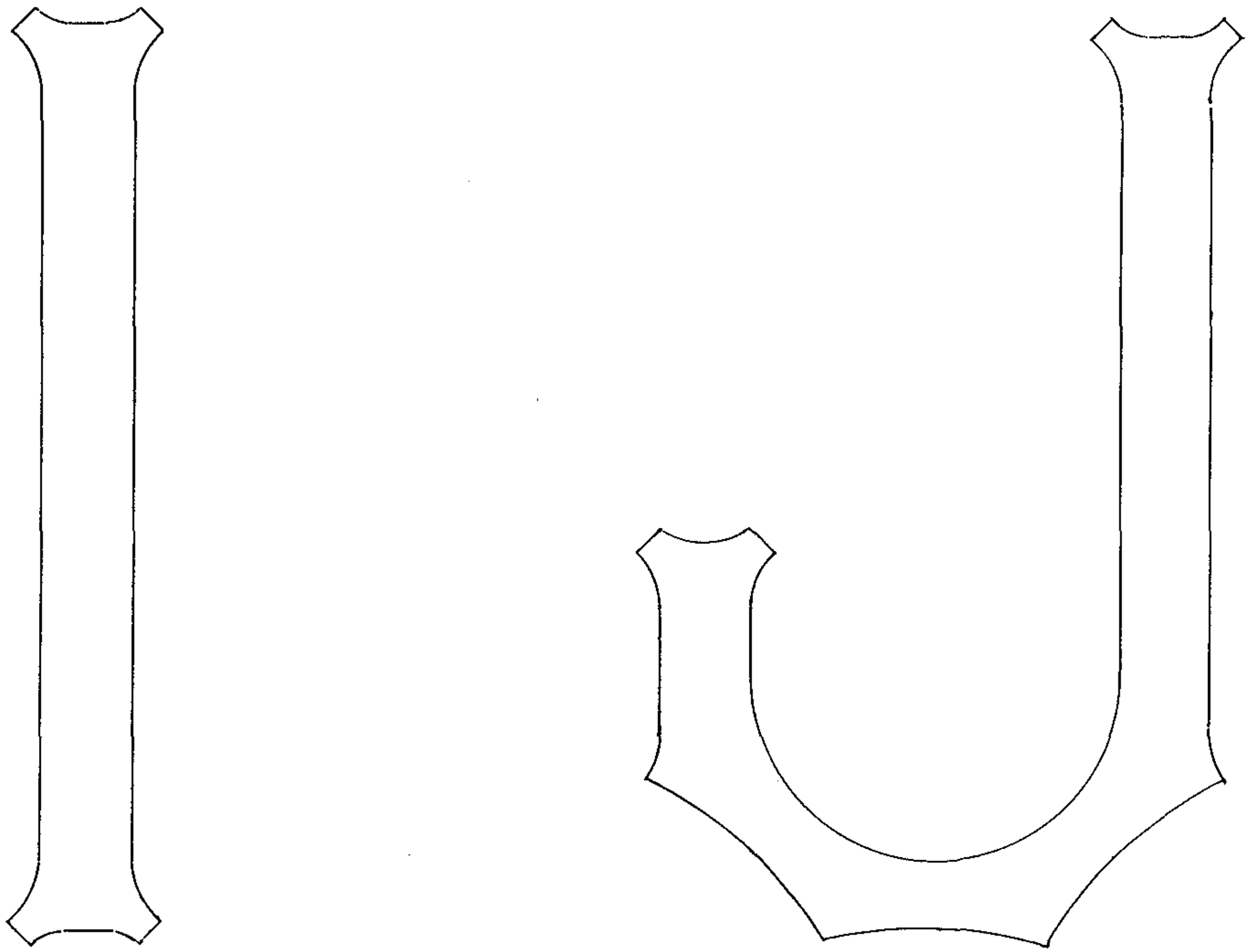

EAGLE LAKE
ELEVATION · DETAIL
PLAN · DETAIL
SIGN · LOCATION · DETAIL
SIGN · PANEL · DETAIL
EC
AUNT BETTYS PO
THE GUDDLES
WITCH HOLE
POND
PARADISE HILL
DOUBLE · ARM · SIGN
U. S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
BRANCH OF PLANS AND DESIGN
DIRECTIONAL · SIGNS · FOR · THE · BRIDLE · & · CARRIAGE · ROAD · SYSTEM
ACADIA · NATIONAL · PARK



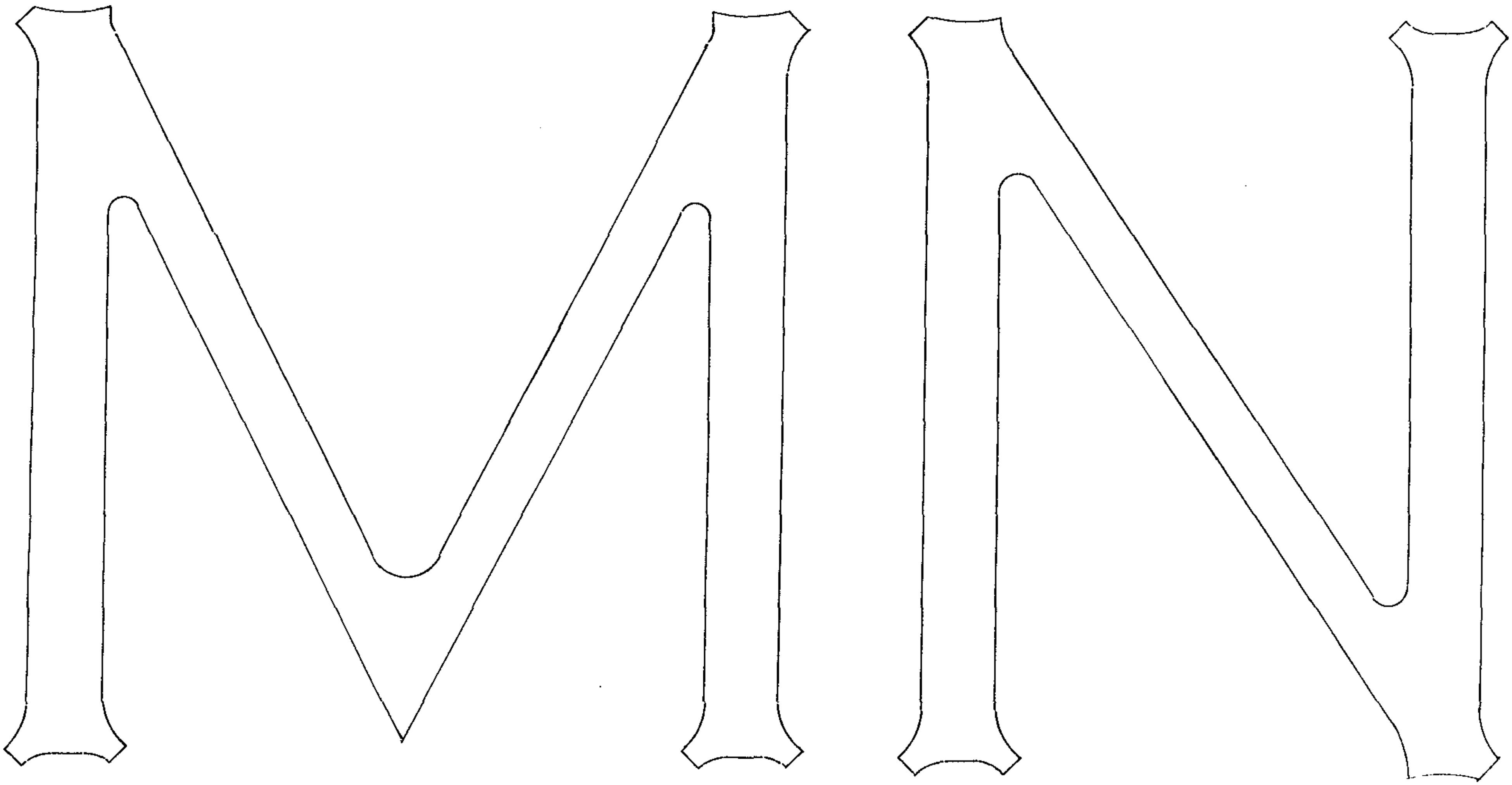


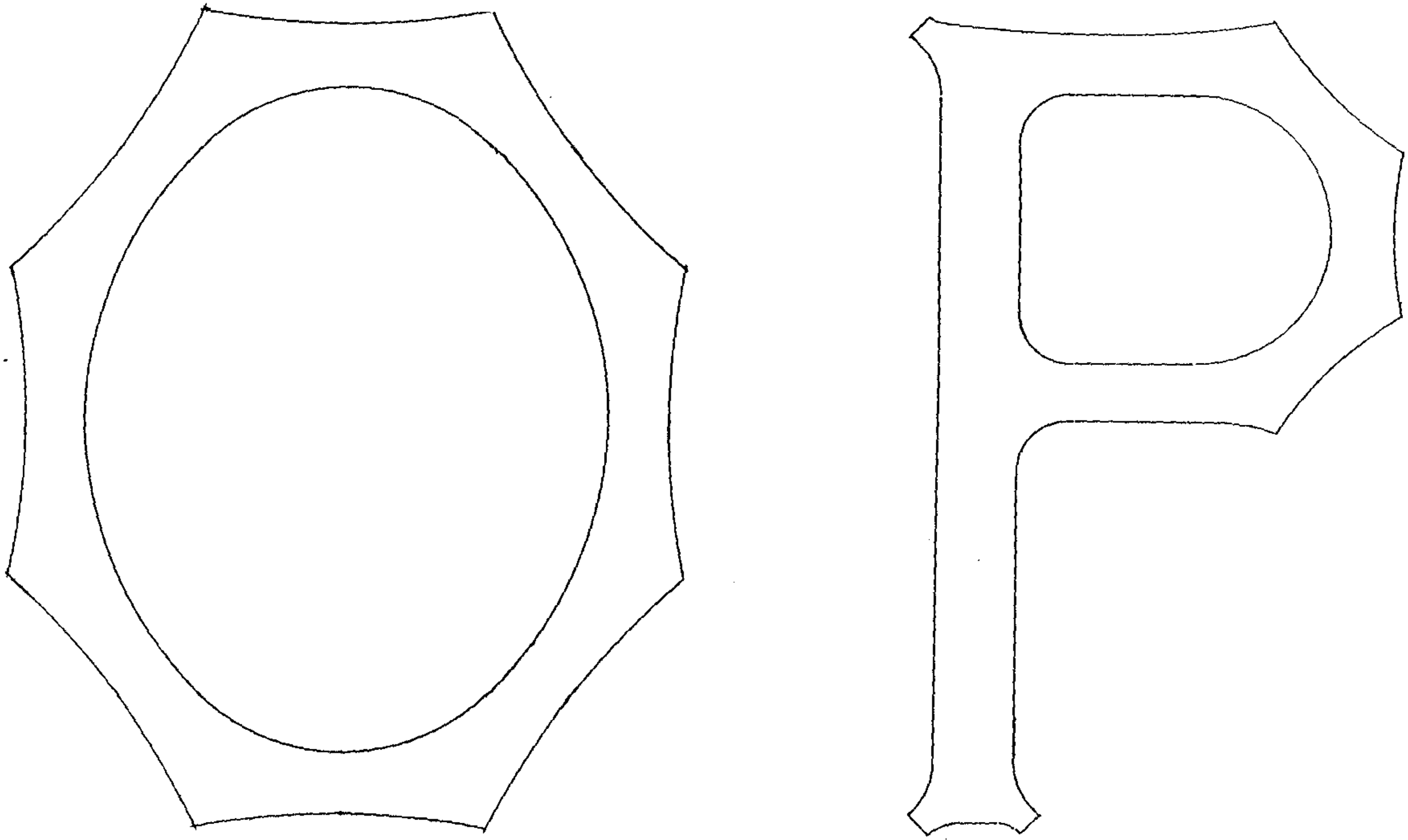

E
F

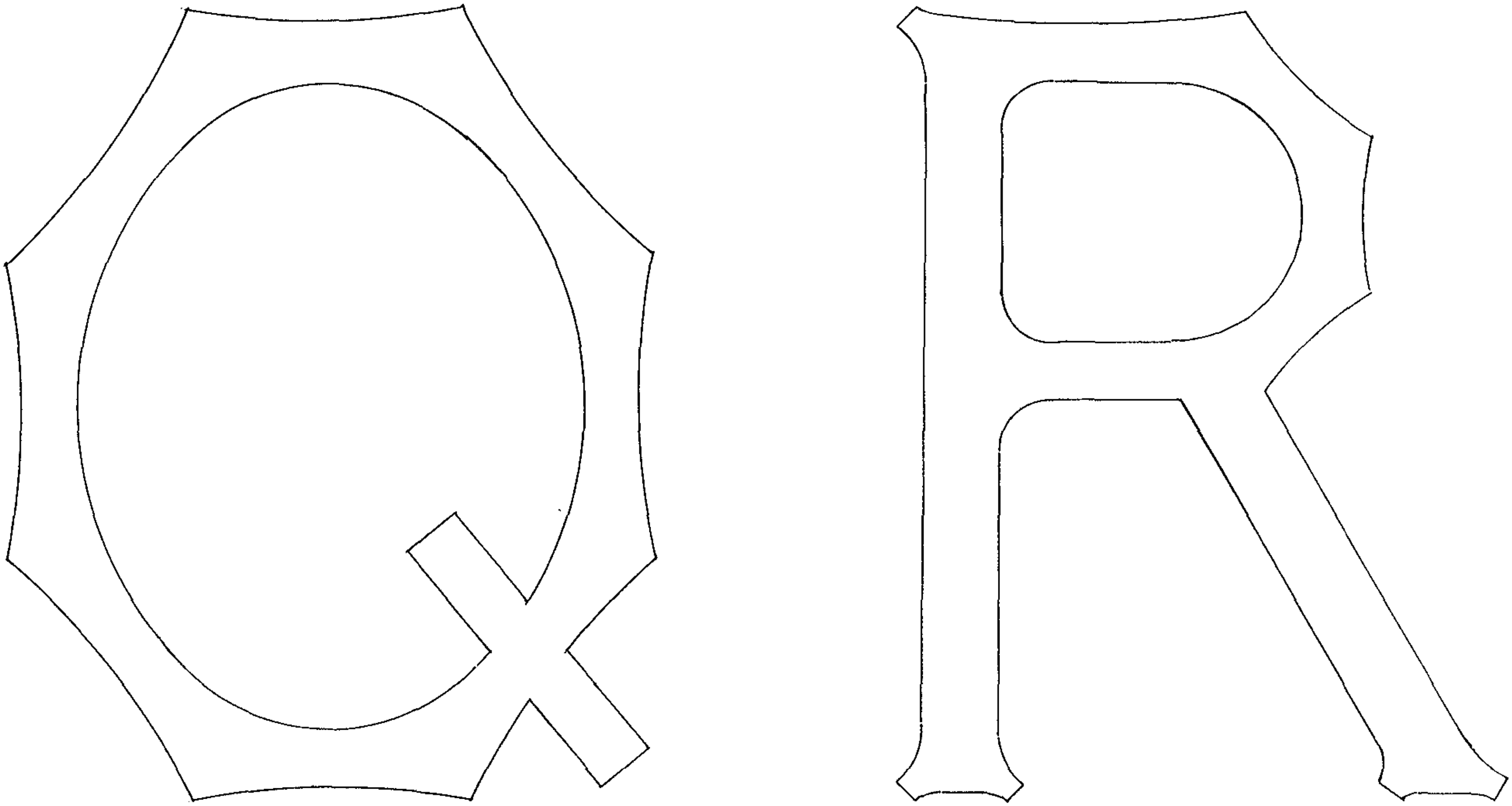




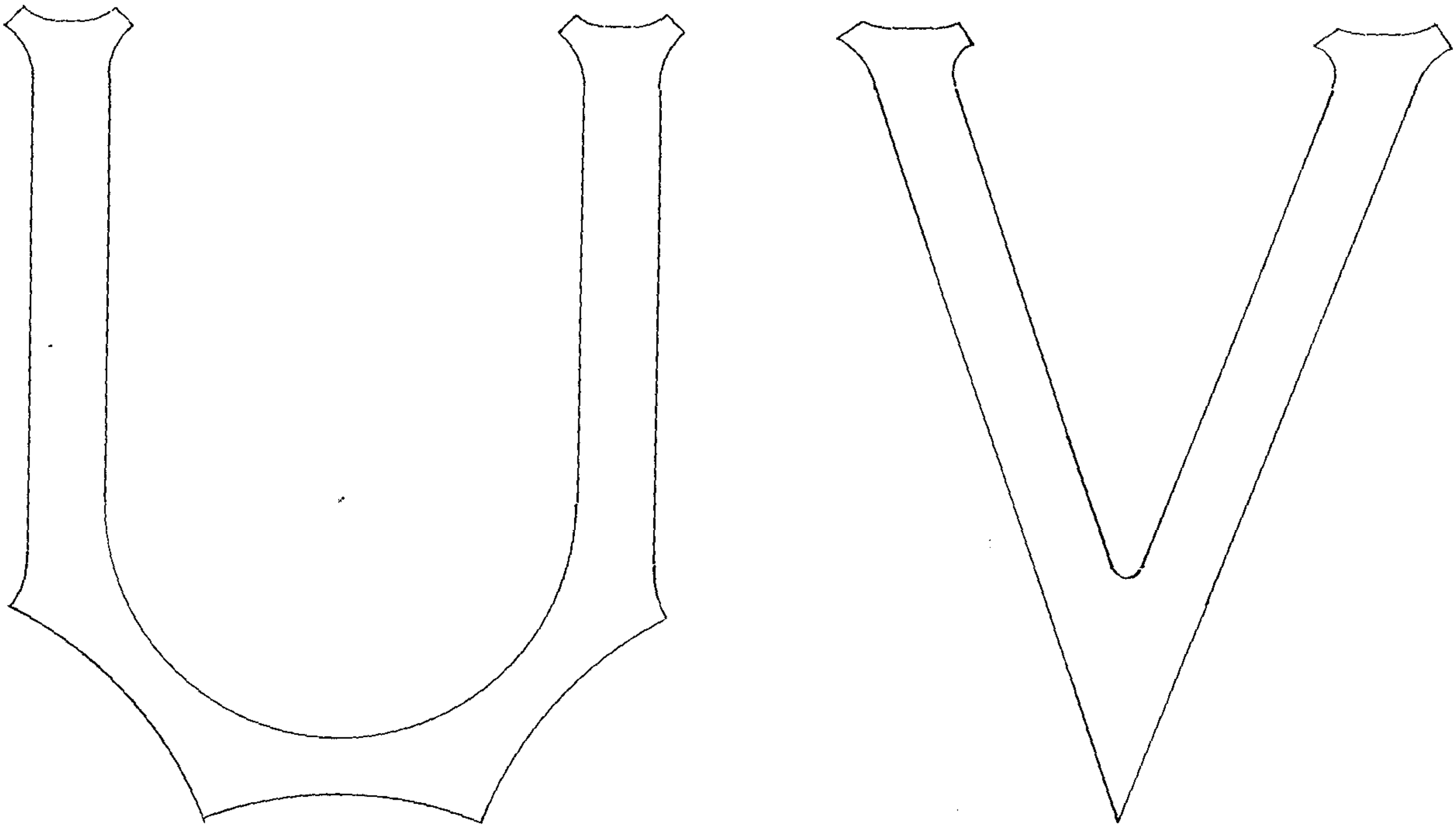
K L

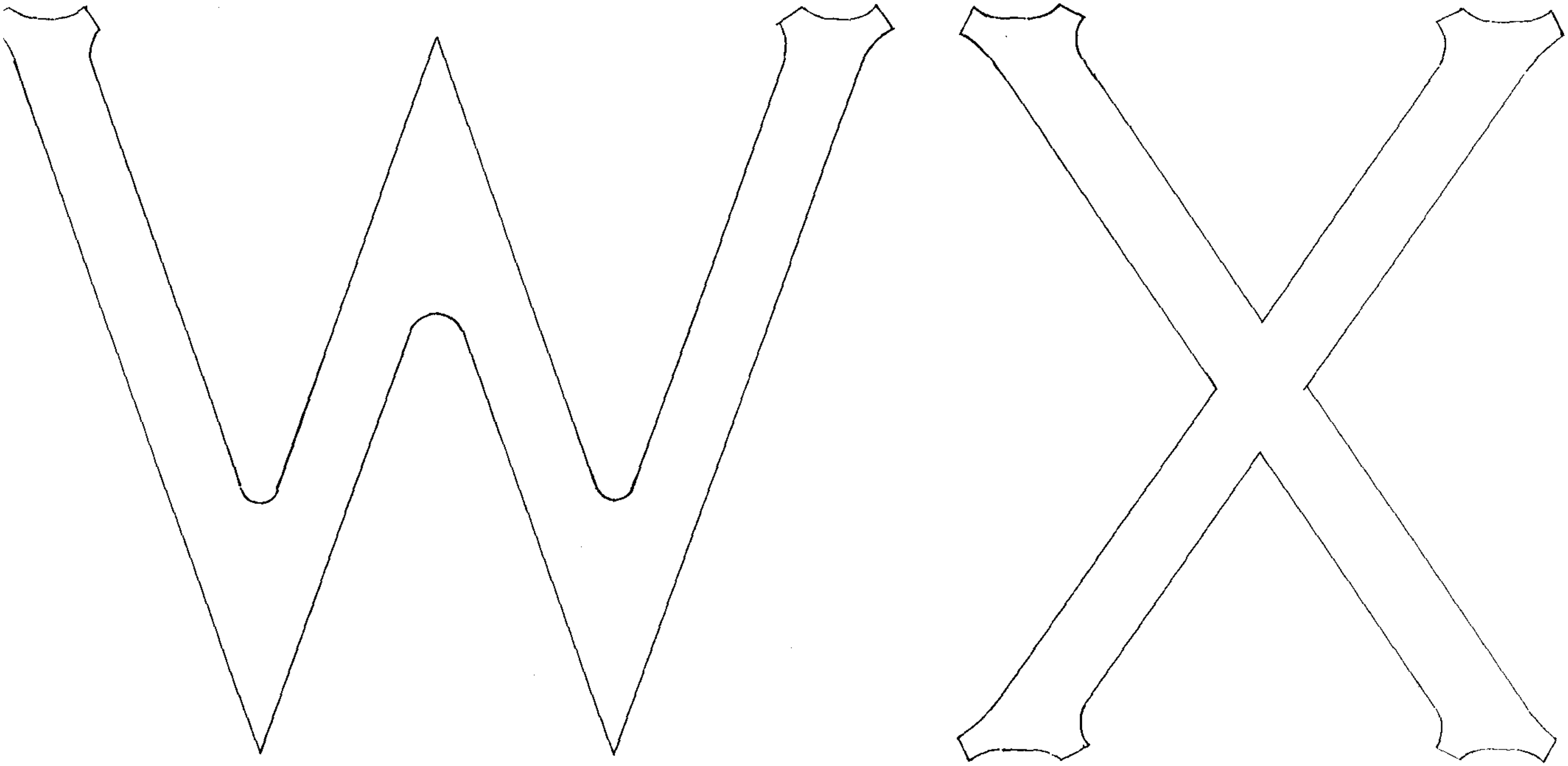

MN


O
P



S T


U V



Y Z

APPENDICE G.

LABORATORY ANALYSIS OF BRIDGE EFFLORESCENCE

ACADIA NATIONAL PARK, MAINE

REPORT OF ANALYSIS

PREPARED BY:

Lorraine Schnabel
Architectural Conservator
1800 Riverside Drive
Trenton, New Jersey 08618

AUGUST, 1992

INTRODUCTION

In late July of 1992, at the request of Tim Marshall of the Central Park Conservancy, a program was initiated for preliminary analysis and characterization of samples of encrustations removed from the masonry of several bridges in Acadia National Park. These encrustations, or efflorescences, are unsightly, and may be damaging the masonry of the bridges. The ultimate objective of these (and any additional) analyses and testing is determination of a method for their removal.

This preliminary test program, the results of which are presented below, was designed to provide basic information on the composition of the encrustations essential to identifying potential removal methods. However, related questions that were also be considered are the source of this material, and the implications of source in the overall structural stability of the bridges. Based on a limited knowledge of the structure of the bridges (stone facing on reinforced concrete), a preliminary literature search was conducted to seek information on efflorescences on concrete: how they form, what their typical composition is, and if damage to the underlying concrete can be evaluated by a study of the efflorescence. Finally, an effort was made to determine if the condition is in any way caused or exacerbated by observed insect infestations. The results of the test program and literature search should provide a good basis from which to proceed in the further evaluation and treatment of the bridges.

SAMPLE DESCRIPTIONS

Ten samples from various bridges were provided by Mr. Marshall. Of these, eight samples were of surface encrustations, both with and without the stone substrate. The sample designations were those on the bags. They are as follows:

Crust Samples:	Crust Samples with Substrate:
West Branch (2)	Amphitheater
Deer Brook	Little Harbor Bridge
Eagle Lake	
Hadlock Brook	
Cliffside Voussoir	

The samples provided had many similarities. Most were finely layered, in many cases with fairly large, irregularly distributed voids between the layers. The exterior surfaces of the samples are smooth, but uneven (rippled). Some of the larger pieces have icicle-like pendents extending from the surface. Color of the samples varies from bright white to brownish-grey; some of the white pieces have bright orange staining. Small pieces of stone were visible incorporated into some of the crust samples. Individual sample descriptions are provided in the Appendix.

ANALYTICAL METHODS AND RESULTS

The program of analysis for the samples from Acadia National Park was designed to evaluate the composition and structure of the crust through thin-section analysis and X-ray diffraction, and to determine the iron content of the crust samples through chemical analysis. The table below shows which samples were selected for each method; descriptions of the test methods and the results follow.

	Thin-Section	XRD	Wet Chemistry
	Crust Samples		
West Branch-white		X	X
West Branch-grey			X
Deer Brook			X
Eagle Lake		X	X
Hadlock Brook			X
Cliffside Voussoir		X	X
	Crust Samples with Substrate		
Amphitheater	X		X
Little Harbor Bridge	X		X

Thin-section Analysis

Thin-section analysis was used to identify the minerals of the substrate stone, and to examine the layer structure of the crust in greater detail. The encrusted stone samples were epoxy impregnated, and mounted on glass slides. The mounted samples were ground to a thickness of slightly greater than 30 micrometers (μm), then polished with successively finer grits, and finished with diamond paste to 30 μm thickness. Polished thin-sections were examined using standard petrographic techniques with a polarized light microscope[1] at magnifications from 40x to 400x.

The substrate material of both the samples appears to be a coarse-grained granite, composed of anhedral crystals of quartz, microcline feldspar, and at least two dark minerals, tentatively identified as horneblende and biotite. There also seems to be at least one opaque mineral. The identification of the dark minerals is complicated by the stain that was applied (potassium ferricyanide). The purpose of the stain was to color any iron-rich calcite in the crust layer blue; because the dark minerals in granite are iron-rich, the development of the stain obscured their optical properties, making them difficult to positively identify.

No surface crust was observed on the Amphitheater sample. However, the surface crust on the sample from Little Harbor was well developed. As shown in figures 1 through 5, the surface crust has an irregularly laminar structure. The layers lack continuity, and are not flat, but bumpy (colloform) and irregular in thickness (figs. 3-4). At low magnification there appear to be alternating layers of transparent and opaque material. The transparent layers are approximately 25-50 microns thick, and consist of columnar crystals, presumably of calcite, oriented perpendicular to the surface of the stone. At higher magnification, the opaque layers can be seen to be micro- to cryptocrystalline, with multiple fine opaque layers having slightly more transparent material between them (fig. 4). There are numerous voids between the layers, usually lined with larger crystals of calcite, some of which seem almost globular. Some of the voids contain large, opaque particles

[1] Information on specific instrumentation and instrumental parameters can be found in the Appendix.

(figs. 1, 5). There are no structures within the layers to suggest that they have been formed through the action of organic life forms (especially algae, which would be the only real possible source).

There is no suggestion of the blue color in the calcite crystals of the Little Harbor sample that would be expected were the calcite in the layers iron-rich. However, there are areas on the surface of the Amphitheater sample where a blue stain has developed, indicating that there is a concentration of iron-rich material (figs. 6-7). It is possible that this stain is obscuring a thin, iron-rich calcite crust (fig. 7); alternatively, the source of the stain may be a superficial deposit of iron oxide released from the dark minerals by weathering.

Although there is no evidence in the thin sections that the material forming the encrustation has penetrated the stone, even though there are numerous fractures (fig. 8), there is evidence that the process of crust formation may be damaging the stone on a microscopic level. In one area of the Little Harbor section, a large mineral grain can be seen surrounded by crust; it is probable that this fragment was once attached to the substrate (fig. 9). The fact that both sides of the sample from Little Harbor are encrusted indicates that the crust material is penetrating the substrate, probably along larger fractures. The ability to remove pieces of stone from the bridges as large as the Little Harbor and Amphitheater samples suggests that the degree of damage to the substrate by the process of crust formation is not insignificant.

X-ray Diffraction Analysis

X-ray diffraction (XRD) is a analytical technique used to identify crystalline compounds. For this test program, XRD was used to positively identify the crystalline components of the crust material. An automated XRD unit was used for these analyses, utilizing copper k-alpha radiation. Crystal monochrometers were used for beta removal. Samples were ground fine, then suspended as aerosols onto a glass filter; scans were made from 5° to 60° two-theta.

The results of the XRD analysis, presented in the table below, show that all three of the samples are predominantly calcite, $CaCO_3$. A minute percentage of quartz is found in all the samples; the samples from Eagle Lake and Cliffside Voussior contain other minerals as well. Interestingly, the sample that was darkest in color overall (Eagle Lake) had the greatest percentage of minerals other than calcite. Note that few of the accessory minerals are iron containing.

Mineral	Composition	West Branch (Approx. Wt. %)[2]	Cliffside V. (Approx. Wt. %)	Eagle Lake (Approx. Wt. %)
Calcite	$CaCO_3$	100.± 0.1	94 ± 2	93 ± 2
Quartz	SiO_2	0.3 ± 0.1	0.3 ± .1	0.6 ± 0.2
Muscovite-Fe	Al, K,Fe silicate	—	6 ± 2	—
Kaolinite	$Al_4[Si_4O_{10}](OH)_8$	—	—	3 ± 1
Microcline	K, Al, silicate	—	—	3 ± 1

[2]Data as supplied by the analyst have been multiplied by 100 so that the results may be presented as a percentage for ease in comprehension.

Wet Chemical Analysis

Identification of elemental composition by wet chemical analysis is accomplished by bringing the material into solution, in this case through digestion of a pulverized sample in a series of different acids, and then evaluating the solution by a variety of techniques. Atomic absorption spectroscopy was used for the determination of iron in these samples. For the samples that had crust with the stone substrate, only the crust material was submitted for analysis.

The results of the analysis are presented in the table below. The values for iron are given in parts per million. If a concentration of 1% is equivalent to one part per hundred, then the sample with the highest concentration (West Branch, grey) had slightly more than 1% iron. However, most of the samples had one thousand times *less* iron than this sample, and some of them were stained bright orange. Almost without exception, the brown and grey samples had a higher iron content than those that were white, even the orange-stained white samples.

Sample	Iron (ppm)
Crust Samples	
West Branch-white	240
West Branch-grey	12000
Deer Brook	195
Eagle Lake	1600
Hadlock Brook	195
Cliffside Voussoir	195
Crust and Stone Samples	
Amphitheater	730
Little Harbor Bridge	495

Discussion

If the all stone of the bridges in Acadia National Park showing this type of efflorescence is granitic (like the substrate material evaluated in thin-section), then there are only two possible sources for the calcitic surface crusts; the concrete backup, or the mortar between the stones. In either case, the cause of the efflorescence is moisture penetration through the materials of the bridge. As the water travels through the concrete (or mortar), calcium ions are taken into solution, either through dissolution of $CaCO_3$ or $Ca(OH)_2$, or through leaching of $Ca(OH)_2$–saturated pore water. When the water reaches the surface, $CaCO_3$ is formed by combination of the calcium ions with atmospheric carbon dioxide.

Based on the layer structure of the crust as seen in thin section, the process of formation is one of cyclical wetting and drying. If the process were continuous, then the deposit would be expected to be more uniform in appearance, rather than composed of multiple layers having widely varying crystal sizes. Some possible factors affecting the crystal size in the layers include: 1) the rate of supply of water containing calcium ions, 2) the degree of saturation of the water with respect to calcium, and 3) the proximity of the deposit to the source of the supply.

The effect of calcium leaching by water penetration would be loss of the binding material of the concrete (or mortar). If the calcium is coming from the concrete backup, then the significance of that loss in terms of structural integrity depends on the extent of efflorescence (both volumetric and areal), and the dispersion of the leaching. If the efflorescence is highly localized, the result might be expected to be a localized material loss that would probably not have a significant effect on the structural stability of the bridge overall. However, if the areal extent of the efflorescences is great, loss of the binding material would probably also tend to be more dispersed, resulting in an overall loss of stability.

The duration of the leaching process will also play a role. Although the initially the source of calcium ions would be the excess calcium hydroxide (both crystalline and in the pore water of the concrete), ultimately the hydrated calcium silicate gel would begin to decompose, yielding calcium hydroxide and hydrous silica gel.[3] As it is the hydrous calcium silicate gel that gives concrete its strength, the decomposition of that material would be expected to have a negative effect on the strength of the concrete; however, reaching this level of decay would take an extremely long time.

If the source of the calcite crusts could be positively identified as the concrete back-up, then a high iron content in the crust might be related to corrosion of the reinforcing steel. However, there is no evidence either from the thin-section analysis or the wet chemical analysis of high concentrations of iron in the crusts. This means that either 1) the reinforcing steel is not corroding, 2) that it is corroding and the corrosion products are not being carried to the surface in amounts large enough to suggest deterioration, or 3) that the concentration of iron is low because the corrosion is in an early stage of development. Unfortunately, in the evaluation of iron content there is no way of ensuring that the source of iron in the crusts is the rebar. Other possible sources include: 1) minerals and weathering products incorporated into the crust from dust and other sources 2) deterioration products from the weathering of iron-containing minerals in the substrate stone.

The darker, more opaque layers observed in thin-section are probably concentrations of accessory minerals of the kind identified by XRD (they may also include amorphous, or non-crystalline, materials not identified by XRD). There are several possible sources for the minerals other than calcite in these samples. They could be surface dirt incorporated into the crusts during their formation; they could also be from the stone substrate, as both quartz and microcline were identified in thin-sections, and mineral grains (fig. 9) and rock fragments were seen bound up in the crust samples. Another possibility is that they could be carried from the source of the water involved in the formation of these efflorescences (e.g. soil from the ground or the road bed). With the exception of the Eagle Lake sample, the amounts seem to be negligible, and the source is probably unimportant. However, the darker samples like Eagle Lake should probably be more carefully evaluated to see if some determination of the source of these other minerals can be made, as this may help in determining the source of the moisture.

Finally, there is no evidence from the results of these analyses to suggest that the encrustations have been formed by biological activity. Although layered carbonates formed by algal growth processes are known (stromatolites), their appearance in thin-section is distinctive, and does not correspond with the appearance of the crust from Little Harbor in

---

[3]F.M. Lea, *The Chemistry of Cement and Concrete*, 3rd edition (Chemical Publishing Company, Inc.: New York, 1971) 177-178.

thin section. The insect infestations observed by Mr. Marshall in some of the samples are probably adventitious; the algal growth observed on some samples is probably related to the high levels of moisture associated with the formation of the crusts.

LITERATURE SEARCH

Method

The literature search was conducted primarily in two indexes of engineering articles: *The Engineering Index*, or *Compendex*, and the *Applied Science and Technology Index*. Both these sources are available on CD Rom at Columbia University's Engineering Library; the former from 1986 to the present, and the latter from 1983 to the present. Searches were made in both references from 1983 to the present, utilizing books where the data was not yet computerized. In addition, CLIO, the Columbia University cataloging system, was searched for books pertaining to the subject.

Initially, the terms 'leaching' and 'leachate' were used for the search. However, from a review of the abstracts of articles under those headings it was clear that concrete researchers do not use these terms to describe the formation of surface crusts. Therefore, the scope of the search was broadened significantly to include the headings'efflorescence' and 'crusts,' as well as 'concrete degradation, conservation, deterioration, and repair.' The heading 'bridges' was also searched, along with the more specialized subheadings of 'concrete bridges', 'stone bridges', and 'masonry bridges.' Titles under 'concrete corrosion' were also reviewed. Many other headings were also evaluated during the course of the search; none proved to be particularly useful.

Results

The literature on concrete and its deterioration is awe inspiring in its scope, and the research conducted for this report can only be considered preliminary given the limited time available. Surprisingly, though, given the amount that has been written on this topic, and the time period covered by the search, only one article was found on concrete leaching;[4] no articles were located on the evaluation of efflorescences on concrete. Both the causes (principally chloride ion concentration and carbonation of the concrete matrix[5]) and symptoms (cracking, delamination, and surface staining[6]) of the corrosion of reinforcing steel have been written about extensively, as have other causes of concrete deterioration, such as alkali-silica reaction. Yet the composition of surface crusts, or efflorescences, on concrete do not seem to be used as a diagnostic tool.[7]

Also surprising was the lack of information on composite constructions like the bridges of Acadia National Park, where there is a stone cladding or facing on a concrete backup. Most of the articles abstracted seemed to relate to constructions of concrete alone. This seems

---

[4]M. Onofrei, et. al., Leaching studies of heavy concrete material for nuclear fuel waste immobilization containers, *Atomic Energy of Canada Limited, AECL Report n. 9076*, August 1989, 47 p. A copy of the abstract of this article is attached.

[5]H. Arup, The mechanisms of the protection of steel by concrete, In *Corrosion of Reinforcement in Concrete Construction*, ed. Alan P. Crane (Chichester: Ellis Horwood Limited), 155.

[6]J.L. Dawson, Corrosion monitoring of steel in concrete, In *Corrosion of Reinforcement in Concrete Construction*, ed. Alan P. Crane (Chichester: Ellis Horwood Limited), 177.

[7]The appearance of the surface material may be evaluated as one indicator of alkali-silica reaction; however, the evaluation is only visual.

particularly surprising, as concrete-stone composites are ubiquitous, particularly in bridge construction (just consider all the bridges over the highways in New York!).

Fig. 1. Photomicrograph of the surface crust on stone substrate. Little Harbor sample, plane polarized light (PPL), 20x. Note the round, dark particle in the void in the lower right of the photo. Another can be seen in the upper left. There is also an oblong particle in a void in the upper right of the photo. (Dark circles with white centers seen in other voids are bubbles in the mounting medium).

Fig. 2. Same as figure 1, crossed polars (XPL). 20x. The stone of the substrate is the grey material at the bottom of the photo; in figure 1, the substrate is white.

Fig. 3. Photomicrograph of the surface crust on stone substrate. Little Harbor sample, plane polarized light (PPL), 20x. Note the layers in the center of the photo that are bumpy and rounded.

Fig. 4. Detail of figure 3 showing the finely laminar structure of the opaque layers. Note also the shape and orientation of the calcite crystals in the transparent layers. PPL, 50x.

Fig. 5. Photomicrograph of the surface crust on stone substrate. Little Harbor sample, plane polarized light (PPL), 20x. Overall view. Note the round, black particle in the void.

Fig. 6. Photomicrograph of the blue stain on the surface of the sample from the Amphitheater, PPL, 50x. The stain indicates the presence of iron.

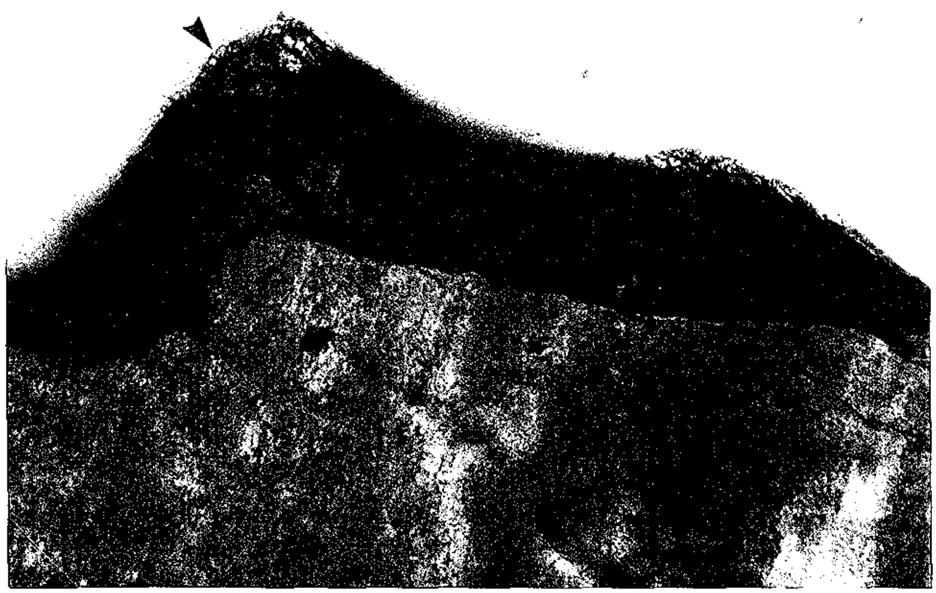


Fig. 7. Photomicrograph of the blue stain on the surface of the sample from the Amphitheater, PPL, 50x. Note the finely crystalline material on the surface of the mineral grain (indicated by the arrow).

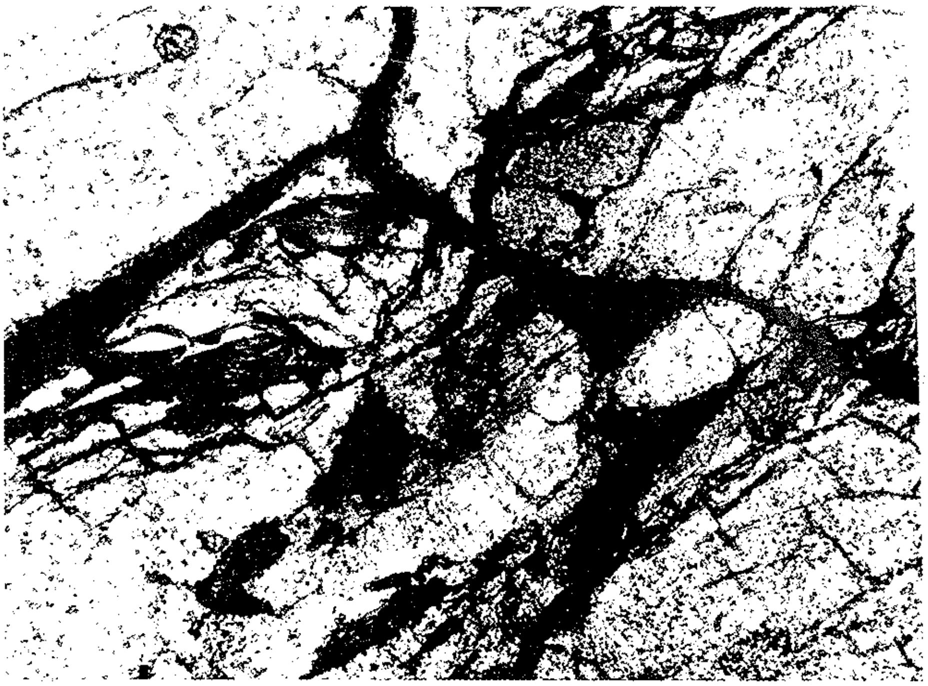


Fig. 8. Photomicrograph of a quartz crystal in the stone substrate. Little Harbor sample, PPL, 20x. The dark lines are fractures in the crystal.

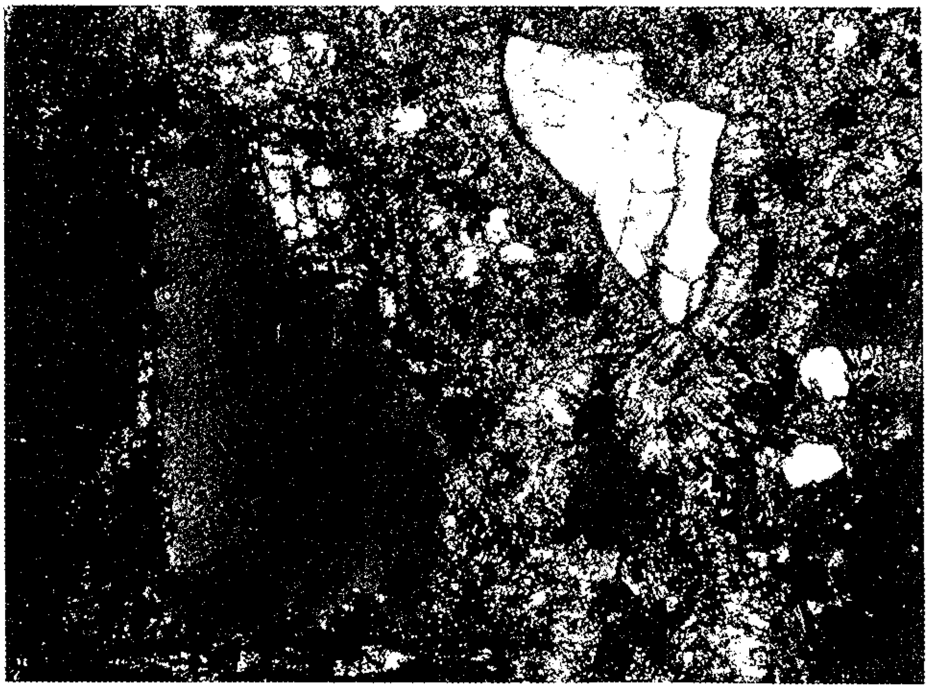


Fig. 9. Photomicrograph of the surface crust on the Little Harbor sample, XPL, 20x. Note the white grain surrounded by the finer grained material. This is a mineral grain bound up in the crust.

APPENDICE H.

BRIDGE ASSESSMENTS

JORDAN POND BRIDGE

Description: The Jordan Pond Bridge is a compact and powerful 40-foot bridge with a twenty foot single segmented-arched span. The gravel deck is flared at either end. The masonry substructure is surfaced in quarry-faced, granite masonry laid in a random ashlar pattern with polygonal blocks between the radiating voussoirs of the arch and orderly coping stones of the gently arched rail. The abutments are square, solid masses surfaced in random granite ashlar masonry and having flattened pyramidal capstones.

Existing Conditions: Good condition. Some areas of efflorescence on the underside of the ring stone on both the up and down stream side.

Recommendations: Mechanical removal of efflorescence.

EAGLE LAKE BRIDGE

Description: The Eagle Lake bridge is 117-foot-long and carries the 36-foot wide Route. 233 and spans the graveled-surfaced carriage path. The masonry substructure is clad in quarry-dressed, random-coursed granite ashlar masonry. On either side of the arch are bayed abutments, which at the bridge deck act as viewer's platforms.

Existing Conditions: In general, the bridge is in good condition. Some areas of efflorescence on the underside of the ring stone on both elevations. Open joints on the railing. Continuously running crack on the northeast abutment.

Recommendations: Railing should be repointed. Mechanical removal of efflorescence. Crack on the northeast abutment should be investigated further and monitored to determine if it is live.

JORDAN POND HOUSE ROAD BRIDGE

Description: The Jordan Pond House Road bridge carries the Jordan Pond Road and spans the graveled-surfaced carriage path. The masonry substructure is clad in quarry-dressed, random-coursed granite ashlar masonry.

Existing Conditions: In general the bridge is in good condition. little efflorescence. There is evidence of long continuously running crack on the west side of the bridge.

Recommendations: The vegetation along the roadside and the bridge should be removed. Areas of efflorescence should be removed. Further investigation should be done to determine cause and whether or not crack is active.

HEMLOCK BRIDGE

Description: The Hemlock bridge is a massive Gothic-arched structure spanning the Maple Spring Brook. It is 185 feet in length, curving back sharply in a flare at either end. The Gothic arch span is thirty feet across and is sharply outlined in radiating voussoirs. The rubble granite masonry substructure is entirely clad in quarry-faced, random-laid, granite ashlar masonry and the rail coping is of large, solid granite blocks dressed in the same manner.

Existing Conditions: Severe efflorescence on the down stream side of the bridge and under the arch. Upstream side contains some rust colored staining. Pointing in good shape.

Recommendations: Efflorescence should be removed.

DUCK BROOK BRIDGE

Description: The Duck Brook Bridge is a spectacular, three-arched structure which carries the Carriage Path over Duck Brook. There is a central thirty-foot span arch flanked by smaller twenty-foot spans, each of which has rough-dressed, uneven radiating voussoirs with prominent keystones. The stone and mortar substructure is clad in quarry-faced random-laid ashlar. The gravel-surfaced roadway is two hundred feet in length and flares at either end. The railing has dressed ashlar copings and there are pairs of rectangular openings piercing the railing above the lesser arches and three pairs above the main arch. Above the spandrels of the arches, corbelled semi-circular balconies extend into from the **elevation** from the deck to allow the traveller to absorb the scenic view from excellent vantage points. From the southeast corner of the bridge a granite masonry stairway descends along the south face of the bridge into the Duck Creek Ravine.

Existing Conditions: The coping appears to have been recently repointed. There is extensive efflorescence on both elevations and on the interior of the arches. There is rust colored staining of the efflorescence in the smaller arch located on the south eastern face.
Located on the south west face of the bridge there is evidence of cracks running in the mortar joint at the road way level.

Recommendations: The cracks located on the south west face should be monitored to determine if they are live. Major areas of efflorescence should be removed. The waterproofing should be inspected and replaced if needed.

BUBBLE POND BRIDGE

Description: The Bubble Pond Bridge is an elliptical-arched structure which is rustic in detail. It spans an abandoned portion of the carriage path and carries the gravel-surfaced carriage path. The thirty-foot elliptical span is echoed in the railing arch which slopes outward beyond the opening to a more horizontal plane. The deck is a two hundred feet in length and flares gently at the ends. The stone and mortar substructure is surfaced in rough-dressed, random-laid ashlar. The uneven and rough-dressed radiating voussoirs form the graceful arch and the keystone block has been carved with the date of 1928. The rail copings are roughly-dressed and jaggedly set, but still provide a strong horizontal element.

Existing Conditions: The interior of the arch contains areas of extensive efflorescence. The concrete arch on the carriage road is exposed and the asphaltic waterproofing membrane has broken down.

Recommendations: Efflorescence within the arch should be removed. New waterproofing applied and the carriage road repaired and regraded.

JORDAN STREAM WEST BRANCH BRIDGE

Description: The West Branch Bridge is a 170-foot structure which has a flared and skewed approach to the gravel-surfaced deck. The bridge curves sharply over the ravine formed by the Jordan Stream and has a small six-foot wide granite arch span. The rubble masonry-laid substructure is very simply clad in quarry-faced, random-laid, granite ashlar masonry which carries up through the side rails, which lack any other coping.

Existing Conditions: Extensive efflorescence inside arch.

Recommendations: Areas of heavy efflorescence should be removed.

AMPHITHEATER BRIDGE

Description: The Amphitheater Bridge is a 236-foot-long structure that spans the deep Amphitheater Ravine and carries a the gravel-surfaced carriage path. The deck flares broadly at either end. The 50-foot rounded arch span is constructed of rough-dressed, random radiating voussoirs and has a prominent keystone. The masonry substructure is clad in quarry-faced random laid ashlar and incorporates large projecting blocks set in several discontinuous vertical rows. The railing copings are of heavy, rectangular blocks of rough-dressed granite with beveled edges and with a gently peaked stone in the center. The tows of ashlar are not completed to their outer edges and this stepped motif, together with the continuous railing coping, creates a series of triangular openings piercing the wall.

Existing Conditions: Sloppy repointing. Heavy efflorescence on lower portion of ring stone and downstream side of bridge.

Recommendations: Areas of heavy efflorescence should be removed.

STANLEY BROOK BRIDGE

Description: The Stanley Brook Bridge carries the gravel-surfaced carriage path and spans the Park Loop Road near Stanley Brook. The bridge is composed of three spans; a wide central span over the Loop Road flanked by narrower spans. The arch faces of the spans are outlined with thin quarry[dressed granite voussoirs of varying lengths. The masonry substructure of the bridge is clad in quarry-dressed, random-coursed granite ashlar masonry on the arch vaulting and the two side faces of the bridge. Various individual stones on the faces project more prominently than their peers. The rails rise in a gradual, straight slope from each end to an obtuse point centered over the central arch. The coping stones of the rails are demarcated from the rest of the lower wall by a greater projection of their faces. On either side of the central point of the rails are long, narrow slits formed by the masonry to give the bridges a crenelated appearance. Similar slits also occur centered above each of the flanking arches.

Existing Conditions: Stone in the crenelated coping dislodged. Heavy areas of efflorescence on the under side and down stream side of the bridge.

Recommendations: Loose and dislodged stone should be reset. Heavy areas of efflorescence should be removed.

CLIFFSIDE BRIDGE

Description: The Cliffside Bridge is a 232-foot-long structure that most closely resembles a medieval battlement. The graveled-surfaced carriage path curves out over a vast ravine. The masonry substructure is clad in quarry-faced, random-laid, granite ashlar. The fifty-foot span segmental arch has a row of tall, slender radiating voussoirs. On either side of the arch are massive bayed abutments, battered at the base, which at the bridge deck become viewer's platforms. The tailing of the bridge is crenelated by the upright placement of massive handhewn boulders at regular intervals. The viewer's platforms have the same ponderous crenelation as well as finely dressed stone scuppers set in to the masonry to drain water from the bridge.

Existing Conditions: In general the bridge is in good condition. There are some small areas of efflorescence.

Recommendations: General cleaning of the bridge and manual removal of efflorescence.

LITTLE HARBOR BROOK BRIDGE

Description: The Little Harbor Brook Bridge carries the graveled-surface carriage path over Little Harbor Brook. The bridge is forty feet in length, relatively shorter than the other bridges, and has a main span of twenty feet in length with a deck of twenty feet in width. The low, round arch of the span is echoed in the curve of the side rails, which also arch gracefully upward toward the center of the arch. The masonry substructure is clad with quarry-dressed, random-laid, granite ashlar masonry. Each face of the arch displays quarry-dressed granite voussoirs, like the copings of the railings which are of quarry-dressed granite masonry.

Existing Conditions: Heavy concentration of moss and lichens. Some efflorescence on underside of arch with concentration near ring stones. Stone in general is more deteriorated; granulation of stone. Quality of granite not as good as other bridges. Test pit indicated clay waterproofing on bridge.

Recommendations: Mechanical removal of moss and lichens because of inferior quality of granite. Rewaterproofing of bridge. Removal of efflorescence on underside of arch.

WATERFALL BRIDGE

Description: The Waterfall Bridge carries the gravel-surfaced carriage path over Hadlock Brook. The structure is 125 feet in length and flares gently at its ends. The twenty-foot span of its elliptical arch springs from the vertical side bases. The facing arches are firmly outlined by quarry-faced radiating voussoirs. The masonry substructure is clad in quarry-faced, random-laid, granite ashlar masonry on its tow faces and the arch vault and sides. Bold granite blocks form the rail copings, which are straight and level. Two pairs of semi-circular viewing platforms bow out on either end to take advantage of the view of the waterfall and the ravine.

Existing Conditions: Recently repointed. Heavy efflorescence on under side of arch with major concentration in the area of ring stone. general good condition. Major problem is efflorescence on underside of bridge.

Recommendations: Heavy areas of efflorescence should be removed using both mechanical and chemical methods.

DEER BROOK BRIDGE

Description: The Deer Brook Bridge carries the gravel-surfaced carriage path over the Deer Brook near the Jordan Cliffs. The structure is 140-foot in length and is flared at either end. There are a pair of tall rounded arches, narrow eight foot spans, separated by a delicate pier and outlined by slender radiating voussoirs. The masonry substructure is clad in quarry-faced, random-laid, granite ashlar. Set into the spandrel of the arches is a circular medallion into which has been carved the date, 1925.

Existing Conditions: No major areas of efflorescence visible. In general, condition is good. The large deposit of rock on the upstream side of the bridge. Stone near the water has either fungal or microbial growth due to constant moisture condition. Needs general masonry cleaning.

Recommendations: Mechanical and chemical cleaning of bridge to remove efflorescence and fungal growth. Removal of rock deposit on the upstream side of the bridge.

CHASM BROOK BRIDGE

Description: The Chasm Brook Bridge is a rustic and small-scaled 20-foot span bridge that is forty feet in length. It is built over Chasm Brook and has a masonry substructure clad in quarry-faced, random-laid, granite ashlar. The long, slender, radiating voussoirs and keystone of the segmental arch and the railing copings are also dressed in the same manner. The gravel-surfaced deck is handsomely flared and terminated at pairs of rounded abutments which form pedestals for their gently peaked caps.

Existing Conditions: Good condition. Efflorescence seems to be from recent repointing. Test pit on carriage indicated no waterproofing.

Recommendations: Further investigation to determine if any waterproofing was done. If not, bridge should be waterproofed.
A light cleaning could be done to remove mortar staining.

HADLOCK BROOK BRIDGE

Description: The Hadlock Brook Bridge is a small-scaled, 40-foot in length with a twenty-foot segmented arch spanning the Hadlock Brook. The rail copings of the bridge follow the line of the arch and flares out gently at either end, with strong abutments with rounded capstones. The masonry substructure is clad with very rugged, quarry-faced, random, granite masonry. The radiating voussoirs and rail copings are similar in texture.

Existing Conditions: Generally in good shape. Efflorescence concentrated on upstream side and on inside of arch on ring stone. Some evidence of dendritic efflorescence on under side of arch.

Recommendations: Rewaterproofing of bridge and general cleaning.

APPENDICE I.

COST ESTIMATE FOR MODEL REHABILITATION

ACADIA NATIONAL PARK - CARRIAGE ROADS
COST FOR COMPLETING 1 MILE SECTION 14-21

	Unit	Cost	
Cutting and Chipping			
Bucket Truck	1	$1,360	
Chip Truck	1	$1,530	
Chipper	1	$1,564	
Pickup	1	$221	
Saw	6	$1,020	
Laborer	4	$7,072	
Truck Driver	1	$2,040	
Subtotal			$14,807.00
Ditching W/Excavator			
Pickup	1	$91	
Dump Truck	2	$1,260	
Excavator	1	$1,820	
Laborer	1	$728	
Truck Driver	2	$1,680	
Equip. Operator	1	$896	
Subtotal			$6,475.00
Ditching W/O Excavator			
Pickup	1	$26.00	
Dump Truck	0.1	$18.00	
Grader	0.1	$64.00	
Loader	0.1	$32.80	
Laborer	4	$832.00	
Truck Driver	0.1	$24.00	
Equip. Operator	0.2	$51.20	
Subtotal			$1,048.00
Revegation			
Pickup	1	$52.00	
Loader	1	$656.00	
Laborer	3	$1,248.00	
Equip. Operator	1	$512.00	
Subtotal			$2,468.00

ACADIA NATIONAL PARK - CARRIAGE ROADS
COST FOR COMPLETING 1 MILE SECTION 14-21

	Unit	Cost	
Clean Between Stones			
Pickup	1	$91.00	
Laborer	4	$2,912.00	
Subtotal			$3,003.00
Repair Stone Walls			
Pickup	1	$39.00	
Backhoe	1	$396.00	
Laborer	2	$624.00	
Equip. Operator	1	$384.00	
Subtotal			$1,443.00
Clean Upper Drainage			
Pickup	1	$26.00	
Laborer	4	$832.00	
Subtotal			$858.00
Grade Surface/Shoulder			
Dump Truck	0.5	$180.00	
Grader	1	$1,280.00	
Loader	0.5	$328.00	
Roller	1	$312.00	
Water Truck	0.5	$180.00	
Farm Tractor	1	$240.00	
W/York Rake	1	$96.00	
Laborer	1	$416.00	
Truck Driver	1	$480.00	
Equip. Operator	3.5	$1,792.00	
Subtotal			$5,304.00
Retrieve Coping Stones			
Pickup	1	$39.00	
Winch Truck	1	$324.00	
Laborer	2	$624.00	
Truck Driver	1	$360.00	
Subtotal			$1,347.00

ACADIA NATIONAL PARK - CARRIAGE ROADS
COST FOR COMPLETING 1 MILE SECTION 14-21

	Unit	Cost	
Reset Coping Stones			
Pickup	1	$78.00	
Excavator	1	$1,560.00	
Laborer	2	$1,248.00	
Equip. Operator	1	$768.00	
Subtotal			$3,654.00
Waterproof Bridges			
Fixed Cost		$500.00	
Pickup	1	$130.00	
Dump Truck	0.5	$450.00	
Loader	0.5	$820.00	
Backhoe	0.2	$264.00	
Compactor	0.2	$64.00	
Laborer	2	$2,080.00	
Truck Driver	0.5	$600.00	
Equip. Operator	0.7	$896.00	
Subtotal			$5,804.00
Road Base Existing			
Fixed Cost		$6,500.00	
Pickup	1	$65.00	
Dump Truck	2	$800.00	
Grader	1	$1,600.00	
Loader	1	$820.00	
Roller	0.5	$195.00	
Water Truck	0.5	$225.00	
Rotartiller	0.5	$0.00	
Laborer	1	$520.00	
Truck Driver	2.5	$1,600.00	
Equip. Operator	2.5	$1,600.00	
Subtotal			$13,925.00

ACADIA NATIONAL PARK - CARRIAGE ROADS
COST FOR COMPLETING 1 MILE SECTION 14-21

	Unit	Cost	
Road Base New			
Fixed Cost		$6,500.00	
Pickup	1	$26.00	
Dump Truck	3	$540.00	
Loader	1	$328.00	
Roller	1	$156.00	
Water Truck	1	$180.00	
Spreader	1	$320.00	
Laborer	2	$416.00	
Truck Driver	4	$960.00	
Equip. Operator	3	$768.00	
Subtotal			$10,194.00
Road Surface New			
Fixed Cost		$6,500.00	
Pickup	1	$26.00	
Dump Truck	3	$540.00	
Loader	1	$328.00	
Roller	1	$156.00	
Water Truck	1	$180.00	
Spreader	1	$320.00	
Laborer	1	$208.00	
Truck Driver	3	$720.00	
Equip. Operator	3	$768.00	
Subtotal			$9,746.00
New Upper Drainage			
Pickup	1	$52.00	
Dump Truck	0.1	$36.00	
Loader	0.1	$65.60	
Laborer	4	$1,664.00	
Truck Driver	0.1	$48.00	
Equip. Operator	0.1	$51.20	
Subtotal			$1,916.80
GRAND TOTAL			$81,992.80

APPENDICE J.

Secretary's Guidelines

The Secretary of Interior lists ten Standards for Rehabilitation which include:

1. Using a property for its historic purpose or changing it minimally for re-use.

2. Avoiding the removal or alteration of historic materials or features.

3. No conjectural additions.

4. Retaining changes with historical significance.

5. Retaining distinctive features, finishes and construction techniques.

6. Repairing is better than replacing.

7. Surface cleaning by gentlest means possible.

8. No archaeological disturbance without mitigating measures.

9. Making new work distinctive, but compatible.

10. Completing new work in a manner which will allow for the continued integrity of historic property if new work is removed.

For this project, the guidelines are addressed as follows:

1. Using a property for its historic purpose or changing it minimally for re-use.

   Rockefeller originally used the carriage roads for carriage drives. He prohibited automobile traffic and the Park Service continues that tradition today, with the only modification being different surface treatments which were more amenable for foot, horse and bike traffic.

2. Avoiding the removal or alteration of historic materials or features.

   The model rehabilitation plan calls for modifying the surface of the road. The surface of these roads was constructed in three layers: a foundation course of large stones ($\pm$4"), a middle course of smaller stones ($\pm$1½-2"), and a surface course of smaller stones with a clay binder. The existing top layers no longer resemble those of the original construction. Two compositions will be tested for the top layers to determine which more closely matches how the roads looked historically. The foundation layer will not be disturbed.

3. No conjectural additions.

The only addition to the section scheduled for model rehabilitation is a diversion swale. Historically, the swale shown on the construction documents at West Branch bridge did not exist. However, perhaps because of a change in the drainage pattern further upslope, a sizeable volume of water is now running across the road at this point and therefore causing surface erosion. This type of swale is used elsewhere along the roads to solve the same problem, thus its use here will seem neither incongruous nor inappropriate.

4. Retaining Changes with Historical Significance

The major change to the carriage roads took place in the 1940's when the motor road was relocated so that it no longer passed under Bubble Pond bridge. This project will have no impact on that modification as there are no plans to relocate either the motor road or Bubble Pond Bridge.

5. Retaining distinctive features, finishes and construction techniques.

None of the distinctive features of the roads: their alignment, the details of construction (e.g., walls, surface, coping stones) will be removed. In fact, the purpose of the project is to restore them to a condition more nearly like the original.

6. Repairing is better than replacing.

The repairs proposed include mending retaining walls and stone culverts and catch basins, resetting coping stones, and restoring the surface as discussed under item 2. While no storm drainage pipes need replacement on this section of the roads, failed pipes on future sections will need to be removed and new pipes installed. The new pipes should be concrete or smooth steel. Plastic pipe would appear too modern and not last very long.

7. Surface cleaning by the gentlest means possible.

The stone bridges on the carriage roads are covered with efflorescence, a deposit which has leached out of the bridges mortar and/or concrete core. It needs to be removed because it is unattractive and it may be causing damage to the granite and mortar. The proposed techniques for cleaning include micro-abrasives for localized areas or walnut shell abrasives. No sandblasting will be allowed.

8. No archaeological disturbance without mitigating measures.

No archaeological work will be required for the roadbed excavation.

However, NPS archaeologists must be notified if excavation of the diversion ditches will be required.

9. Making new work distinctive, but compatible.

The new work for the section scheduled for model rehabilitation consists mainly of replacing stones missing in the retaining walls and extending a retaining wall approximately 100 feet. The specifications call for matching the stone of the existing wall and the techniques of its installation.— which means it won't be distinctive

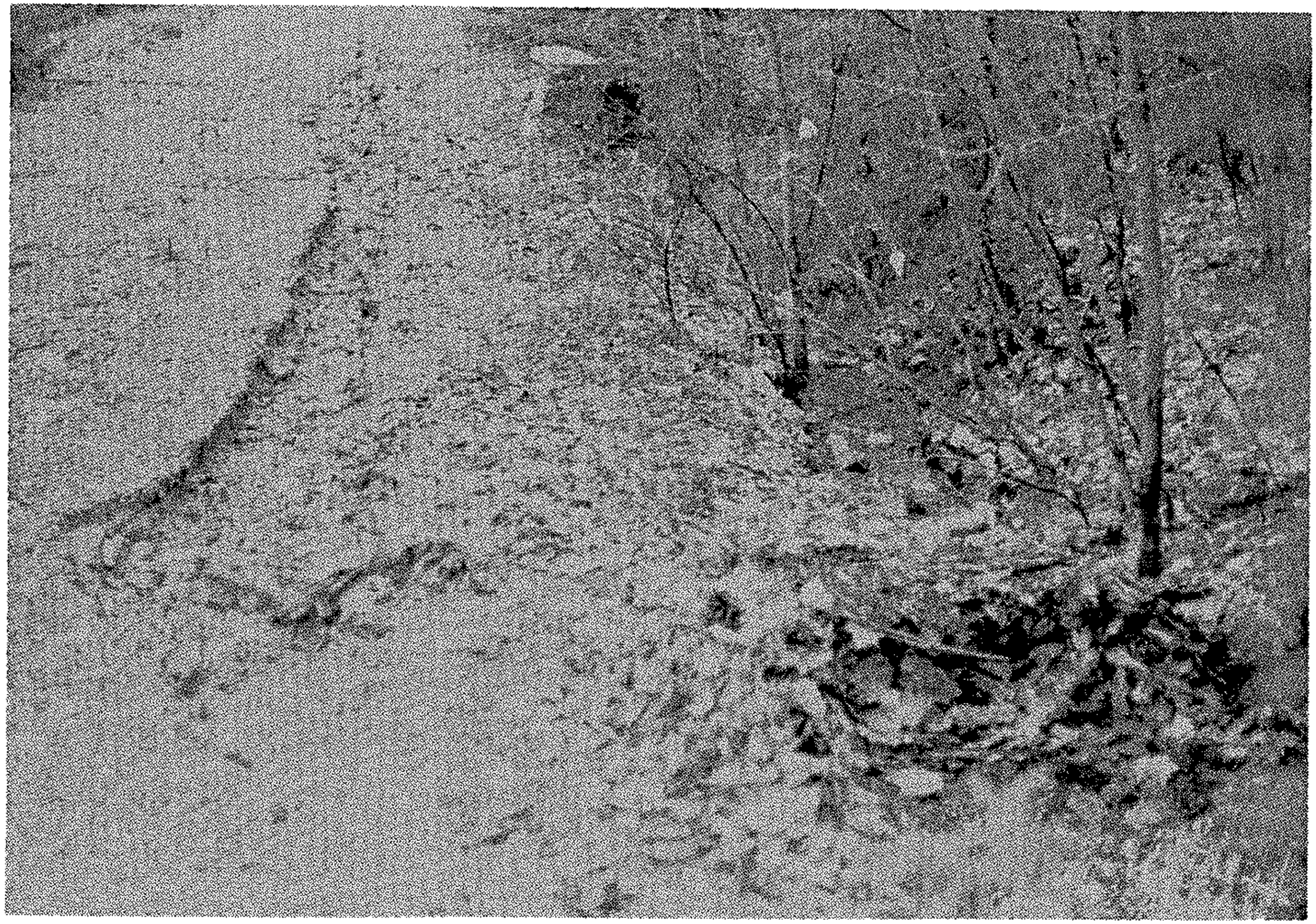
10. Completing new work in a manner which will allow for the continued integrity of historic property if new work is removed.

Where the retaining wall is extended, connection to the existing wall will need to be made according to this criterion.

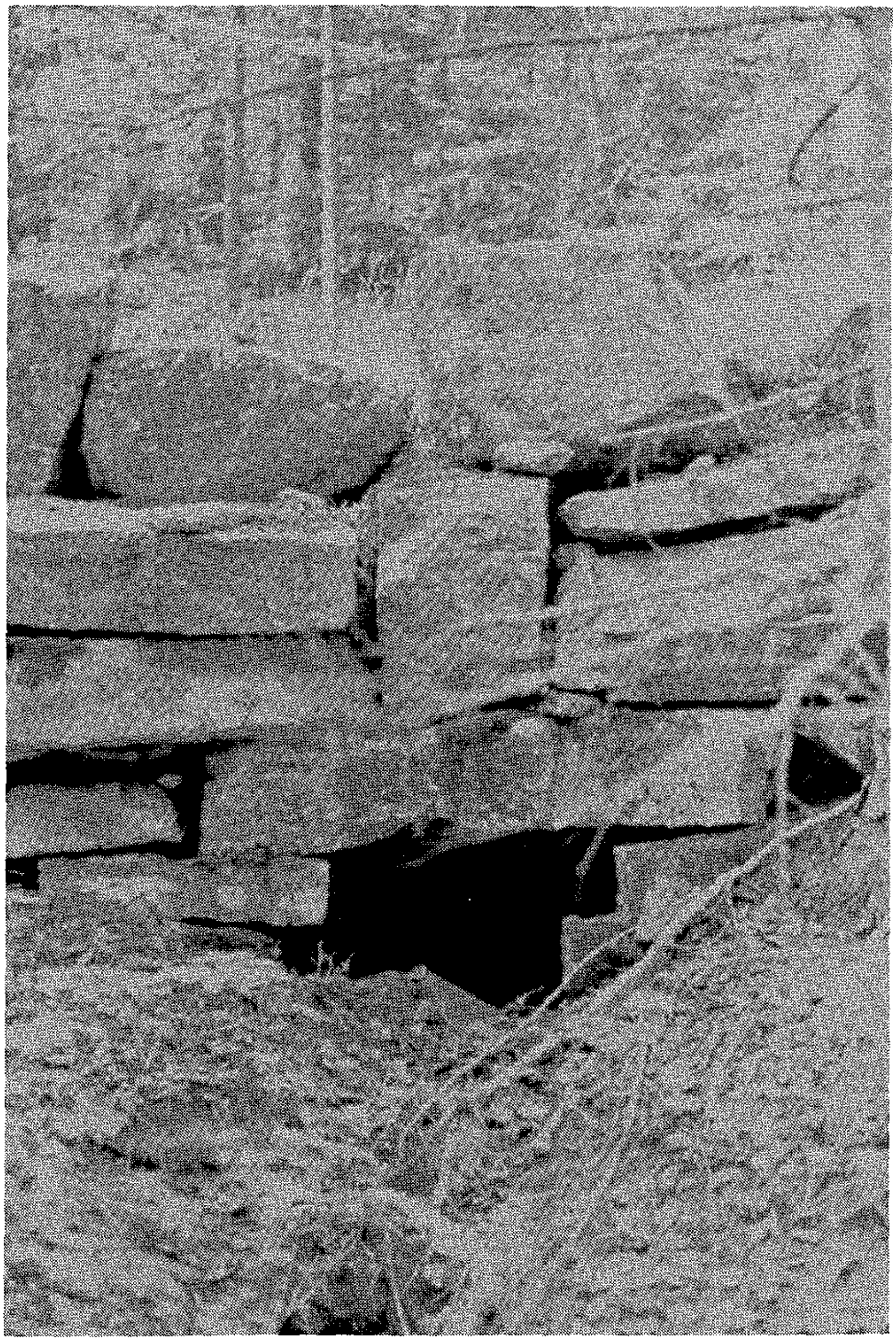
The most recent guidelines from the Department of Interior should be consulted prior to beginning work on each management unit.

APPENDICE K.

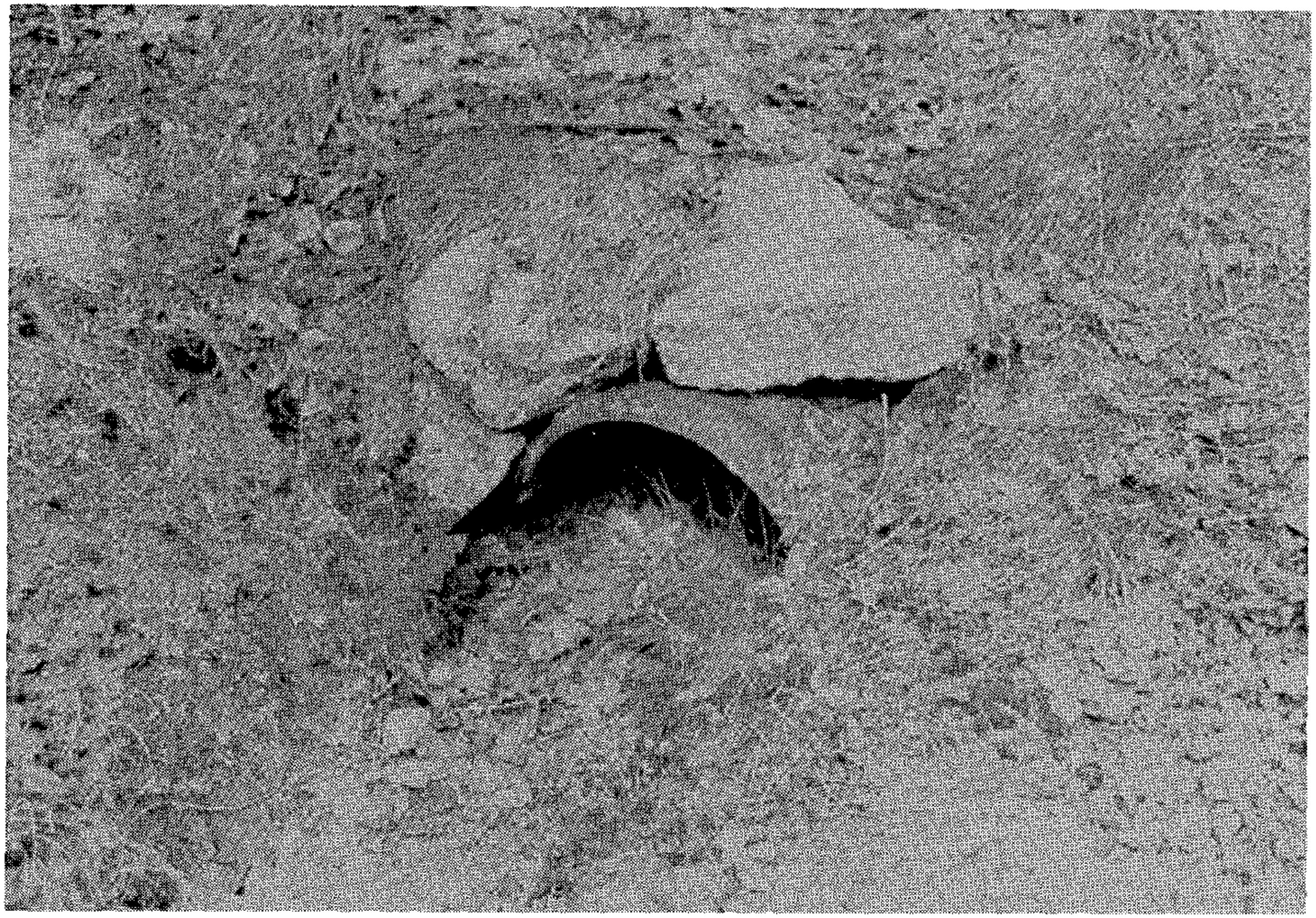
PHOTOGRAPHS OF EXISTING CONDITIONS



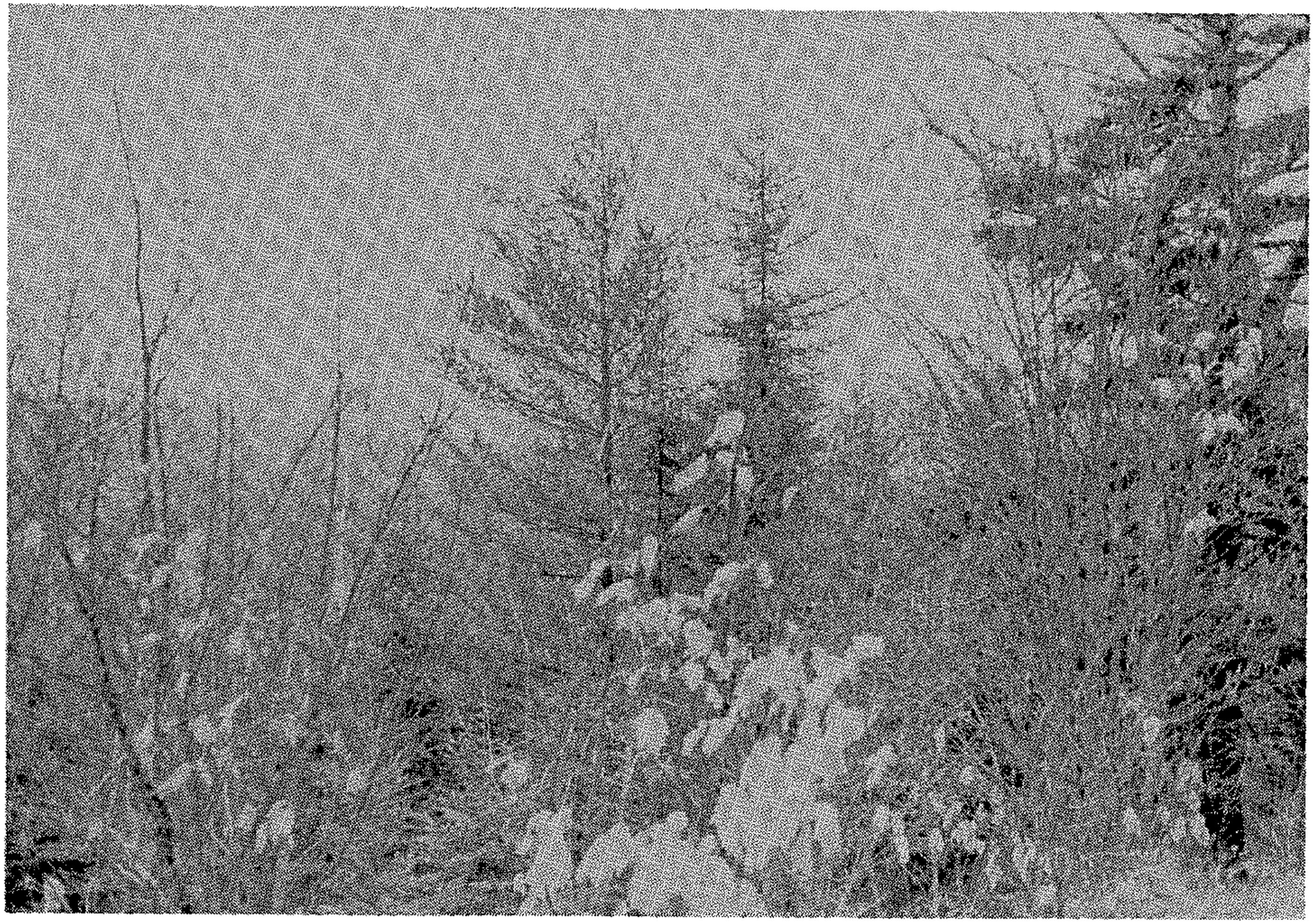
Leaves caught on woody vegetation forms a dam, diverting
water over road surface and resulting in erosion.



Stone Culvert

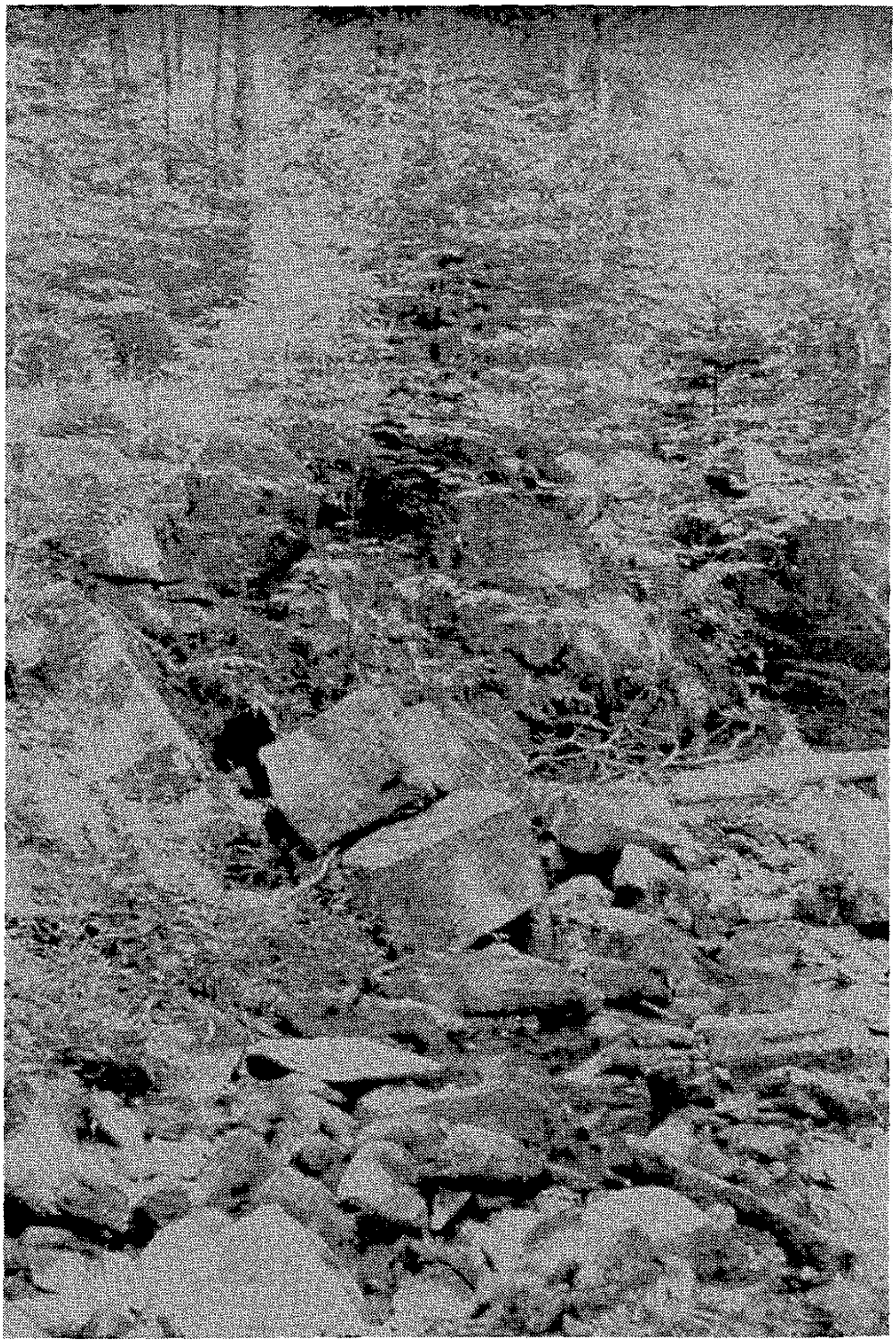


Culvert Rusted and Silted In



Obscured View

Ditch and culvert failure causes erosion.



Displaced Coping Stones

BIBLIOGRAPHY

Abrell, Diana F. A Guide to the Carriage Roads in & Near Acadia National Park. Mt. Desert, ME: Diana F. Abrell, Publisher, 1985.

Albright, Horace M. The Birth of the National Park Service-The Founding Years, 1913-33. Salt Lake City, UT: Howe Brothers, 1985.

American Architecture and Building News. (To be referred to as AABN) Vol. 2. Gate-Lodge for E. H. Johnson, Esq., "Alta Crest." Greenwich, Conn.: Currere and Hastings, Architects, 11 August 1888:63.

AABN. Vol. 25. Gate-Lodge for G. A. Nickerson, Esq. Dedham, Ma.: Longfellow, Alden and Harlow, Architects, 20 April 1889:186.

AABN. Gate-Lodge for the estates of F. L. Ames, Esq. North Easton, Ma.: Hames R. Osgood and Co., 26 December 1885:304.

AABN. Vol. 38. Gate-Lodge and Hamersley Library, sea-side home. Bath Beach, N. Y.: Purfitt Brothers, Architects, 12 November 1892:106.

AABN. Vol. 82. Entrance Gate and Lodge to Samoset grounds. Rockland, Maine: H. C. Wilkinson, Architect, 17 October 1903:23.

Amory, Cleveland. The Last Resorts. New York: Harper & Brothers, Publishers, 1952.

Annese, Domenico. "The Impact of Parkways on Development in Westchester County, New York City, and the Metropolitan New York Region." Paper read at conference on Parkways. Roanoke, Virginia, 9 September 1987.

Architectural Review. Vol. 5. Gate House of Marshall E. Scunpsell. Highland Park, IL: Marshall and Fox, Architects, 1908:27.

Atterbury, Grosvenor. Notes on the Architectural and Other Esthetic Problems Involved in the Development of Our Great National Parks. (August/September) 1929.

Baker, I. O. A Treatise on Roads and Pavements. New York: John Wiley and Sons, 1913.

Breeze, Benjamin L. A Land Status Study of Acadia National Park, Mt. Desert Island, Maine. Prepared for the United States Department of the Interior, National Park Service, 20 August 1942.

Brown, Lenard E. "Acadia National Park - History, Basic Data." Office of History and

Historic Architecture - Eastern Service Center. Washington, D.C.: United States Department of the Interior, National Park Service, February 1971.

Building. Vol. 9, no. 2. Gate-Lodge. Fanwood, N. J.: McKim, Mead and White, Architects, 14 July 1888.

Building. Vol. 7, no. 12. Gate-Lodge. Tuxedo Park, N. J.: Bruce Price, Architect, 17 September 1887.

Butcher, Russell D. "Tea and Popovers Please." Down East. July 1970.

Clemens, Herschel. "Prize Essay on Road Making." Massachusetts State Board of Agriculture Report. 1869.

Coherex Dust Control Manual (The). Witco Publication.

Collier, Sargent F. Mount Desert Island & Acadia National Park: An Informal History. Camden, ME.: Down East, 1978.

Colvin, Howard, ed. Design and Practice in British Architecture Studies in Architectural History. Leads, England: W. S. Maney and Sons, Ltd., 1984.

Cron, F. W. "Fitting the Highway to the Landscape." The Highway and the Landscape. W. B. Snow, ed. New Brunswick: Rutgers University Press, 1959.

Dearn, T.D.W. Sketches in Architecture. London: J. Taylor, Publishers, 1805.

Doell, M. Christine Klim. Gardens of the Gilede Age: Nineteenth - Century Gardens & Homegrounds of New York State. Syracuse, New York: Syracuse University Press, 1986.

Dorr, George B. Acadia National Park: It's Growth and Development. Bangor: Burr Printing Co., 1948.

Dorr, George B. The Story of Acadia National Park. Bar Harbor, ME: Acadia Publishing Company, 1985.

"Dust Retardant Keeps Mountain Air Clean." Highway and Heavy Construction. June 1979.

Eliot, Charles W. The Future of Mount Desert Island. A Report to the Plan Committee Bar Harbor Village Improvement Association. Bar Harbor Village Improvement Association, 1928.

Eliot, Chas W. "The Need of Conserving the Beauty and Freedom of Nature in Modern Life." National Geographic 26. The National Geographic Society, July 1914.

Encyclopedia Americana. "Carriage Building." 1600-1900.

Farrand, Beatrix. Road Notes for John S. Rockefeller, Jr., 11 November 1934.

Farrand, Beatrix. Road Notes for John D. Rockefeller, Jr., 4 November 1930.

Farrand, Beatrix. Letter to John D. Rockefeller, Jr., 15 April 1935.

Fein, Albert. Frederick Law Olmsted and the American Environmental Tradition. New York: George Brazilier, Inc., 1972.

"Forest Service Gets Drop on Dust with Suppressant." Roads and Bridges. January 1986.

Fosdick, Raymond B. John D. Rockefeller, Jr. A Portrait. New York: Harper & Brothers, Publishers, 1956.

Gandy, Joseph. The Rural Architect. London: John Harging, Publisher, 1805.

Hadley, Benjamin L. "Healing Acadia's Burn." National Parks. The National Parks Association, (July-September) 1950.

Howard, Donald. "History of Recreation." Recreation Places. New York: Reinhold Publishing Co., 1958.

Hubbard, Henry Vincent. "The Designer in National Parks: Preservation and Enhancement of Natural Scenery." Landscape Architecture 38, no. 2 (January 1948):58-60.

Hubbard, Henry Vincent, and Kimball, Theodora. An Introduction to the Study of Landscape Design. New York: The Macmillan Company, 1927.

Hubler. "A Service in Remembrance and Appreciation of John D. Rockefeller, Jr." 31 July 1960.

Jackson, Gervase. "Letter to the Editor." Country Life Magazine Vol. 169. 29 June 1981:261.

"John D. Rockefeller, Junior, Lover of Order and Excellence." Landscape Architecture 28, no. 3. (April 1938):136-143.

Judson, William P. City Roads and Pavements. New York: The Engineering News Publishing Company, 1909.

Krueger, C. E. Policy & Guidelines for the Design and Construction of Park Roads. [Draft]. 16 July 1967.

Labor and Capital. News. Waco, Texas. 20 January 1917.

Layton, Victor J. "Mr. D. I's Granite Heritage." Down East. June 1982.

Lynes, Russell. The Taste Makers. New York: Harper & Brothers, 1954.

Lyons, Lewis M. "John D. Rockefeller Lives with Villagers in His May Vacation Trips to Mt. Desert Island." Boston Sunday Globe. 2 June 1929.

Malton, James. An Essay on Rural Architectrue: The Principles of James Malton's Essay on British Cottage Architecture. England: Westmead, Fanborough and Hunts (re-pub), 1972.

Mowl, Tim and Earnshaw, Brian. Trumpet at a Distant Gate: The Lodge as Prelude to the Country House. Boston: David Godine, Publisher, 1985.

National Commission of Fine Arts (The). Eleventh Report. (January 1, 1926-June 30, 1929). Washington, D. C.: U. S. Government Printing Office, 1930.

New York Sketchbook of Architecture (The). Vol. 3. Design for Gate-Lodge. May 1876.

New York State Engineer and Surveyor Bulletin No. 1. April 1899.

Newhall, Nancy. A Contribution to the Heritage of Every American - The Conservation Activities of John D. Rockefeller, Jr. New York: Alfred A. Knopf, 1959.

Newspaper Article. "No Automobile for John D. Rockefeller, Jr., But With a Pair of Spanking Black Horses He Drives to Work Each Day; He's a Lover of Out-of-Doors Life." New York. nd.

Newspaper Article. Pocantico Hills, New York: Scrapbook Collection at Rockefeller Archives Center. Scrapbook U. nd.

Newton, Norman T. Design on the Land. Cambridge, MA.: The Belknap Press of Harvard University Press, 1971.

O'Neil, Gladys. "Acadia Stone Bridges Link Past and Future." The Bar Harbor Times. 23 April 1987.

Oglesby, Clarkson, H. Highway Engineering. Third Edition. New York: John Wiley & Sons, 1975.

Pannell, J. P. Man the Builder: an Illustrated History of Engineering. New York: Crescent Books, 1964.

Pencil Points. "Master Draftsmen, IX: Welles Bosworth." Volume VI, No. 1. Placzek, Adolf, editor.

Macmillan Encyclopedia of Architects. New York: The Free Press Division of Macmillan Publishing Company, 1982.

Pond, Bremer W. "Fifty Years in Retrospect: Brief Account of the Origin and Development of the ASLA." Landscape Architecture 40, no. 2. (January 1950):59-66.

Pyle, Tom. Pocantico: Fifty Years on the Rockefeller Domain. New York: Duell, Sloan and Pearce, 1964.

Report of the New York State Engineer and Surveyor. 1899.

Rockefeller, John D., Jr. Address presented at the Opening of Fort Tryon Park, New York. 12 October 1935.

Rockefeller, John D., Jr. Extract From Remarks at a Lunch Given by Mr. Harold H. Swift. Chicago, Illinois. 25 September 1942.

Rockefeller, John D., Jr. Remarks at the Opening of the Cloisters, 10 May 1938.

Rockefeller, John D., Sr. Random Reminiscences. Tarrytown, New York: Sleepy Hollow Press, 1984.

Rockefeller, John D., Jr. "Making a Living or Making a Life." Sermon given at Euclid Avenue Baptist Church. Cleveland, Ohio. 7 May 1927.

Rose, A. C. Historic American Roads. New York: Crown, 1976.

Rostler, F. S. and Kunkel, W. M., Jr. "Soil Stabilization." Industrial and Engineering Chemistry Vol. 56, No. 4. The American Chemical Society, April 1964.

Russ and Butcher, Pam. "Carriage Roads and Bridges of Acadia National Park." Down East, XIX. August 1972.

Savage, Chas. K. Bar Harbor Times Editorial (CKS). 19 May 1960.

Scanlon, Jack. "Editor Takes 'Wonderful' Safari to Maine to Tell How Contractors Overcome Obstacles to New Span." Bangor Daily News. (December 1951):8-9.

Specifications for Little Harbor Brook Road. Tarrytown, New York: Rockefeller Archive Center, 25 September 1918.

Tilden, Freeman. The State Parks: Their Meaning in American Life. New York: Alfred A. Knopf, 1962.

Tilden, Freeman. The National Parks: What They Mean to You and Me. New York:

Alfred A. Knopf, 1951.

Tilden, Freeman. Who Am I: Reflections on the Meaning of Parks on the Occasion of the Nation's Bicentennial. Washington, D.C.: Office of Publications-National Park Service, United States Department of the Interior, 1975.

Tilden, Freeman. The Fifth Essence. Washington, D.C.: National Park Trust Fund Board, nd.

Trefethen, Joseph M. Geology for Engineers. New York: D. Van Nostrand Co., 1959.

U. S. Department of the Interior. National Park Service. General Information Regarding Acadia National Park, Maine. Washington, D. C.: U. S. Government Printing Office, 1933.

U. S. Department of the Interior. National Park Service. Acadia National Park, Maine. nd.

U. S. Department of the Interior. National Park Service. Circular of General Information Regarding Acadia National Park, Maine. nd.

U. S. Department of the Interior. National Park Service. General Information Regarding Acadia National Park, Maine. Washington, D. C.: U. S. Government Printing Office, 1934.

U.S. Department of the Interior. Bureau of Outdoor Recreation. The Recreation Imperative: The Nationwide Outdoor Recreation Plan. A Report to the President and the Congress by the Secretary of the Interior. Washington, D.C.: U. S. Government Printing Office, 1974.

Webster's Biographical Dictionary. Springfield, MA: G. & C. Merriam Co., 1974.

Wheeling, Kenneth Edward. Horse Drawn Vehicles at the Shelburne Museum. Shelburne, Vermont: The Shelburne Museum, 1974.

Whithey, Henry F. and Whithey, Elsie Rathburn. Biographical Dictionary of American Architects (Deceased). Los Angeles: New Age Publishing Company, 1956.

Wixom, Charles W. A Pictorial History of Road Building. Washington, D.C.: American Road Builder's Association, 1975.

Wright, Terry. "Trumphal Arch." Architectural Journal. London: Architectural Press, Ltd., December 1972:1290.

Wurman, Richard Saul, Levy, Alan, and Katz, Joel. The Nature of Recreation: A

Handbook in Honor of Frederick Law Olmsted, Using Example From His Work.
Cambridge, MA: MIT Press, 1972.

ON MICROFILM