wetherill mesa

design directive

MESA VERDE NATIONAL PARK

WETHERILL MESA

DESIGN DIRECTIVE

RECOMMENDED:

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ACTING CHIEF, OFFICE OF ENVIRONMENTAL PLANNING AND DESIGN, WESTERN SERVICE CENTER	Date
ACTING DIRECTOR, HARPERS FERRY CENTER	Date
SUPERINTENDENT	Date

APPROVED:

REGIONAL DIRECTOR SOUTHWEST REGION	Date

NATIONAL PARK SERVICE

UNITED STATES DEPARTMENT OF THE INTERIOR

WETHERILL MESA

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NATIONAL PARK SERVICE
Department of the Interior
December 1969

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PREFACE

The management objectives and the master plan draft for Mesa Verde National Park provide what we have considered to be an overall philosophy for the use and development of the park. An interpretive prospectus, as yet not completed or approved for the entire park, has established interpretive themes for Wetherill Mesa within the context of this philosophy.

The design directive, as we conceive it, is a document that pulls together the thoughts and concepts, frequently divergent, from these documents into a workable proposal. This has frequently meant detailed reappraisal of each point in each document, resulting in the resolution of conflicts and solution of specific problems hidden within the necessarily broader scope of these documents.

The result is, we hope, a detailed workable plan for Wetherill Mesa with occasional diversions onto Chapin Mesa and Navajo Hill. At times our design directive is at variance with the master plan and the interpretive prospectus. This has been necessary to bring all of the divergent elements into a workable whole. We have been careful, however, not to diverge from the philosophical framework of the master plan nor from the themes developed in the interpretive prospectus.

PART I DESIGN DIRECTIVE

In the early planning phases, Wetherill Mesa was to be an equal to Chapin Mesa in the number of people it would accommodate, the number of ruins available to the visitor, the interpretation provided, and the physical facilities provided for the public. In 1967 the Director determined that the road to Wetherill Mesa would be a low standard (slow design speed) closely following the existing jeep trail. This decision initiated further studies of the type of experience we should provide the visitor.

In September of 1967 a master planning team headed by Volney J. Westley with representatives from WASO, Southwest Region, Mesa Verde National Park, The Mesa Verde Company, RPSSC, and DCSSC made an extensive study of the park and made numerous recommendations upon which the present draft of the master plan is based. The essence of these recommendations still appear valid to this design team. The major recommendation to provide a secondary transit system on Wetherill Mesa has become the focal point for planning the visitor experience.

The main road to Wetherill Mesa is currently under construction and should be completed in 1970. Several overlooks are provided along the way to the Mesa and there will be interpretive development at several of these. The road will stop just short of the Step House-Mug House area and future construction will connect this road with the parking area. This road is relatively narrow with some steep grades and a design speed of 25 mph. This may slightly limit the number of visitors choosing the trip to Wetherill over the more accessible Chapin Mesa. Once the road to Wetherill Mesa is completed, there will be public pressure to open the mesa to visitors.

There are no existing visitor facilities on Wetherill Mesa. The basic sewer and water system has been installed and will require some modification to connect to the proposed structures. There are existing rough trails to all the ruins which are proposed for visitor tours.

The surface ruins are presently covered with temporary structures which must be replaced before the visitor can view these ruins. Numerous jeep trails wander around the mesa and survey lines have been cut through the brush. Where feasible, these existing scars will be used in locating new trails and roads.

The Master Plan Fourth Draft dated October 1969, The Management Objectives dated June 25, 1969, and the Interpretive Prospectus Preliminary Draft dated May 1, 1968, with Wetherill Mesa portion rewrite dated September 9, 1968, all of which have not been approved as of November 1, 1969 were used as reference material for the preparation of this design directive. All conclusions in this design directive are considered compatible with legislation establishing Mesa Verde National Park as an historic management area.

This design team has used the following conclusions as the basis for their recommendations:

1. Navajo Hill must be utilized as an information point where the visitor would stop before deciding which mesa to visit.

2. Wetherill Mesa will be a day-use summer only area. The peak season is from June 15 to September 15. This season could extend from May through mid-October. However, the mesa should be open only when all facilities can be staffed and operated for the fullest visitor experience.

3. Off-season use will be by special arrangement auto caravans or busses, which will not require higher standard roads and could be accommodated by the available manpower.

4. Wetherill Mesa will be a more leisurely experience for the visitor who is willing to spend more time than he might on Chapin Mesa.

5. The number of visitors will be restricted to a carrying capacity which would enable all of the visitors to have a quality experience.

6. Walking will be encouraged and an extensive trail system developed from and between the key points.

7. The visitor would best be served by a secondary transit system on the mesa, allowing him to park and forget his car.

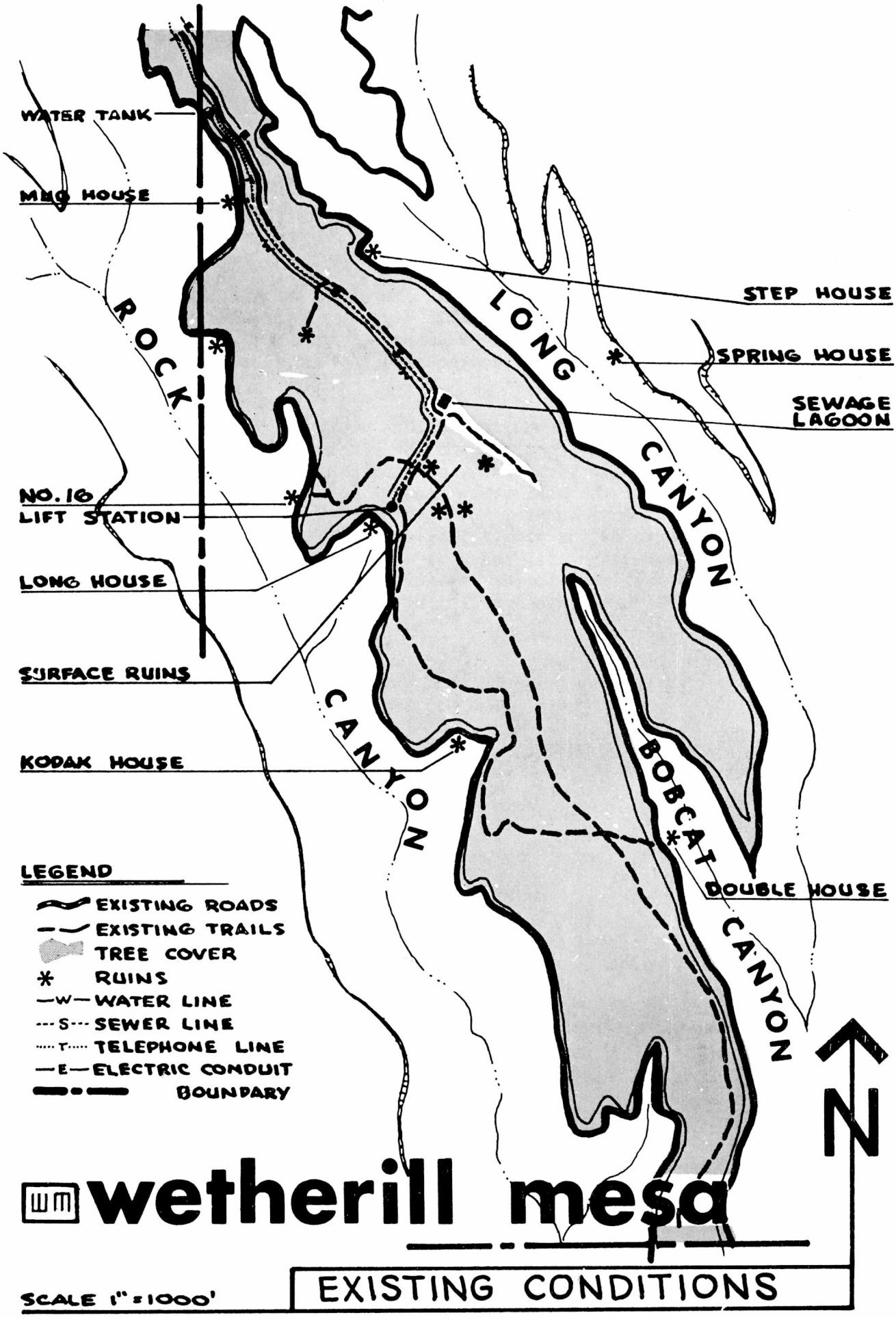
8. The mesa top resource can best be preserved by using low speed roads which would accommodate the secondary transit system and service vehicles. Multiple parking lots would therefore not be required.

9. A single parking lot would be provided. When the lot is full, the road should be closed at Navajo Hill.

10. The mini-train system will be designed to provide maximum service to key points at frequent intervals rather than attempt to take all people to all points of interest.

11. The mini-train will operate without charge to the visitor, or the visitor will pay only one fee for a full day use of the mini-train with unlimited transfers, if a free system cannot be realized. Alternate methods of collecting this fee are discussed in Part II of this design directive.

The development concept as conceived in this design directive, while varying in detail, is in agreement with the concepts stated in the master plan, interpretive prospectus, and the management objectives. A thorough analysis of the mini-train concept and its affect on the visitor has resulted in a shorter route serving three key points, and several lesser points on the mesa. Travel time has been greatly reduced and the mini-train will be utilized more efficiently. A variety of experiences will be available to the visitor enabling him to readily adjust his schedule to the availability of guided tours.



wetherill mesa

SCALE 1" = 1000'

EXISTING CONDITIONS

The development of Wetherill Mesa should proceed in a four-phase program which will allow increasing visitor access to the mesa as projects are completed. Some ingenuity in the handling of traffic and visitor flow will be necessary in the early phases until sufficient facilities have been constructed to allow full scale operation of the mesa and the mini-train.

PHASE I

The following project, originally planned for FY 1970, has been deferred.

(1) Parking Area (200 cars), PCP R-101

Preliminary plans to be prepared in fall 1969; construction to start in summer 1970; and location selected and rough design prepared in field during October 1969.

The parking area will be designed for 400 spaces with 200 spaces constructed during this first phase. The use of wide separation between lanes, the retention of trees and brush, and a close relationship to the natural topography will prevent a sea of cars. The fact that the parking area will be at a higher elevation than, and somewhat distant from the visitor center, and the retention of natural features will prevent the cars from being seen while in the visitor center complex. Specimen trees will be retained even though they may eliminate some parking spaces. Provision should be made in this contract for the transplanting of select trees from the parking lanes to areas on the mesa requiring restoration, particularly in the area between the surface ruins and Long House Overlook.

The FY 1970 program includes the following projects:

(2) Long House Trails and Overlooks, PCP R-62-4

Preliminary location in field in October 1969. Park day labor construction is recommended. No formal plans required. Supervision of construction by park staff and design office. Trail and overlook construction criteria as stated in Part II of this directive will be followed. Existing topography is adequate for layout, but detailed topography will be required for the overlooks.

(3) Loop Road, Mini-train, PCP R-96

Preliminary plans and field location to be prepared in winter 1969-70. Field layout in spring 1970. Construction to start in summer 1970. Existing topography is adequate for design.

A rough location was flagged and surveyed in October 1969. Further adjustment will be required to ease grades and avoid archeological sites. The mini-train road will be a one-lane, 10' wide trail designed for a maximum speed of 15 mph and closely following the natural topography. Further design criteria is stated in Part II of this directive. The location of this road as proposed in this design directive is somewhat different than proposed in the earlier drafts of the master plan and interpretive prospectus and the developed area plan (Drawing Number 307-40000). Although the actual location differs, the concept of mini-train access is in full agreement with these documents. Further analysis of the transportation system is contained in the Appendices of this directive. Water and power lines should be extended to the Long House Overlook and Kodak House areas as part of this construction.

(4) Archeological Salvage

Both day labor and contract excavation and salvage work will be required in areas affected by construction.

It is recommended that the Loop Road for the mini-train be deferred to the FY 1971 program rather than the parking area. The new road to Wetherill Mesa presently dead-ends with no facilities for parking or turn-around. Construction of the parking area would allow access to the mesa for future construction projects and limited visitor access. Upon completion of Phase I, the mesa facilities will not be sufficiently completed to handle visitors. Some groups could visit Long House on a conducted trip from Navajo Hill.

Phase II

The following projects are not currently programmed. It is recommended that they be scheduled for FY 1971 construction.

(1) Park Day Labor Projects

Navajo Hill Information Center (temporary), PCP required.

Step House Loop Trail and Overlook, PCP R-64-1 (needs revision).

Mug House Trail and Overlook, PCP required.

Kodak House Trail and Overlook, PCP required.

The Navajo Hill Information Center is essential to the successful operation of Wetherill Mesa. The master plan and interpretive prospectus have suggested various methods for

providing information at Navajo Hill. This team believes that a facility manned by uniformed personnel is required even though other means of informing the visitor may also be used. This structure will serve as the orientation point for the visitor where he will make his decision to visit either Chapin or Wetherill Mesa.

It is recommended that a temporary structure be erected due to the circulation problems existing at Navajo Hill. By experimenting with the location of this structure and the signing at Navajo Hill, we can then determine the most suitable location for a permanent structure. Preliminary design in spring 1970 with construction in FY 1971. This temporary structure may be a pre-fab unit which would be purchased or leased by the park or a simple structure which the park staff could erect. Design criteria is contained in Part II of this directive.

The trails to Mug House and Step House will make all three ruins accessible to the public and the Kodak House Trail and Overlook will provide a necessary diversion to avoid congestion at the primary resources. Field layout in spring 1970 with construction during FY 1971. Existing topography is sufficient for layout but detailed topography may be required for overlooks. Trail and overlook construction criteria as stated in Part II of this directive will be followed.

(2) Construction Package

Mesa Top Ruins Shelters (4 sites), PCP B-94-1 (needs revision).

Mesa Top Information Center, PCP required.

Mesa Top Ruins Loop Trail, PCP R-65-1 (needs revision).

The temporary shelters over the surface ruins are in poor condition and the ruins are being damaged. Top priority has been given to shelter replacement. Detailed drawings of the ruins are available but some additional topography of the immediate area may be needed.

Next to the visitor center, where basic information will be given to the visitor, the second most important center on Wetherill Mesa is at the hub of the surface ruins walk, Long House Overlook, and the Long House guided tour. A

secondary facility here will provide a sheltered mini-train waiting area, rest rooms, drinking fountains, possibly vending machines, a manned information station where Long House tour tickets may be given out, a self-serving information area, and a small exhibit area. The visitor has several choices of activities, all of which will be accompanied by some form of interpretation. This structure will serve as the primary information center until the visitor center is completed. Detailed topography is needed for the information center. Water and sewer lines are existing near the site.

The loop trail connecting the surface ruins, information center, and Long House Overlook will serve as access for construction and will essentially complete this complex for visitor use. Underground electrical lines to the ruins sites should be constructed with the trail. Design criteria is contained in Part II. Preliminary studies in spring 1970, bid in fall 1970 for construction in spring 1971.

(3) Exhibits

Design and construction of exhibits for facilities to be completed in Phase II should proceed concurrently with these projects. Final exhibit plans will be required for incorporation into the design of the structures.

(4) Sign Program - PCP required

The comprehensive sign program for Wetherill Mesa and revision of signing at Navajo Hill should be designed and the particular signs required for the opening of the Mesa should be constructed for installation in the spring of 1972.

(5) Utilities

Primary electrical service to the mesa and the underground distribution of electrical and telephone service to all projects in Phases II and III should be completed by the spring of 1972. Low voltage distribution for remote audio locations should coincide with road and trail construction. Water and sewer extensions and connections will be programmed as part of individual projects.

(6) Archeological Salvage

Excavation and salvage work will be required in all areas affected by construction.

(7) Demolition and Restoration - PCP required

Demolition of the Long House Camp and obliteration of jeep trails in the area around Long House, the Mesa Center, Kodak House, and Long House Overlook, and the restoration of these areas by means of planting and seeding is essential to restore the area to its natural appearance. The sewage lagoon and borrow pit will also require some planting to restore these areas and shield them from view. Work should be scheduled to coincide with projects in these areas.

Upon completion of Phase I and II, the primary resources will be accessible to the visitor and temporary means of directing the visitor will be available. Wetherill Mesa could be opened in spring 1972 for general use by the visitor, although the limited parking spaces, incomplete trail system, and the lack of the visitor center and restaurant facilities will not allow the mesa to operate at full capacity. Mini-train service would be on a reduced basis, probably operating with two trains. Initially, the concessioner will collect fees directly from the visitor for use of the mini-train and he will need temporary facilities at the mini-train terminal area. Temporary information displays will also be required. Alternate methods of financing the mini-train operation are discussed in Part II of this directive.

PHASE III

It is recommended that the following projects be included in the FY 1972 program:

(1) Parking Area Expansion - PCP required

It is essential that the full 400-car parking capacity be available upon completion of the visitor center, and it should be available when the mesa is opened for general use. The expansion, designed in Phase I, should be bid in spring of 1971, with construction in FY 1972, and completion by early spring of 1972. The full 400 capacity would be completed by the time visitors could use the mesa. However construction activity at the visitor center will require some storage and work space which would logically be located in the parking area. Thus, we anticipate a parking area of 250-300 spaces available when the mesa opens in the spring of 1972.

(2) Construction Package

Visitor Center w/Restaurant and Terminal, PCP B-88-4 (needs revision)
Visitor Center Grounds Development, PCP M-85

Duplex Residence, PCP B-89
Utility Building, PCP B-103

Preliminary design of the visitor center should be completed in the spring of 1970. This early design date allows the major structures to be studied at the same time so that a valid architectural theme will evolve. Design of the residence and utility building would be completed in the fall of 1970, with working drawings for all three projects completed for bidding in the spring of 1971 with construction in FY 1972. Preliminary drawings were prepared for the visitor center as part of the Developed Area Plan (307-40,000), which has not yet been approved. Subsequent changes in interpretive requirements and the change of site requires new studies for this structure.

The visitor center complex serves several functions: to introduce visitors to the activities on Wetherill Mesa; to provide facilities for physical comfort (food, rest rooms, relaxation); to provide various forms of in-depth interpretation of the area; to serve as a transition from automobiles to other transportation methods (walking and mini-train). Since all visitors will enter the visitor center complex, it is essential that the development reflect the quality of experience the visitor can expect on Wetherill Mesa. An analysis of the visitor center location and the design criteria are contained in Part II of this directive.

The area surrounding the visitor center complex will require restoration to a natural appearance. Existing jeep trails and construction scars must be obliterated. Development of the parking area should be included as part of the project. Large trees should be carefully salvaged and transplanted to break vistas along existing jeep trails.

The utility building and duplex residence will be essential for the operation and protection of the facilities on Wetherill Mesa and should be completed at the same time as the visitor center.

(3) Park Day Labor Project

Waysides and Overlooks (2), Tower-Burn and Head of Mesa, PCP required.
Rock Canyon Loop Trail, PCP required.

These interpretive areas along the Wetherill Mesa approach road should be completed at an earlier date if funds allow. They are scheduled at this point to spread the day labor projects over the development period. The Rock Canyon Loop Trail is desirable to allow a diversion for visitors who have more time to spend and wish to be away from the more populated areas on the mesa. Design in fall of 1970 with construction in FY 1972. Detail topography is needed for overlooks. Existing topography is adequate for field layout.

(4) Exhibits

Design and construction of exhibits for facilities to be completed in Phase III should proceed concurrently with these projects. The exhibit plan for the visitor center should be finalized early in 1970 so that the visitor center design can be closely coordinated with the exhibit plan.

(5) Utilities

The basic utility system would be completed in Phase II and only minor extensions and connections would be required in Phase III. These will be programmed as part of the individual projects.

(6) Archeological Salvage

The continuing excavation and salvage of archeological sites will be required in all areas affected by construction. Site 1573 adjacent to the visitor center is rather extensive and should be considered as a possible site for future excavation and stabilization as part of the visitor center complex.

Upon completion of Phase III the major facilities will be in operation and the visitor capacity of the Mesa will be greatly increased. The visitor will be exposed to most of the interpretive aspects of the mesa and only the wayside exhibits and the longer walking trails will be missing from the total development.

PHASE IV

It is recommended that the following projects be scheduled in the FY 1973 program:

(1) Construction Contract

Mug House Exhibit Shelter, PCP required.
Kodak House Exhibit Shelter, PCP required.
Long House Overlook Shelter, PCP required.
Mesa Top Ruins Audio Shelters, PCP required.
Navajo Hill Information Center (permanent), PCP required.

These relatively small exhibit-audio shelters will essentially complete the physical development on Wetherill Mesa and provide for a fuller interpretive experience. The ruins audio shelters may not be required if other devices are utilized and this will require further analysis. The permanent Navajo Hill Information Center should be completed at this time. These structures, with the exception of the Navajo Hill facility, will follow the architectural theme established on Wetherill Mesa. Design criteria is contained in Part II of this directive. Detailed topography is needed for all structures on the mesa. Design in fall 1972 with construction in FY 1973.

(2) Park Day Labor

Picnic Area Development, PCP required.
Double House Loop Trail, PCP required.
Long Canyon Loop Trail, PCP required.

Completion of the trail system will allow full use of the Mesa by the visitor and will provide for distribution of peak crowds over the mesa. The more leisurely experience envisioned by the interpretive prospectus will thus be fully realized and the visitor experience would be complete. Although a temporary picnic area may be necessary when the mesa is opened in the spring of 1972, the final picnic area development has been scheduled at this time to spread day labor projects throughout the development phases. Initial field layout in spring 1972 with construction in FY 1973. Existing topography is adequate for general layout but detailed topography may be needed at various overlooks on the trails. Trail and overlook design criteria will be as stated in Part II of this directive.

(3) Exhibits

Design and construction of exhibits will be coordinated with facilities to be completed in Phase IV.

(4) Utilities

Only minor utility extensions and connections will be required in this phase and they will be programmed as part of the individual projects.

(5) Archeological Salvage

Excavation and salvage of archeological sites will be required although relatively few sites will be affected by this phase of construction.

The first two Development Phases must be completed as rapidly as funds will allow. This schedule allows visitor access early in 1972 and any delay in these projects would push the opening date to 1973 or later. Some projects such as the surface ruins shelters are critical for the protection of the resource. Other projects in the first two phases are essential not only to allow visitor access at an early date but to provide for efficient management and protection of the mesa resources as the area becomes more accessible. Phase III and IV are less essential to the operation of the mesa and any delay would only result in some management problems and a less complete experience for the visitor.

More complete analysis and special studies are included as attachments in support of this design directive. More complete data is required for the design of specific facilities and many PCP's need writing or revision. As the various construction programs become final and construction funds are made available, there will undoubtably be some adjustments required. However, the basic Development Program, as presented here, will provide for logical and orderly development of the facilities on Wetherill Mesa.

"Those who come to Wetherill may have to work for it a bit, rather than driving right up to the rim in a car. But it will be worth it to see it in as quiet and inspirational an atmosphere as possible."

George B. Hartzog, Jr.
as quoted in
The Christian Science Monitor

SUMMARY OF WETHERILL MESA DEVELOPMENT PROGRAM

PHASE I

Parking Area - 200 cars
Long House Trails & Overlooks
Loop Road for Mini-train

Possible limited visitor access for Long House Tour.

PHASE II

Navajo Hill Information Center (temporary)
Step House Loop Trail & Overlook
Mug House Trail
Kodak House Trail & Overlook
Mesa Top Ruins Shelters
Mesa Top Information Center w/rest rooms
Mesa Top Ruins Loop Trail
Interpretive Devices
Sign Program
Utility Extensions & Electrical Service
Restoration - Long House Camp Area

Mesa open to visitors - somewhat reduced capacity - Mini-train operating.

PHASE III

Parking Area Expansion - 200 cars - (Scheduled to be completed prior to opening to public)
Visitor Center - Restaurant - Terminal
Grounds Development & Restoration
Duplex Residence
Utility Building
Waysides & Overlooks (two) on approach road
Rock Canyon Loop Trail
Interpretive Devices

Major facilities complete - possible crowding due to lack of trails - Mini-train operating with four trains.

PHASE IV

Exhibit Shelters - Mug House, Kodak House, Long House
Navajo Hill Information Center - Permanent
Mesa Top Ruins Audio Shelters
Picnic Area
Double House Loop Trail
Long Canyon Loop Trail
Interpretive Devices

Facilities complete except for future trail extensions.

WETHERILL MESA
DEVELOPMENT CONCEPT

MESA VERDE NATIONAL PARK - COLO.

SCALE 0 500 1000 2000

VISITOR CENTER - TERMINAL
INFORMATION - EXHIBITS - TOUR TICKETS
FOOD - REST ROOMS - PICNIC AREA

STEP HOUSE TRAIL
OVERLOOK

UTILITY & RESIDENTIAL AREA

MESA TOP RUINS
SURFACE RUINS SHELTERS
AUDIO SHELTERS - EXHIBITS

LONG CANYON TRAILS
WAYSIDE EXHIBITS

DOUBLE HOUSE

LOOP TRAILS
WAYSIDE EXHIBITS

MESA CENTER
INFORMATION
EXHIBITS - REST ROOMS

PARKING
400 CARS

KODAK HOUSE TRAIL CENTER
EXHIBITS - AUDIO SHELTER - NORDENSKIOLD CAMP

LONG HOUSE OVERLOOK
SHELTER - EXHIBITS

LONG HOUSE TRAIL
WAYSIDE EXHIBITS

ROCK CANYON TRAIL
OVERLOOKS & EXHIBITS

MUG HOUSE TRAIL
AUDIO SHELTER

WATER TANK
UTILITY AREA

NAVAJO HILL - 12 MILES

RUIN 11- 12-13

Navajo Canyon
Wickiup
Cliff Dwellings
Long Canyon
LONG MESA
Sentinel House
Sewage Disposa Ponds
WETHERILL MESA
SPRINGS
mini-train
ROCK
JEEP TRAIL
Kodak House
Double House
Canyon
Loop TRAILs
Rock Canyon
Mug House
Indian Ruins
WILDHORSE MESA
PACK TRAIL
BOUNDARY
R16W
R15W
T34N
T33N
78¼
85

PART II ANALYSIS

A. MANAGEMENT AND INTERPRETIVE REQUIREMENTS FOR THE DEVELOPMENT OF WETHERILL MESA

- Relationship to Existing Areas & Facilities
- Archeological Resource
- Hours of Use
- Length of Visitor Stay
- Visitor Capacity
- Visitor Parking Needs

B. ALTERNATIVES

- Transportation System
- Navajo Hill
- The Visitor Center
- Off Season use of Wetherill Mesa
- Visitor Fees

C. PROPOSED TRANSIT SYSTEM

D. VISITOR CENTER LOCATION

E. ANALYSIS OF SCENIC RESOURCE

F. REQUIREMENTS FOR THE DESIGN OF WETHERILL MESA FACILITIES

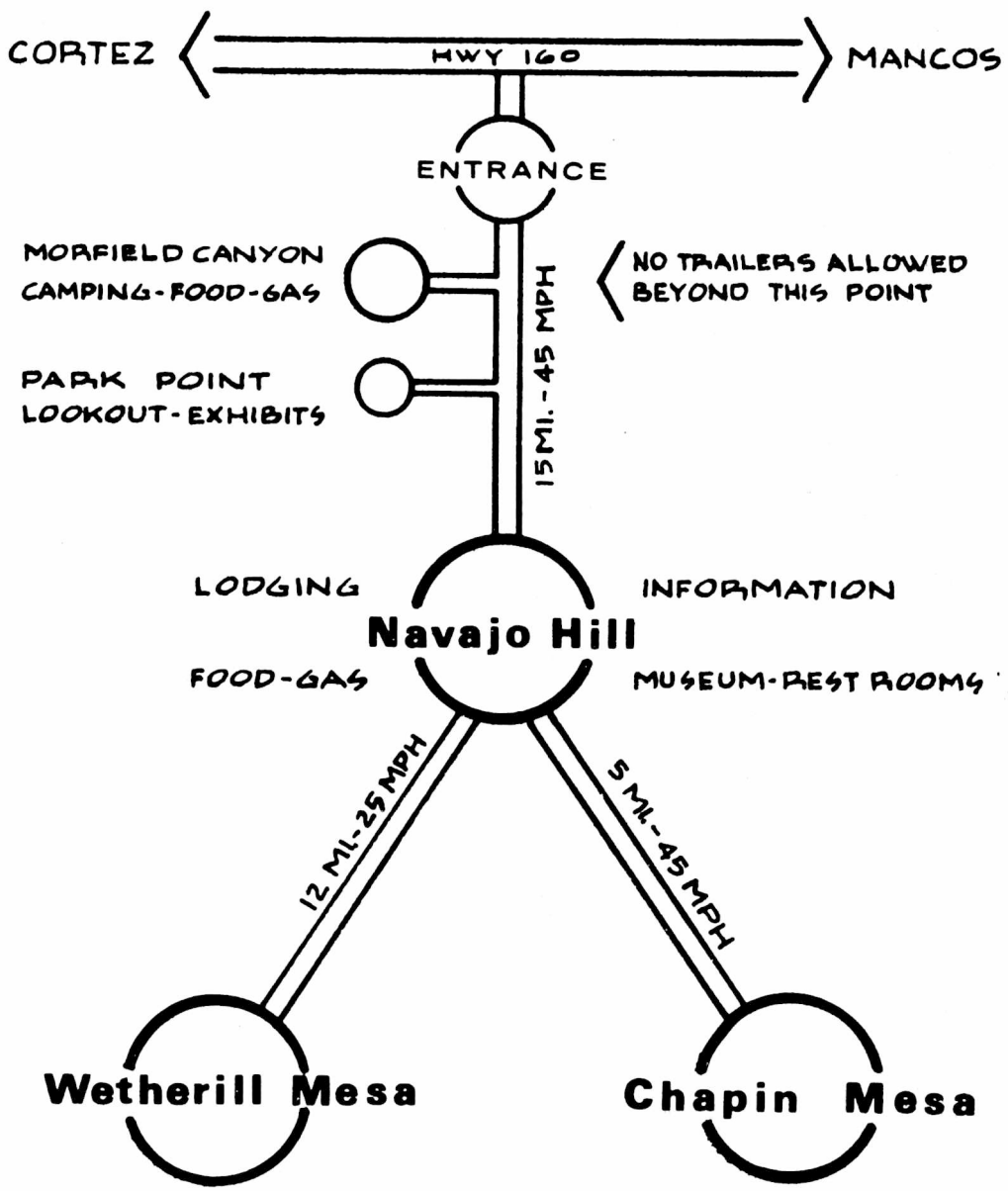
MANAGEMENT & INTERPRETIVE REQUIREMENTS for the DEVELOPMENT of WETHERILL MESA

RELATIONSHIP TO EXISTING AREAS AND FACILITIES

Since Wetherill Mesa is a separate entity, to be used seasonally, all considerations must include its relationship to the park as a whole and to Chapin Mesa in particular due to the common entrance road, visitor lodging and camping, and administrative facilities and staff. The lengthy entrance road actually divides the park into two segments: the passive approach with some diversions, and the area of concentrated use. Presently, this active use area is near the center of Chapin Mesa and especially at Spruce Tree Point, with secondary concentrations at Navajo Hill and Morfield Canyon campground.

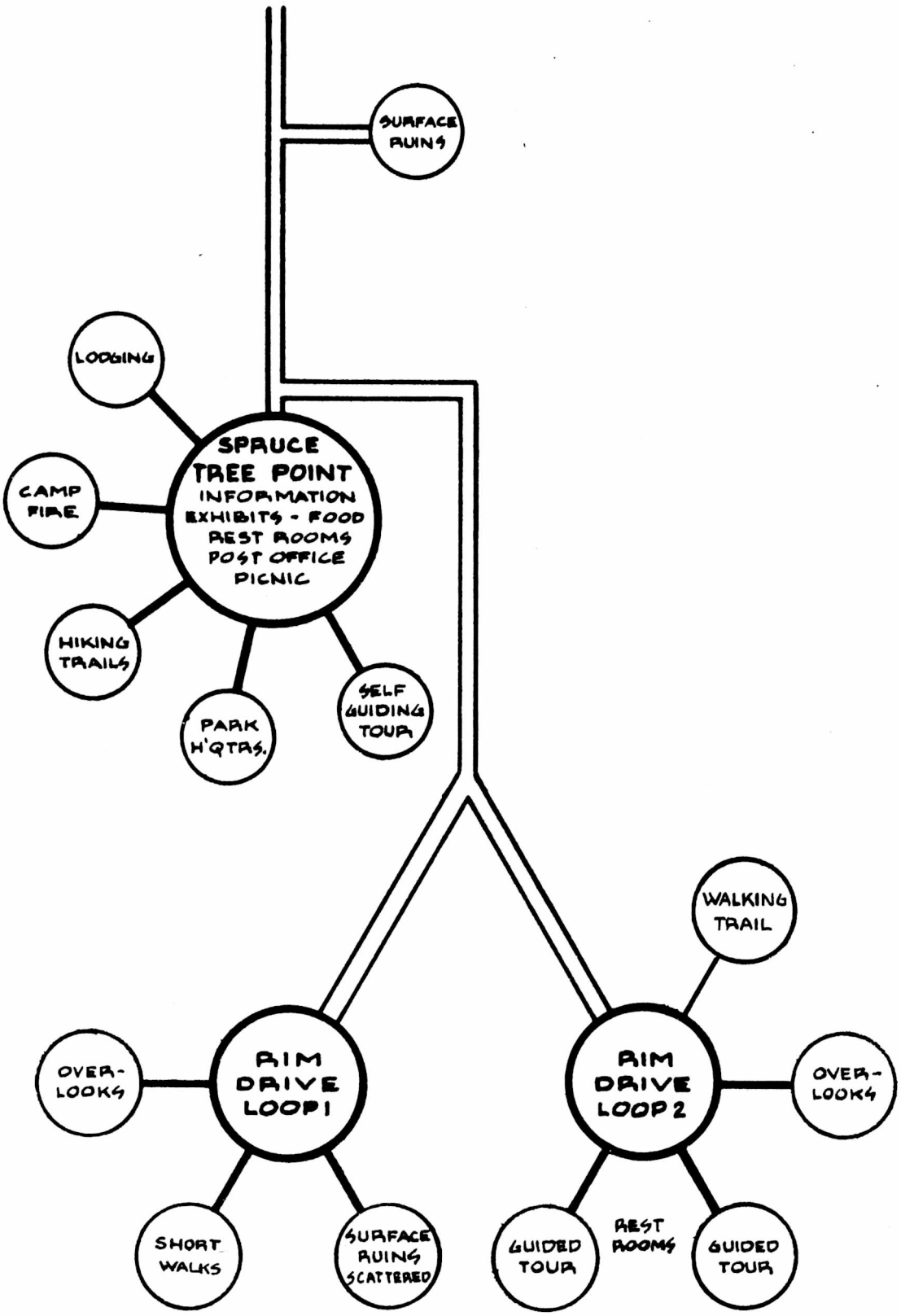
With the opening of Wetherill Mesa, Navajo Hill will become a focal point for the two Mesas. Navajo Hill is located 15 miles from the park entrance and is the point where the roads to Chapin and Wetherill Mesas divide. A visitor entering the park will be given a packet of printed information and instructed to go directly to the campground or trailer parking area if he were pulling a trailer, and then proceed to Navajo Hill for additional information.

There is a new visitor center currently in operation at Navajo Hill. However, due to altered traffic flow patterns and revised concepts of park operations, the visitor center is not conveniently located in relation to the existing parking area for the high volume visitor circulation while seeking information. Some redesign is recommended such as an information booth in or adjacent to the parking lot so that the present structure can be used exclusively for a museum and administrative offices. Since we would like all visitors to stop before proceeding to Chapin or Wetherill Mesa, a conveniently located information center would reduce the time required for this stop and help relieve parking area congestion. Some changes to the



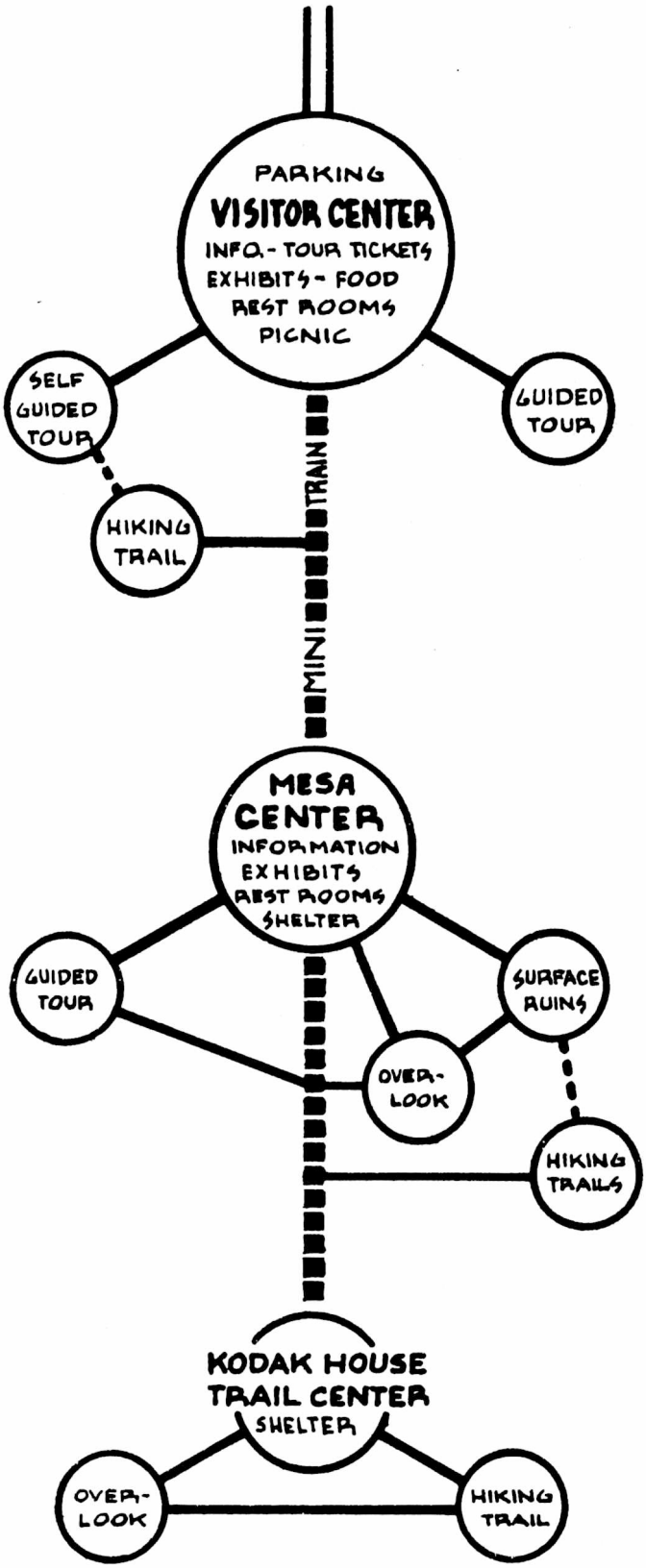
RELATIONSHIP of VISITOR USE FACILITIES

Mesa Verde National Park



existing

VISITOR USE FACILITIES--Chapin Mesa



proposed

VISITOR USE FACILITIES--Wetherill Mesa

existing sign system should be made when the information booth is in operation and the road to Wetherill is opened. Proper signing should relieve congestion in the existing parking area and eliminate some of the confusion at the intersection with the Far View Lodge Road. These signs should be designed as part of a comprehensive sign program for Wetherill Mesa which would eventually be extended throughout the park.

ARCHEOLOGICAL RESOURCE

Mesa Verde National Park

Nearly 2,000 years ago, Indians in the "Four Corners" area of Colorado, Utah, Arizona, and New Mexico were farming, fashioning tools and household utensils, and trading with other Indian groups. Their culture evolved over the centuries, until about 700 years ago, when they abandoned their homes and moved to the south and east.

Evidence of that ancient occupation is seen today in ruined villages dotting the mesa tops and valley floors and in cliff dwellings throughout this canyon country.

Visitors to Mesa Verde who can momentarily live and think in the past will enjoy a glimpse of life in those prehistoric times.

To expand the capacity and resources of Mesa Verde National Park, a long range development program is now in progress on both Chapin and Wetherill Mesas.

The Wetherill Mesa project was undertaken to learn more about the early people who lived here and to provide additional interpretive facilities.

Archeological Features of Wetherill Mesa

The continuous occupation of the Mesa Verde from approximately 600 A.D. through 1300 A.D. produced several recognizable stages of architectural and cultural development culminating in the spectacular cliff dwellings which were occupied for only the last 100 years of this occupation. Wetherill Mesa offers an opportunity to display all of these developmental stages to the visitor.

Surface Ruins: Unlike Chapin Mesa where the excavated surface ruins are spread out over a large area, the four sites excavated on Wetherill Mesa offer a chronological sequence of ruins in a relatively compact area. The architectural developments from 600 A.D. through 1200 A.D. (Basketmaker III, Pueblo I & II, and Early Pueblo III)

will be the primary feature of this tour. However, the cultural changes during this time period will be shown through various means of interpretation.

The Cliff Dwellings: The highest architectural achievement of the Mesa Verde people and the features most appealing to the visitor are the numerous cliff dwellings.

Three will be open for tours.

Step House: Although this is a relatively small cliff dwelling there are several features which offer a slightly different approach for interpretation. Located in a side canyon on the eastern edge of the mesa with relatively easy access to the mesa top, this site had two periods of occupation. The pithouses, one of which has been reconstructed, are evidence of use during the Basketmaker III period while the main cliff dwelling is of the Pueblo III period. The double occupancy of the site and the flight of stone steps which inspired the name, led to the selection of this ruin for visitor tours.

Mug House: Only partially visible from the mesa rim, this dramatically situated cliff dwelling is located on the west wall of the mesa and contains approximately 94 rooms and 8 kivas. Midway on the trail is a prehistoric water catchment or reservoir constructed below a cliff-edge pour off. The tour will be self-guiding with interpretive markers located at points in the ruin where they will best discuss features visible to the visitor.

Long House: The largest cliff dwelling on Wetherill Mesa, Long House, contains approximately 150 rooms and 22 kivas. The trail passes a series of check dams and crosses the original toe and hand-hold trail as it descends into the canyon. Both of these will be interpreted. The ruin is not visible from any point along the trail. Located on the west wall of the mesa in a side canyon, the ruin is visible from several points on the rim where overlooks will be constructed.

Other Features: Several other cliff dwellings will be visible from overlooks. Kodak House with approximately 60 rooms and 7 kivas, and Double House with 75 rooms and 5 kivas are the easiest to view. Other ruins both on the edge of Wetherill Mesa and across the canyons are visible. These include, but are not limited to, Ruin 16, 11, 12, 13, Daniel's House and Spring House. In addition, the second camp-site of Gustav Nordenskiöld near Kodak House will be interpreted for the visitors. The Swedish scientist explorer hired the Wetherill Brothers to lead him into the Mesa Verde in 1891 and it was Nordenskiöld who named the Mesa for the Wetherills. Kodak House, so dubbed by Nordenskiöld after their practice of caching a camera in

one of the rooms, and Ruins 11, 12, and 13 were explored while at this camp. Long House, Ruin 16, Mug House, Step House, Spring House and numerous other ruins were explored and many are still known by these numbers assigned by Nordenskiöld in 1891.

HOUR OF USE

As stated in the management objectives and the master plan, the Wetherill Mesa facility is to be designed for day use only.

Because of the time it takes to drive between Navajo Hill and the Wetherill parking area, visitors can be expected on Wetherill Mesa between 8:30 a.m. and 7:00 p.m. (Few, however, can be counted on to get there before 9:30 a.m. or to stay after 6:00 p.m.) Presumably the road to Wetherill Mesa would be opened at 8:00 a.m. and closed at 8:00 p.m. during the summer months.

LENGTH OF VISITOR STAY ON THE MESA

Although the master plan states the average length of time a visitor would spend on Wetherill Mesa would be four hours, this team believes that four hours would be a bare minimum and that the average length of stay would be greater due to various factors. Although the mini-train will provide a more leisurely experience for the visitor, it will prevent him from hopping into his car and leaving when the mood strikes. The guided tours present some scheduling problems but these should be no different than now exists on Chapin Mesa.

It is possible to analyze the typical visitor's day from many viewpoints and arrive at various average lengths of stay. We present the following visitor experience as a possible typical visit.

Having left Cortez quite early, the visitor arrives at the park entrance, and pays his fee, receives his information packet, and is instructed to stop at Navajo Hill for further information.

8:45 Arrives at Navajo Hill Information Center--Mom walks Spot--Kids use rest rooms and run up and down ramps--Dad decides to try Wetherill Mesa since he saw Chapin Mesa one day four years ago.

9:15 Arrives in Wetherill Mesa parking lot after stopping briefly at two overlooks--checks on tours and is able to get everyone on the 10:30 Long House tour--Mom and Dad use rest rooms.

9:45 Ride mini-train to Mesa Top Information Center--quick look at exhibits and ask ranger where the trail to Long House is.

10:10 Walk into Long House tour holding area--no time to look at wayside exhibits.

10:30 - 11:15 Tour in Long House--begin walk-out with several rest stops at wayside exhibits.

11:45 Arrive back at Mesa Top Information Center--everyone uses rest rooms--walk through three of the four surface ruins and on down to Long House Overlook--Mom rests while Dad and kids take pictures, and look at some of exhibit material.

1:00 Past lunch time and the kids are hungry--hopping on the mini-train at the overlook stop, they ride back to the visitor center.

1:45 Kids ate lunch rapidly and have seen the exhibit area--Mom and Dad go to see the exhibits while the kids run down to Step House Overlook.

2:15 The kids want to go to Mug House but Mom is tired and Dad says they have to leave since they must be in Durango by 6:00 P.M. Little Susie pushed Johnny as he was getting into the car, making him drop his ice cream bar all over the back seat and that part of it which Spot didn't eat has to be cleaned up and Spot has been in the car and needs a drink and a "rest stop".

2:45 Begin drive back to Navajo Hill and the park entrance. Having spent 5½ hours on the mesa, this typical family has seen one cliff dwelling and three surface ruins, has glanced at some of the exhibits and must rush on. They were fortunate to get an early tour of Long House. If he had planned to spend the night in the park, there would have been time to take another guided tour and/or the self-guiding tour, extending his stay to seven or eight hours.

The visitor experience will be such that most persons will spend mush more time on Wetherill Mesa than the average of visitors on Chapin Mesa. This will be influenced by the time required to drive to the Wetherill parking area, the time it will take to get around on the mini-trains, the time required for guided tours through ruins, and walking time to overlooks and surface ruins. Wetherill Mesa will not be the place for the non-walking visitor and it is imperative that the hurried, non-walking, non-contemplative visitor be discouraged from leaving the Chapin Mesa road and beginning the longer drive over a narrow winding road to Wetherill. Nevertheless, the visitor center, surface ruins

complex, and Long House Overlook will, if feasible, be designed for access by the handicapped who can then obtain a capsule experience on the mesa.

Considering the above analysis, it seems reasonable that the average visitor could spend at least six hours on Wetherill Mesa and some will spend considerable more time.

VISITOR CAPACITY

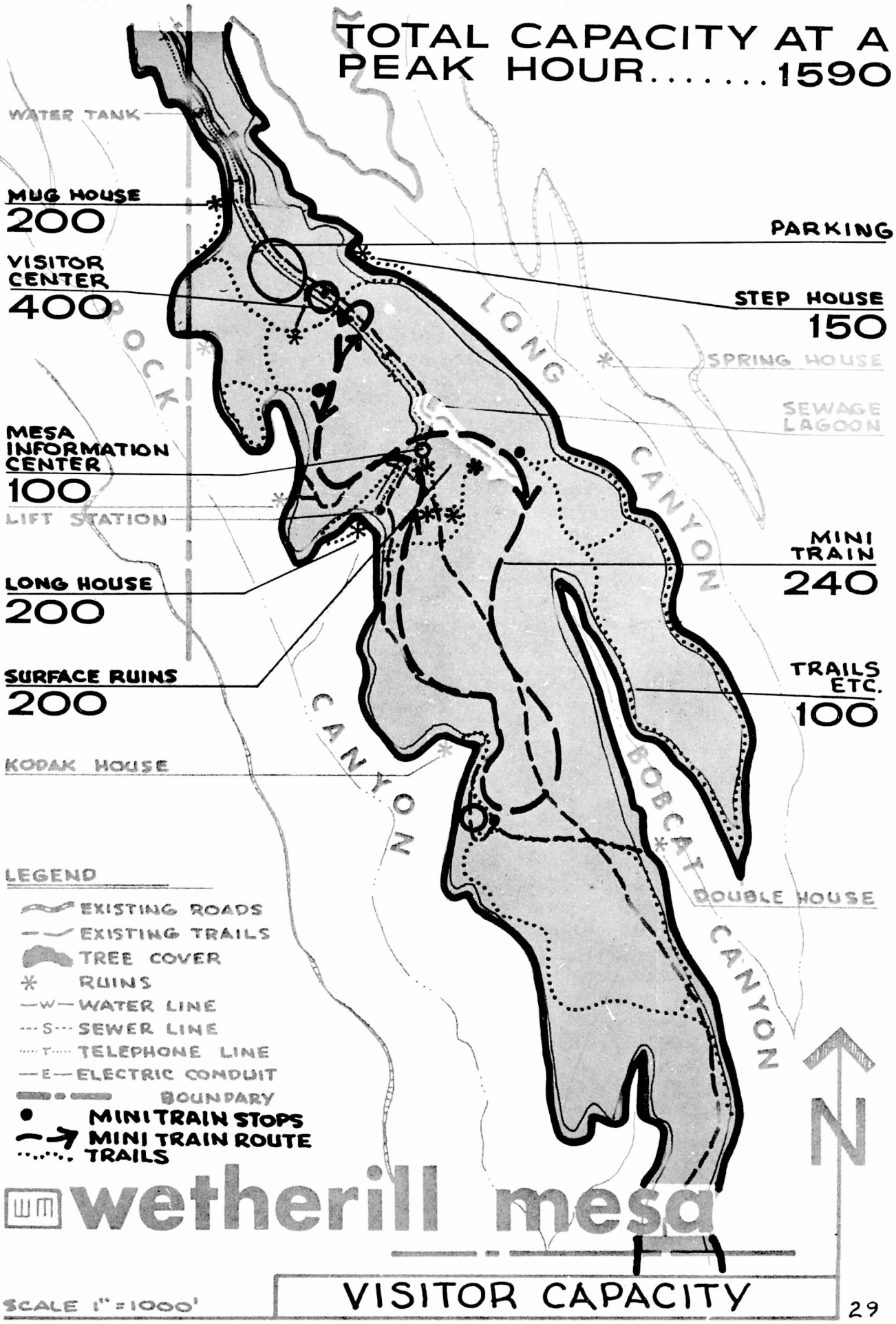
The maximum number of visitors on Wetherill Mesa should be determined by the carrying capacity of the guided trips through the cliff dwellings, the activity most popular with the visitor and desirable from the standpoint of the interpretive program in the park. Before the introduction of the ticketing system on Chapin Mesa, a little over half of the number of visitors in the park could be counted on taking trips through Cliff Palace. Others took the trip through Balcony House, although many were repeats from the Cliff Palace trip.

Guided trips through both Long House and Step House are to be given every half hour from 9:00 a.m. to 5:30 p.m. for a total of 18 trips a day, through each ruin. Assuming 50 persons per trip, some 900 people can easily be handled during a day at both Long House and at Step House.

Experience at Chapin Mesa indicates that somewhat over half of the visitors actually take advantage of guided tours. Assuming that this would be the case at Wetherill Mesa, optimum capacity would be twice the number of people accommodated on a guided tour per day. Since we have determined that the capacity of the tours will be 900 per day, optimum capacity might be 1800 people per day. However, taking into consideration the number of people who might only take one tour and the number of choices of activities available, it would seem reasonable to start with a daily maximum of 2500 people as optimum capacity.

Maximum Visitor Capacity on Wetherill Mesa at a Peak Hour

Arriving, getting information, waiting for transport	100
Museum, book sales, comfort station etc.	200
Restaurant	100
On trails to guided tours, etc.	100
On transports - 4 cars @ 60 passengers	240
In Mug House self-guided - 1½ hour	200
In Long House 50 people @ 30 minute 2 hour tour	200
In Step House 50 people @ 30 minute 1½ hour tour	150
At Interpretive Shelter & Mesa Top Trails & Ruins	300
Total	1590


TOTAL CAPACITY AT A PEAK HOUR.....1590
WATER TANK
MUG HOUSE
200
VISITOR CENTER
400
MESA INFORMATION CENTER
100
LIFT STATION
LONG HOUSE
200
SURFACE RUINS
200
KODAK HOUSE
PARKING
STEP HOUSE
150
SPRING HOUSE
SEWAGE LAGOON
MINI TRAIN
240
TRAILS ETC.
100
DOUBLE HOUSE
ROCK CANYON
LONG CANYON
BOBCAT CANYON
LEGEND
EXISTING ROADS
EXISTING TRAILS
TREE COVER
RUINS
WATER LINE
SEWER LINE
TELEPHONE LINE
ELECTRIC CONDUIT
BOUNDARY
MINI TRAIN STOPS
MINI TRAIN ROUTE
TRAILS
N
wetherill mesa
SCALE 1" = 1000'
VISITOR CAPACITY

Figures are estimated at assumed maximum capacities for principal facilities. Some overlap is inevitable but would be absorbed by the use of the various trails for which no figure is included.

This analysis is not intended to indicate the daily capacity since this would be affected by average length of stay and by an assumed optimum experience levels.

VISITOR PARKING NEEDS

An early parking area design for Wetherill Mesa provided space for 220 cars and 8 buses. However, few buses can be expected in the park during the summer months and then the maximum number on any given day would be 3 (although one day a few years ago there were five buses in the park, the result of a special meeting in Durango). Most visitors, therefore, will be arriving by private automobile and few can be expected by bus. If we assume an average of 4 persons per car (this may be on the high side) a maximum of 880 persons at a time could have been accommodated in the parking area. The lack of an extensive turnover in parking spaces to be expected would mean that only between 900 and 1000 persons could visit Wetherill Mesa during a day's time. Thus, virtually every person who drives out to Wetherill Mesa could go on a conducted trip through Long House. But experience has shown that only about half of the visitors will actually take advantage of this opportunity. Some tours through Long House, therefore, will have only a few persons on them and some Step House tours could be practically empty.

To take full advantage of these two tours, as well as the Mug House self-guiding trip, and to provide efficient management of personnel giving the tours, we must plan for an optimum capacity. The optimum capacity for good management appears to be well above the arbitrarily derived capacity for the parking area. For these reasons, the parking capacity on Wetherill Mesa would be increased, probably to at least 400 spaces.

It is preferable that this capacity be planned for immediately so that later expansion of the parking area will not result in an unexpected sea of pavement; and because management will be hindered, not helped, by continual changes caused not by visitor need or use, but by arbitrarily derived parking spaces. The heaviest visitor demand on Wetherill Mesa will be immediate. Only later, when some of the newness has worn off, will there be a relaxing of visitor pressure on this new and well advertised development at Mesa Verde.

With a maximum capacity of approximately 1600 visitors on the Mesa at any peak time, and assuming an average stay of one-half day, a 400-car capacity parking area would handle the peak crowds (with approximately four passengers per car) and, allowing for varied lengths of stay, would seem adequate and not excessive to handle a daily visitor load of 2500.

ALTERNATIVES

The following alternatives were discussed by the team during the preparation of the Design Directive.

TRANSPORTATION SYSTEM

The development of a road system with extensive parking areas and turnouts in lieu of a transit system would destroy much of the natural setting of the Wetherill Mesa resources and only duplicate the congestion now existing on Chapin Mesa. The secondary transit system is desirable not only on Wetherill Mesa but as an ultimate solution to Chapin Mesa.

NAVAJO HILL

All private vehicles could be stopped at Navajo Hill. Extensive parking would be required. High speed transit systems would take the visitor to either Chapin or Wetherill Mesa. This system would offer the most control of the number of visitors on each mesa. Although this system is not proposed at this stage of planning, any significant increase in the visitation rate would require consideration of this type of development in the future.

Various changes in the road system around Navajo Hill have been proposed in past studies. With the Wetherill Mesa road nearing completion, we propose no changes at this time. If future development leads to a transit system from Navajo Hill to both Chapin and Wetherill, extensive changes will be required to accommodate the required parking. Our proposal for the present places more emphasis on Navajo Hill as a major information center and would require only moderate changes to the existing sign system to ease circulation problems.

VISITOR CENTER COMPLEX

The location of visitor facilities on Wetherill Mesa is a somewhat arbitrary decision since several locations can be justified. Based on the assumption that all visitors should go through the basic information process prior to visiting the ruins, the structure should be located at the head of the developed area of the mesa in the vicinity of Mug House or Step House. The Step House site has been chosen to allow a quick walk to the ruin which is on a scheduled tour basis and therefore timing is more critical. Since Mug House is not a scheduled tour, the visitor may take the longer walk at a leisurely pace.

Another alternative is to locate most of the visitor facilities at the Mesa Center Ruins development and therefore more centrally located on the mesa. This would still require an information-terminal facility in the Mug House-Step House area. There are several disadvantages to the Mesa Center location, (1) servicing the concession facilities would be somewhat more complex, (2) all visitors would be required to take the mini-train to this location, (3) closing out at night would be more difficult and the mini-train would have to operate until all visitors and employees have left the area. At the Step House site, the mini-train could shut down earlier than the visitor center and there would still be facilities in operation for the visitor. The Mesa Center location would have the advantage of providing exhibits, etc., at the center of the greatest concentration of visitor activity. However, this can be accomplished by a satellite facility in this area.

The exhibit functions of the visitor center could be divided between the Step House area and the Mesa Center area. However, this should be studied more thoroughly by the exhibit planners.

OFF SEASON USE OF WETHERILL MESA

An analysis of the visitation pattern of Mesa Verde indicates that the mini-train would only operate economically for a 90-day season from mid-June to mid-September. However, it may be possible to extend the visitor use season beyond this 90-day period. Staffing would be a problem due to the lack of seasonal rangers and limited concession employees. If the mesa is to remain open, there are several alternatives:

1. Government subsidy of the concession operated mini-train:	This may be feasible with a flexible contract allowing for reasonable profit over an extended season. With a reduced Park Service staff, the whole operation may be geared down with less frequent tours and mini-train service.
2. Use Park Service personnel to operate mini-train after the peak season:	This would present many problems involving staffing and a rather complex concession contract. Alternate (1) seems more feasible.

3. Allow private autos to use the mini-train trail after the peak season:	Unlimited auto use would require a higher standard road and extensive parking spaces along the mini-train route.
4. Operate only the Step House - Mug House portion of the Development:	This would allow operation with a reduced staff by concentrating services in one location. However, the visitor would be deprived of the Long House Tour and the Surface Ruins Walk. Their experience would be only partial.
5. Close all facilities but provide special tours for bus groups and auto caravans:	A limited number of cars following a ranger car in caravan could navigate a lower standard road and park on the road and at turnouts without requiring formal parking spaces. Since these tours would be limited in number, a two-way road would not be required. It may also be feasible to park cars and busses at the central parking area and operate the mini-train for these scheduled groups.

VISITOR FEES

Ideally, the cost of operating the mini-train would be supported by the Park Entrance Fees or some other form of subsidy to a concessioner operating the system. Three other methods of collecting fees seem feasible:

1. A "toll booth" at the head of the Wetherill Mesa road. This would logically be operated by the concessioner but should be operated by uniformed park personnel or be an automatic coin operated control gate. This system would solve many problems at the terminal facility on the mesa. However, all visitors would have to pay to use any portion of the facilities regardless of whether or not they use the mini-train.

2. Collect individual fees at the mini-train loading area. There are numerous problems in controlling crowds in the ticketing and loading area and checking at each of the stops. We consider it undesirable to charge a fee each time the visitor uses the train, therefore, a ticket which the visitor wears and which is good for a full days use would be preferable to a turnstyle type of system. This would not solve the control problems at intermediate stops nor would there be any way to prevent the visitor from selling his ticket to someone else. Different tickets would be required for each day; a "conductor" would probably be needed on each train; and several employees would be needed throughout the day to sell tickets at the terminal.

3. Collect all fees at the Navajo Hill Information Center and provide the visitor with a "token" which would open a control gate on the road. This would be the ideal point to collect fees since the visitor must make his decision on which mesa to visit while at Navajo Hill. Other fees such as the rental of "radio receivers" for the various areas of interpretation and information could be collected at the same time.

PROPOSED TRANSIT SYSTEM

The selection of a secondary transit system for Wetherill Mesa is based on several factors:

1. Mesa Verde is located some 300 miles from any major urban area. Transportation to the park is almost exclusively by private vehicle and 97 percent of all visitors come from areas over 300 miles away.

2. It is 15 miles from the park entrance to Navajo Hill where the roads to the two mesas divide. The present road from the park entrance to Chapin Mesa and the new road under construction to Wetherill Mesa all have capacities far exceeding the capacities of the park resources and the parking facilities on the mesas.

3. Chapin Mesa has been developed, based on private vehicle transportation, with parking areas at each attraction, some 12 miles of roads, and has housing, headquarters, museum and visitor center complex located in the general area of the resource attraction.

4. Wetherill Mesa has an equal number of resources available for development. However, the area for development is more restricted with the resources more closely related than on Chapin Mesa. Imposing a high standard road system with numerous parking areas on this restricted area would result in unnecessary congestion and detract from the primary resources. Numerous parking areas would still be unable to handle all traffic generated by the existing major road system.

5. The use of a central parking area and a secondary transit system is the most effective means of controlling the number of visitors in the resources development and thus assuring the quality of the visitor experience.

The use of a secondary transit system operating at a low speed, which would cause minimum damage to the resource, while providing safe, quiet, economical transportation in a comfortable vehicle, would allow the visitor to relax and enjoy a scenic route.

The earlier proposals for the transit system, as shown in the master plan, attempted to link together in two loops, all the points which could be visited. Further analysis of transportation systems and visitor use patterns indicated that this routing would require an excessive amount of "train time" and could require the visitor to circle the route several times to reach scheduled tours. The separate outer loop would require extra trains and could not economically provide frequent service to the four stops. The visitor would require two hours to visit all four stops if the train ran at 30 minute intervals.

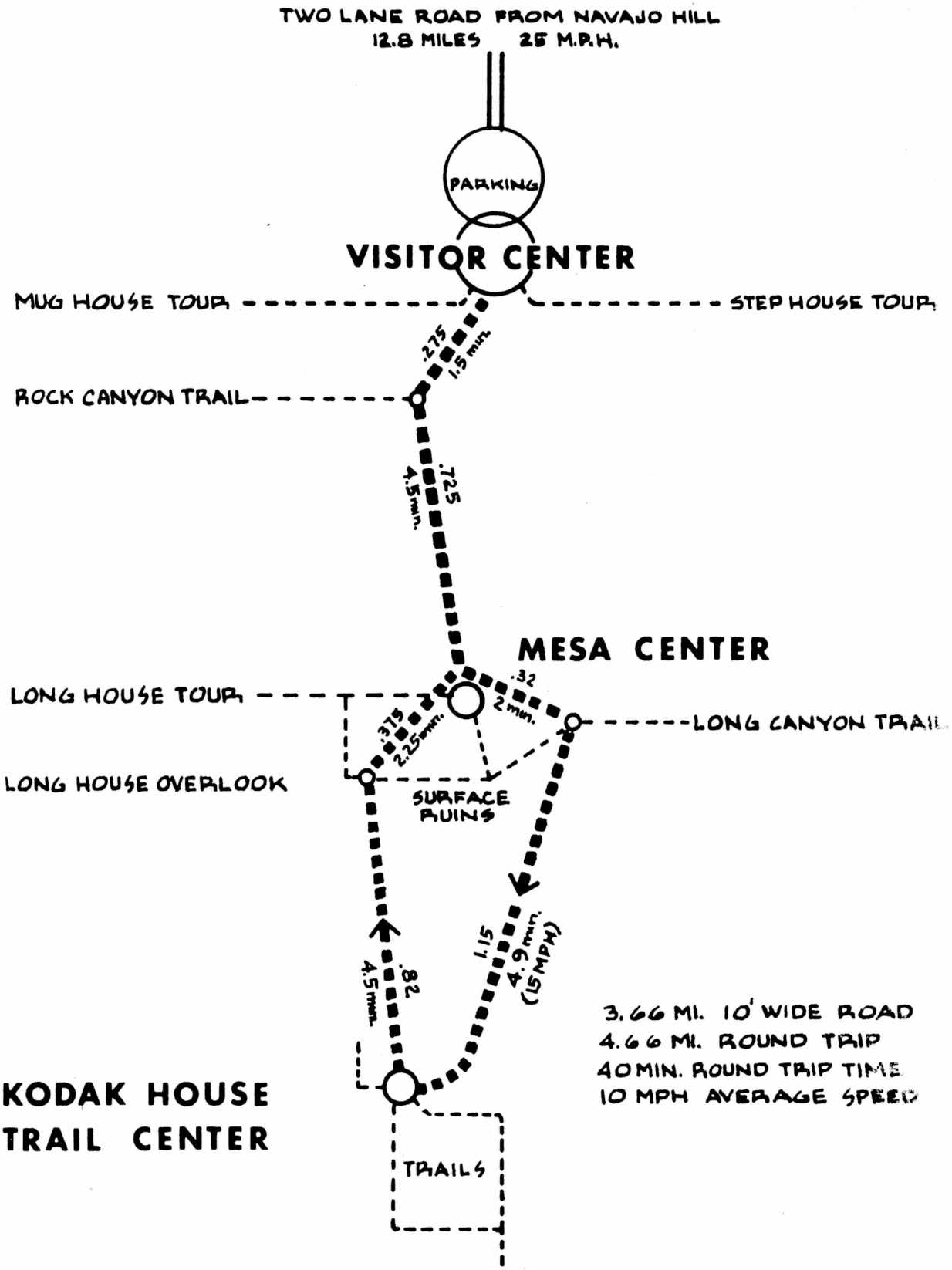
The proposal in this design directive connects certain key points of visitor use with the visitor center. The total mini-train trail system would be only slightly longer than the previously proposed inner loop. This will allow the trains to operate more efficiently and provide frequent service to all stops. The visitor will be able to follow more direct routes to his destination.

Walking will be encouraged more than under the previous plan and this hopefully would add to the more relaxed experience. A variety of trail lengths will be provided with key points connected to train stops by relatively short trails.

A complete analysis of the transit system is included in Part III of this report. It is feasible to have trains operating on a 10-13 minute interval with a complete round trip requiring 40 minutes. Due to the flexibility in the system design, the visitor would rarely be more than 15-20 minutes from the visitor center, with much shorter times to other points. The cost study is based on each visitor paying only one fare for the train for the day's use of the train facilities. Control will be required and a system of collecting fees will require further study. The costs of fee collection and control have not been figured in the daily use charge.

The proposed vehicle would be a power unit and trailer combination seating approximately 75 passengers and would be gasoline powered. The possibility of a battery powered unit will require further study of feasibility and operating cost.

The use of busses from Navajo Hill to Wetherill Mesa rather than allowing private vehicles to operate on the Wetherill Mesa approach road, should be studied further. Present parking is inadequate at Navajo Hill and an additional 500-600 spaces would be required to handle the anticipated number of visitors on Wetherill Mesa. If a mini-bus system is also used on Chapin Mesa with feeder bus service from Navajo Hill, the requirement for additional parking would increase substantially.



SECONDARY TRANSIT SYSTEM

VISITOR CENTER LOCATION

Since transportation between sites on Wetherill Mesa is to be by trackless train, the approach road must be terminated at the head of the developed area of the mesa in a parking area where people will be separated from their cars. The Step House and Mug House Ruins occur at this end of the mesa. They are 3000 feet trail distance apart on opposite sides of the mesa.

The three sites studied for the visitor center are within 200 feet of either ruin trailhead and half way between. Space is available at all three sites for 400 or more parking spaces. Picnic facilities can be located at all three sites.

Parking: A parking area for either the Step House or the half-way location would be on a natural 5% slope and would require very little grading. The parking area at the Mug House site would be on a steeper slope between ridges. More grading would be required but the ridges would confine scarring to the immediate area of the parking lot.

Management: Mug House will be a self-guiding tour requiring one or more uniformed attendants in the ruin. Step House will be a guided tour requiring several uniformed guides rotating their duties. With offices and dispatch room located in the visitor center, it would be preferable to locate these facilities close to the more active tour. Similar problems exist with the Long House Tour, however, the Mesa Information Center will alleviate some of the problems.

The Visitor: Locating the visitor center at Mug House would require a relatively long walk to Step House. Since this would be a guided tour, the visitor would have to time his walk carefully to arrive in time for the tour. With the visitor center at Step House, the short distance eliminates this problem. The walk to Mug House would be the longer one but tours are not scheduled and the visitor could set his own pace. The trail into Mug House is fairly rugged and people who are willing to attempt this should have no difficulty with the additional fairly level mesa top trail.

If the visitor has a late tour into Step House, he will wish to visit other areas on the mesa. With the visitor center at Step House it will be easier to plan his return by mini-train in time for his tour. With the visitor center at Mug House it would be possible to route the mini-train past Step House. However, this would increase the length of the mini-train route, add an additional limited use stop, and thus reduce the efficiency of the transit system.

Scenic: The Mug House and Step House sites are somewhat equal. The Mug House site is slightly steeper and would allow for a closer relationship to the canyon rim. The Step House site is more gentle and would be further from the rim. Both sites are far enough from the rim so that views through the trees to the canyon are minimal but close enough so that one is aware of the canyon beyond. This feeling is reinforced at both sites by the gradual steepening of the site toward the canyon.

There is no point on the mesa rim (within park boundaries) where the visitor can obtain a good view of Mug House. There are several locations for overlooks which would offer excellent views of Step House. Due to the trail below, the overlooks would be kept to minimum size.

Archeological: The location of recorded archeological sites affects the selection of construction sites. If we are to obliterate any sites, they must first be surveyed for archeological value and possibly excavated. Since we have no accurate survey tying archeological sites to topography and BPR control, we can only estimate the problems to be encountered. Apparently there are few significant sites in the vicinity of the Mug House location. The half-way location has several sites but they appear small and spread apart. The Step House location has several important sites falling within the possible construction area. An accurate survey, coordinating the archeological site survey with topography is needed before final building locations can be determined. It should be possible to avoid major archeological sites at all proposed building locations.

The possible building site half-way between the two cliff dwellings, scenicly removed from the rim, appears to have none of the advantages of the other two sites aside from the equalized walking distance.

ANALYSIS of SCENIC RESOURCE

Analysis of scenic resource on Wetherill Mesa influencing location of trackless train route and foot trails and overlooks.

Cliff Ruins - The principal scenic features of Mesa Verde. Care is to be taken in providing the visitor with inspiring views, considering the element of surprise in the approaches to these views.

Canyons - Trails and overlooks along the rim provide various views into the canyons. (A long view down Rock Canyon can be provided through a foot trail to an overlook on a point.)

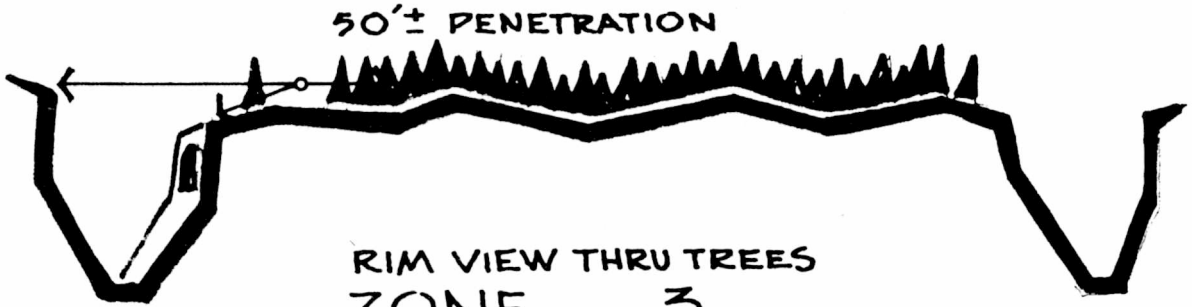
Canyon rim with tree foreground - Where trails approach within approximately 50 feet of the rim, glimpses are opened through the trees. Effort is to be made to locate enough of the trackless train route through this zone to orient the visitor to the mesa and relieve the monotony of the following:

Pinyon-Juniper Mesa Top - Visual penetration through pinyon-juniper is generally not more than 50 feet. Thus, a trail cut through over fifty feet from the rim of the mesa creates a visual corridor generally self-terminating through curved alignments. Most of the trails will be in this zone.

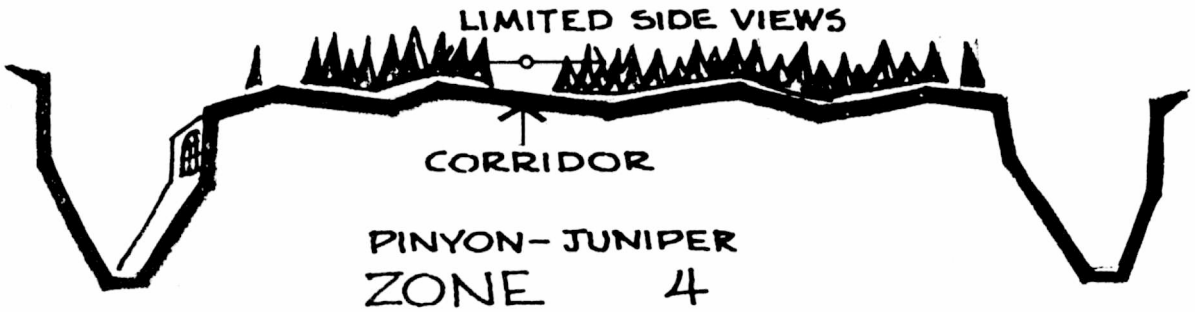
Meadow - A pleasant break through the trees. An "enclosed landscape" bounded by pinyon-juniper featuring a few individual trees.



CANYON & RUIN VIEW
ZONE 1 & 2



RIM VIEW THRU TREES
ZONE 3

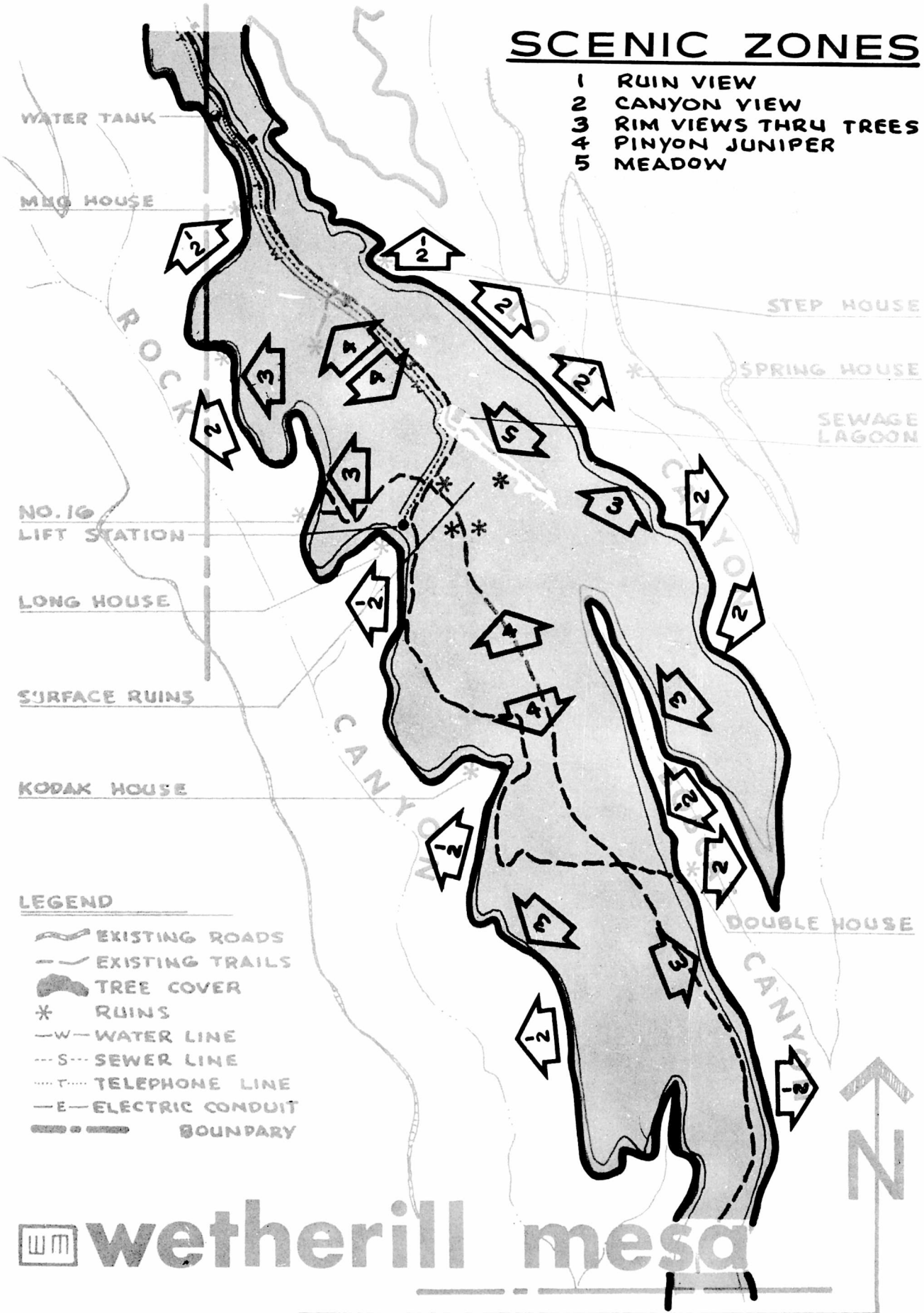


PINYON-JUNIPER
ZONE 4



MEADOW
ZONE 5

SCENIC ZONES
WETHERILL MESA


SCENIC ZONES
1 RUIN VIEW
2 CANYON VIEW
3 RIM VIEWS THRU TREES
4 PINYON JUNIPER
5 MEADOW
WATER TANK
MEG HOUSE
STEP HOUSE
SPRING HOUSE
SEWAGE LAGOON
NO. 16 LIFT STATION
LONG HOUSE
SURFACE RUINS
KODAK HOUSE
DOUBLE HOUSE
ROCK CANYON
LEGEND
EXISTING ROADS
EXISTING TRAILS
TREE COVER
RUINS
WATER LINE
SEWER LINE
TELEPHONE LINE
ELECTRIC CONDUIT
BOUNDARY
N
wetherill mesa
SCALE 1" = 1000'
SCENIC ANALYSIS

REQUIREMENTS for the DESIGN of WETHERILL MESA FACILITIES

The Master Plan

Archeological Salvage

Design for the Handicapped

Navajo Hill Information Center

Wetherill Mesa Approach Road

Parking Area

Mini-train Loop Road

Trails and Overlooks

Mesa Center - Surface Ruins Development

Sign Program

Demolition and Restoration

The Visitor Center

Utility Area

Utilities

Climate and Terrain

The following excerpts from the master plan are presented here as the guide lines for the development concept on Wetherill Mesa:

OBJECTIVES

Provide conservation through development design by establishing architectural themes and construction in harmony with a park-like atmosphere and to plan no development on archeological sites unless properly excavated and salvaged.

ARCHITECTURAL THEME

The buildings will be constructed by the Service. The proposed new terminal-visitor center will not be an imitation of old Indian forms but something more contemporary; a low building with free-flowing open spaces and clean masses finished in stone, stucco, and rough wood. Ruins shelters, visitor shelters, and other buildings on the mesa will refer to the terminal-visitor center for continuity of roof lines and materials.

As recommended in the design directive, the major facilities (visitor center and Mesa Center Ruins Shelters) should be studied as early as possible to establish the architectural theme for Wetherill Mesa.

ARCHEOLOGICAL SALVAGE

Throughout all phases of construction, archeological sites which will be affected by construction will be excavated and salvaged. In some instances the site may prove sufficiently important to require relocation of planned facilities. Therefore, it is essential that the development concept be finalized and construction sites located so that salvage may proceed well in advance of construction.

DESIGN FOR THE HANDICAPPED

Although Wetherill Mesa is being planned primarily as a walking experience, it is feasible to provide some features with accessibility for the handicapped. Present facilities on Chapin Mesa offer virtually no access for the handicapped due to an abundance of steps and steep grades.

A brief survey of the proposed facilities on Wetherill Mesa indicates that several attractions may be feasible for use by the handicapped. The visitor center can be designed to allow access to most, if not all of the facilities. The mini-train can be equipped for use by the handicapped. The Mesa Center development is basically level and motorized wheel chairs or pedicabs would allow easy access to the

surface ruins. Trails can be designed with easy grades for use by individual wheel chairs throughout the surface ruins. It may be possible to design Long House Overlook for limited access from the mini-train stop to at least the first point on the overlook.

Through thoughtfulness in the design stages, we can provide a capsule experience for the handicapped without adversely affecting the design theme for Wetherill Mesa.

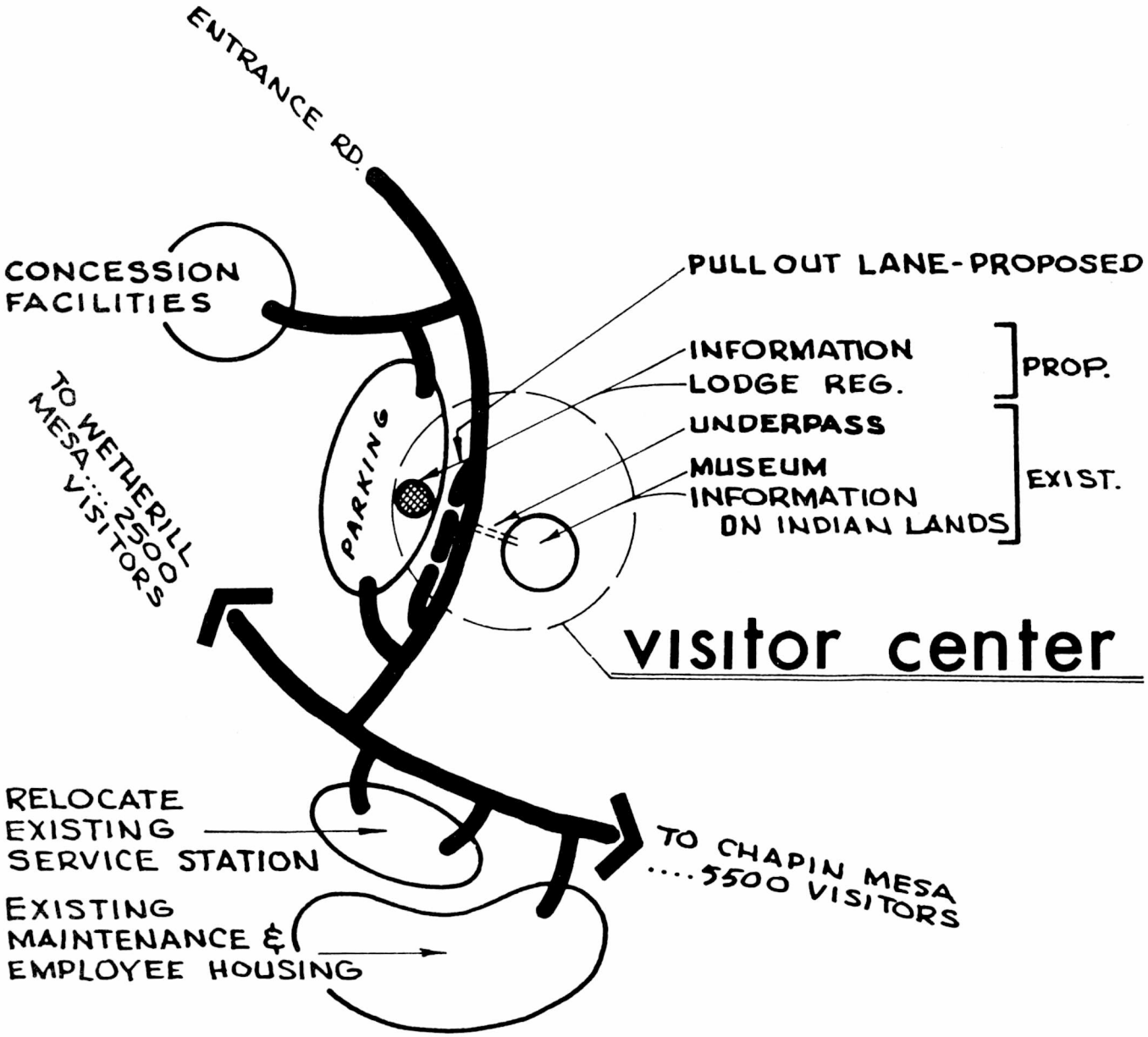
NAVAJO HILL VISITOR INFORMATION CENTER (PCP required)

This proposed structure located adjacent to the existing parking area will serve as the orientation point for the visitor. Both audio and visual aids may be used to assist the attendants in answering questions. There will also be a reservations desk where the visitor can confirm his room reservations. It is proposed that eventually all separate fees for Wetherill Mesa be collected at Navajo Hill. These fees would cover the use of the mini-train and the rental of a "radio receiver" for use at interpretive points on the mesa. The receivers would be distributed at Navajo Hill and returned either at Navajo Hill or at the Wetherill Mesa Visitor Center. The visitor would also receive a "token" to open a control gate on the Wetherill Mesa approach road.

It is proposed that a temporary structure be erected at Navajo Hill. By experimenting with the location of this structure and the circulation through the parking area and road intersection we may avoid future problems which would be difficult to resolve if a permanent structure is built initially. Both the temporary and permanent facility must relate to the existing museum structure on Navajo Hill and, since it will serve as an information center for both Wetherill and Chapin Mesa, there should be no attempt to directly relate the design to the new structures on Wetherill. Some modification of existing facilities would improve the visitor flow through this area. The schematic for the development of Navajo Hill indicates the basic changes recommended. No PCP has been prepared for this facility. Space requirements will be finalized when the PCP is prepared.

WETHERILL MESA APPROACH ROAD (Under Construction)

As the visitor approaches the developed portion of Wetherill Mesa he will already have experienced some of the quality which will carry over through his entire visit. The lower standard road will in itself be an experience and several overlooks with wayside exhibits will introduce the visitor to design features ahead. As he drops off the head of the mesa and enters the pinon-juniper forest, which will enclose him for most of his stay, he approaches the visitor center complex where his car will be left behind for the day.



navajo hill development

The approach road is scheduled for completion in July 1970. Several overlooks will be partially developed as part of the road contract. Interpretive devices and final development of the overlooks has a low priority in the overall development program and design criteria has not been finalized for these projects.

The unresolved problem of fees for the use of Wetherill Mesa facilities may have some relationship to the approach road. If all fees are collected at Navajo Hill, an automatic control gate operated by "tokens" would be installed at some point along the Wetherill Mesa approach road. This gate could be located close to Navajo Hill, at the head of the mesa, or near the parking area. Both an entrance and exit gate would be required and these would serve to close the area at night and during the winter season. An automatic counting system could be connected to the Navajo Hill Information Center to keep the attendants informed of the number of cars in the parking area. When the 400-car capacity is reached, no more cars would be allowed on the road.

PARKING AREA (PCP R-~~89-1~~ 101)

The parking area at the Step House location has been studied in the field and design will be completed in the winter of 1969-70. The design will be for 400 spaces, although only 200 spaces will be constructed in the initial phase. The location selected by the design team will allow for construction with minimum grading and maximum retention of trees and ground cover. Existing topography is adequate for the design of the parking area. Provisions should be made to salvage specimen trees and plants for relocation to areas requiring restoration.

MINI-TRAIN LOOP ROAD (PCP R-~~89-1~~ 96)

Once the visitor boards the mini-train, he steps into a new experience--a leisurely ride through the pinon-juniper forest of Mesa Verde. The mini-train trail should be a narrow path through the woods, ten feet wide and following as much as possible the natural contours of the mesa top. The train will move at a low speed allowing open sided cars. Protection should be provided for rain. A public address system will be available to announce stops and general information but its use should be kept to a minimum.

The mini-train route was located on the ground in October 1969. The entire route of approximately 3.66 miles was flagged. Design will be completed during the winter of 1969-70. Some adjustment of the flagged route will be required to ease grades and avoid archeological sites. Construction could start in the spring of 1970 if funds are available.

The transport trail will be a maximum of 10 feet wide, which is sufficient to accommodate both pedestrians and transports. Grades are to be held to 5% as far as is practicable and not to exceed 10% for efficient operation of the transport vehicles. Alignments will be field adjusted to avoid destroying trees or crossing ruin areas unnecessarily, and to take advantage of existing scenic resources. Tree clearing is sufficient only for safe passage of vehicles and pedestrians and limited vista clearing will be allowed.

DESIGN OF TRAILS AND OVERLOOKS

Mesa top trails receiving light traffic will be no less than 3 feet wide, with a maximum of 5 feet where necessary to accommodate passing groups or heavy traffic.

Rim trails will vary in width according to the topography of the canyon slopes. Careful study will be required to provide adequate and safe passage into the ruins.

Trails will be built up above the adjacent ground to the degree necessary to prevent erosion. Gutter sections, dips or underdrains will be provided as needed. Surface material will be the same as the adjacent ground, with the coarse stones removed, and will be stabilized where necessary with "soil cement". The trails will thus blend with the surroundings and still be well defined and have a good walking surface. Further study of the feasibility of soil cement and alternate methods of surfacing roads and trails will be required.

The trails into Mug House, Step House and Long House will be heavily used and should reinforce the quality of design on Wetherill Mesa. Preliminary routes have been studied for these trails to minimize the requirement for steps and to locate them where construction with natural materials would be feasible. Wayside exhibits will be a part of all the cliff dwelling trails.

No metal handrails or stairs or any other incompatible material will be used on rim trails or overlooks where these intrude on the rim views. Overlooks will be protected with rock walls laid to blend with adjacent rock formations, i.e., a minimum batter of 3" in 12" will be necessary in most areas, joints to be raked deeply to resemble dry masonry construction.

Steps on the rim areas will either be cut into bedrock or built of stone laid in mortar or a combination carefully blended to the adjacent area. Exposed aggregate concrete may be used in some instances where it can be successfully blended with the stone.

Very detailed suvey and on-site study will be required to fit all construction into the landscape sensitively and unobtrusively. It is recommended that the walking trails, steps, and overlooks be constructed by day labor due to the excellent workmanship of the park crews. Less detailed plans and supervision will be required.

Long House Trails and Overlooks (PCP R-62-4)

Detailed topography for the overlooks was taken in October 1969 and some surveys of the trail locations were also completed.

A loop trail will connect the Long House Overlook with the surface ruins complex and back to the visitor information center. The overlook would also be served by a stop on the mini-train route. The overlook area extends for considerable distance along the canyon rim. There will be a sheltered rest area and two developed overlook areas, one with photos and text describing the ruin and its excavation.

The rest area shelter should relate by design to the visitor information center but should be unobtrusive so that it does not dominate the overlook, especially when viewed from below by visitors in Long House. Informal seating for up to 20 persons should be oriented for a view into Long House.

The trail into Long House will require extensive steps at the rim of the canyon. The use of ladders was considered but rejected because of the two-way traffic and the probable need for a ranger to be stationed at the ladder. The trail will originate at the Long House Camp area. The mini-train trail will be used for walking from the Mesa Center to the trail head. In the future a parallel trail may be constructed.

Previously stated criteria for "Design of Trails and Overlooks" and "Design for the Handicapped" will apply as appropriate.

Trails from the Visitor Center

Two trails lead out of the visitor center complex. The Mug House Trail (PCP R-63-1) takes the visitor to the edge of the canyon where a shelter containing an audio-graphics program will discuss the exodus of the Indians from Mesa Verde. This shelter should seat 20-30 persons informally, with a view up the canyon. The trail continues down the face of a talus slope, past a reservoir, and into Mug House. This is a self-guiding tour--no tickets are required. A uniformed ranger will be on duty in the ruin to answer questions and provide the necessary protection.

The second trail leads to Step House which is a guided tour with tickets required. PCP R-62-4 should be revised to provide for a loop

trail. Due to the relatively small size of the ruin, the trail should be a loop entering the ruin from the north by way of the check dams above Step House and returning around the point to the south. This route will provide an element of surprise as you enter the ruin and will provide the best view of the steps for which the ruin was named. One way circulation through the ruin will avoid congestion and allow for better interpretation. A small overlook, offering a partial view of Step House, will be located near the end of the trail and close to the visitor center. Since the overlook is close to Step House and above the trail, the area should be confined to a small natural ledge to restrict the number of visitors and hopefully reduce the noise level. Other overlooks on the ledge to the south may be developed later if the small overlook appears inadequate. Unfortunately, the main road to the mesa would be visible from these overlooks and would intrude slightly on the primative setting.

Rock Canyon Trail (PCP required)

The first stop on the mini-train route is a trail leading to Rock Canyon. A loop trail with several overlooks will offer views of Robbed Cave, Ruin No. 16, and an excellent view of Rock Canyon with several visible ruins and sites. The trail returns to the stop and will also connect with the Mug House trail. Since a minority of the visitors are likely to take this trail, this could possibly be a "signal" stop for the mini-train.

Long Canyon Trail (PCP required)

This trail system will originate at a mini-train stop but will also connect with the surface ruins trail. When fully developed, this will be the major hiking trail on the mesa with two loops providing various lengths of trails. The trail would basically follow the canyon rims on a spur of the Mesa, offering views into and across Long Canyon and Bobcat Canyon. There will be numerous interpreted overlooks and wayside exhibits.

MESA CENTER - SURFACE RUINS DEVELOPMENT

Visitor Information Center (PCP required)

For most of the visitors the first stop on the mini-train will be at the Mesa Center development. This is a major focal point offering several experiences for the visitor. Trails will lead to Long House (guided tour), Long House Overlook, through the surface ruins complex, and to the Long Canyon trail system. At this stop there will be a visitor information center structure containing an information area, exhibits, rest rooms, drinking fountains, possibly vending machines, and sheltered seating. This structure would most closely recall the

design of the visitor center complex but must also relate to the nearby ruins shelters. It is estimated that a covered area of approximately 2200 sq. ft. will be required. Rest rooms, storage space, and an equipment room for remote audio stations would be contained in a single structure with the remaining features under the same roof structure. Spatial requirements need further analysis when the PCP is prepared.

A possible site for the visitor information center was flagged in October 1969. Existing topography is sufficient for preliminary studies. Final site studies will be required after the mini-train route has been finalized.

Surface Ruins Development

A concentrated group of surface ruins offers a tour through all the developmental stages of Mesa Verde in chronological sequence. Unlike Chapin Mesa where the excavated surface ruins are widely separated, the close proximity of three extensive ruins and a nearby fourth ruin requires that they be developed as a unit. These ruins will require shelters to protect them from rain and snow and the design of these and the protective barriers is probably the most sensitive design problem on the mesa. PCP B-94-1 for Mesa Top Ruins Shelters needs revision. Cost estimates have been too low and the area to be covered by the shelters appears to be under-estimated.

The existing ruins shelters on Chapin Mesa consist of various combination of logs, steel trusses, wood posts, and tar paper, with the exception of one ruin which has been roofed with a sky-lighted steel space frame. The success of this space frame has been debated since its completion in 1968. The visitor and park reaction has generally been favorable. All agree that the quality of lighting is excellent, that the protective railing is extremely poor design, and that the method of closing the structure for winter protection is very poor.

In designing the ruins shelters for Wetherill Mesa, all possible structural forms should be studied. There should be no columns intruding into the ruins although removable supports for winter snow loads may be used to reduce spans. The structure should be obviously the work of contemporary man but should not distract from the resource. Protective barriers should not compete with the form of the ruins. Graphics and interpretive material should be integrated into the overall design.

Adjacent to the ruins structures will be audio shelters (PCP required). These will hold 15-20 people situated for viewing the ruins and overhead graphics displays. This structure may be less subtle than the ruins shelters and more closely related to the information center structure. The use of other devices to present the audio information may eliminate the need for these separate audio structures.

Mesa Top Ruins Loop Trail (PCP R-65-1)

The PCP should be revised to include extension to Long House Overlook. Low voltage audio wiring should be installed in the trail from the visitor information center to each ruin. This trail will be wider than average to accommodate heavy traffic, and grades will be maintained under 5% to accommodate the handicapped.

SIGN PROGRAM (PCP required)

The complete sign program shall be kept simple, highly effective and above all in good design taste. These prerequisites shall be achieved through a continuity of letter form, sign shapes, and color(s).

Sign locations should be carefully selected to achieve the greatest effect through the least number of signs.

Symbols shall be used wherever possible to achieve both a decorative as well as a functionally effective program. Symbols that convey ideas, thoughts, or suggestions, are usually more effective at greater distances and hence can be smaller than verbal messages.

DEMOLITION AND RESTORATION (PCP required)

The Long House camp area consists of numerous buildings, tent platforms, wiring and debris which must be removed before the area is opened to the public. Numerous jeep trails and construction scars should be obliterated and restored to a natural state in the public use areas. Extensive planting and tree transplanting will be required, especially in the Mesa Center and Long House Overlook areas. The sewage lagoon, borrow pit, and trash dump should be concealed from view by screen planting.

THE VISITOR CENTER (PCP B-88-4)

The Wetherill Mesa Visitor Center will be located at the first focal point of visitor activity. Trails will lead to two cliff dwellings which will be open to the visitor, and the mini-train will take the visitor to additional activity centers. Depending upon tour schedules and the availability of tickets for guided tours, the visitor may remain in the visitor center complex or move on to the Mesa Information Center.

Introductory Area

From the parking area all visitors will pass through an introductory program area where a brief (2 minute) audio program will explain what there is to see and how to see it. The audio will be supplemented by

photos of scenes and visitor activities around Wetherill Mesa. This program area should probably be roofed to accommodate low volume audio speakers, to provide shelter from the weather, and to delineate the formal entrance to the complex. Space should allow for around 50 persons comfortably standing. The visitor should not feel trapped by this structure; however, all design factors should direct him to and through it.

Information Area

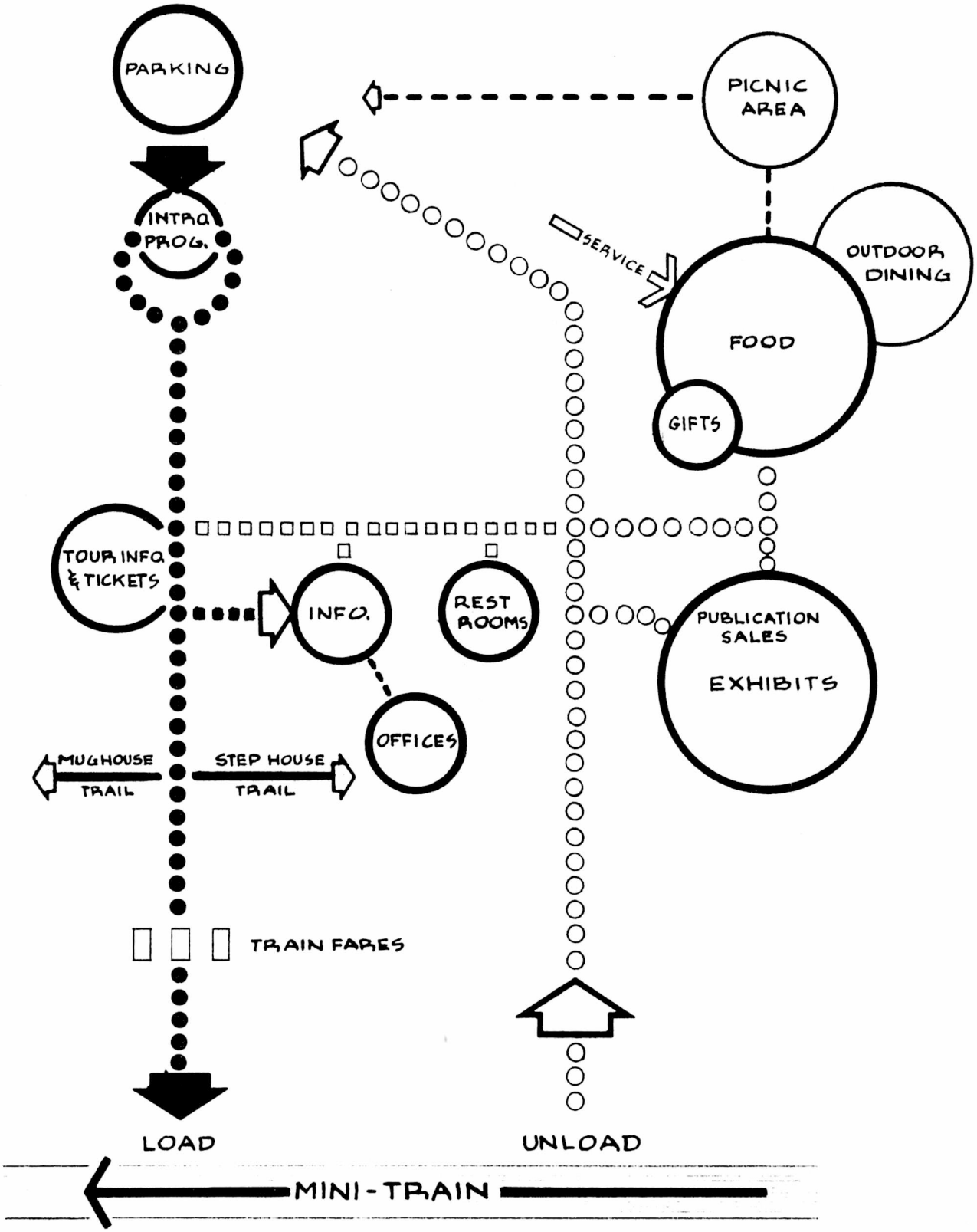
The visitor next passes into the main complex of the visitor center which may best be described as a cluster of semi-related functions. Because we wish to move the visitor rapidly onto the mesa his objective, and therefore the focal point, should be the mini-train boarding area with tour information and ticketing for tours and train an almost equal but secondary focal point. Other functions within the complex should be obviously available but should not detract from the desired primary objective.

The tour ticketing information area will provide further audio and graphic information about the guided tours. At this point the visitor should basically plan his stay on the mesa and this will be largely determined by the availability and timing of the guided tours. An information desk nearby will provide further assistance for the visitor who cannot plan his trip with the information already presented. The visitor may then choose to remain in the visitor center complex, take the mini-train, or start off on one of the trails.

This area would require space for at least 40 persons standing with a view of the visual presentation. Again, low volume audio will be required. Adjacent to this program area will be an area where tour tickets may be obtained. Two and possibly three "booths" or counters would be required at peak times. During slack times any remaining tickets would be distributed at the information desk.

The Mini-train Terminal

This portion of the visitor center complex must be designed to provide a smooth flow of visitors onto the mini-train. If the train is free or all fees have been collected at Navajo Hill, there will be few problems handling the train loading. If fees are to be collected at the loading area, the methods of collecting the fee and the means of identifying those visitors who have paid, could become quite complex, requiring an excessive number of personnel and creating delays during the peak use period. Initially, the concessioner will collect fees for the use of the mini-train and temporary facilities for the collection of these fees should be provided. The design should provide flexibility for the future elimination of these facilities or the



PRIMARY VISITOR FLOW and FUNCTIONAL RELATIONSHIP of VISITOR CENTER FACILITIES

construction of permanent fare collection and crowd control facilities. Ideally, the train would stop at a separate unloading area and pull in empty to the loading area. The terminal structure should provide adequate roofed area to cover the train, the boarding passengers, excess passengers who may be waiting, and the fare collection facility if one is required. The unloading area may not necessarily be roofed since the visitor would move directly into the visitor center.

Related Visitor Center Facilities

The relationship of the various functions within the visitor center is somewhat complex in that each visitor will determine his own program of activities. A "Plaza" plan with structures opening off this plaza would allow the most variety of traffic patterns and maintain an open feeling which would be carried out throughout the mesa. Portions of the "Plaza" should be roofed, at least partially, to provide some rain and sun protection. This roof may be integral with, or separate from the buildings. Changes of levels, planting and open spaces may be used, as the site allows, to direct traffic and provide a variety of experiences within the complex.

Information: The information desks should be closely related to the main traffic flow from parking area to mini-train terminal but somewhat to the side. Two persons would man the desk at the peak times and each would be required to talk to groups of 10-20 persons. When only one person is in attendance the other desk space should not appear empty. Both manned spaces will require facilities for random-select, rear screen slide projection. When only one space is manned, the other will present a continuous slide program.

Sales: The book sales area may be related to either the information desk or the exhibit area. During peak periods the publication sales desk would be attended by two persons. Approximately 50 title will be on display and there should be ample space for browsing. The relationship between sales desk, information desk, display area and the exhibit spaces will require careful analysis. There must also be storage space for publications stock both in the sales area and in a stock room.

Museum: The museum requirements are defined in Part III, "Interpretive Plan for Wetherill Mesa". The various areas required may evolve as separate structures under one roof or as inter-connecting units around a central core. The basic museum spaces require an area of approximately 7200 sq. ft. Allowing for publication sales and browsing areas, mechanical spaces, storage spaces for publications and museum equipment, and circulation and seating spaces, the total floor area of the museum portion of the visitor center complex would be approximately 10,000 to 12,000 sq. ft.

Offices: Administrative facilities will include offices for protection and supervisory interpreter, first-aid room with lavatory and storage space, employee rest rooms, general storage space, closets, janitor space, and a work room with sink, counters, and tables. There will be radio communication with other areas of the park and these facilities should be sound isolated from the public areas. The information desk would most likely be included in this structure. An area of approximately 1700 sq. ft. would be required for these facilities. Specific requirements are outlined in General Superintendent Guillet's memorandum of October 13, 1969. (See references.)

Rest Rooms: Public rest rooms should be conveniently located with a minimum of five toilets and three lavatories for each sex. Janitor facilities should be provided.

Concession: The food service, kitchen, and souvenir sales will require a structure of approximately 4000-6000 sq. ft. More complete analysis of the type of food service may modify this. Indoor dining space should seat approximately 100-150 with space for an equal number available on an outdoor covered dining terrace. Employee and public rest rooms, locker room and janitor facilities should be provided.

The food service facility has been described as a minimum quick service lunch and snack operation. A preliminary analysis and more detailed requirements of this operation are included in Part III. The building will be constructed by the Service and major built-in equipment will be included. Removable and expendable equipment will be supplied and installed by the concessioner.

Picnic Area: A picnic area would be developed (under a separate PCP) in the vicinity of the visitor center. This should be accessible from the parking area and the concession facility. Capacity will be determined by the site.

Mechanical: It is not anticipated that air conditioning or heating will be required although some minimum heating would be desirable to "dry out" the spaces in the spring; ventilation must be provided for the enclosed spaces and especially the program area. Supplemental heat could be provided in offices and less active area. Air conditioning may be required in some areas where ventilation alone would be inadequate to remove heat build-up and provide comfortable temperatures.

The site for the visitor center at Step House has been roughly located in the field. The boundary of a large unexcavated site (Number 1573) was roughly determined and plotted on topography sheets

in October 1969. It is anticipated that the visitor center would evolve around this site which may be fully excavated and stabilized at some future date as a feature of the complex. Existing topography is adequate for preliminary studies, but more detailed topography will be required for the final design. The PCP will require revision to reflect changes in the interpretive, concession and management requirements.

Extensive grounds development at the visitor center will be required to obliterate and restore existing scars, jeep trails and damage caused by construction. The parking area should also be restored under this same contract. PCP M-85 will need some revision to reflect the changes in location and scope of the visitor center. Paving of approach walks and terraces adjacent to the visitor center and parking area should be added to this PCP or the visitor center PCP.

This complex of buildings will set an architectural theme for Wetherill Mesa--a theme that will be carried out in every detail of modern man's construction on the mesa. This is not to say that all buildings will be of the same appearance, that all railings will be identical. Rather, there will be a recall of materials, of details, of scales, of color. It is important that the manmade facility is subservient to and not competetive with or dominant of the natural features of the area.

ESTIMATED SPACE REQUIREMENTS FOR VISITOR CENTER COMPLEX

Information desk - office ..... 1700 sq. ft.

Public rest rooms ..... 580 sq. ft.

Museum - publications sales ..... 10,000-12,000 sq. ft.

Concession facilities ..... 4,000- 6,000 sq. ft.

Covered outdoor areas ..... 10,000-12,000 sq. ft.
(Introductory program area, tour information, ticket area, train loading area, and dining terrace.)

Open terraces - train unloading area.. 9,000-12,000 sq. ft.

(Connecting walks, service trails, picnic area walks and other miscellaneous paved areas not estimated.)

UTILITY AREA DEVELOPMENT

A duplex residence (PCP B-89) has been proposed to provide quarters for personnel to operate and protect the mesa. One unit may be leased to the concessioner for maintenance personnel. Each unit would have two bedrooms and should be designed in accordance with the architectural theme.

A maintenance building (PCP B-103) will be required for NPS use. Exact requirements have not been finalized although basic requirements are outlined in Superintendent Guillet's memorandum of October 13, 1969. (See references.) Storage space for concession supplies may be required either in a separate structure or as part of the NPS structure.

Storage and fueling facilities for mini-train vehicles will be required and minimum service facilities will be needed. The use of the visitor center for winter storage of mini-train vehicles is a possibility. The type of vehicles and frequency of service require analysis prior to design of utility area facilities.

The most suitable location for this development has been determined to be behind a knoll just north of the parking area. In this location this development will not intrude at all on the prime resource areas. Road access will be off of the main road into the mesa. An alternate location adjacent to the existing water tank is still under consideration.

UTILITIES

Water System

At present a 300,000-gallon water tank located at the head of the mesa developed area and supplied from the 2,000,000-gallon reservoir at Navajo Hill serves a 6" line running to the vicinity of Long House. This system is adequate for all anticipated needs and will only require connection to the various facilities. The water line should be extended to the Long House Overlook and Kodak House Trail Center.

Sewer System

A six-inch gravity line exists from above Mug House to an existing sewage lagoon. This will be adequate to serve the visitor center and utility area developments. A 4" forced main line from a partially completed pumping station near Long House Overlook to the sewage lagoon may be abandoned and the pumping station structure obliterated. Part of this 4" line may possibly be used for the Mesa Top Information Center or a new gravity line may be required.

Electrical

There is no electrical service to the mesa. Underground distribution will be used throughout the mesa development and some conduit is already in place. Overhead service from Chapin Mesa has been proposed and will require further study so that it is not visible from Wetherill Mesa or its approaches. In addition to the major power distribution, there will be low voltage lines serving remote audio stations.

Telephone

The telephone cable presently being installed will be extended to the visitor center and utility area. This may possibly be extended to the Mesa Information Center. Radio telephone service will also be required at the visitor center and the information center.

Fuel

Fuel requirements for the visitor center and the utility area buildings must be determined. The cost and feasibility of all electric versus propane or fuel oil for heating and cooking will affect the design of the utility area. If propane gas is to be used, a bulk storage system will be located in the utility area with lines to the visitor center and residences.

Fuel will be required for the mini-train and the type and location of fueling facilities must be studied. The proposed vehicle will be capable of operating all day on one filling. Fueling could be remote from the mini-train route or by supply truck. Trains can be driven to the maintenance area for refueling and an underground tank with pump can be placed there. All vehicles would be fueled in the morning before visitors arrive on the mesa. The possibility of electrically (battery) powered vehicles requires further analysis. Fuel facilities will also be required in the utility area for NPS vehicles.

The following excerpts from the master plan are included for convenient reference during the design of facilities for Wetherill Mesa.

CLIMATE

Mesa Verde has mild, dry, sunny weather through most of the year. Rainfall averages 18.30 inches annually; February and August are the wettest months, while June and November are the driest.

Precipitation

Weather records have been kept in this park since 1923. December, January and February are usually quite inclement. Although snow depths during these months average 17.5 inches, the greatest amount on the ground at any one time was 39.5 inches--measured on February 7, 1949. The maximum snowfall for any single 24-hour period was 17.5 inches on January 2, 1949. Since the park's terrain slopes southward, snow melts quite rapidly, especially in the lower sections. Moisture contained in snow averages one inch of water for every 12.5 inches of snow.

The heaviest rains occur during the months of July and August. In fact, at times it rains in cloudburst proportions as was experienced on August 30, 1929, when it rained 2.35 inches during an hour's time; this was also the maximum amount recorded during a single 24-hour period.

Wind

The prevailing winds over Mesa Verde are from the southwest. However, at times, especially during winter, the wind direction changes to the northwest and invasion of cold air cause the air masses to become unstable and stormy weather occurs. Maximum wind speeds are usually recorded during April when it often reaches a velocity of 25 mph.

Special Conditions

Storms usually last for a few hours or a day at the most. Fog sometimes accompanies snowstorms in winter, when winds are from the northwest. Lightning is a common occurrence during summer, especially during July and August.

TERRAIN

Weatherill Mesa is a high (elevation 7,000 to 7,300 feet) tableland deeply incised with vertical-walled deep canyons. It is gently sloping from the top of the escarpment along the north boundary toward the Mancos River. North of the escarpment the drop is precipitous into the Montezuma Valley. The park entrance road climbs about 900 feet in less than 4 miles. Built on the Mancos Shale and other formations of the Mesa Verde group, it has provoked serious engineering problems due to nearly constant shifting and sliding of the roadbed. To travel from one finger mesa to another requires returning north to the escarpment to avoid the steepsided canyons, the drainage of which flows south to the Mancos River. The mesa tops within the Mesa Verde are mostly covered with a mantle of rich soil varying in depth from zero at the edge to as much as 12 feet back some distance from the canyon rims.

The red clay soil is a loess (wind-formed) deposit which covered the flat-topped mesas but has been eroded off on the steep slopes and on the canyon rims. Soils from residual rocks are shallow and rather sterile. They characterize the canyon slopes and bottoms except for very limited deposits of alluvium.

PART III
APPENDICES

INTERPRETIVE PLAN

TRANSPORTATION STUDY

FOOD SERVICE STUDY

DEVELOPMENT SCHEDULE

INTERPRETIVE PLAN for WETHERILL MESA

Interpretation on Wetherill Mesa should be considered as an integrated whole, rather than as a series of separate elements.

From an analysis of this whole we have developed groupings of functions so that interpretive needs are fulfilled while assuring the efficient use of manpower; complete protection and preservation of the ruins; and adequate care of specimens.

The Interpretive Program will have two main functions:

Orientation

Identify activities available to the visitor.

Help visitor choose the way he will spend his time.

Explain how visitor should do what he selects to do.

Inspire visitor to explore the Mesa, especially areas other than cliff dwellings.

Interpretation

Make the area come alive with the daily life of the Anasazi by relating the dwellings and the people who built them.

Provide a basic understanding of the cultural periods represented.

Impress upon the visitor that the Anasazi lived in harmony with their environment.

METHODS TO BE USED IN INTERPRETIVE PROGRAM

The main emphasis should be on the areas - the ruins - used by the prehistoric people. The best way to breathe some life into these ruins and to create an understanding of how the people lived would be to rebuild and refurnish the ruins. However, a field setting is not compatible for proper preservation of artifacts (especially of perishable materials).

OUT-OF-DOORS INTERPRETATION

In the ruins we propose to interpret what the visitor sees by using:

Drawings showing the site reconstructed.

Floor plans of the ruins with features identified.

Photos of objects from the site.

Low level sound at widely dispersed portions of the ruin.

Personal contact with uniformed rangers.

THE VISITOR CENTER COMPLEX

The visitor center complex provides the initial introduction to the Wetherill Mesa experience. Here the visitor learns what he may see and do and how he should go about it. The complex also provides food and restroom facilities for the physical comfort of the visitor. Finally, the complex contains exhibits and other interpretive devices for a basic understanding of the cultural development and prehistoric life at Mesa Verde.

INTRODUCTORY AREA

Purpose

To briefly introduce the visitor to Wetherill Mesa and the ways to see it.

Location

All visitors should pass through this area before proceeding to any other part of the visitor center complex.

Content

Short audio message telling that three cliff dwellings may be entered, that reservations are needed for two, that surface ruins may be visited, that tickets are necessary for the mini-train, and that a museum with a program and exhibits is available.

Curving "sculptural wall" made up of metal-photo (or etched aluminum) pictures of scenes and activities available to visitors. Scenes and wall they are mounted on will serve to block out the view of other distracting elements in the visitor center complex.

Space

The area should provide comfortable standing room for some 50 persons and ample space for others to bypass this knot of people.

CLIFF DWELLING INFORMATION

Purpose

To provide information on the cliff dwellings that may be visited and how they may be seen so the visitor may decide which, if any, he prefers.

Location

This and the ticketing booths should be about the most obvious areas seen by the visitor after leaving the introductory area, but not adjacent to it.

Content

Short audio message describing the ruins and the walks into them.

Backlighted transparencies in rotating triangular pylons that are programmed to turn with the audio to show the ruin being described.

Space

An open area capable of handling crowds of 40 to 50 persons standing.

TOUR TICKETS

Purpose

To give out tickets for the Step House Tour.

Location

Adjacent to the information counter (so one attendant may take care of both functions after most tickets have been given out.)

Content

A manned counter or booth.

Space

A counter, desk, or table with space for one, but occasionally two, attendants.

INFORMATION

Purpose

To provide individualized answers to specific visitor questions.

Location

Should be a convenient alternative to the cliff dwelling information and convenient to the other elements in the complex.

Content

A manned desk (or desks).

Random-select projection system (attendant operated).

Space

A counter area, permanently installed, for a single attendant to talk to individuals or groups of up to 20 persons. Rear screen random-select projection system.

Another counter area with associated rear screen projection system. Either an extension of the main counter or a completely separate one that is movable, so that it is not obtrusive when not in use. When this area is not in use, however, the rear screen will be used for projection of captioned slides showing scenes and visitor activities on Wetherill Mesa.

BOOK SALES

Purpose

To display and sell publications that supplement the interpretive story.

Location

Preferably near the exit or entrance to the museum area and relatively near the information area. This could be a completely independent kiosk located in a "courtyard" or other non-enclosed space.

Content

Display rack, preferably freestanding.

Sales desk and supply closet or cabinet.

Space

Probably a minimum of 200 square feet, more if seating is to be provided. The sales desk or counter should accommodate two clerks during peak periods. Display for a minimum of 50 titles.

MUSEUM

Purpose

An exhibits-program area will serve two major objectives. First, and possibly of prime importance, it should provide an extension of the information portions of the visitor center complex. It should help orient the visitor in greater detail as to what Wetherill Mesa offers and thus will help him plan his stay so that he may use all the facilities more efficiently. The conventional information areas will provide specific instructions whereas this area should provide the inspiration to seek and explore the mysteries of this "monument to the works of man."

Second, the exhibits-program area should be prime in breathing life into the ancient communities that the visitor will see once he leaves the visitor center complex. We must instill the idea that man lived here for at least 800 years during which time he learned to use his environment to its fullest without destroying it!

We also want the visitor to understand, if only cursorily, that in the time that people lived at Mesa Verde, architecture changed and developed with other aspects of culture, so that three basic types of houses were used during different periods. Thus, when the visitor sees the ruins he will better grasp their temporal relationship to other structures in the vicinity.

Location

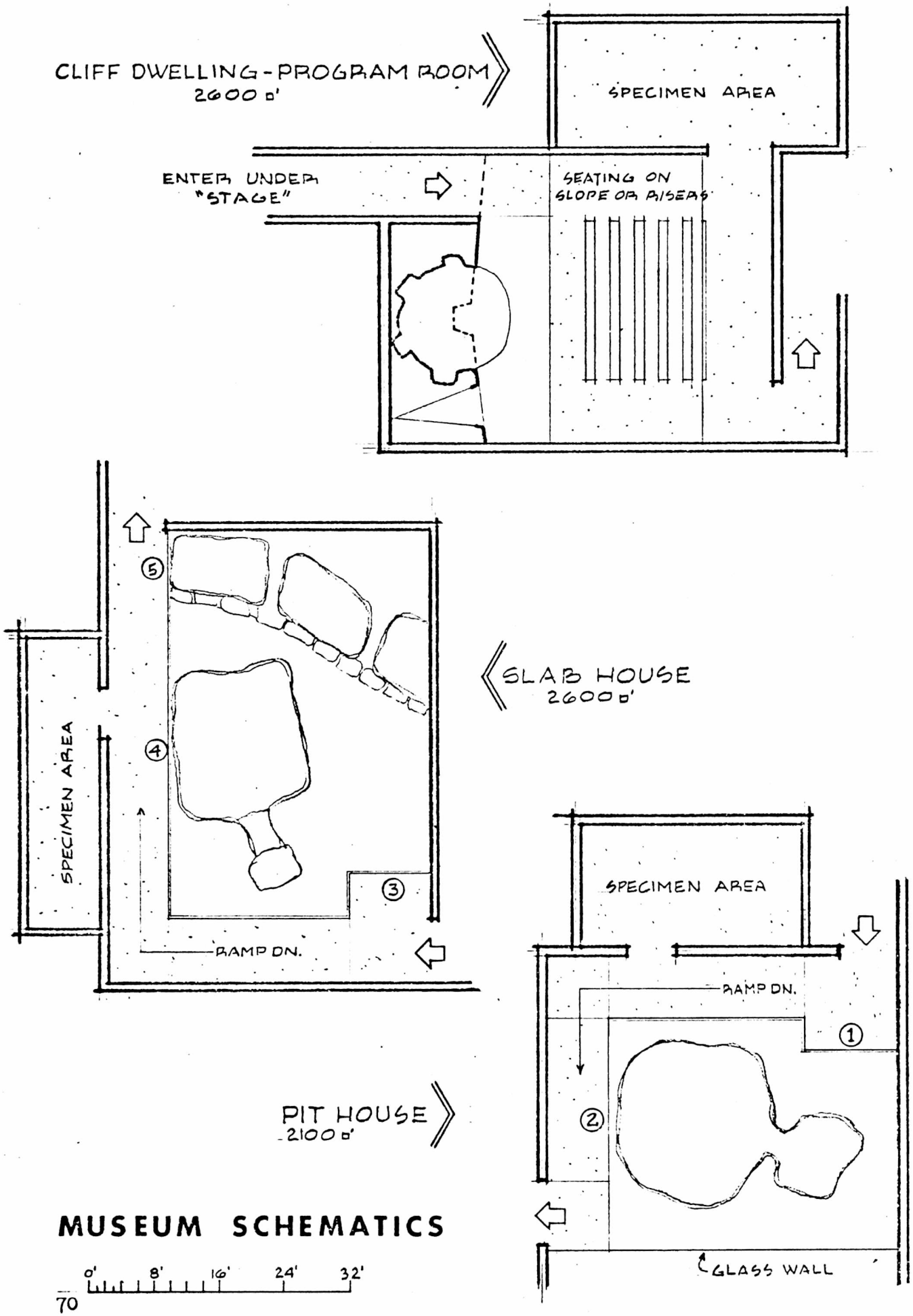
One of the elements defining the visitor center complex, it should be easily accessible to all other elements.

Space

See plans.

Content

Two galleries and a theater room, each with an adjacent specimen room. These could be separate units that the visitor may enter or exit from at any point. (It is likely that many visitors will want to re-examine a particular portion of the museum.)



MUSEUM SCHEMATICS

Pithouse

A reconstruction of a BMIII Pithouse with objects (perishable materials as well as stone, bone and pottery artifacts) placed as they may have been used when such a house was occupied.

1. (See plan). A low level speaker to briefly discuss the economy during this period.

2. A glass wall of the pithouse to provide a view of the inside and another low level audio program to tell about life in such a structure.

Slab House

A partial reconstruction of a PI house and kiva, again with related objects displayed relative to their original use.

3. (See plan). Entering on an elevated platform the visitor would look down at the village and hear a brief audio message about the way the people lived in such a community.

4. Going down to a lower level the visitor would look into the kiva through a glass wall and hear how this structure evolved from pithouses and an interpretation of the developing social organization of the people as shown by such specialized structures.

5. A glass wall to show the inside and construction of a living room.

Cliff Dwelling - Program Room

Here, in a theater-type setting, an abstract cliff dwelling will be created on a stage using dimensional constructions and projected images. In a 10-or 12-minute program the visitor will understand how the Indians lived at Wetherill Mesa and used the available natural resources to their fullest and developed a complex culture.

Specimen Rooms

Each of these three rooms will display objects relative to the general time period of the adjacent house construction. Primarily this will be a visible storage room with, for example, a wall of pottery; a case of different shaped manos; a case filled with bone awls; and possibly individual cases where "special" finds may be shown (the jar filled with azurite; the infrant and turkey mummies from Long House; etc.)

TRANSPORTATION STUDY

The transportation study, July 16-19, 1969, with the design team resulted in modifications to the proposed transit system route and visitor center location shown in the second draft 1968 master plan.

The original proposal had an inner loop 3.4 miles long with 8 stops and an outer loop over 4 miles long with 6 stops. The proposed operation included vehicles for each loop originating at the visitor center. The first phase of development included the inner loop with the outer loop to be added in the future.

The review of the original transportation proposal was concentrated on the inner loop.

Visitor Flow

After leaving the visitor center there were 7 stops--with No. 2 and No. 7 being limited capacity guided tours, requiring reservation tickets issued at the visitor center.

The major transit stop shelters were the visitor center and Stop 3.

There were no activities at Stops 2 and 7 to occupy the visitors while waiting for the guided tours.

Any visitors with reservations for later tours would have to stay at the visitor center or go beyond Stop 2 to the surface ruins, overlook, or trails, and then make a second transit round trip for the guided tour.

The second and conceivably third round trips for some visitors would require additional vehicle capacities to provide a "mobile reservoir." Each of the extra trips were a 36 minute waste of vehicle and visitor's time.

Transit Route

The inner loop route passed near the western edge of the Mesa for approximately 1 mile, swung around to the eastern edge of the Mesa and returned. There were some scenic possibilities on the western edge if the trees between the route and the edge of the Mesa were removed. Otherwise, the entire route passed through repetitious Juniper and Pinion growth.

Each transit stop was located at a "trail head." The trails were from 500 to 1,500 feet each way, from the transit stop to the ruins.

The inner loop was 3.4 miles long. The travel time including stops would have been 36 minutes per round trip. The outer loop would have approximately doubled these figures.

Vehicles

The terrain and resource value of the Mesa top is such that a surface roadway is permissable.

The limited visitor capacity of the Mesa does not warrant an expensive elevated roadway.

The short distance between stops does not warrant high speed vehicles.

We considered trackless, semi-open, self-propelled, pneumatically tired articulated vehicles, each with a capacity of approximately 70 passengers.

Five such vehicles would have been required to carry 450 visitors per hour on the inner loop. If the inner loop operation had been modified so there was a transfer between the two loops, instead of the outer loop vehicles originating at the visitor center, a minimum of three additional vehicles would have been necessary.

SUMMARY OF ORIGINAL PROPOSAL

If the visitor center were relocated to the area south of the parking lot and the transit system route was to be self-guided activities, prior to a limited capacity guided tour, the visitor "backtracking" could be corrected, the route could be shortened, fewer vehicles would be required, and the visitor would use less time for transportation.

These features were considered by the master plan team. A new visitor center location was tentatively selected, the inner and outer transit loops were combined and the route was modified as described in the following report, resulting in a smooth visitor flow with visitor activities proceeding the limited capacity guide tours, a total transit route 3.6 miles long replacing the 7 miles total of the inner and outer loops, retaining the scenic views, using only four vehicles for the same capacity, and eliminating the need for 2 or 3 round trips for a visitor.

The revised route will improve the visitor's experience, reduce travel time, reduce the length of transit trails, and reduce the number of vehicles required.

ANALYSIS OF REVISED TRANSPORTATION PROPOSAL

The carrying capacity of the Chapin Mesa area of Mesa Verde National Park is not adequate for the present visitor use. Wetherill Mesa is an area with Indian ruins, similar to those found on Chapin Mesa that will be opened to the public. Mesa Verde is located some 300 miles from any major urban area. Transportation to the park is almost exclusively by private vehicle, 97 percent of all visitors come from areas over 300 miles away.

The concessioner's bus accommodates a few visitors, however, for all practical purposes visitor transportation within the park is by private auto.

The capacity of Chapin Mesa has been established by park management, interpretive personnel, and archeologists as being approximately 5,500 per day and the capacity of the Wetherill Mesa area is limited to 2,500 visitors.

It is 15 miles from the park entrance to Navajo Hill where the roads to the two Mesas divide. From Navajo Hill to the museum, visitor center and park headquarters complex on Chapin Mesa is 5 miles; to the future visitor center-museum on Wetherill it will be 12.8 miles.

The park is subject to seasonal use with 70 percent of all annual use during June, July, and August; 50 percent during July and August. The peak use days are Fourth of July, Labor Day, and Tuesdays and Wednesdays of each week. Total visitation in 1967 was 440,000. Five hundred fifty thousand are anticipated for 1970 and 700,000 by 1974.

The compartively limited capacity of 7,500 to 8,000 per day, the seasonal and daily peak use, and the considerable distances within the park do not warrant a mass transit system. There are no non-motorist visitors who need transportation.

The 500-site camping area within the park is located near the park entrance and trailers are prohibited beyond the camping area. The park road from the entrance to Navajo Hill and the park roads from Navajo Hill to Chapin Mesa and Wetherill Mesa all have capacities far exceeding the capacities of the park and the parking facilities on the Mesas.

Chapin Mesa has been developed, based on private vehicle transportation, with parking areas at each attraction, some 12 miles of park roads, and has a housing, headquarters, museum and visitor center complex located in the general area of the resource attractions.

There has been some effort toward removing some of the facilities from the resource area. Lodging is being moved to Navajo Hill with 60 new units complete, and plans for 65 additional units. It would be advantageous to move housing, headquarters, etc. to Navajo Hill also. At some future date it may become necessary to provide public transportation beyond Navajo Hill. We suggest that the proposed expansion of employee housing and construction of a visitor lodge on Chapin Mesa be reconsidered.

The transportation plan for Wetherill Mesa is to provide adequate parking at the visitor center for all visitors and use trackless trains, miniature trains, buses, or some type of relatively slow speed mass transportation to the various attractions in the resource area.

The objectives for the development of Wetherill Mesa have been established by management, interpretive procedures and resource planning which is reflected in the 2,000 visitors per day capacity. The transportation system is to provide feasible transportation from the visitor center to the areas of interest in a safe, quite, comfortable vehicle operating on a scenic route that causes a minimum of resource damage.

The options are:

Walking

The distance to and from the ruins when added to the absolutely necessary walking distances of guided tours, self-guiding tours, and overlook access where transportation routes are impossible, are excessive. Many of the trails would pass through repetitious Juniper and Pinion growth with little or no attraction.

Private Vehicles

Private vehicles would require wide roadways and 12 parking areas each capable of holding 25 to 50 cars, which would cause considerable resource damage. There would be traffic congestion, there would be the excessive litter associated with private vehicles, etc.

Mass Transit System

Speed--The distances between stops are in the range of $\frac{1}{4}$ to $1\frac{1}{4}$ miles and there are several outstanding scenic views, both of which eliminate the need of any type of high speed vehicles.

Type--An average daily volume of 1,500 passengers and a 90-day seasonal use are not in keeping with an expensive overhead track structure.

The topographic features and the resource value, except for the actual ruins, permit the use of surface routes.

Vehicles

The mini-bus vehicles used on the Washington Mall are the type of vehicle recommended.

These vehicles have a power unit and 1 trailer totaling 50 feet in length. The seating arrangement has 16 rows of 3 and 2 passenger seats with a narrow isle the entire length of the vehicle. There are only two entrances. A modified seating arrangement with larger entrances would be desirable which will reduce the capacity to approximately 75 passengers.

Design Speeds

Mini-buses have 6 speed transmissions. The recommended 2500 R.P.M. engine speed results in:

3rd gear - 10.1 M.P.H.
4th gear - 14 M.P.H.

These speeds will be in the range used on the transit route.

5th gear - 19 M.P.H.
6th gear - 26.9 M.P.H.

Turning Radius

Outside front wheels 37'

Maximum Climb

No specific data, however, since normal running speeds require 3rd and 4th gear, 5% grades leaving station and 10% grades en-route would be acceptable.

Other Data

Gross weight - 31,000 lbs. on 10 tires (single front drive dual, and trailer tandem singles) or an average of 310 lbs. per tire.

Vehicle width - 102"
Vehicle height - 108"
Floor height from ground 27" to 29"
Cost - Approximately $45,000 per vehicle
Vehicles would be open with roll curtains for storms.

Transit Route and Vehicle Passing Points

4 Vehicles - 10 minute headway

40 Minute Round Trip Time:

Speed 10 M.P.H. except Long Canyon to Kodak House 15 M.P.H.

Rock Canyon	1 min. stop
Long Canyon	1 min. stop
Long House Overlook	1 min. stop
Mesa Top Ruins	2 min. stop
Kodak House	2 min. stop
Visitor Center	5 min. stop

Passing point would be at Rock Canyon and Mesa Top Ruins stops with both vehicles in stations.

3 Vehicles - 13 minute headway

39 Minute Round Trip Time:

Speeds and stop times same except visitor center stop time would be 4 minutes.

Passing point would be at midpoint between Rock Canyon and Mesa Top stops.

2 Vehicles - 20 minute headway - No passing point.

Capacity

4 Vehicles - 75 passengers each

40 Minute Round Trip Time

Maximum capacity - 450 passengers per hour

The visitors arrival pattern for Chapin Mesa has peaks of 16 percent of the total daily use, during each of three 1-hour periods. (9 to 10, 10 to 1, and 3 to 4). Assuming a peak daily use of 2500 visitors, these hourly periods would have 400 visitors per hour. Due to the travel time from Navajo Hill to Wetherill, we can expect a concentration of arrivals between 10 a.m. and 3 p.m. exceeding those experienced on Chapin Mesa. Four hundred and fifty passengers per hour on the transit system will be necessary.

Operating Costs Per Vehicle

90-day season

10-hour days

40-minute round trip

15 trips per 10-hour day

4.7 miles per trip - 70 miles/day

Most days three vehicles will be adequate. The following preliminary feasibility is based on using four vehicles two days a week and three vehicles five days a week.

Investment			
4 - 75 passenger mini-buses @ $45,000			$180,000
Amortization			
10 years with 10% residual		$16,200	
Interest			
8% averaged to 4%		7,200	
Return on investment 8%		14,400	
Operation			
Labor 3 - $3/hr. operators 90 days	$8,100		
1 - $3/hr. operators 60 days	600		
		8,700	
Taxes-Ins.-H&A, etc. 1/3		2,900	
Gasoline 4.5 M.P.G. @ $.35 - $.08 mile			
70 miles X 90 days X 3 vehicles	18,900		
70 miles X 20 days X 1 vehicles	1,400		
@ $.08	20,300 mile	1,624	
Gas - maintenance @ $.05/mile		1,050	
Total		$52,074	

75 passengers X 15 trips = 1,125 pass./day
60% load factor
675

3 X 90 = 270
1 X 20 = 20
290 operating days X 675 = 195,750 passengers/season
@ .25 = $48,937.50

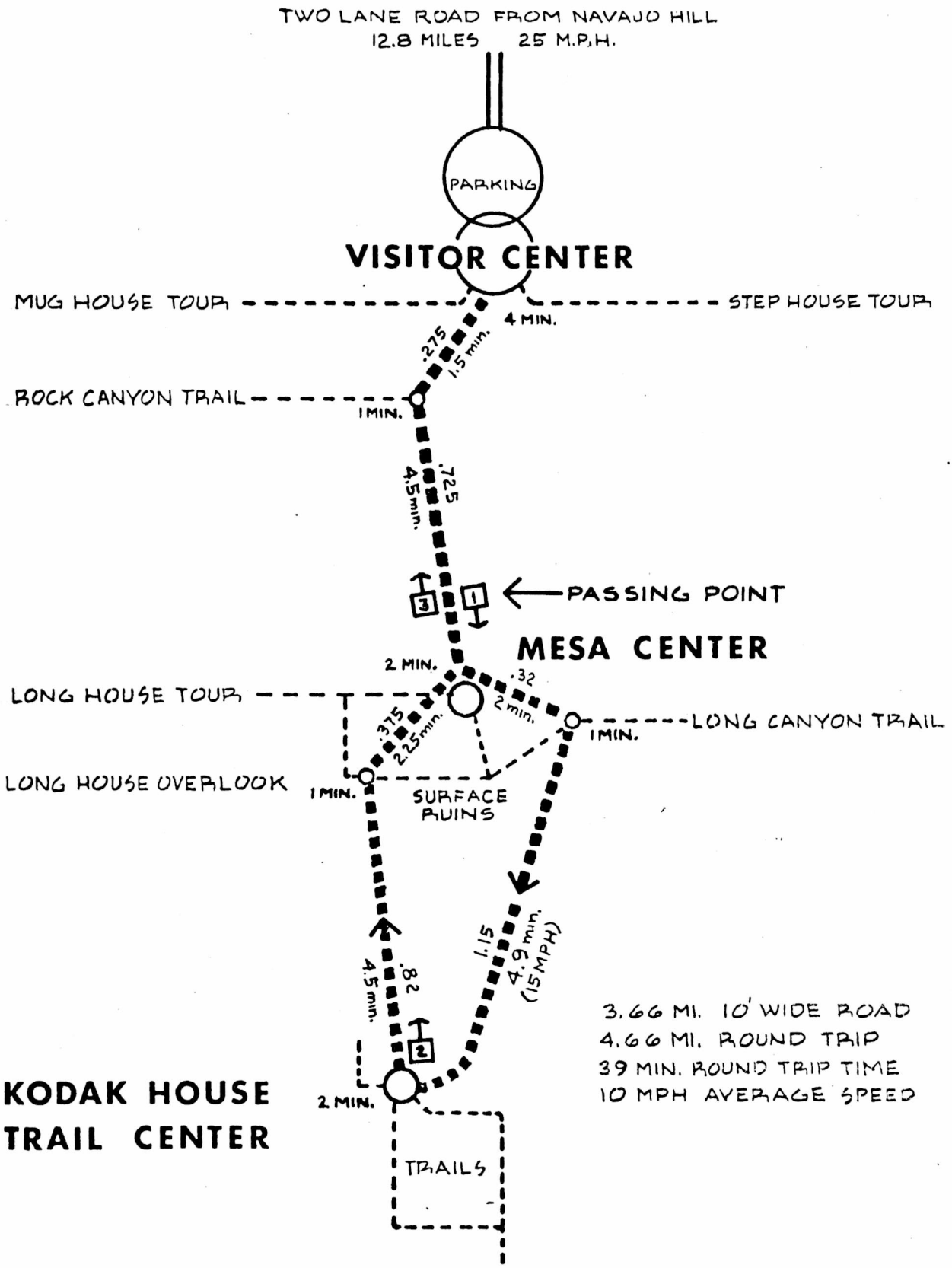
@ .27 = $52,852.50 income
$52,074.00 expenses
$ 778.50 Balance

The second preliminary feasibility is based on using only three vehicles. Three vehicles would be adequate for 2,025 passengers per day. Three vehicles would be adequate for first phase of operation, however, four vehicles will be necessary for the anticipated use.

Investment		
3 - 75 passenger mini-buses @ $45,000		$135,000
Amortization		
10% with 10% residual	$ 12,150	
Interest 8%, etc.		
Averaged to 4%	5,400	
Return on investment 8%	10,800	
Operation		
Labor - 3 operators @ $3/hr. - 10 hr./day - 90 days	8,100	
Taxes, overhead, insurance, etc. 1/3	2,700	
Gasoline - 4.5 M.P.G. @ $.35 $.08/mile 70 miles/day 90 days 504 X 3	1,512	
Insurance) Maintenance) $.08 mile etc.)	1,512	
Total	$ 42,174	

75 passengers X 15 trips = 1,125
60% load factor
675
3 buses
Total 2,025 passengers/day

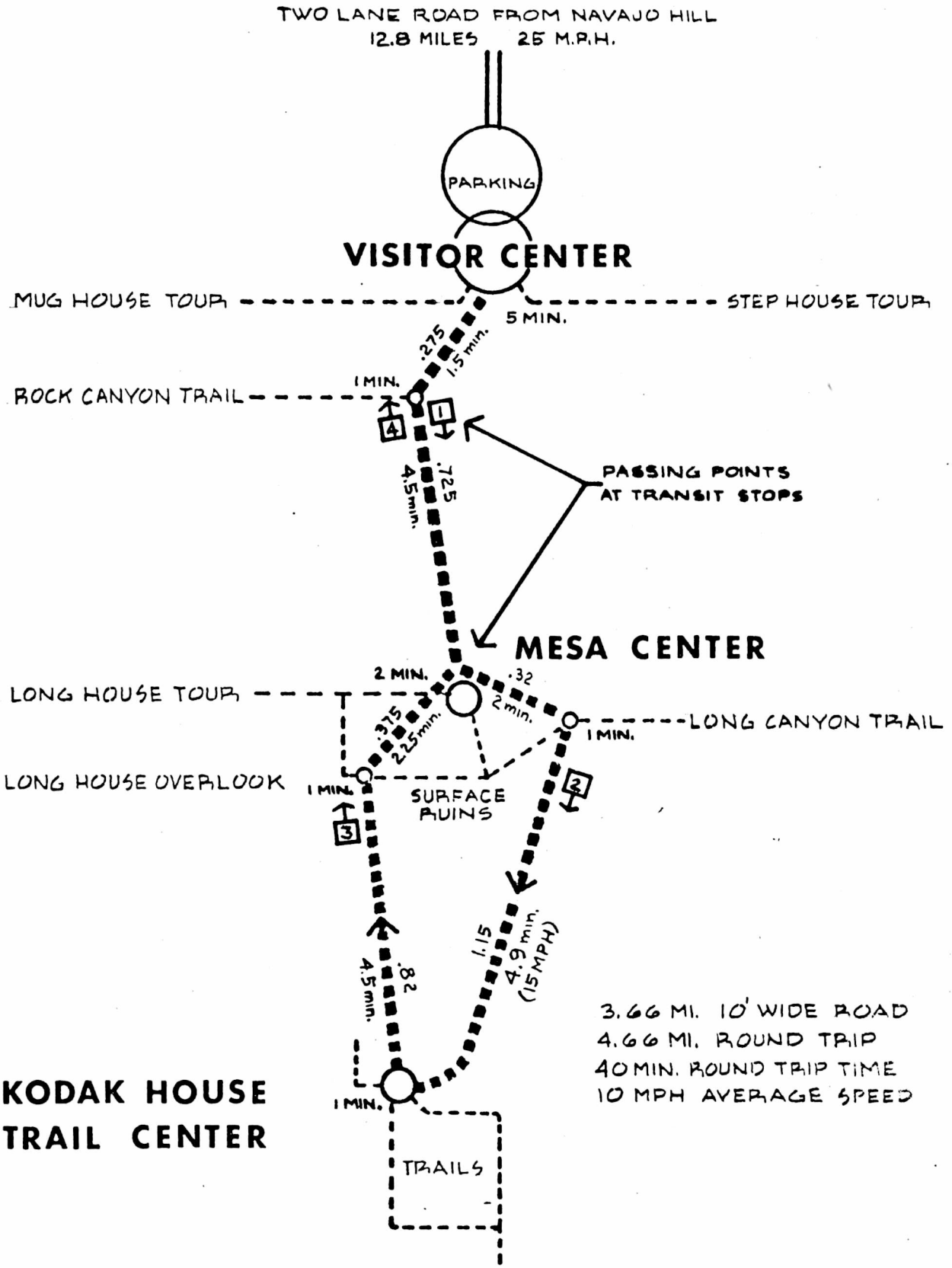
675 X 90 X 3 = 182,250 passengers
@ $.25 = $45,562 income
42,174 expenses
$ 3,388 Balance



3 TRAIN

SECONDARY TRANSIT SYSTEM

Wetherill Mesa - Mesa Verde National Park WM



4 TRAIN

SECONDARY TRANSIT SYSTEM

Wetherill Mesa - Mesa Verde National Park WM

FOOD SERVICE STUDY

INTRODUCTION

Several considerations affect the type of food service, equipment, workers, space and seating requirements, etc., for this food service operation. They are:

1. The scheduling of visitor use of the area. That is, the number of hours the Mesa will be open to the public and the schedule of the mini-train carrying people to and from the public use building to the ruin areas.

2. The menu to be served, i.e., short order versus full dinner service.

3. The amount of processing of food to be done at the serving location.

ASSUMPTIONS

The planning recommendations presented here are based on the following:

1. Maximum daily visitation use of the Wetherill Mesa area will be 2500 people.

2. Average visitor stay from the time people leave Navajo Hill junction till they return in the evening will be five to seven hours. They will therefore require only one meal at Wetherill Mesa.

3. Food workers will commute to the Wetherill Mesa area daily with the exception of one person who will serve as janitor-watchman and live in an apartment in a nearby building.

4. Of the 2500 maximum capacity it is estimated that 40% to 50% will use the food service at Weatherill Mesa. This will allow for a maximum of 1250 meals per day to be served.

5. The food service will be basically short orders and fast service. The raw food material will be of the "convenience variety" (pre-prepared, pre-cooked, frozen--requiring only mixing and heating before serving).

RECOMMENDATIONS

Menu will be simple, consisting of sandwiches, beverages, salads, desserts, miscellaneous items and three to five hot entrees. This will involve the use of convenience foods, paper and plastic service when possible. Kitchen facilities requiring basic mixing and heating equipment.

Receiving Area: The food service receiving area dock should be seperated from the garbage room.

Storage Area: Storage area will consist mainly of a commissary room for dry items and very large walk-in type freezer and refrigerator units. This will be necessary because of use of convenience and frozen foods.

Preparation Area: This will be relatively small since very little handwork will be involved.

Processing or Cooking Area: This will consist mainly of electronic high-speed ovens for heating the frozen items, and adequate grill space.

Dish Washing Facilities: This will be required for pot washing or those china items requiring washing.

Incinerator: Gas or electric. Important because of the need to dispose of the great amount of paper debris resulting from this kind of food service.

Service Area: A single line food service is recommended. It should be such that customer use does not conflict with the removal of dirty and used dishes.

Dining Area: This should be in two sections; one enclosed area and one open area. It is estimated that 300 seats and 75 tables will be required. This is based on the following:

The service line will have a maximum serving speed of seven persons per minute. It is estimated that there will be three turn overs during the two heavy use hours of the day. Using a standard formula the seating requirement will be approximately 300. The space required for the dining area will be approximately 4000 sq. ft. This is based on an allowance of 14 sq. ft. per person. (This compares with 2400 sq. ft. dining area and 200 seat capacity available at the present Navajo Hill Food Service facility.)

SPRUCE TREE FOOD SERVICE

HOT ENTRIES

STUFFED PEPPERS (roll & butter)	1.25
PORK LOIN (roll & butter)	1.50
CHICKEN ALA KING (roll & butter)	1.35
WIENERS & BEANS (roll & butter)	1.25
WIENERS & SAUERKRAUT (roll & butter)	1.10
BEEF STEW (roll & butter)	1.25
PIZZA	1.50
CHILI	.60

SANDWICHES

CHILIBURGER	.85
HAM & CHEESE	.85
TURKEY	.85
HAM	.80
BARBEQUE BEEF ON BUN	.75
TUNA	.75
HAMBURGERS	.60
SALAMI	.60
SWISS CHEESE	.60
EGG	.65
BOLOGNA	.55
AMERICAN CHEESE	.50
PEANUT BUTTER & JELLY	.45

MISCELLANEOUS

POTATO CHIPS	.10
APPLES & ORANGES	.15

BREAKFAST

SCRAMBLED EGGS	.50
FRENCH TOAST	.75
CEREAL	.45
HAM	.75
TOAST	.25
ROLLS	.25
DONUTS	.10
JUICE	.25

SALADS

CHEF'S SALAD	.75
COTTAGE CHEESE (any style)	.65
CUP POTATO SALAD	.30
CUP CARROT SALAD	.30
CUP MACARONI SALAD	.30
CUP COLE SLAW	.30

DRINKS

ICE COFFEE	.20
ICE TEA	.20
BEER	.50
MILK	.20
CHOCOLATE MILK	.20
HOT TEA	.15
COFFEE	.15
SANKA	.15
HOT CHOCOLATE	.15
PUNCH	.15 & .25
POP	.15 & .25

DESSERTS

PIE	.25
JELLO CUP	.25
PUDDING CUP	.25
FRUIT CUP	.25
ICE CREAM BARS	.15
ICE CREAM MALTS	.25

OPERATIONS BY CONCESSIONER

It is recommended that the concessioner purchase and install all food service equipment. It is estimated that this will cost 40 to 50 thousand dollars.

Based on a one shift, one-meal operation, the personnel requirements are estimated as follows:

Manager	1
Salad Cook	1
Fry Cook	1
Servers	3
Table Attendants	3
Janitor	1
Total	10

SUMMARY

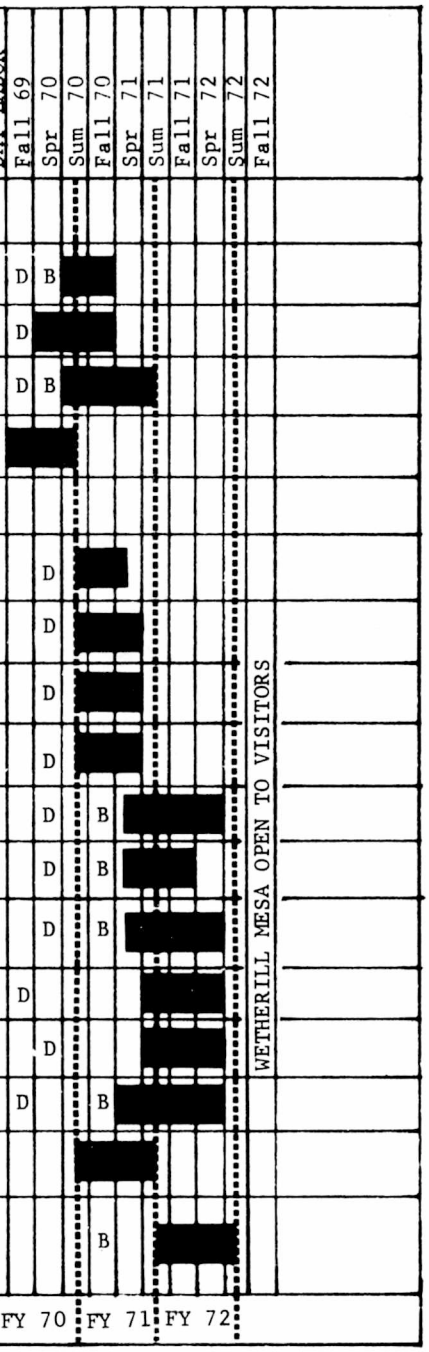
The basic idea of the Weatherill Mesa food service is that food should be served rapidly. It should be simple and moderately priced. The preparation facilities will be minimal, utilizing the Navajo Hill kitchen facilities for heavy work. The amount of space required for preparation and seating is dependent not only on the type of food service but on the scheduling of the visitors riding the mini-train. For example, if the tours are so arranged that most of the day's visitors are at the visitor center, either returning or getting ready for the trip between 11 a.m. and 1 p.m., this would mean that 800 or 1,000 meals would need to be served during this very limited time. If this is so, then the facilities will have to be expanded to accommodate the extra seating and serving. On the other hand, if the ruin tours permit a steady flow of people coming to and from the visitor center, then the meal period will be stretched out and lesser facilities will be needed to accommodate 800 to 1,000 people. Therefore, detailed planning requiring equipment selection, layout, and space requirements must be deferred until the transportation system and schedules are worked out in detail.

Mr. William Winkler, President of the Mesa Verde Company, has been conferred with and these requirements are in accordance with his views regarding food service accommodations.

Space for sale of film and souvenirs will also be provided. Space requirements for all areas of the concession facilities will be provided as requirements are finalized.

DEVELOPMENT SCHEDULE

	PCP STATUS	CONTRACT or DAY LABOR
PHASE I FY '70		
(1) Parking Area (200 cars) w/utilities	R ~~89-1~~ 101	C
(2) Long House Trails & Overlooks	R 62-4 **	DL
(3) Loop Road (mini-train) w/utilities	R ~~89-1~~ 96 **	C
(4) Archeological Salvage		DL C
PHASE II FY '71 recommended		
(1) Navajo Hill Information Center (Temporary)	*	DL
Step House Loop Trail & Overlook	R 64-1 **	DL
Mug House Trail	R 63-1 **	DL
Kodak House Trail & Overlook	*	DL
(2) Mesa Top Ruins Shelters 4 Sites	B 94-1 **	C
Mesa Top Information Center w/rest rooms	*	C
Mesa Top Ruins Loop Trail w/utilities	R 65-1 **	C
(3) Interpretive Devices	*	1
(4) Sign Program	*	1
(5) Utility Extensions [2]	*	C
(6) Archeological Salvage	*	DL C
(7) Demolition, Obliteration, Restoration Long House Camp & Jeep Trails	*	C



D = Start Design B = Bid Date

NOTES:
* PCP Required ** PCP Needs revision
1 Method of construction and installation to be determined
2 Included as part of other projects
3 This project may not be required

DEVELOPMENT SCHEDULE

	PCP STATUS	CONTRACT or DAY LABOR	Fall 69	Spr 70	Sum 70	Fall 70	Spr 71	Sum 71	Fall 71	Spr 72	Sum 72	Fall 72	Spr 73	Sum 73	Fall 73	Spr 74	Sum 74
PHASE III FY '72 recommended																	
(1) Parking Area Expansion (200 cars)	*	C	D				B										
(2) Visitor Center w/Restaurant & Terminal	B 88-4 **	C		D			B										
Visitor Center Grounds Development	M 85	C		D			B										
Duplex Residence	B 89	C				D	B										
Utility Building	B 103	C				D	B										
(3) Waysides & Overlooks Head of Mesa & Tower-Burn	*	DL				D											
Rock Canyon Loop Trail	*	DL				D											
(4) Interpretive Devices	*	1				D											
(5) Utility Extensions[2]		C				D	B										
(6) Archeological Salvage	*	DL C															
PHASE IV FY '73 recommended																	
(1) Mug House Exhibit Shelter	*	C							D	B							
Koday House Exhibit Shelter	*	C							D	B							
Long House Overlook Shelter	*	C							D	B							
Navajo Hill Information Center	*	C							D	B							
Mesa Top Audio Shelters[3]	*	C							D	B							
(2) Picnic Area Development	*	DL								D							
Double House Loop Trail	*	DL								D							
Long Canyon Loop Trail	*	DL								D							
(3) Interpretive Devices	*	1							D								
(4) Utility Extensions[2]		C							D	B							
(5) Archeological Salvage		DL C															
					FY 70			FY 71			FY 72			FY 73			FY 74

Length of construction period will vary with complexity of project and number of projects included in contract package.

PART IV REFERENCES

BASIC DOCUMENTS

The Master Plan for Mesa Verde National Park
Fourth Draft - October 1969

Interpretive Prospectus May 1, 1968
Rewrite - Wetherill Mesa portion - Sept. 1968

Management Objectives June 1969

Interpretive Exhibits Plan January 1969

The Archeological Survey of Wetherill Mesa
Alden C. Hayes 1964

DEVELOPED AREA PLAN

Wetherill Mesa Comprehensive Site Plan with narrative
Drawing No. 307-40,000

Correspondence relating to this plan:

"Developed Area Plan, Mesa Verde," Memorandum from Chief, Division of Development Planning & Project Control, DC-SSC to Regional Director, Southwest Region, December 16, 1968.

"Developed Area Plan - Mesa Verde," Memorandum from General Superintendent to Regional Director, Southwest Region, December 30, 1968.

"Parking Lot, Wetherill Mesa Visitor Center," Memorandum from General Superintendent, Mesa Verde to Chief, Design and Construction, SSC, January 16, 1969.

"Developed Area Plan, Mesa Verde," Memorandum from Regional Director, Southwest Region to Chief, DCSSC, January 16, 1969.

"Field Trip Report, Mesa Verde, January 13-14, 1969," Memorandum from Douglas B. Cornell, Jr., DCSSC to Chief, Design and Construction, SSC, January 20, 1969.

TOPOGRAPHY

USGS Mesa Verde National Park

Wetherill - Navajo Hill 1"=100'
Drawing No. 307-9006
Topography - Drawing No. 307-3405 14 sheets

DRAWINGS

Ruins Location - Wetherill Mesa
Drawing No. 307-3415

Ruins Control Traverse
Drawing No. 307-3236 6 sheets

Utilities - Wetherill Mesa
Drawing No. 307-3419 14 sheets

Utility Building - Preliminary
Drawing No. 307-3222

Visitor Center - Preliminary
(Long House location)
Drawing No. 307-3409

PERTINENT CORRESPONDENCE RELATING TO WETHERILL MESA

"Mesa Verde Planning Study," Memorandum from Deputy Chief, DCSSC to Chief, Design and Construction, SSC, August 24, 1967.

"Proposed interpretive services and sequence, Mesa Verde," Memorandum from Interpretive Planning Team to Volney Westley, RPSSC, October 2, 1967.

"Master Plan Study, Mesa Verde," Memorandum from Douglas B. Cornell, Jr., Architect to Chief, Design and Construction, SSC, October 9, 1967.

"Development of Wetherill Mesa, Mesa Verde," Memorandum from Chief, Division of Development Planning & Project Control, DCSSC, August 29, 1968.

"Development of Wetherill Mesa Visitor Center and terminal study, Mesa Verde," Memorandum from General Superintendent, Mesa Verde to Regional Director, Southwest Region, September 12, 1968.

"Development of Wetherill Mesa Visitor Center and terminal study, Mesa Verde," Memorandum from Assistant to the Regional Director, Program Coordinator to Chief, DCSSC, September 20, 1968.

"Planning Trip to Wetherill Mesa, Mesa Verde," Memorandum from Laura E. Wilson, Landscape Architect, DCSSC and Douglas B. Cornell, Jr., Architect, DCSSC to Chief, DCSSC October 28, 1968.

"Transportation Study - Wetherill Mesa, Mesa Verde," Memorandum from Acting Chief, Advance Technology, WSC, November 6, 1969.

"Design Study Wetherill Mesa, Mesa Verde," Memorandum from General Superintendent Guillet to Chief, DCSSC October 13, 1969.

MESA VERDE NATIONAL PARK