TWO GREAT KIVAS
AT POINT OF PINES RUIN

by

M. Virginia Gerald

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DEPARTMENT OF ANTHROPOLOGY
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In the Graduate College
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STATEMENT BY AUTHOR

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APPROVAL BY THESIS DIRECTOR

This thesis has been approved on the date shown below:

EMIL W. HAURY
Head, Department of Anthropology

Date
Artist's Reconstruction of Great Kiva II, Point of Pines, Arizona
PREFACE

This study is based on the excavation of Great Kiva II, its substructures and entryway, and 21 adjacent rooms in Point of Pines Ruin in east central Arizona. Work was conducted under the joint auspices of the Arizona State Museum and the Archaeological Field School of the Department of Anthropology, University of Arizona. Excavation of Great Kiva II and its substructures allows a sequence of great kivas in the Point of Pines locality to be formulated, since analysis of the field reports indicates that the largest and latest great kiva, Great Kiva II, the excavated structure, was preceded by a smaller great kiva, Great Kiva I.

Excavation of the great kiva structure was accomplished in two seasons—1947, under the field direction of Carr Tuthill, and 1948, under the direction of Donald Lehmer. From 1947 through 1954, the great kiva entrance, entryway, and the route through an adjoining plaza to the outside gate of the pueblo were defined. Rooms surrounding the great kiva and the entryway were excavated during the summers of 1947 through 1951; this writer aided in the excavation of three of these rooms, and of one of the pithouses lying under the great kiva structure. This report is the result of analysis of the field notes and maps made by the many individuals who participated in the above projects, and of the pertinent
material culture collected and documented by the excavators. The students of the University of Arizona Archaeological Field School, and Apache Indians of the San Carlos Apache Indian Reservation, who executed the major excavation of the great kiva structure, are listed below:

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<td>Ferd Okada</td>
<td>Andy Hunter</td>
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<td>Wilford Astor</td>
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<td>Amos Pike</td>
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<tr>
<td>Ted Bueno</td>
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<td>Steve Borhegyi</td>
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<td>Rex Gerald</td>
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Mapping of the great kiva structure was done by Fred Wendorf, Jay Rowen, and Robert Dyson, and revised by Raymond Thompson, who also prepared the revised master map of the adjoining sections of the ruin. These maps were adapted somewhat for the purposes of this report. Excavation photographs were taken by E. B. Sayles. Dr. L. F. H. Lowe graciously prepared the majority of the final photographic prints.
Consultations with Dr. Raymond H. Thompson, Lloyd Collins, Elizabeth Morris, Alan P. Olson, Bryant Bannister, James C. Gifford, and Charles C. DiPeso provided stimulus and criticism throughout the initial analysis, for which I would like to express my thanks. To Dr. Emil W. Haury should go much of the credit for this report, if any is deserved. His interest and cooperation, guidance, and encouragement smoothed out many of the bumps in the road to completion of this project.

The frontispiece, figures, and maps (with the exception of Figure 4) in this report are the work of my husband, Rex E. Gerald, who gave unselfishly of his time and talent, not only in this way, but in many discussions of specific points, and in the endless job of assembling the final copies. For these aids, his patience, and optimistic encouragement, I am truly grateful.

The interpretations of the data were devised solely by this writer, and as such, are solely her responsibility.
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FRONTISPIECE. Artist's Reconstruction of Great Kiva II, Point of Pines, Arizona

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INTRODUCTION

The archaeological program of the University of Arizona and the Arizona State Museum in the Point of Pines locality of east central Arizona has been underway since 1945. The focus of these excavations, from the eyes of many blistered students at least, has been the large fourteenth century village known as the Point of Pines Ruin, designated Arizona W:10:50 in the Arizona State Museum survey system (Wasley 1957) (Map 1). This site, a masonry pueblo containing approximately 800 ground floor rooms (Haury 1957: 10-13), is located one quarter mile east of the Field School location on the San Carlos Apache Reservation. Within the Point of Pines Ruin, excavations in a large depression exposed a rectangular great kiva. This great kiva is the product of several remodelings of earlier structures (Map 2). The following paper describes the results of this excavation.

The history of general archaeological explorations in areas adjacent to the Point of Pines locality has been recounted by Wendorf (1950: 11-12). A brief resume of the archaeological investigations of great kivas follows. In the years immediately preceding the establishment of the University of Arizona Archaeological Field School at Point of Pines (1946), ceremonial structures were just beginning
to receive their share of the archaeologists' attention. A sequence of great kivas in the Forestdale Valley had been postulated (Haury 1940, 1950; Haury and Sayles 1947; Reiter 1946: 225), beginning with the large structure at the Bluff site (A.D. 300-400) and ending with the rectangular great kiva at Kinishba. At the time this sequence was formulated, the Kinishba structure was thought to be an unroofed plaza or patio in accordance with excavation reports of early workers (Baldwin 1934; Cummings 1940). Although several Pueblo IV period sites in addition to Kinishba had been investigated, no large roofed ceremonial structures had been reported. At Tundastusa, a large fourteenth century site in the Forestdale valley, excavations by Hough (1903) were not extensive enough to provide evidence for the presence or absence of a great kiva. The Third National Geographic Society Beam Expedition to Showlow, Fourmile, and Pinedale ruins (Haury and Hargrave 1931) revealed no indications of large ceremonial structures, although several distinctive small kivas were excavated. The Canyon Creek Ruin in the Sierra Ancha boasted an unusual second story small kiva, but no large ceremonial structure was found (Haury 1934). In the Chacoan area, Reiter (1946), by restricting his definition of great kivas, implied the disappearance of the great kiva complex at the end of the Pueblo III period. Because of this apparent absence of large roofed ceremonial structures in Pueblo IV times, it
was suggested that the great kivas became completely secularized by Pueblo IV period (Haury 1950).

Against this background, it was natural before excavation to interpret the large depression in the northern half of the Point of Pines Ruin as a possible plaza. As excavation progressed, it rapidly became clear that the "plaza" had acquired a roof and some rather unusual floor features; it was obviously a fourteenth century Western Pueblo Great Kiva.

Environment of Point of Pines Ruin

The ecology, geology, and topography of the Point of Pines locality have been briefly described by Wendorf (1950: 13-19), Smiley (1952: 6-7), Wheat (1954: 9-11), Breternitz (1956: 1-3), and Heindl (1955). Gifford (1957: 6-23) presents a physiographic and geological picture of the locality in great detail with specific attention to the Nantack Caves, some 7 miles southwest of Point of Pines Ruin. Further detailed description will be left to future reports as such information is not pertinent to this topic.

The Point of Pines Ruin itself lies on the same erosional remnant on which the sites Arizona W:10:51 (Wendorf 1950), Arizona W:10:50A (Wasley 1952), and Arizona W:10:50B (Morris 1957) are situated. The ridge upon which the pueblo rests, and into which the earliest houses of the site were dug, is oriented generally northeast by southwest. It is one of numerous fingers sloping from the higher pine-
covered foothills at the base of Nantack Ridge onto the southern margins of Circle Prairie, a rolling grass-covered plain which stretches northeast to the Willow Mountains and Prieto Plateau. The ridge itself is composed of a reddish-yellow clay containing tuff particles. The color and texture of this clay contrasts sharply with that of the man-made trashy fill within the pueblo and trash deposits overlying the ridge. Prior to excavation the ruin was covered with blue grama grass (Boutelous gracilis), Rocky Mountain Bee Weed (Cleome serrulata), Thistle Poppy (Argemone platyceras), and other grasses and pest weeds in smaller quantities, with an occasional young pine (Pinus ponderosa), juniper (Juniperus pachyphloea), and Gambels Oak (Quercus gamballii) as an extension of the forest margins. Such a pine had sprung up on the edge of the great kiva and was removed during the excavations.

Terminology

Before this study proceeds certain terms which will be in frequent use should be discussed. Brew (1946: 32-43, 44-66) has reviewed the history and problems of taxonomic classifications in the Southwestern culture area, and more recently Wheat (1955: 7-12) has summarized and elaborated the taxonomy of the Mogollon culture. In this paper the Pecos classification is utilized as a basic time-marker as suggested by Brew (1946: 61) rather than as terminology descriptive of specific culture complexes. Wheat’s con-
ceptualization of the Gladwin system of phases and branches into major developmental and chronological periods within the Mogollon culture provides another frame of reference to be used in this report.

In accord with Brew and others, it is thought that systematics are only the means of analyzing data; therefore the classificatory schemes introduced in this paper should be viewed as techniques, some of which are experimental, to aid in interpretation of cultural history.

New taxonomic concepts are introduced into the Southwest by Gifford (1957: 2-3) when he applies Phillips and Willey's terminology of "region" and "phase" (1953: 618-623) to Point of Pines. Gifford fails to delimit the areal extent of the unit he chooses to designate as the "Point of Pines region." He does indicate that phases occurring at Point of Pines after A.D. 1000 are expressions of a homogeneous culture extending to "adjacent localities such as Pine Lawn Valley in west central New Mexico and eventually, during Canyon Creek Phase, the Sierra Ancha cliff dwellings, to the west, Kinishba ruin to the northwest, and other neighboring localities" (1957:2-3). In order to be consistent with Phillips and Willey's definition of "phase" as not extending beyond a "region", Gifford's proposed "Point of Pines region" would, according to his statement above, have to include the areas he mentions, plus, the Forestdale Valley (post A.D. 1000) and the Showlow locality. The use
of the term "Point of Pines Region" to distinguish this large area seems ill-considered, in view of the fact that eleven reports already employ the term "Point of Pines" in their titles to refer to a restricted locality. (See Breternitz 1956; Breternitz, et. al. 1957; DiPeso 1950; Haury 1946; Heindl 1955; Reed, A.C. 1954; Smiley 1949, 1952; Wasley 1952; Wendorf 1950; Wheat 1952).

Following the suggestion of Phillips and Willey (1953: 619) that "archaeological regions are very apt to coincide with minor physiographic subdivisions", I propose that when such regions are defined, the physiographic term can profitably and logically be applied. The term, "Southeastern Rim Region" might be so applied to this region we are considering; the term would serve to demonstrate the correlation of the specific culture complex with a minor physiographic subdivision, the Mogollon Rim. A precedent for the use of this term was set by Colton and Hargrave (1937: 101) in their description of White Mountain Red Ware, the major decorated pottery ware in the region.

In this report, the terms "locality" and "region", "component" and "phase" will be used according to Phillips and Willey (1953: 618-623). Thus the term "component" will specify the manifestation of a phase with regional or local extent in a particular site. Adaptation of this terminology will lead, I believe, to more comprehensive and comprehensible formulations pertaining to cultural stability, cul-
ture contact, and human geography.

The term "tradition" will be used as defined by Phillips and Willey (1953: 626-628) and amplified by the Seminar in Archaeology (Haury, et. al. 1956: 38-39).

The term "Western Pueblo" has been defined by Reed (1948, 1950) as applying to the specific cultural configuration found in east central Arizona. In this region the general Puebloan pattern, which is common both to the Anasazi and the Mogollon, consists of "pit-houses (early) and masonry or adobe pueblos (later, from before 900 AD in some districts, and to the present); polished painted pottery, rough plain and polished and/or corrugated utility ware; inhumation of the dead; artificial cranial deformation; grooved stone axes, full-grooved globular mauls, metates, etc.; abundance of bone implements." (Reed 1950: 125). These traits contrast sharply with those of the Hohokam in southern Arizona. The traits which distinguish east central Arizona from the Anasazi area are extended inhumation, vertical occipital deformation, rectangular small kivas (or none), 3/4 grooved axes, and unpainted pottery of Mogollon type (polished brownware) (ibid.: 128). Reed does not discuss the occurrence of great kivas in the Anasazi and Western Pueblo trait complexes; this problem will be discussed briefly later in this report. The term "Western Pueblo" will be used throughout, as defined by Reed.
The term "great kiva" and "kiva" will be used interchangeably in this paper purely for literary variation. Whenever a small kiva is referred to, the term "small kiva" will be used.

**Description of Point of Pines Ruin**

Point of Pines Ruin extends some 350 meters northeast by southwest, paralleling the direction and linear orientation of the underlying ridge. Prior to excavation few large rocks were present on the surface of the mound, with the exception of those in three small habitation units which sheltered the last occupants of the site. Wendorf (1950: 19) postulates that the Point of Pines Ruin was robbed of building stone by the inhabitants of these late pueblos (Arizona W:10:50A, Wasley 1952; Arizona W:10:50B, Morris 1957, and Arizona W:10:50C, limited testing only), and the occupants of Arizona W:10:51 (Wendorf 1950), another late pueblo adjacent to the Point of Pines Ruin.

The site stands approximately 8 meters above Circle Prairie with trash and architectural deposits ranging from 1 to 3 meters in depth above the sterile subsoil. The physical extent of the site, horizontally and vertically, reflects the long occupation, estimated at about 200 years, by perhaps several thousand people during the town's heyday.

Point of Pines Ruin contains components of Tularosa, Maverick Mountain, Pinedale, Canyon Creek, and Point of Pines phases, as currently interpreted (Breternitz, et. al. 1957;
Gifford 1957: Fig. 1). A chart indicating the local and regional sequence of phases within the Point of Pines locality relates Point of Pines Ruin, and the sequence of great kivas in the Point of Pines locality, to various phases. (Table 1).

During the Canyon Creek phase, the time of greatest population as determined by the physical extent of the ruin, the Point of Pines village probably housed a population of 2000 to 3000 (Haury 1957: 10-13). Sometime before the full flowering of the Canyon Creek phase a stone wall, 2 1/2 feet (.76 meters) thick and at least 6 feet (1.83 meters) high, was erected to encircle the city (ibid.: 13). In this wall two gates have been discovered—one on the south end of the pueblo, and the other on the east side. The East gate, flanked on the interior by two rooms, leads into a large, apparently unroofed, plaza from which a zig-zag passageway extends northwest to the great kiva entrance. The final great kiva, which will be referred to as Great Kiva II, and the earlier structures under it, and incorporated in it, are located in the northern half of the ruin. (Map 1, Plate I).

Architectural History of the Communal Area

During the excavation of Great Kiva II, it became evident that the structure was the final result of several remodelings. Apparently the area finally occupied by this largest structure had been used in at least five different
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**TABLE 1: PHASE SEQUENCE AND OCCURRENCE OF GREAT KIVAS AT POINT OF PINES**
SKETCH OF ARIZONA W:10:50
POINT OF PINES, ARIZONA
SHOWING RELATIONSHIP OF
GREAT KIVA TO PLAZA I
AND GREAT WALL
Plate I.

Great Kiva II, looking east toward uncleared entrance.
ways. Throughout this report the term "communal area" will be used to designate generally the expanse used for communal activities at a specific period in the life of the community. Since the physical extent of this area changed somewhat as a result of the various remodelings, the term "communal area" will be used with corresponding flexibility.

The first discernible occupation of the communal area occurred sometime prior to the Pinedale phase. This occupation is revealed by Pithouses #3 and #2, which were dug into the sterile conglomerate. After abandonment, the pithouses were crossed by the east wall of the first great kiva (Great Kiva I), and the west wall of Great Kiva II. The early pithouse occupation will not be discussed in this paper, other than to state that no evidence of a walked-on surface other than the top of the conglomerate itself has been associated as yet with this occupation.

The second utilization of this area is somewhat unclear since little direct evidence remains as a result of the later remodeling. The existence of a houseblock north of the communal area whose southern boundary later became the north side of the communal area seems certain. From this houseblock, the development of a four-sided plaza with an eastern opening can be demonstrated as a theoretical possibility. There is some indication that an early and disrupted floor level (Floor I) may be associated with these structures.
The third use of the area occurred when the plaza was reduced somewhat in size, and the resulting enclosed section was roofed to form the first great kiva. Nothing is known concerning the internal features of this rectangular kiva, other than the posthole pattern, general roofing methods, and eastern entrance and passageway. It is probable that at least one of three or more fragmentary floor levels can be associated with this building. This structure had an approximate area of 220 sq. meters. It will be referred to as Great Kiva I in the remainder of the paper. The dating of Great Kiva I and the plaza will be discussed more fully later.

The fourth and final use of the area resulted in the enlarged and elaborated structure to be referred to as Great Kiva II. Great Kiva II is surrounded by 18 contiguous masonry-walled rooms, some of which at least were two storied.

It, too, was entered from the southeast side through a zig-zag passageway leading to a wide opening in the east wall. Seventeen large posts supported the roof of this structure. In a rectangular central section, bounded by seven posts, the hearth and four unique trenches are located. A small three-sided room or partitioned area stands in the northeast quadrant of the kiva against the east wall. The floor level associated with this structure extends through the entrance, passageway, and enclosed plaza #1 to the East gate of the pueblo. Great Kiva II is nearly square; it has a floor area
of 264 square meters (2450 square feet). It is approximately 16.75 meters long on the east-west axis, and 15.70 meters wide on the north-south axis. Approximately 570 adults could be seated in Great Kiva II without encroaching on the central ceremonial area. The structure was remodeled, used, and abandoned during the Canyon Creek phase.

Before proceeding with detailed discussions of these three structures—the plaza, Great Kiva I, and Great Kiva II—the reader should be cautioned against assuming their complete vertical stratigraphic relationship. Great Kiva II utilizes many of the same walls constructed and used by the builders of the earlier plaza and Great Kiva I. These structures appear to have resulted from accretion and reduction, as great, if not greater, in a horizontal direction than in a vertical direction. The existence of the plaza and Great Kiva I has been inferred from evidence pertaining to wall abutments, relationships of floor levels and base levels of walls, posthole placement, and posthole characteristics. Vertical stratigraphy occurs chiefly along the east side of the communal area where the latest floor level (associated with Great Kiva II) overlies stubs of earlier walls. Stratigraphy here provides the evidence for a sequence of masonry techniques; this evidence is the basis for much of the reconstruction of the earlier structures.
Method of Excavation

In general, excavation of the kiva, surrounding rooms, and entryway was accomplished by outlining the walls of the structures, and removing the trash fill by extending a broad face across the structure. Excavation and segregation of material 10 cm above the floor and in floor contact, and final removal of the trash below the floor down to the sterile conglomerate completed the operation. Fill from the great kiva excavation was hauled away by wheelbarrow and truck. Within the kiva the Great Kiva II floor level served as the primary vertical control, and a 2-meter square grid was established in the second season of digging to facilitate triangulation of features; this grid was related to the regular 10 meter grid system employed in the site as a whole. The datum established for the site as a whole was not utilized during excavation of Great Kiva II because the large scope of the excavation necessitated expediency. As a result, detailed correlation of depth of features in surrounding rooms with features within the great kivas is tenuous. In the first season sherds were collected from the area above the Great Kiva II floor (the uppermost floor) without finer separation. In the second season pottery was excavated by quadrant and marked as "subfloor." Photographs were taken of all important features.
Method of Presentation

Since the interpretation of the cultural and architectural history of the communal area depends, not upon the stratigraphic relationship of entire structures, but upon the other types of architectural evidence incorporated within the final great kiva, the data pertaining to this final structure will be presented separately and as a factual preface to the architectural reconstructions. It is believed that this separation of the basic observations from the reconstructions will allow for a more critical assessment by interested readers, thus achieving the quality of "public verifiability" so necessary in scientific endeavors (Black 1946:328). The tabular system which has been adopted for the presentation of data is designed to collect as much of the pertinent information as possible upon one subject in one place. In order to decrease repetition of the facts in the discussions of the postulated structures, and in order to facilitate reference to these facts, the postulated structural associations for each item have been indicated in the tables. It is hoped that no confusion will arise from this system.
THE DATA

Wall construction

Four masonry techniques were used in the walls of Great Kiva II. Map 3 indicates where and to what extent these techniques occurred within this final structure. Table 2 records the characteristics of the various techniques at specific locations within Great Kiva II and the structures under the floor of Great Kiva II.

Banded tuff masonry: Map 3, Table 2, Fig. 1, Plate IIa

Materials used: dressed tuff blocks, from .25 to .80 m in length, tuff spalls, basalt boulders from .15 to .30 m in diameter, adobe mortar.

Construction technique: Basically this construction is typified by coursing of large tuff blocks, each course being separated from the next one by two or three layers of tuff spalls laid in fairly regular rows. Mortar fills in the irregularities. This type of wall is only one block wide, that is, it is a through wall, not a core wall; thickness .25 to .30 m. Workmanship is good.

Wall footing: The basal course of this type wall consists of basalt boulders which were laid so that the joint between each unshaped roundish stone averages .05 to .10 m in width. Between these joints and above the boulders, small tuff
<table>
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<th>WALL CROSS SECTIONS</th>
<th>MASONRY TECHNIQUES</th>
<th>BASE LEVEL</th>
<th>STANDING HEIGHT (cm.)</th>
<th>CONSTRUCTION UNIT</th>
<th>UTILIZATION OF WALLS</th>
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NP—Floor not present

**TABLE 2: WALL CHARACTERISTICS**
BANDED TUFF

SPALLED BLOCKS WITH RUBBLE

FILL

SPALL RUBBLE

CRUDE RUBBLE

Figure 1. Masonry techniques
Plate II. a. Banded tuff masonry, south wall Room X, looking toward northeast corner, Great Kiva II. Note beam hole high in north wall. b. Spall rubble masonry, east wall, Great Kiva II, adjoining Room 24. Attempted banding on left, proceeding to spall rubble right of meter stick.
spalls were fitted to strengthen and level the course. A summary of Table 2 indicates that of a total of 12 cross sections taken through banded tuff walls, at six locations the basal course rested on sterile ground, at one place the wall rested on trashy fill above the sterile surface but below the later floors; at one or possibly two points, the wall rested on or at the level of Floor I, and at two places the wall rested on Floor II. At no point within Great Kiva II does a banded tuff wall rest on or at the level of Floor III, the latest floor in Great Kiva II. In the northeast corner of the structure in the vicinity of sections "L" and "N" the wall is set into a trench dug into the sterile clay. The trench is .08 to .10 m deep and approximately .30 to .35 m wide. This trench did not extend beyond approximately 5 m along the north wall, from the northeast corner of Great Kiva II, or beyond the same distance along the east wall from the same corner.

Plaster: Burned mud plaster is recorded on the basal courses of the banded tuff east wall of Great Kiva II, and on some of the banded tuff substructure walls, specifically on the east ends of the basal courses of walls designated by section "R" and "X". No coving of plaster from wall to floor is recorded.

Occurrence: Great Kiva II, North wall; West wall, north end; East wall, north third; South wall, west three-quarters. Great Kiva II Entryway, North and East walls. Substructures
1, 2, and the northwest and south walls of 2A.

Postulated Construction Period: On the basis of wall abutments, a sealed doorway, and stratigraphic relationships with Floors I, II, and III, banded tuff masonry is believed to be the earliest masonry technique used in the communal area. It is believed to be the masonry technique employed during construction of the court and plaza.

Spall rubble masonry: Map 3, Table 2, Fig. 1, Plate IIb

Materials used: Chiefly tuff spalls of rectanguloid and irregular shapes, from .05 to .20 m long; occasional crudely dressed tuff slabs, .20 to .55 m long and .05 to .15 m thick; tuff blocks, irregular; basalt boulders .15 to .30 m diameter.

Construction technique: Basically this construction is typified by extensive use of tuff spalls in irregular, sometimes mosaic-like, patterns. Occasionally these spalls are interspersed with tuff slabs, arranged in irregular courses (as in the east wall of Substructure 2A), or tuff blocks in random placement. Adobe mortar is the binder. Workmanship is less precise than the banded tuff walls. Walls average .25 to .30 m wide.

Wall footing: The basal course of this type wall consists of unshaped basalt boulders, placed contiguously in some sections. In other sections basalt boulders and unshaped tuff blocks are placed with small spalls in the joints.

A summary of Table 2 indicates that of a total of 3 sections
taken through spalled rubble walls, one rests on sterile and two rest on Floor II. At no point within Great Kiva II does a spalled rubble wall rest on or at the level of Floor III.

Plaster: No evidence of plaster is recorded from spalled rubble walls.

Occurrence: Great Kiva II, east wall immediately north of entrance (identical with the west wall of Room 24). Substructure 3, west wall. Room 14, west and south walls, underlying the entrance to Great Kiva II.

Postulated Construction Period: On the basis of wall abutments, stratigraphic relationships with Floors II and III and certain later walls, and wall alignments, spalled rubble masonry is believed to be the second construction technique employed within the communal area. It is believed to be the technique used during the remodeling of the plaza into Great Kiva I.

Spalled Block with Rubble Fill masonry: Map 3, Table 2, Fig. 1, Plate III.

Materials used: shaped tuff slabs, irregular tuff block, tuff spalls, basalt boulders, adobe mortar.

Construction technique: Basically this type of construction is characterized by coursing of tuff slabs and blocks in two parallel files, between which tuff rubble and mortar are placed as fill. The courses are irregular, but definitely present. Tuff spalls fill in around almost all of the
Plate III. a. Spalled block masonry, footing technique, west wall of Great Kiva II. Looking west into Room 15. b. Spalled block masonry with rubble fill, west wall of Great Kiva II, crossing Pithouse 2, in foreground. Spalls cleaned out on left.
larger stones to maintain the course levels, so that in the faces of the wall, spalls are numerous and little mortar is evident. The rubble fill appears to be basically of tuff spalls and mortar. Information on this type masonry is meager; it appears that the inner rubble is actually fill put in place after the two rows of tuff blocks were erected. The rubble center is approximately .20 m thick; each facing is from .20 to .25 m thick, so that the wall averages .65 m wide. Workmanship is serviceable, but not precise.

Wall footing: The basal course of this type of wall consists of a single row of basalt boulders under the kiva face of the wall. On top of this course rests a course of tuff slabs in a transverse position extending the width of the wall (Plate IIIa). The rubble fill and the tuff block facing are placed on this transverse layer. The outer end of the transverse layer of slabs rests on trash since the basalt boulders form only a single row along the inside face. A summary of Table 2 indicates that of a total of two sections taken through the block face-rubble fill wall, one point rests on sterile and one on deep trash of Pithouse #2 above sterile. Because of the slope of the underlying ridge from north to south within the communal area, and from west to east, the sterile underlying the block face-rubble filled wall at section "C" is only .20 m below Floor III. This means that the basal course of boulders rests on sterile, while the secondary transverse course adjoins Floor III.
Plaster: No evidence of plaster is recorded from spalled block-rubble fill masonry.

Occurrence: Great Kiva II, West wall, south two-thirds. This type of construction technique apparently does not occur elsewhere within the site.

Postulated Construction Period: On the basis of wall abutments, stratigraphic relationships, and technological considerations, spalled block-rubble filled masonry is believed to be the third construction technique employed in the communal area. It is believed that this technique was one of two employed during the remodeling of Great Kiva I into Great Kiva II.

Crude Rubble masonry: Map 3, Table 2, Fig. 1, Plate IVa.

Materials used: Chiefly irregular tuff blocks, .20 to .40 m long and .10 to .25 m thick; occasional thin tuff slabs .45 to .70 m long and .07 to .12 m thick; tuff spalls of irregular and rectangular shapes, .05 to .20 m long; possibly some basalt boulders; adobe mortar.

Construction technique: Basically this construction is typified by the large proportion of big unaltered tuff stones arranged randomly in abundant mortar. Occasional thin shaped tuff slabs present short irregular courses. Spalls are at a minimum and seem to be larger on the average than those used in spall rubble technique. Walls are .50 m wide. Workmanship is poor. The term "crude" is applied
Plate IV. a. Crude rubble masonry, east wall, Great Kiva II, south of entrance. b. Entrance, Great Kiva II, looking west from lowest floor of Room 14. Floor III level under riser of three slabs.
to indicate the predominance of the rough unshaped stones.

Wall footing: The basal course of this type wall consists of large and small tuff blocks, laid either on the long side or standing on end, and generally contiguous or nearly so. These blocks are used in conjunction with basalt boulders, both occurring in the same basal course at times. A summary of Table 2 indicates that of a total of two sections taken through crude rubble walls, one point rests on Floor II and the other point rests on or at the level of Floor III. At no point within the communal area does this type wall rest on sterile or on Floor I.

Plaster: No evidence of plaster is recorded from crude rubble walls.

Occurrence: Great K'iva II, East wall, south half; South wall at east corner, and as a veneering technique along the south wall for 3.5 m from this corner.

Postulated Construction Period: On the basis of wall abutments and alignments, posthole pattern, and stratigraphic relationships with Floors II and III and with banded tuff and spall rubble walls, crude rubble masonry is believed to be the fourth construction technique employed within the communal area. It is believed to be one of two techniques used during the remodeling of Great Kiva I into Great Kiva II.
The correlation of specific walls with specific construction techniques has on the whole been relatively clear-cut. However some problems arise in connection with the wall stubs of the substructure rooms. Most of these stubs stand between .35-.45 m high so that little but the basal course and the next one or two layers remain. In general, the designations of wall technique used by the excavators have been followed. However, the excavators originally grouped the spall rubble and crude rubble walls under the general classification of "rubble" masonry. On the basis of size and characteristics of individual rocks, of predominance of usage of certain shapes and sizes of stone, of base level, footing techniques, and the stratigraphic relationships of the walls and floors, the dual classification appears necessary and relevant.

In regard generally to the level at which wall bases rest, it should be realized that the surface of the sterile conglomerate is irregular and slopes gradually from north to south, and more sharply from west to east. The amount of trash which accumulated above the sterile and on which the walls are built ranges from .05 to .75 m. (this deepest section being under the west wall in the depression of Pithouse #2). The north ends of both the east and west walls of Great Kiva II are placed on or set into sterile soil, as is the central section of the south wall. In all other portions of
these walls (banded tuff) the basal course rests directly on trash.

**Wall bondings, abutments, and repairs**

There are two bonded corners in Great Kiva II. One occurs in the southeast corner between walls of crude rubble, and the other is in the southwest corner between walls of banded tuff (Plate XIVa). Both of these bonds appear to join walls of synchronal construction. Bonding is accomplished by a rough interfingerling, not necessarily between every stone set in the wall but often enough to form a strong and easily recognizable joint.

Abutments can be discussed as joints in which the end of one wall butts against the face or the end of another wall. Of the eleven abutments within the perimeter wall of Great Kiva II, 4 are of the type termed "end-to-end" abutments, and 7 are "end-to-face" abutments. The northeast and northwest corners of Great Kiva II are end-to-face abutments. The reconstruction of the building sequence of the various walls in the communal area is dependent to a great extent on the interpretation of the direction of abutment. In the 4 instances of end-to-end abutment, analysis of the sequence has been easy since in 3 cases one of the walls in question butts against the end of the other wall and also against part of the face of a wall running at right angles to the
end-to-end abutment. The probability is great that the latest or abutting wall is the one running against the other two walls. The other end-to-end abutment occurs when the end of one wall runs against the end of another wall and one of the faces of this same wall.

End-to-face abutments have been analyzed by employing the assumption that in all cases the wall face was the earlier structure, and that the wall end was the later construction.

The number of abutments within the perimeter wall of Great Kiva II indicates the great amount of remodeling which took place in conjunction with the construction of the plaza, Great Kiva I, and Great Kiva II.

Four of the end-to-face abutments within the perimeter wall of Great Kiva II are the result of incorporation of room wall stubs. The northwest corner of Room 20 was torn out when Great Kiva II was built and the wall stubs standing above Floor III were butted against by the crude rubble wall to form the southeast corner of Great Kiva II. Room 20 is the only instance of actual incorporation of room walls within the perimeter wall of Great Kiva II.

Other rooms were partially destroyed when the west spalled block wall was erected. This is indicated by the irregular abutment of the eastern ends of Rooms 15, 58, 53, and 21 against the spalled block wall. The ends of the room walls are jagged and were crudely mended to meet the face
of the wider wall. This is an instance in which analysis of the situation as an end-to-face abutment, concluding that the face wall was the earliest, would be incorrect. Only examination in the field of the condition of the wall ends prevented a misinterpretation of the construction sequence.

In Great Kiva II several sections of the perimeter wall have been repaired. In the southwest corner, in the south wall, a break was filled in with mortar and small rock. This break may have been caused by the stresses from collapse or destruction of the original west wall of the communal area (of which the bonded southwest corner is a part) or by the subsequent rebuilding along the west side.

In the north wall of Great Kiva II a section adjoining Room 31 was repaired by placing large tuff slabs at right angles to the lowermost courses of the wall. The work was crudely done and little of the wall was standing when excavated.

Room X Plate I, IIIa

One other masonry structure remains to be discussed. Room X, a partitioned area which rested on Floor III or slightly below this floor, is located in the northeast quadrant of Great Kiva II. This structure utilized the banded tuff south wall of Substructure 2 as its south wall, and the east wall of Great Kiva II as its east wall. In contrast to the rest of Substructure 2, which was torn out so that
only the wall stubs remain, the south wall on its east end projects above Floor III approximately .50 m. The south wall butts against the east wall of Great Kiva II which is also the east wall of Substructure 2. A single course of tuff slabs runs north from this wall, paralleling the east wall of Great Kiva II for approximately 1.50 m. This course consists of three stones, the southernmost of which is placed upright (on its short axis). This stone butts against the south wall of the room. The stone had an irregular depression in its west face. The north end of Room X is open, in effect forming a three-sided partition. The area enclosed is 1.0 m wide and 1.50 m long. Below the level of Floor III, two stones project from the south wall of Room X directly under the southernmost stone in the west wall of the structure. These underlying stones do not continue as a course. They do not rest at any of the three floor levels.

Doorways, Entrance, and Entryway

Fig. 2, Plate IVb

Two small doorways occur in the peripheral walls of the communal building. Both are pictured in Figure 2. The doorway in the north wall is located 2.30 m west of the east end of this wall at the northeast corner of Great Kiva II. The doorway is rectangular in shape. The top of the door is missing because of wall collapse; it is at least .80 m tall, and is .64 m wide. It extends at least .60 m above Floor III, and 1.55 m above the level of Floor I.
The bottom of the door is .28 m below Floor III and .35 m above Floor I. This door is located in a banded tuff wall, which forms the south wall of Rooms 39 and 35. When the door was in use this area was one large room, with the floor level being less than .05 m above the sterile layer, and the bottom of the door being .25 m above the floor level of the room. The door was sealed up, using a banded tuff technique, an attempt being made to match the coursing in the adjacent walls.

The wall dividing the big room into Rooms 39 and 35 was erected sometime later. This wall butted against the sealed doorway, and extended from the low floor level in the room to at least 1.10 m above this floor, completely covering the west side of the doorway. On the south side of the doorway wall, within the communal area, another wall butts against this sealed doorway. The west wall of Substructure #1 stood, at the time of excavation, at least .15 m above the base of this doorway. The bottom of the west wall of Substructure #1 was .65 m below the base of the door. This substructure wall originally had stood much higher; it is probable that at one time it extended over and above the east side of the sealed doorway. The sequence of erection of the two walls and the sealing of the doorway is not known, other than that it is probable the doorway was sealed prior to the erection of both walls. Obviously this would preclude usage after erection of these walls.
The other doorway, located in the banded tuff east wall of Great Kiva II, (which served earlier as the east wall of Substructure #2), is a T-shaped doorway. It is 1.0 m tall, .62 m wide at the top of the T, and .45 m wide at the bottom. The top of the door is .70 m above Floor III, (the Great Kiva II floor), 1.10 m above Floor II, and 1.3 m above Floor I. The bottom of the doorway is .35 m below Floor III, .10 m above Floor II, and .32 m above Floor I.

The doorway was also sealed, using a banded tuff technique in which the large tuff slabs were aligned with similar courses in the east wall. A long shaped tuff slab served as a lintel for this opening, with both ends of this slab projecting some .10 m beyond the sides of the doorway. At time of excavation, this lintel slab was cracked. It seems possible that if the crack occurred when the doorway was open, it might have been necessary to seal the door in order to keep the wall, which supported a second story room, from collapsing.

No walls butt against this sealed door. The door evidently opened into Substructure 2 from Room 27, and was probably used during the occupation of Floors I and II within the substructure room. The bottom floor of Room 27 appears to be at approximately the same depth as Floor I which would indicate the primary usage was in conjunction with Floor I. Sometime during or after occupation of Floor II, this door was sealed. Trash above Floor II and below Floor
III butts against the doorway, as does Floor III itself.

The entrance to Great Kiva II is in the center of the east wall (Fig. 2, Plate IVb). It is 1.7 m wide at floor level, but widens to 1.85 m at approximately .07 m above the floor. This irregularity is caused by a large rock which butts against the north side of the entrance wall, and rests on or at the level of Floor III. The south wall of the entrance contains two upright slabs of tuff, the westernmost of which is .60 m long, and is set .05 m below Floor III. These slabs serve to demarcate and flank the south side of the entrance. The north wall of the entrance stood at a height of .70 m above Floor III at time of excavation. This was also the height of the south wall.

Floor III extends through the entrance from Great Kiva II into the entryway and on into Enclosed Plaza I (see Map 1). When the entrance was excavated 4 rocks, one of which can be classed as a slab, were aligned north-south across the entrance opening. The base of these rocks was .10 m above Floor III, and .25 m above the top of the west wall stub of Room 14. The remains of this wall extend north-south in exact alignment with the entrance and with these stones; however none of the stones join any section of this earlier wall. The 4 rocks are confined to the southern 1/2 of the entrance, but do not touch the south wall.
Two possible explanations occur to me: 1) the presence and position of the rocks is the result of wall collapse, either from other walls or from the wall above the wooden (?) lintel of the entrance; 2) the presence and position of these rocks is indicative of placement there by the builders, in which case the rocks would have served as a step or line of demarcation between the entrance and the entryway. The explanation that the rocks fell from above the collapsed lintel seems possible to me, although no evidence, per se, of a second story structure in this area has been recorded, to strengthen this hypothesis. If a 2-story room once had existed in this area, Room 14 would have formed the lower story; presumably the stories would have shared the same masonry technique, crude rubble. It is conceivable then that some of the larger stones, and the smaller stone at the south end of the alignment, could have formed part of the first course above the ceiling of Room 14. Then when the entrance was made, by removing the central section of the west wall of Room 14, the ceiling beam may have remained in place to serve as the entrance lintel, and the room above would have remained in place until the collapse of this "lintel."

However appealing this logic may be, I believe, since a precedent for the presence of a step or riser across the entrance of great kivas does exist, that this is the most probable explanation. In the Forestdale Valley at
Arizona P:16:2, a pueblo believed to be occupied from A.D. 1100-1200, stairs occur in the southeast entrance of the great kiva (Haury 1950: 38). An earlier occurrence of a wide stepped entrance is found in the great kiva at Nantack Village, Point of Pines locality (A.D. 900-1000). Here the entrance is also oriented east (Breternitz 1956: 28, 160). House #19 at Crooked Ridge Village at Point of Pines may be an early expression of this tradition, although the structure itself has been considered to be too small, and too early, to be termed a "great kiva." This ceremonial house (A.D. 400-600) contained a stepped entry oriented east; admittedly this type of pithouse entry is quite different from the wide entrances of the Nantack and Point of Pines great kivas.

From the entrance to Great Kiva II, an entryway leads to Enclosed Plaza #1, which is connected with the east gate of the pueblo. This entryway consists of a series of right-angle turns. Proceeding from the enclosed plaza toward the north for 6.5 m, the passage turns sharply left (to the west), then again to the north, and finally again to the west and into the great kiva. At the narrowest point the entryway is approximately 3.65 m wide; it is approximately 4.0 m wide adjoining the entrance. The shortest distance from the mouth of the entryway to the great kiva entrance is 14.5 m (Maps 1 and 2).
All the walls which form the entryway are built of banded tuff masonry, with the exception of the west wall after the first right angle turn. This wall is the east wall of Great Kiva II; it is built of crude rubble. The entryway adjoins the enclosed plaza by means of one bonded corner and one wall abutment. In the southeast corner of the entryway, the east wall of the passage bonds with the north wall of the enclosed plaza, indicating one building period for the two walls. In the southwest portion of the entryway, the east wall of the enclosed plaza extends some 2.8 m past the entryway mouth to butt against the south face of the south wall of Room 20. This abutment is made in such a way that the plaza wall is exactly lined up with the west wall of Room 20, which also butts against the south wall of the room.

Floor III extends from Great Kiva II, through the entrance, on through the entryway, and in spots into enclosed plaza #1. No other definite floor levels are recorded in the entryway. Below Floor III, in a strip adjacent to the east wall of Great Kiva II, gravel deposits were present. These lenses were 10-20 cm below the level of Floor III, from 1.0 to 2.0 m south of the entrance, and approximately .50 m east of the east kiva wall. No gravel was found in contact with the west face of the wall. It is possible that these gravel deposits may have resulted from drainage off the roof of Great Kiva II; because of the location of these deposits out from the wall, it is possible to suggest
that the water was carried out away from the wall before being allowed to fall. This could have been accomplished by an overhanging roof, or by use of drain slabs or troughs. If the gravel deposits are taken as evidence of drainage from the great kiva roof, it would appear that the possibility of the entryway's being roofed needn't be considered seriously. The height of the walls above Floor III at time of excavation appears to have been no greater than .85 m, which fails to be indicative of second-story structures adjacent to the entryway. However it is entirely possible that the entryway could have been roofed, either at the second story level or the first; none of the evidence appears conclusive enough to deny this possibility.

A summary of the possible ground floor entrances into the communal area demonstrates that two small intra-wall doorways existed in the northeast corner of Great Kiva II. One of these was rectangular; and the other T-shaped; both were sealed prior to construction of Great Kiva II. When open, these doors provided access from the communal area directly in one room and, in the other case, from one room through another which was adjacent to the communal area. Both doors are in banded tuff walls and were sealed using the same technique with matching of the coursing. Later walls, and, in one instance, a later floor, and trash deposits were placed against the sealed doorways so that use of them in conjunction with use of Great Kiva II is impossible.
The entrance to Great Kiva II is on the east side of the structure in the approximate center of the east wall. It is a wide entrance which may have been stepped with a sill-like row of rocks, or riser. Floor III extends through this entrance and into the entryway.

The entryway proceeds from the entrance to a large plaza southeast of the great kiva structure by means of 3 right-angle turns. The passage is long and narrow in places, but because of the turns could easily have been roofed. Water deposited lenses below the floor of the entryway may indicate that this area stood exposed to the rain or to the roof drip off the Great Kiva II roof at some time.

The possibility that a roof entry also existed and was used during the Great Kiva II period cannot be ignored. The centrally located hearth may have served as a seating pit for a ladder base, in a manner similar to the ash pit-ladder base documented by Reiter (1946: Table II). No postholes close enough together to secure the base of a ladder were found within the communal structure.

Figs. 2 and 3

Reference has been made to three floors within the communal area, Floor III, Floor II, and Floor I. These floors were the only ones traceable over an appreciable area. Other floor levels were traced for short discontinuous distances; many of these were not recorded since they could
Figure 3. Schematic section of fill, northeast quadrant, Great Kiva II, showing Floor III levels and trash deposits. Not representative of deposits in substructure rooms.
not be followed. Some of these levels may have been the result of water deposition, via a leaky roof, or possible precedent to the roofing of the communal area. Fig. 3 indicates some of these levels and the character of the fill between them. Apparently only the top level was traceable over the entire area of Great Kiva II. This floor, #III, was the one extending through the entryway and into enclosed plaza #1. It is the latest floor in the communal area. Figure 2 shows the relationship of this floor to points along the east wall, to the entrance, and to lower floors.

Generally this floor surface was not regular, or consistent in quality. It seems to have sloped slightly from west to east and even more slightly from north to south, following the general slope of the underlying sterile soil.

Floor II is the top floor found between the north and south walls of Substructure 2. This same level apparently was utilized as a base level for the spall rubble walls of Rooms 14 and 24, and of the west wall of Substructure 3, hereafter to be referred to as Unit E. The problems of assigning these rooms to one construction period will be discussed later. In Substructure 2, this floor level appears to have been poorly defined.

Below Floor II in Substructure 2, is the earliest and deepest of the recorded floor levels. This floor, #I, extends north to form the only floor within the boundaries
of the small room, Substructure #1. The west wall of Substructure #1, which is believed to be continuous with the west wall of Substructure #2, is based at this bottommost floor level. The south wall of Substructure #1 (identical with the north wall of Substructure #2) is also based at this level. This floor is only .05 m to .10 m above sterile soil in Substructure #1 and, because of a pronounced dip in the sterile layer, is from .15 to .20 m above sterile in Substructure #2.

From the field notes it appears there was another floor level which was consistently placed about .05 m below Floor III, and which was recorded in the northeast quadrant of Great Kiva II in several discontinuous areas. This level is probably an earlier edition of Floor III, and as such is associated with Great Kiva II. The discontinuity of this level and its physical closeness to Floor III seem to indicate that the two floors resulted from accretion of trash and continuous usage. It was impossible to separate material from these two levels during excavation. Both will be included in the term, Floor III. Floor III extended from the west wall of Great Kiva II to the east wall of this structure; it overlay the wall stubs of Substructures 1, 2, 2A, and 3, and the torn out northwest corner of Room 20. It also overlay a number of pits, small postholes, and channels or trenches located, for the most part, centrally in Great Kiva II. This level, extended as it was through the entrance
and entryway, also was superimposed above the west and south wall stubs of the earlier Room 14. Two walls utilize this level as a base—the spalled block-rubble filled west wall of Great Kiva II, and the crude rubble east wall of the same structure. The west wall actually rests on sterile which along this side appears to be only .10 to .20 m below Floor III. The basal course of basalt boulders rests on the sterile, but the first course of transverse tuff slabs is placed at the level of Floor III. On the east side the crude rubble wall rests on or at the approximate level of Floor III which is .75 to .85 m above sterile.

In summary, numerous floor levels existed within the communal area; many of these were discontinuous and impossible to follow beyond the immediate area. It was possible to record three floors, and to relate the bases of specific walls to these levels. Floor III, the topmost and latest floor, is the only floor to extend across Great Kiva II and above all of the sub-walls. This floor is .10 m thick in spots, and seems to be the product of accretion of debris and silt during a continuous period of use. Under Floor III, and on the east side of the communal area, but restricted within the west boundaries of the substructures, are Floors II, and I. Of these, Floor II can be traced roughly from the north corner of Room 20 to the north wall of Substructure 2. Floor I is recorded only within Substructures 1 and 2. It is approximately the same level as the
lowest floors of Rooms 39, 35, and 27 which are adjacent to Substructure 1. No floor levels below that of Floor III were found in the confines of Substructure 2A.

Postholes Plates I, V, Table 3, Map 2

Dimensions and characteristics of postholes in the communal area are given in Table 3. Location and shape of these postholes can be seen by consulting Map 2. As a means of analyzing the shape of these holes, of which there are 17, an index number has been derived, using the formula: Width/Length x 100. This was tried as an experiment originally, the object being to reduce the subjectivity often present in space or shape analysis. The index numbers group themselves into three classes, which seems to me to indicate that three basic shapes were used. The shape classification is only a method of analysis; naturally it is not possible to state that the shapes were recognized and purposely utilized by the diggers. However the categories appear to some extent to be a function of the building procedure. The following index classes show the clustering of the data, and the name which I (subjectively?) apply to each class.

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<td>46-64</td>
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The shape classification has been further elaborated by including the section view of each posthole which gives, to some extent, a three-dimensional shape analysis. The postholes were either straight--sided or stepped down in a
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<td>93</td>
<td>X</td>
<td>49</td>
<td>Not Ex. [49]</td>
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* Stepped down toward this direction. * Floor level averaged; both sterile and floor level irregular in these areas. Stone slab seating stones in hole.

**TABLE 3: POSTHOLE CHARACTERISTICS**
Plate V. Postholes. a. #9, prior to excavation. b. #12, during excavation. c. #11, excavation completed. d. #15, seating stones, west wall of Substructure 2A in background.
specific direction. (Map 2, section "J-K"; Fig. 4a). As shown in Table 3, the stepping of postholes has a definite correlation with the elongated shape of these holes. It is my belief that these steps functioned as fulcrums to facilitate the placement of the large upright posts. The direction of stepping appears to me to indicate the direction toward which the posts were pushed when erected. The elongated and stepped holes could have housed larger posts than many of the other holes; the shape of these holes is probably a function of post size.

A summary of the information in Table 3 indicates that five of the seven holes classed as "central" are elongated and stepped. One of the other central holes is ovoid and un-stepped. The seventh hole (#3) is round and not stepped. Discussion of the peculiarities of this hole will be deferred to the reconstruction section. There are two other stepped holes in the communal area, #6 and 13, both of which are marginal holes. Both marginal holes are stepped down toward the adjacent wall, supporting the contention that the direction of the step-down is indicative of the direction toward which the post was pushed at time of erection. It would have been impossible, because of the closeness of the walls, to push the post in place from the opposite sides of the holes. Analysis of the direction of step-down in the central holes reveals that the holes on the south side of the hearth area are stepped-down toward the north, and the
Figure 4. Posthole data
two stepped holes north of the hearth area are stepped down toward the south. If the assumption is correct that direction of stepdown is indicative, it can be stated that the south row of posts was erected from the south side of the structure, with the bases of the posts initially pointing north, and the length of the pole being raised toward the north also. On the north side of the hearth area, the posts would have initially pointed south, and would have been raised toward the south.

All of the round holes, with the exception of #3, are marginal holes, along the east side of the great kiva structure. Three of these four holes are smaller than #3, and the two excavated holes are much shallower than #3, or any other hole in the structure. There are six other marginal holes. Two of these, #6 and #13, have been discussed and were stepped, and either ovoid or elongated. The remaining four are ovoid (#1, 5, 9, 10).

Total depth of postholes has been analyzed as a function of two component measurements. The first of these measurements, from Floor III to sterile, actually indicates the irregularities and slope of the underlying sterile and the consequent variation in the depth of the trash deposit below Floor III. The second measurement is from the surface of the sterile soil to the bottom of the posthole. Assuming a relatively level floor, preliminary consideration of this type of analysis would lead to a belief in its futility. Logically
posthole total depth would be assumed either to vary randomly, as a result of using poles of random length, or to be relatively uniform, as a result of using poles of uniform length. Either result would supply useful information pertaining to construction methods. Analysis of the total depths of postholes in Great Kiva II, however, reveals a skewed distribution which seems neither random nor uniform. Prior to the analysis of the total depth figure, it was thought that this skewed distribution was attributable to the irregularity of the sterile soil below the floor level and the consequent variation in the trash deposits. However, as is evident from Table 3 and from Figure 4b, the proportion of the trash deposit to the depth into sterile measurement is roughly equivalent in all the holes, with the exception of Postholes #1, 13, 14, and 15. Both holes #1 and #13 are characterized by extreme deviation from the average trash depth. But each of these holes conforms in other respects to other holes in the great kiva structure. In Posthole #1 the depth of penetration into sterile corresponds almost exactly with the average of this measurement taken from 5 marginal holes (#1, 5, 6, 10, 13). In Posthole #13 the total depth corresponds almost exactly with the average of this measurement taken from the same 5 marginal holes.

In contrast to these partial conformances of postholes #1 and 13, neither Posthole 14 nor 15 conform to any average for either of the composite measurements or for the total
depth measurements. The depth of penetration of the holes into sterile is less than \( \frac{1}{2} \) the average of this depth in the 5 other marginal holes. The total depth of these holes is \( \frac{1}{5} \) less than the average total depth of the other 5 marginal holes. The relationship of these measurements to the averages of the same classes of measurements taken from the other excavated holes in the structure (the 7 central plus the other 5 marginal) is of the same order but more extreme. For a graphic illustration of these differences see Fig. 4b.

The relative shallowness of the total depths of Postholes #14 and 15 is more surprising when it is realized that because of the great trash depth here, digging would have been relatively easy—certainly easier than digging a deep hole into the sterile clay. Even though the digging would have been easier, no attempt was made to attain even the minimum total depth reached by the other holes. This situation might indicate that 1) it was not considered essential, or it was not possible, to support the posts in the compact sterile, and 2) the posts in the northeast quadrant of Great Kiva II were shorter than any others (except #1).

In regard to this first proposition, Posthole #13 provides evidence that even in extremely trashy areas it was desirable and was possible to support the post in a hole as deep as the average total depth. Obviously, post #13 and all the other posts in the great kiva area except #1, 14, and 15, were longer than necessary to reach to roof height from the
floor level. Since the labor involved in shortening an overly long post is much less than the labor involved in digging a meter deep hole into hard clay, it seems evident that use of such long posts was intentional and was determined by a desire to seat the posts deeply.

If the measurements for Posthole #1 are correct, they indicate a possible basis for this desire. Even though the trash deposit was negligible here, thus reducing the total depth drastically, the amount of penetration of the hole into sterile falls well within the range of the same measurement in other deep-seated marginal holes (5, 6, 1, 13). This, I believe, indicates recognition of the functional importance of solid (as opposed to "loose trash") and deep seating of the post. From the evidence in Posthole #1 and 13, in conjunction with the 10 other deep postholes in the communal area, I feel it is possible to say that the use of long posts and the deep-seating of these posts in sterile or in a combination of trash and sterile was a significant "construction value." The practical basis for this construction value may have been the necessity to provide such support for the heavy roof.

The shallow total depth and the shallow penetration into sterile of Postholes #14 and 15 indicate not only the shortness of the poles here, but also the non-functioning of the above-described "construction value."
One other feature pertaining to the depth of Posthole # 15 needs to be recorded. Two broken tuff slabs, similar to those used in the banded tuff walls, were located on the bottom of this hole. The slabs rested directly on the sterile soil, so that the tops of the slabs were approximately .10-.20 m above the floor of the hole (Plate Vd). This reduced the effective depth of the hole and the length of the post by a similar amount. Such a mismatch of hole depth with pole length could have occurred accidentally, as a result of the hole being dug without reference to the length of the pole, or vice versa. It also could be the result of planning. Possibly these stones were put in place to function as seating stones, that is, to prevent the post from sinking into the sterile as a result of the compression from the roof weight. This may be the correct explanation, but since the use of such stones occurs nowhere else in the site, it would seem that the principle of "seating stones" may have been unknown at this time in this locality. (See Reiter 1946: Table I for distribution of this trait in ceremonial structures. Seating stones occur in one posthole in the great kiva at Nantack Village, Point of Pines, Breternitz 1956). I prefer to think that the digging of this hole, the cutting of the post, and the placing of the stones were the result of planning and were necessary to solve a specific problem. Since this is highly conjectural, I will reserve discussion of this problem for a later section.
The pattern of the postholes has been analyzed in terms of "row" and "position" within the row. There are four rows of holes within the communal area, a row being considered as a north-south alignment. The western row has been designated Row A; the west-central row as B; the next, to the east, as C; and the eastern row as D. These terms are used purely as a convenience, and are not meant to imply sequence of erection. The term "central position" is considered to apply to those holes which serve to demarcate the central ceremonial area within Great Kiva II. These seven holes are distinguished from the others not only by their central position, but also by their shape and depth. The "marginal" holes, which do not delimit the ceremonial area, are adjacent to the perimeter walls of the communal area.

The designation of 7 holes as "central" may be disputed by some familiar with the Anasazi great kivas (Aztec, Rinconada, Nutria, Lowry, and others) with their 4 central support pattern. Even though 4 holes (#7, 8, 11, and 12) in the great kiva at Point of Pines Ruin form a square around the centrally located hearth, I propose that these holes are actually part of a "central pattern" which includes 3 other holes (#2, 3, and 4). These three holes occupy a position adjacent to the west wall, that is, they are three of the five holes in Row A. Posthole #3 is the odd hole in Great Kiva II, distinguishing Row A from all other rows in the kiva which contain only four holes. Discussion of the reasons for place-
ment of Posthole #3 will be deferred to the reconstruction section.

The postulate that these 7 holes should be considered as "central" is based on the following evidence and reasoning: 1) the 7 holes surround the central ceremonial area which includes the hearth and the surface manifestations of the four unique subfloor trenches or channels; 2) a glance at Map 2 should be sufficient to convince the skeptic that Postholes #2 and 4 differ significantly in size and shape from their companion holes in Row D (#15 and 17), and are extremely similar to holes #11 and 12 in Row C, and only slightly less similar to #7 and 8 in Row B. Comparison of 6 of the 7 central holes (minus #3) shows that #2, 4, 11, and 12 have practically the same Width/Length Index (54, 57, 57, and 57, respectively), while holes #7 and 8 have indices of 77 and 67. This comparison indicates a greater similarity between holes #11 and 12 in Row C and holes #2 and 4 in Row A than between the Row C holes and #7 and 8 in Row B. In summary the evidence indicates to me that 1) the 7 posts would have served to isolate the ceremonial area from the rest of the floor area, thus appearing to be analogous in this respect to the central floor grooves at the Crooked Ridge and Turkey Foot Ridge sites (Wheat 1955: 57-60); and 2) dissimilarity in the size of the companion holes (#2 and 4 in Row A with #15 and 17 in Row D) and similarity in the size of the holes in Row A and C, is, I believe, indicative of dissimilarity and similarity, respec-
tively, in status and probably of function. I believe the evidence justifies my designation of the seven holes as central.

All of the 17 postholes in the communal area were filled with loose tuff rocks at the time of excavation. The rock piles projected .05 to .20 m above Floor III at this time.

Suggestions have been made that these rock-filled holes did not function as postholes at all, but served as "altars", "fire-platforms", "dance platforms or markers". No evidence that the surface rocks had been burned is recorded. If these holes actually did function in one of the above mentioned ways, the ceremonial implications would strengthen the supposition that Great Kiva II is a ceremonial structure, in that case unroofed. However, during excavation of Posthole #2 evidence was found which strongly supports the contention that these rock-filled holes originally held wooden posts. The excavator writes, "The place of the original post itself was determined by the pillar of soft earth surrounded by rocks. This took the form of a circle and the diameter was approximately 25 cm. It continued to the native earth [sterile]. ...A great deal of ashes and small bits of charcoal were found in the debris around the space of the original post."

(Bannister ms.) Unfortunately this is the only hole for which detailed information is available. From Postholes #2 and 8, Charcoal Specimens #26 and 31, respectively, were recovered. It seems reasonable, from the evidence presented above, to
suppose that the rock filled holes originally held upright posts.

In Posthole #2 the rocks themselves "vary from larger than a man's head to about the size of a man's fist" with the "average size [being] about the size of an open hand. The heavier rocks were in the bottom and the smaller predominated near the top. There seemed to be no pattern to their placement. [They appeared to be] just thrown in with the heaviest first." In Posthole #8 the rocks ranged "from 30 cm. in diameter to small stones." (Bannister ms.)

From the cross-sections of Great Kiva II (Map 2) and from photographs, it appears that some of the rocks rested on Floor III, that is, they protruded beyond the margins of the posthole. This is particularly evident in the area of Postholes #4 and 11. If it is granted that these holes are postholes, the only explanation which occurs to me for the presence and distribution of these rocks is that they were placed around the post to support it. It appears that rocks were placed within the holes and also above the top of the holes, some of them resting on Floor III. The quantity and random arrangement of rock, and lack of evidence of mortar preclude the possibility that the rocks were laid up in a mortared box or circle around the posts below and/or above the floor (see Reiter 1946: Table II for distribution of this trait).
In summary, the 17 postholes in Great Kiva II have been analyzed in terms of shape, contour, depth, pattern, fill, and features. There are 5 round holes, 4 of which are along the east side and one of which is central. There are 6 elongated holes, 5 of which are central and stepped. The other elongated stepped hole is marginal, as is the only ovoid stepped hole. The other 4 marginal holes are ovoid, as is the remaining central hole. There are 7 central holes and 10 marginal holes, three of the latter never having been excavated below the top of the sterile clay level. Stepping of the sides of the hole, a trait present in 7 of the 14 excavated holes, appears to indicate the direction toward which the post was raised; the trait controls the surface shape of the posthole to some extent. Posthole depth is neither random nor uniform; it indicates that regardless of the variation in depth of trash deposit above sterile 12 of the 14 excavated holes conformed in some respect to a "construction value" of deep-seating of the posts. The other two holes do not conform to this standard; these holes used shorter posts than 13 of the other holes used. One of these non-conforming holes was distinguished by the presence of two stone slabs in the bottom, the placement of which is believed to have been planned as a device to meet a specific situation, which may differ from that served by the "seating slabs or discs" in the Chacoan area. All of the 17 holes were filled with loose rock of random size, which projected above and rested on the floor in some instances.
These rocks were evidently necessary for the support of the posts, and were probably placed around the posts in the hole and also above the floor for a short distance.

The lengthy discussion of posthole characteristics presented above yields two results important to a reconstruction of Great Kivas I and II.

Obviously, Great Kiva II was roofed, with 17 upright posts forming the chief support for the massive beamed ceiling. No direct evidence, such as charred timbers or clay roof casts, was recovered to aid in interpretation of roof construction. The appearance and construction techniques of the roof of Great Kiva II will be discussed in the reconstruction section.

Evidence to support the hypothesis that a smaller roofed structure existed prior to construction of Great Kiva II is also presented in the above analysis. Each of the holes in the eastern row differs sharply from all other holes in other rows in Great Kiva II in all or some of these characteristics—shape, depth, placement, internal features. This difference allows an inference that Postholes #1 through 13 were already constructed and functioning as post supports when the eastern row of holes was made. These differences in posthole characteristics, in conjunction with stratigraphic factors, are important evidence for the existence of a smaller roofed structure, Great Kiva I. Further discussion of this hypothesis will follow in the reconstruction section.
The Hearth Area  

The hearth area is located in almost the geometric center of Great Kiva II. The area as defined consists of two sections. The first of these is a round, concave, shallow basin which was filled with ash at the time of excavation. A layer of small rocks apparently rested below Floor III within this basin. Apparently Floor III did not extend over the basin. Evidently the area within this pit showed evidence of being burned. Ash lenses extended from the basin toward the ends of the radiating floor trenches, but there appears to have been no actual contact between this hearth area and the trenches.

The basin is 1.30 m long on the north-south axis, and 1.70 m long on the east-west axis. Within this large area the small rocks were arranged in a rough square with a northwest axis. This rock area is .70 m northwest to southeast, and .60 m at right angles to this axis. Its greatest depth is reached at a point .75 m from the western margin along section line "C-D", and .65 m from the northern margin along section line "G-H". At this point the basin is .10 to .12 m deep. Below the concave bottom of the basin which rests on trash, a depression matching the contours of the pit has been dug into the sterile clay. Where the two section lines cross, the depression in sterile reaches a depth of .40 m below Floor III. The lowest point in this depression is located .65 m on an east-west axis from the western edge of the overlying
Figure 5. The Hearth Area
Plate VI. a. Hearth area, Great Kiva II, looking south-east. b. Ash filled basin, prior to excavation. c. Ash filled basin and rock area below Floor III. d. Fire box, below ash filled basin resting on sterile soil.
ash pit. The depth here is .60 m below Floor III. This measurement is actually taken in the middle of the second feature of the hearth area—the fire box.

This rectangular stone lined box is located in the center and rests on the bottom of the large depression into sterile. The box is formed by four small shaped tuff slabs set on edge in the sterile soil. The tops of these slabs are .05 m below the bottom of the ash-filled basin; this feature then is completely below the basin and Floor III. The inside dimensions of this box are given as .16 m along the east-west axis, and .21 m along the north-south axis. The four slabs are oriented so that each of them parallels the corresponding main walls of the communal area. The bottom of this boxed area is .20 m below the tops of the slabs in the central and deepest location; the bottom is slightly concave. The box was not filled with ash, when excavated. Trash similar to that below Floor III was in the box along with some reworked native soil and one sherd (type unrecorded). This box is similar to other room fireplaces in the site. Since it was not filled with ash or burned debris, its function cannot be definitely determined. The probability that it was constructed, and functioned briefly, as a fire box is strengthened by indications of burning found on the insides of the slabs.
Four trenches radiate from the center of Great Kiva II toward the cardinal directions. The trenches are cut into Floor III and extend downward into the sterile soil. The trenches are located for the most part within the rectangle formed by the seven central posts. The central or inner ends of the trenches are placed from .10 to 1.20 m from the edges of the hearth area, but field investigations failed to detect any connection of the ash lenses or the margins of the hearth area with the inner ends or sides of any of the trenches.

When the trenches were discovered, they were filled with a few small stones and trash containing paint fragments, ash, charcoal, sherds, and soil—in general the same type of fill found in the kiva. At excavation three of these trenches—the west, south, and east ones—were partially covered with shaped tuff slabs and small stones. Generally the ends of the slabs rested on Floor III. The northern trench had no stones covering it at the time Floor III was cleared. This trench is shaped differently from the other three, so the question of whether or not it was ever rock-covered is a difficult one to answer on the basis of analogy. Slab covering would have been possible over portions of the north trench.

Each trench is composed of a number of different features or parts. None of the four trenches is identical in its parts, orientation, size, and relationship to surrounding features (such as the postholes or hearth area.) However all
Plate VII. a. East, south, and west floor trenches before excavation. Note absence of floor manifestations of north trench, and notched slab, east trench.

b. Floor trenches during excavation, looking east toward entrance.

c. West trench, looking east, during excavation. South wing of rock alignment removed to show features below.
four of the trenches share at least one feature--two small postholes flank the sides of the outer ends of all the trenches. In addition to this similarity, each of the trenches contains some features found in at least two other trenches.

The west trench: Fig. 6, Plate VIIc, VIII.

The west trench is located so that its inner end is approximately 1.0 m west of the central hearth area. The linear extent of the trench toward the west wall of Great Kiva II is 4.20 m. The trench contains 6 major features--a channel, tuff slabs covering this channel, a deep pit, a semi-circular subfloor rock alignment, 3 parallel troughs running at right angles to the east-west axis of the channel, and 6 postholes.

The channel is the feature at the inner end of the west trench. It is a round-bottomed cut into the sterile soil which extends approximately 1.5 m toward the west. The bottom of the cut is .60 m below Floor III. The channel is approximately .40 m wide on the average. The sides and bottom of the channel are relatively smooth and were easily distinguished from the trash and unaltered sterile into which the trench was cut.

Above the channel and resting at the level of Floor III are 6 tuff slabs which extend across the axis of the channel forming a cover. These slabs and a few other scattered stones in the area were the only features of the west
Figure 6. The West Floor Trench
Plate VIII. West Trench. a. Looking north across troughs.
b. Looking south across troughs.
trench which were evident when Floor III was cleared. Slabs range from .45-.55 m long. No slab was found covering the innermost end of the channel.

At the west end of the slab covered channel, a deep pit is located. The bottom of this pit is .71 m below Floor III. The pit is roughly ovoid in shape, and is set so that its center is slightly north of the east-west axis of the channel.

Immediately west of the deep pit and overlapping somewhat upon or in it, is a semicircular rock alignment, which at excavation, was almost entirely below Floor III. However one small slab and several other spall-size rocks which showed when Floor III was cleared were probably associated with the semicircular alignment. The rocks in this semicircle, which opens toward the west, apparently rest on trash. The line of stones is from .10 to .15 m below Floor III, and from .10 to .50 m above sterile—the wide variation here being the result of numerous depressions in the conglomerate. The base of this alignment is essentially at an even and uniform level. Stones in this alignment are .10 to .35 m long, and mainly ellipsoidal or round. The only slab-like stone is located in a line with the axis of the channel to the east. The slab found on the surface of Floor III or at that level is also located on this east-west axis. If the position of the remaining rocks on Floor III can be accepted as indicative, the subfloor line of rock appears to have at one time stood higher.
Below the subfloor rock alignment and dug into the sterile conglomerate are 3 parallel troughs which run north-south at right angles to the east-west channel. The eastern and middle troughs are separated from each other only on the

[Please continue on page 73]
south ends; in the middle and at the north apparently they merge and maintain the same depth, approximately, below the floor. The bottom of these troughs is .55 m below Floor III along the east-west section line. The third or westernmost trough is .50 m below Floor III and is cut into the sterile clay approximately .30 m. The eastern trough is 3.7 m long, the middle trough 3.3 m long, and the western trough is 4.7 m long. The eastern edge of the eastern trough is directly below the eastern face of the semicircular rock alignment. The western edge of the western trough appears to form the western boundary of the western floor trench. At both the north and south ends of the western trough is a small slab which rests partially on the surface of the sterile and partially on the trash within the trough. Under these stones are several smaller stones apparently, but the relationship of the smaller stones to the bottom of the trough is not recorded.

There are 6 postholes associated with the west trench. All are small, .12 m or less in diameter. They range from .41 to .64 m in depth below Floor III; two are cut as deep as .24 m into sterile. Four of these holes are aligned with, or are within, the middle parallel trough. Holes 2 and 4 are placed within the western and eastern trough respectively. Of the four holes associated with the middle trough, 3 (#1, 5, and 6) are located immediately to the east of the slabs which flank the western trough at the north and south ends. None of the postholes were evident in Floor III. Because of the irregular
and soft nature of this floor, it is possible that, even if at one time posts set in these holes extended above Floor III, they could have been overlooked. The holes were filled with trash.

The channel section of the west trench was large enough to hold a man in prone position under the slab covering. Since apparently it was only 1.5 m long, only a short individual could have been accommodated, unless the deep pit at the west end of the channel were used to house the lower legs and feet of the individual. Such usage appears to be a possibility physically at least.

The south trench: Fig. 7; Plate IX, X.

The south trench is located so that its inner end is approximately .10 m west of the western edge of the hearth area. This indicates that the south trench is oriented so that it projects slightly between the hearth and the inner end of the west trench. The south trench does not touch either the margins of the west trench or of the hearth area, however. The linear extent of the trench toward the south wall of Great Kiva II is 5.80 m. The trench contains 6 major features—a channel, tuff slabs covering this channel, a deep pit, a semicircular subfloor rock alignment, one or more troughs at right angles to the channel, and 3 postholes.

The channel is similar to that of the west trench. It is a round-bottomed cut into the sterile soil, which extends
Figure 7. The South Floor Trench
Plate IX. South Trench.  
a. Channel, prior to excavation of troughs.  
b. South end of channel.
Plate X. South Trench. a. After excavation, looking north. Rock alignment removed. b. After excavation. Note fire box in right background, deep pit at south end of channel.
to the south approximately 3.0 m. The bottom of the channel is .45-.50 m below Floor III. It is approximately .45 m wide.

Above the channel and resting at the level of Floor III are 9 tuff slabs which extend across the north-south axis of the channel, serving as a cover. These slabs range from .70-.85 m long. No slab covered the innermost end of the channel. On top of one of the slabs near the south end of the channel are 3 smaller rocks. At this end of the channel two slabs stand on edge, flanking the channel on the west and east sides. These slabs project slightly above Floor III, as do a number of other smaller stones which lie between the upright slabs in the southern end of the channel. The slabs and small rocks described above were the only indications of the south trench which showed on Floor III.

At the south end of the slab covered channel, and set inside the channel against the east and west walls are two more slabs on edge. The tops of these slabs are below Floor III and the cover slabs. The bottom of these slabs rests on the bottom of the channel cut in the sterile. Apparently two more slabs lay flat on the sterile at the southern end of the channel between, but to the south, of the upright flanking stones.

A semicircular stone line of rocks, set on trash, adjoins the southern end of the channel, merging with the flanking stones set below Floor III. This rock alignment
is below Floor III, and above the level of sterile. It is similar in placement and construction to that in the west trench. The semicircle is open on the south side; its east and west wings cross the margin of the basin in which the deep pit is located, but the rocks do not extend over the pit itself. Stones in this alignment are within the size range of those in the west trench alignment.

A deep pit set within a shallow oval basin in the sterile is located south of the end of the channel and the adjoining rock alignment. The bottom of the pit is .78 m below Floor III. The mouth of the pit is elliptical, being .45 m wide and .60 m long with the long axis running generally east-west, at right angles to the axis of the channel. The pit is centrally intersected by this channel axis. The oval basin in which the pit is centered extends beyond the sides of the channel to the east and west, the margins of the basin connecting with the margins of the channel. The bottom of the basin is from .43 to .60 m below Floor III.

South of the deep pit and basin are 3 other depressions. These, although similar in number and general location to the 3 parallel troughs found in the west trench, differ somewhat in shape. The inner or northern trough (?) is .70 m deep below Floor III, 1.20 m long and .65 m wide. It is roughly ovoid, with its axis paralleling the axis of the oval basin and deep pit to its north. The middle trough (?) is .60 m deep, 1.50 m long, and .50 m wide. It is oriented along
the same general axis, and is centered between 3 postholes, one at the west end (#7) and two (#8 and 9) at the east end in a relationship similar to that of #1 and #5 and 6 in the middle trough of the west trench. The third or outer trough, which forms the southern margin of the south trench, is .44 m deep, 1.20 m long, and .70 m wide. It is ovoid, with axis parallel to the other troughs. The three troughs, if these depressions can be assumed to be man-made initially, are shorter and wider than the three associated with the west trench; however their location, orientation, number, and relationship to postholes and the stone alignment are nearly identical. The stone alignment does not cross any of the troughs in the south trench, although the wings of the alignment extend past the outer margins of the northern trough.

There are 3 postholes associated with the south trench. All 3 appear to be more nearly aligned with the middle trough than with any other features in the trench. Two of the holes are approximately .12 m in diameter; the bottom of #7 is .26 m below Floor III, and of #8 is .48 m below the same level. The third posthole, #9, is .35 m in diameter, and .46 m below Floor III. None of these postholes were evident in Floor III, but the same possibility exists that the posts could have extended through this floor at one time. The holes were trash filled.

The channel section of the south trench was large enough to hold a man in prone position under the slab covering
without utilizing the deep pit at all to house any part of
the body.

The east trench: Fig. 9,

The east trench is located so that its inner end is
approximately .20 m southeast of the hearth area. This trench
is oriented with the long axis of the channel running from the
southwest to the northeast, so that instead of the inner end
pointing directly toward the hearth area, it points southwest
toward the southwest corner of the great kiva. The east
trench does not connect with the central hearth area, although
a peculiar trench-like extension of the hearth to the east
comes within several centimeters of the east channel outline.
The linear extent of the east trench is 1.80 m; it is .40 m
wide and ranges in depth from .30 m to .47 m below Floor III.
The east trench consists of only three major features—a chan­
nel, tuff slabs covering the channel, and postholes. The di­
mensions given above are those of the channel also, since no
troughs were found in connection with the east trench. Three
tuff slabs cover the channel in the same manner in which they
cover the west and south channels. At the inner or southwest
half of the channel, no slabs were found, the area being co­
vered with smaller irregular stones at the level of Floor III.
The slabs average approximately .55 m long. Two postholes
flank the outer end of the channel. They are in a position
roughly on a line at right angles to the axis of the channel,
Figure 8. The East and North Floor Trenches
and slightly northeast of the northeast edge of the channel. Posthole #10 is .40 m in diameter and extends .50 m below Floor III. Posthole #11 is .25 m in diameter, extending .47 m below Floor III.

The east trench is distinguished from the west and south trenches by its lack of exact alignment, and its lack of a deep pit, stone alignment, or parallel troughs. However this trench contains two features which are found in none of the other trenches. The first of these is an irregularly shaped pit or basin located to the southeast of the channel adjacent to the southeast margin of the channel. This pit is only .05 m southeast of the channel; it is .22 m below Floor III and roughly .75 by .60 m at the mouth. The second feature is a notched thin tuff slab which lay flat, resting one end on the outer edge of the outermost tuff covering slab at the northeast end of the channel. The other end of the thin slab rested on Floor III. The slab is approximately .60 m long by .35 m wide. The thickness is not known. Two corners of the slab are cut off, forming a slight projection in the center of one of the long edges.

The east channel could have sheltered a man in prone position underneath the slab covering (assuming the channel at one time was completely slab covered).
The north trench is located so that its inner end is approximately 1.20 m north of the northern margins of the hearth area. The trench is set somewhat to the west of the hearth area, and is almost directly in line with the inner end of the south trench. The trench connects with no other features. The linear extent of the north trench toward the north wall of Great Kiva II is approximately 3.30 m. The trench contains 5 major features—a channel, a deep pit, an oval basin, one or more troughs at right angles to the channel axis, and 2 postholes.

The channel differs from that of the west, south, and east trenches in that at its inner end the north channel becomes bulbous, with a broad circular outline. This area of the channel is approximately .70 m along the north-south axis of the rest of the channel. From the inner edge of the channel (including the round portion) to the outer end, the channel is approximately 1.60 m long. Where the sides of the channel are parallel, the feature is .40 m wide. In the bulbous section the bottom of the channel is .86 m below Floor III. In the parallel sided section, the bottom is from .51 to .65 m below Floor III.

Immediately north of the channel, and formed actually by an extension of the channel margins is an oval basin in which a deep pit is located. The deep pit is elliptical, .40 by 1.30 m with its long axis running at right angles to that of the channel. It is set slightly to the east of the long
Plate XI. North Trench. a. Prior to excavation of troughs, looking north.
b. Looking south, showing troughs, deep pit, and channel. Rocks removed.
axis of the channel. The bottom of the deep pit is 1.02 m below Floor III, being cut into the sterile some .75 m. The oval basin in which the pit is enclosed extends beyond the east and west margins of the north channel, the margins of the basin connecting with those of the channel. The bottom of the basin is from .65 to .81 below Floor III.

North of the deep pit and basin is the inner trough. It is 1.80 m long and .70 m below Floor III. Adjoining it to the south is a shallower and irregularly shaped depression, which may or may not be another trough, parallel to the inner trough. It is .53 m below Floor III and 1.25 m long by .35 m wide. Slightly north of this questionable trough is another irregularly shaped depression which is set to the west and curves slightly to the south of the inner and middle (?) troughs. The third depression consists of two elliptic areas connected by a shallower section. Depth of the elliptic sections averages .55 m. Length of the outer depression is 1.5 m. The number and general location of the depressions are similar to that of the troughs in the west and south trenches. However the size and shape seem aberrant. It is evident that the inner depression can safely be termed a "trough"—a man-made feature—since it is flanked on the east and west ends by postholes #12 and 13. These holes are approximately .12 m in diameter and are .47 and .48 m respectively below Floor III.

The north trench is distinguished from the west,
south, and east trenches by the bulbous extension at the inner end of the channel, and the lack of stone slab covering. Like the east trench, it contains no semicircular stone alignments. It seems possible that the two innermost depressions at least can be considered as man-made troughs. The north trench contains another feature not found in any of the other trenches—subfloor slabs resting on trash above the bottom of the channel. Two of the slabs lie flat in the bulbous inner end of the channel with their long axis parallel to that of the channel. Two other slabs stand on their short ends, upright, between the parallel sides of the channel. Apparently the bottoms of these rocks rested at the same level, which was some .40-.50 m below Floor III.

Summary:

In summary, on and below Floor III in Great Kiva II 4 trenches radiate toward the cardinal directions. All 4 of the trenches contain channels, the west, south, and east channels being covered with tuff slabs. Three of the trenches, the north, west, and south, contain deep pits, which in the north and south trenches are set within well-defined shallow oval basins. The west and south trenches contain semicircular subfloor rock alignments with the open end outward from the hearth area. The north trench contains subfloor slabs, two on end and two flat within the channel. Three trenches, the north, west, and south, are believed to contain a set
of 3 parallel troughs running at right angles to the axis of the channel. All 4 trenches contain at least two postholes, with as many as 6 holes occurring in one trench. In 3 trenches—the north, west, and south—two postholes flank the ends of the parallel troughs; in the east trench two postholes flank the end and sides of the channel. The location of the channel, the deep pits (and the oval basin if present), and the 3 troughs is consistent in the 3 trenches in which this combination occurs (the north, west, and south). None of the 4 trenches connect with the hearth area. The major sections of each trench are within the boundaries established by the 7 central posts.
Pits

One large "borrow pit" was found below Floor III in Great Kiva II. This pit is located in the northwestern quadrant of the structure, in an area enclosed by Postholes #1, 6, and 7. The pit is somewhat irregular in shape, being 1.90 m long in a north-south direction, and 1.50 m in an east-west direction. Corners of the pit are rounded. The bottom of the pit is flat, sides are almost perpendicular. The pit is dug .40 m into the sterile soil; the bottom being approximately .25 m below Floor III. All the sherds in this pit were corrugated types.

Numerous other smaller pits, all irregularly shaped, and located sporadically along the west and northwest sides of the great kiva structure, occurred in the sterile soil. None of these pits or depressions were revealed in outline at the level of Floor III. The variation in size, shape, location, and depth do not allow generalizations as to function or period of occupation with which the pits are associated. It is possible that some of them could have been utilized during ceremonial activity in Great Kiva II; it is equally as possible that all were utilized during the earlier occupations.
Associated Material Culture

It is not within the scope of this report to discuss in detail or to analyze descriptively the material culture associated with Great Kiva II and the earlier structures. Such description will be left to the final report on Point of Pines Ruin. However certain items or classes of material pertinent to the dating of the structures or to the postulate of ceremonial usage will be considered briefly.

Pottery:

Since no tree-ring dates were obtained from within the great kiva structure, pottery cross-dating is the basis of the chronological placement of Great Kiva II and the earlier structures. Representative samples of pottery, which were saved and brought to the University of Arizona, Tucson, were consulted and re-analyzed for various crucial areas and levels within Great Kiva II, the entryway, the substructures, and some of the surrounding rooms. Table 4 indicates the phase affiliations of the various units as determined by this study of the ceramic samples. In general, dating by pottery typology in the Point of Pines locality is dependent upon the occurrence and general proportions of certain members of the Little Colorado redwares, specifically of the Four-Mile series. Intrusives such as Gila and Pinto Polychromes, Zuñi glazes, Tucson Polychrome, and Gila Basin types also aid in the dating. Diagnostics of the Tularosa and Maverick Mountain phases are
respectively Tularosa Black on White, White on Red, and McDonald types, and the locally made Maverick Mountain types which have not yet been described. Dating of the Maverick Mountain occupation at Point of Pines is substantiated by dendrochronology.

Pottery was not abundant in the fill above Floor III in Great Kiva II. The fill was clean and apparently similar to that discussed by Heindl (1955). The abundance of Cedar Creek and Fourmile polychromes, and the lack of significant quantities of the later Point of Pines Polychrome conclusively date Great Kiva II as a Canyon Creek phase structure, abandoned somewhat before the end of this phase (A.D. 1325-1400).

Pottery cache:

Consideration of a cache of 3 restorable pots located below Floor III in Great Kiva II is necessary because of information recently published by Ellis (1952: 151) pertaining to the ceremonial utilization of such caches during the rededication ceremony in the great kiva at Jemez pueblo.

The cache found in the Point of Pines Ruin great kiva was located .90 m east of the hearth area in a pocket in the sterile soil. Two of the vessels found are indented corrugated bowls with smudged interiors; one of these bowls is shallow, (A-6574), and the other is double-shouldered (A-6575). The third vessel is an indented corrugated un-
smudged jar (A-6576). The vessels ranged in size from 7.8 cm. in height to 10.1 cm., and in diameter of orifice from 10.5 cm. to 12.8 cm. When the pots were excavated, specific types of indented corrugated ware were not yet defined; possibly these specimens can be more accurately typed when the pottery from Point of Pines Ruin is analyzed. The present knowledge of utility wares in the Point of Pines locality indicates that three types of indented corrugated pottery are found in the area; to date the temporal differences in the occurrences of these types has not been defined (Breternitz, et al. 1957). All three types, as far as is known now, occur from Nantack through Point of Pines phases (ibid.: 414).

It is not known whether these vessels were associated with the eastward trench-like extension of the hearth area which falls within the .90 m distance from the firebox. The location of this cache, in the center of the great kiva and between the hearth and the east floor trench, is the strongest indication of possible ceremonial function. The vessels contained no "offerings."

Substructure #2 Cache: Plate XII

Substructure #2 was originally a room along the east side of the communal area which was torn out at time of construction of Great Kiva II; indicative of this interpretation is the fact that Floor III is superimposed over the wall stubs of the room. In this room a cache of stone tools and pottery
Plate XII. Ceremonial cache in Substructure 2.
a. Looking east. Note top of sealed T-door. Base of east wall not cleaned off. b. Looking south, toward Substructure 2A. Note stub of west wall of Room X to left of bowl.
was found. This cache is apparently associated with Floor I, the lowest floor in Substructure 2. The cache contained the following items: 2 metates, 8 stone "digging tools", 1 paint palette, 21 manos (3 broken), 9 polishing stones, 2 concretions or tuff balls, 2 axes, 1 maul, 2 choppers, 1 arrow straightener, 1 knife, 1 turquoise bead (broken), 1 bone awl, 1 worked slate, 1/2 shell bracelet, 2 pitch wads, loose paint chunks of azurite, hematite, malachite, limonite, minerals such as asbestos, quartz crystal, specular hematite ?, 1 corrugated jar full of hematite, and a quantity of sherds.

None of this material will be described in this report. Identification of the sherds as to type is not recorded. The nature of many of the items seems indicative of activity connected with preparation of paint or painted items and with magic. Until the stone "digging tools" and concretions or tuff balls are examined, it is possible only to speculate as to whether or not the items in question could be "teamahias" or kiva thunder balls, respectively (see Woodbury 1954: 165-173). Paint palettes are associated with ceremonial usage throughout the Western Pueblo area and are used in conjunction with rubbing stones, pottery, wood-working tools, and various pigments "to produce paint of the proper consistency and color for decorating carved wooden objects, dance costumes, and the dancers' bodies." (Ibid.: 114-116). Quartz crystals are well-known ritual objects among modern Pueblos, and in suggesting archaeological contexts have been recovered from situations.
ritual or symbolic usage. A "love sorcerer's medicine bundle" containing "turquoise, shell, crystal, etc." has been recorded for the Hopi, as have many other specific magical or ceremonial uses of the quartz crystal (ibid.: 191-192). The ceremonial nature of the cache in Substructure 2 seems evident.

Unfortunately the cache is located under Floor III, the floor level associated directly with the final usage of Great Kiva II. This fact is demonstrated by the superposition of the west wall of Room X which rests on Floor III. This wall passes above and directly across a portion of the artifact cache. This location, combined with the field investigation of the relationship of Floor III with the cache, indicates that the artifacts were placed in position prior to construction of Floor III; therefore the cache cannot be associated with ceremonial activity of Great Kiva II.

The relationship of the cache to Floor II, the middle floor in Substructure 2, is less definite. The nature of the cache was such that many of the objects found rested considerable above Floor I; excavators surmised that part of the cache may have been in place on Floor I and part may have fallen or been dumped from above Floor I. This uncertainty may indicate that the cache, in full or in part, is actually associated with Floor II, having been put down from this level. The stacking of many of the tools, particularly the manos, contrasts strangely with the random arrangement of the broken pottery. The exact relationship of the arti-
facts to Floors I and II, and the question of intentional as-
association of all the items found cannot be satisfactorily
resolved.

In summary, the cache predates construction and use of
Great Kiva II. It is definitely contained within confines of
Substructure 2, and is overlain by Floor III and the west wall
of Room X, indicating usage of the room, probably in some
ceremonial manner if the content of the cache is interpreted
correctly, prior to the construction of Great Kiva II. Ap-
parently the cache is associated with Floor I, Substructure 2.
Many items known to be used ritually or as an aid to cere-
monial performances are contained in the cache.

Other Material Culture:

Various other items recovered from within the com-
munal structure and the surrounding rooms will be listed here
merely to indicate the type and quantity of evidence for
ceremonial usage of the area. Within Great Kiva II in the
west floor trench a bone awl and turquoise bead were found
side by side in the channel; possibly these were an offering
of some kind. A copper bell, battered and bent, was found
approximately .10 m above Floor III in the northeast corner
of Great Kiva II. Other items of possible ceremonial sig-
nificance were found in surrounding rooms—2 parrot or macaw
burials in Room 31, a large quantity of large shell artifacts
in Room 22, and in Room 24 a "hawk" burial under a notched
stone slab. All of these items occurred in association with the deep floor levels within these rooms, and do not seem to have resulted from careless deposition of trash. Room 24 contained great quantities of paint of all types with many fragments of large size being recovered.

A summary of the associated material culture discussed above indicates that items connected with ceremonial usage have been considered in the main, and that none of these items has been given more than a brief mention. Pottery is considered only as a dating technique, and as such will be discussed again in a later section.

Summary:

The data section has presented details concerning wall construction, bondings, and abutments, doorways, the entrance, and entryway, floors, postholes, hearth area, floor trenches and pits, and associated material culture of Great Kiva II. Four masonry techniques were utilized by this latest structure—banded tuff, spall rubble, spalled block with rubble fill, and crude rubble. The latter two techniques were employed when Great Kiva II was constructed; the other two appear in earlier walls of the communal area. Two sealed doorways occur in the walls of Great Kiva II, and partially below the floor of this structure. The entrance, oriented southeast, is wide with a single course of stones forming a riser or step. It leads into a long zigzag entryway connecting with enclosed plaza 1 to the south. Seventeen postholes,
described in terms of size, shape, depth, type of profile, position, fill, and function, held the large posts which supported the post-and-beam type roof of Great Kiva II. The eastern row of postholes differs in many respects from all the other holes. The hearth area, consists of a stone-lined firebox below Floor III, the floor of Great Kiva II, and a shallow ash-filled basin above the box at the level of this floor. Four floor trenches, which radiate from the hearth toward the walls of Great Kiva II are analyzed in terms of their component parts—channels, deep pits, oval basins, troughs, and postholes. Several pits occur with in the great kiva structure; all are well below Floor III, but could have been utilized during lifetime of Great Kiva II and later sealed over. They may be the work of an earlier occupation also. Material culture is discussed in regard to only two items—its time-determative value, and its possible ceremonial nature. Pottery is the sole means of dating Great Kiva II and the earlier structures. Great Kiva II was constructed and utilized during Canyon Creek phase, A.D. 1325-1400. Two caches—one of three pottery vessels, and the other of stone tools, pottery, and various minerals and paints—indicate ceremonial use of the communal area. The first cache may well have been used by occupants of Great Kiva II, as it is located east of the hearth area. The second cache occurs below the west wall of Room X, a small partitioned area resting on the floor of Great Kiva II, so that it could be associated only with earlier occupation. Several other items of material culture indicate the ceremonial function of the structure.
THE RECONSTRUCTION

The data pertaining to the excavation of the communal area have been presented in the preceding section. From a study of these data, particularly those concerned with wall construction, techniques, abutments, base levels, and floor levels, the following reconstruction of the cultural and architectural history of the area has been made. This is presented in an order progressing from the earliest occupation of the area after the pithouse utilization to the latest usage of the location. The reconstruction is presented as a postulate, the factual data for which have been presented previously, and the reasoning for which is being presented in this section. It is postulated that a house row may have been the first pueblo occupation of the area, followed by a plaza, then by a great kiva which utilized some of the main plaza walls, and finally by Great Kiva II which was considerably larger than the earlier structures and was made by razing several pre-existing rooms.

Analysis of the various building periods will be based primarily on the sequence of construction of certain architectural units. These units are determined by an analysis of the wall bondings and abutments, in conjunction with masonry techniques. Great Kiva II was constructed by combining five building units, two of which were probably added
at the time the final structure was built. It is difficult to determine the direction of growth or the construction sequence in all cases, partially because of the elusive nature of many of the abutments, and the possibility that many of the surrounding rooms which were included in the building units may have been cleaned out of the associated trash and re-occupied, or occupied continuously. In general the oldest section of the site appears to be in the northern part of the mound north of the communal area. Growth appears to have been from north to south generally with more concentration of population on the east side of the mound in earlier periods. This awaits confirmation by further digging.

The alphabetical designation of the building units is not meant to imply consecutive construction. Such instances will be specifically discussed in the text.

The House Block

The southern portion of the area believed to have been occupied initially as a house block is indicated in Map 4.

The house block probably consisted of Rooms 8 and 25; possibly Rooms 10 and 11; Rooms 16, 31, 18, 22, 39-35, 43, and 44; and a series of unexcavated rooms to the north. The southern boundary of this house block was marked by Unit A, consisting of Rooms 16, 31, 18, 22, 39-35, 43, and 44. Unit A is believed to be the earliest one adjoining the communal area; five of its rooms stand in position to later form the
north side of the communal area. Unit A butts against and may have been built in the same construction period as Room 25 to the northwest of the communal area. This unit was built in such a way that there are six interlocking bondings or abutments, indicating that if the rooms were not constructed in a single stone-laying operation, at least they were conceived of as a desirable and pre-planned entity. This does not mean necessarily that all the rooms of the latest period in this unit were built when the original main walls of the unit were erected; it is possible that some of the cross walls were built at a later date to alter the size of original rooms. The obvious example of this situation is the wall between Rooms 35 and 39, discussed next.

In the south wall of Rooms 35 and 39 is the only ground-level doorway in Unit A. This doorway and the Floor I level associated with it indicate that when the unit was built, neither the wall between Rooms 35 and 39 nor the west wall of Substructure 1 were in place, and that this doorway could then have been utilized as an opening into the open area south of Unit A.

Unit B, consisting of Rooms 10 and 11, extends Unit A to the west and was built sometime after Unit A was constructed, as demonstrated by the abutment of the end of the south wall of Unit B against the face of the west wall of Unit A. Unit B also butts against two earlier rooms, 8 and 25. Probably this unit was the first to be constructed
after completion of Unit A. Since it is not incorporated in any way in the later ceremonial structures, or in the plaza, it is described only for clarity in regard to construction of other units.

Both Unit A and B are constructed of banded tuff masonry, with the exception of several cross walls which are either spall rubble or banded tuff with a rubble veneer. Since the extent of the house block is unknown, no generalizations will be made as to the most prevalent masonry technique employed.

The use of the row of rooms which form Unit A prior to construction of rooms along the east side of the communal area is substantiated by the presence of the door in the south wall of the unit, and by the level of the associated Floor I. Unit B could have stood as an extension of the house block, in conjunction with Rooms 8 and 25 and other unexcavated rooms to the north. There is no way to determine whether or not these units were erected and occupied at the same general time; however the fact that all are of banded tuff masonry, and were built prior to construction of the west and east rows of rooms seems to allow the inference that all were part of a larger block of rooms north of the communal area. The relationship of Unit A to the rooms on the west, south, and east sides of the communal area will be discussed below in detail.
The Plaza

The area delineated by the plaza and the construction units which formed the plaza are shown in Map 6. The plaza was formed by addition of several construction units to the southern section of the earlier house block, Unit A.

Unit C is the designation given to the rooms and walls on the west and south sides of the communal area (Map 5). Examination of the bonding and abutments of these west and south walls indicates that originally they were bonded in the southwest corner, forming one continuous wall from the northwest corner to Room 20 in the southeast corner. This wall was originally of banded tuff construction. Erection of this wall, the main wall of Unit C, obviously commenced after construction of the south wall of Unit A, as evidenced by the end-to-face abutment. Three blocks of rooms are built against this long main wall, and for purposes of simplicity will be considered as parts of the large Unit C. Unit C-1 (Rooms 9 and 13) was constructed sometime after the south wall of Unit B and the main east wall of Unit C were complete. Unit C-2 (Rooms 15, 58, and 53) is built against C-1; these rooms are united by a bonded southwest corner (in Room 53) and parallel and continuous wall alignments.

Unit C-3 (Rooms 21, 34, 23, 17, 19, 26, and 20) contains several cross walls which were probably erected at a later date. Room 19 is a particularly good example of this
as demonstrated by abutment of the south wall against a sealed doorway which originally connected Room 19-30 with Room 26. Unit C-3 poses a slight problem in that it is impossible to determine whether or not its south wall was erected prior to or contemporaneously with its north wall, the main wall of Unit C. The abutment of the north wall of C-3 against the west wall of Room 20 seems to indicate that this room and the south wall of C-3 were built sometime before completion of the north wall. It seems reasonable to assume that the west wall of Room 20 never stood as a wing wall, since the courses of banded tuff in this wall and the south wall of said room coincide, indicating contemporaneous construction.

Room 20 utilizes the level of Floor II for the base level of the walls, and the floor level of the room.

A third construction unit which butts against Unit A is Unit D (Map 6). Unit D is believed to consist of Substructures 1 and 2, Room 27, Room Y, and probably Room 48 and the east and west walls (banded tuff) of the entryway. The wall abutments and bondings in this series of rooms are peculiarly non-informative; in fact, if this evidence alone is considered it is theoretically possible to consider that each of these rooms was built as a single unit. The conceptualization of these rooms as an entity erected during a specific period of building is arrived at by the utilization of information pertaining to floor levels, doorways, identical masonry techniques, and wall alignments, in conjunction with the meager information yielded by a study of abutments and bondings.
The ends of the east and west walls of Room 27 and Substructure 1 and 2 butt against the face of the south wall of Unit A. This fact is taken to be indicative of a later construction of Unit D. The northern portion of Unit D (Rooms 27, Substructures 1 and 2) appears to have been built as an entity if the following evidence is interpreted correctly. The courses of tuff blocks in the banded tuff west wall of Room 27 are identical in alignment and character with those in the south wall of Substructure 2. The level at which the bases of these walls rest is also identical, as is their relationship to Floors I, II, and III, within Substructure 2. The T-door in the common wall between Room 27 and Substructure 2 connects the two rooms which utilized the same floor level, Floor I, at the time the door was first used. These facts argue for the contemporaneous construction of Room 27 and Substructures 1 and 2.

It is interesting to note here that Floor I is the level associated with the large room in the vicinity of the later rooms, 35 and 39, and with the doorway in the south wall of these rooms (Unit A). The sealing of this doorway and the erection of the west wall of Substructure 1 against the seal do not indicate the abandonment of Floor I, since this level is utilized in the block of rooms just discussed --Room 27 and Substructure 1 and 2. Further evidence to support this view, that Floor I was the original floor of the northern rooms in Unit D, can be recounted. The bottom of
the T-door in the east wall of Substructure 2 is closer to
the level of Floor I, even though Floor II intercedes between
them, than is the bottom of the door in the north wall of
the communal area. Since Floor I is the only floor in Rooms
35 and 39, it must be associated with the doorway; it is
reasonable then to assume that the T-door between Room 27
and Substructure 2 is also associated with this floor level
since it stands in a closer spatial relationship to it. The
position of the ceremonial cache in Substructure 2, which
either rested on Floor I or between Floors I and II, indi-
cates usage of the room prior to abandonment of Floor II, and
probably prior to abandonment of Floor I also. That is,
the cache contained within the confines of Substructure 2
must be associated with this structure, and probably can be
associated with Floor I.

The basis for the contention that Substructure 1 was
built as an integral part of Unit D is found in the fact that
the banded tuff south wall of Substructure 1 rests on Floor
I, and forms the northern boundary against which Floor II
butts. The wall in question must have been in place during
the period in which Floor I was utilized and prior to con-
struction of Floor II. Floor II does not occur in Substruc-
ture 1.

Substructure 1 contained the only wall posthole, or
beam socket, to be found within the communal area (Plate IIa).
The hole was 1.5 m above Floor I in the north wall of the
room, and .30 m from the northeast corner of the room. It was .06 m in diameter and .04 m deep and was formed in a long tuff slab in the north wall. Although a low ceiling could have existed in Substructure 1, possibly extending to Substructure 2, the smallness of the hole, its closeness to the east wall, and its position, which suggests a north-south orientation for the beam preclude the conjecture that the hole once held a beam which supported the roof. Perhaps the pole held in this socket served in the same capacity as those described for the Keres pueblos: "Girls sweep the whitewashed rooms and gather the sleeping rugs from the floor to hang on the 'pole of the soft goods' which is the cupboard." (Underhill 1946: 99).

The question of the period in the life of the communal area in which the beam hole in Substructure 1 was made and used cannot be answered. It seems unlikely that the hole was made and used prior to construction of Substructure 1, but it could have been made any time after this room was built and before destruction of Great Kiva II.

Room Y is the next section of Unit D to merit discussion. Actually the existence of this room can only be postulated; evidence which indicates presence of such a room is slight and mainly circumstantial. Postulated Room Y is believed to have been located in the position later occupied by Room 24 and Substructure 2A. The room was larger than Substructures 1 and 2 which were occupied at the same time,
but compares favorably with Room 27 directly to the north in area. The long axis of Room Y runs east-west; if the room existed it would have been longer and narrower than any other occupied at the time Unit D was built.

In brief, the evidence for the belief in the existence of Room Y consists of three items. The main reason is that the west wall of Unit D (also the west wall of Substructures 1 and 2) continues south of the southern wall of Substructure 2 some 2.0 m (Plate XIVb). This wall appeared to have been torn out at its southern end at time of excavation. The south wall of the later rooms, 2A and 24, gave the same appearance. Projection of these walls demonstrates that, if the walls were ever completed, and end-to-face abutment would have existed. It is possible to speculate that the west wall of Unit D was no more than a wing wall originally; however additional evidence makes the case for an early room stronger.

The presence of a large ash area sealed below the hard packed floor of the later Room 24 southwest of the floor hearth seems to indicate that some sort of earlier use of the area had occurred. No floor levels (except Floor III) were found in the vicinity of Substructure 2A, in contrast to the well-defined low floor of Room 24 and Substructure 2. It appears from the lack of lower floors in Substructure 2A and the missing southwest wall corner that the structure was destroyed at some time prior to the laying of Floor III of Great Kiva II. This destruction must be the explanation
for the lack of concrete evidence of an earlier structure.

The two points discussed above—the extension of the west wall of Unit D, and the south wall of the later rooms, 2A and 24; and the ash area sealed under the lowest floor of Room 24—suggest an earlier occupation of some type. A consideration of masonry techniques, based on sequences of these techniques determined by abutment patterns and vertical stratigraphy, indicate that the area in question was indeed a room. The north wall of postulated Room Y was of banded tuff, and was formed by the south walls of Substructure 2 and Room 27 and the end of the common wall between these rooms. The west wall, the south wall, and the east wall of postulated Room Y are also built of banded tuff, apparently the type of technique associated with Units A and C, with the northern rooms of Unit D, and with the rest of Unit D (which has not yet been discussed). Abutments throughout the communal area demonstrate that banded tuff construction is earlier than all other types; they also indicate that spall rubble masonry consistently butts against the banded tuff, but does not butt against any other type of construction. This is the basis for the contention that the spall rubble west wall of Room 24, which divides postulated Room Y was built in a later construction period (to be further described in conjunction with the reconstruction of Great Kiva I) after completion and occupation (of some sort) of the banded tuff room. The evidence is not conclusive, but
I believe a logical basis is present for the postulate that a larger room existed prior to its division into Substructure 2A and Room 24, and that this room was an integral part of Unit D.

The suggestion that Unit D also includes Room 48 and the east and west walls of the entryway is based solely on the utilization of banded tuff construction technique in these structures, and the already discussed early use of this technique in the communal area. Banded tuff walls are stratigraphically earlier than Floor III of Great Kiva II; horizontal stratigraphy, in the nature of wall abutments, demonstrates the pre-existence of banded tuff walls to spall rubble, spalled block, and crude rubble walls. Room 48 and the east wall of the entryway butt against the long east-west running wall which later forms the south wall of Room 24 and Substructure 2A. The banded tuff east wall of postulated Room Y also butts against this long wall, and on the other end against the banded tuff corner of Room 27. If only this evidence is considered, the relationship of the rooms south of this long wall to those north of the wall is indefinite, the only conclusion possible being that the long wall existed prior to construction of Rooms Y and 48. If the west wall of Unit D is considered as extending to meet the end of the long wall, then, no matter which direction this abutment may have taken, the northern rooms of Unit D would incorporate the long wall as an integral part
of these structures. Its obvious incorporation as a part of the southern rooms (48 at least) in conjunction with the internal evidence of the early use of banded tuff masonry could indicate that the northern and southern sections were built during the same construction period. This is the basis for designating these rooms as part of Unit D.

A summary of the outlines of the plaza as just described shows that it was a four-sided structure, essentially, with an entrance on the east side. This entrance was 7.65 m wide, extending from the south wall of Room Y to the north wall of Room 20. The entrance opened onto a hallway, or entryway, by means of a right turn to the south. The position of this entryway is such that the plaza would have been secluded, and could validly be considered to have been "enclosed." Surrounding the plaza were at least 17 rooms, the majority of which are of banded tuff construction. No evidence exists that this structure was ever roofed; if it had been roofed, postholes should have been found under or adjacent to the later spall rubble wall designated as "P" on Map 2 and 3, and discussed in the next section as Unit E. The postholes which were found in this area (#16 and 17) are definitely later than Unit E. It seems highly improbable that the plaza area was ever roofed.

Since no overall floor level, floor features, or posthole pattern can be associated with this structure, the question arises as to whether or not the plaza ever existed as a
functioning institution in the community. The question is difficult to answer, particularly because the artifactual content of the surrounding rooms with 3 exceptions indicates a Canyon Creek phase occupation. However, the three exceptions occur in some of the latest rooms to be erected adjoining the plaza. Substructures 1 and 2, which were sealed over by the floor of Great Kiva II, and Room 24 contain Pinedale phase material; this discrepancy indicates several things, all of which will be discussed in greater detail later. The important fact for the interpretation of the plaza is that "time" elapsed from the construction of the plaza to the construction of Great Kiva II, so that use of the plaza by the community would have been temporally possible.

Evidence of floor levels in the eastern rooms (35-39, 27, 1, 2, and 20) contributes to the contention that the plaza was utilized, since they indicate occupation of the surrounding rooms prior to the construction of Floor III and Great Kiva II. However, since Unit D utilizes a lower floor (Floor I) than Room 20, Unit C-3, (Floor II), question arises as to which of these floor levels was utilized by the plaza. This problem cannot be solved definitely from the evidence at hand, although Floor II seems to be the only floor level found in the vicinity of the plaza entrance, indicating that if the plaza floor were reasonably level, Floor II would have extended into the plaza. This immediately points up the discrepancy between the floor levels utilized by Units
C and D; ultimately the relationship of these units is dependent upon the interpretation given the floor levels, and upon inductive analysis of the alignment of these units.

It is postulated that Unit C was constructed prior to Unit D. It is not possible to relate the two units by wall abutments or stratigraphy. Evidence against this hypothesis is found in the utilization by Room 20, the easternmost room of Unit C, of Floor II initially, while Unit D adjoining the plaza used Floor I initially. If the assumption is made that the same physical level was occupied at the same time over the communal area or even over the east side of this area, it is logical to believe that Unit D was constructed first, using Floor I, and that after construction of Unit C, using a higher level as its floor, this level (Floor II) was built in Substructure 2. However the assumption stated above is not always correct; in Point of Pines Ruin and in other prehistoric and historic pueblo villages throughout the Southwest, floor levels often vary from room to room, all of which are occupied at the same time. The possibility that this is the case in this situation should not be disregarded. The greater depth of the trash deposit which is dependent upon the sloping of the sterile subsoil in the southeast corner of the communal area may have had some bearing upon the level of floor utilized by Room 20.

Evidence which tends to support the hypothesis that Unit C was constructed prior to Unit D is based on the in-
terpretation of the position of Room 20, and on the presence of the ceremonial cache in Substructure 2. The lack of alignment of the west wall of Room 20 with the west wall of Unit D, and the slanting projection of the northern wall of this room into the communal area indicate that Room 20 was built prior to erection of Unit D, if the assumption is made that alignment of walls and rooms was generally the practice in this community. This assumption can be challenged, of course; however around the communal area there is a tendency toward alignment of rooms and walls, evidenced by Units A, C-1, C-2, and C-3, in which walls are parallel to others within the unit. The strongest evidence for the priority of Unit C is still circumstantial. The ceremonial cache in Substructure 2, which is believed to have rested on Floor I, is unexplainable if it is postulated that Unit D were erected first. No reason for the presence of the cache is obvious unless it can be associated with a structure in which ceremonial functions took place. Such a structure existed only when the plaza was formed; the plaza depended on erection of Units C and D; since the cache was on Floor I of Unit D, Unit C must have already been erected at the time the cache was utilized.

Admittedly the sequence of construction of Units C and D can be challenged. However the sequence itself is not vital to the postulate that such a plaza existed. Once both units were built, the architectural entity was formed. The cache and floor levels in adjoining rooms indicate usage of the area.
Great Kiva I

The area delineated by Great Kiva I and the construction units which formed this structure are shown in Map 7. Great Kiva I was formed by addition of two construction units to the plaza structure.

Construction units A, C, and D of the plaza structure were retained to form three and one-half sides of Great Kiva I, and portions of the entryway to this structure. Unit E was built to form the new "half-side." Unit E is composed of a spall rubble wall which runs generally north-south and is lined up with the west wall of Unit D. No walls, or evidence for them, were found running east-west and butting against either side of the single wall constituting Unit E. The northern end of this wall which stops some 3 meters south of Substructure 2A seems never to have continued farther north. It appears that this wall was built as a single unit, which would have created a visual and physical barrier between the inner structure and the apparently uninhabited area immediately to the east. In other words, the wall never formed part of a room or series of rooms. Unit E was built sometime after the erection of Units A, C, and D, as will be detailed below. It should be understood that at this time all of these earlier units, including the rooms designated by the term "Substructure", stood at least one story high.

Unit E butts against the face of the south wall of
the plaza, Unit C-3, and rests on Floor II, the same floor
level which extends under Rooms 20 and 14 (Plate XIII).
This floor level can be projected from the northern terminus
of Unit E (where excavators encountered several lines of de-
marcation in sandy material which showed different floor
levels), to Substructure 2 where it is again recorded, in
this instance as the middle floor in the room. The relation-
ship of these floor levels has been discussed in the section
dealing with the plaza. Unit E was erected after construc-
tion of the south wall of the plaza, and during or after con-
struction of Floor II.

Unit E can be placed sequentially after construction
of Unit D also on the basis of circumstantial evidence. The
earlier plaza was demarcated in the southeast by the jutting
walls of Room 20, shown previously to have been, beyond dis-
pute, an integral part of Unit C-3. If, when the decision
to build the wall forming Unit E was made, Substructures 1
and 2 and postulated Room Y had not yet been erected, it
would seem likely that Unit E would have been built as a
continuation of the west wall of Room 20. No purpose would
be served by building the wall of Unit E a meter west of
Room 20; a small unusable space would have been the only
result. The logical inference is that the west wall of
Unit D was in place at the time Unit E was constructed,
providing the reason for the position of Unit E. The prior
existence of Unit D may have provided part of the stimulus
Plate XIII. Southeast corner, Great Kiva II, looking east.  

a. Unit E, east wall of Great Kiva I in foreground, on Floor II. Floor III in background. 
b. After excavation, northwest corner of Room 20, and east walls of Great Kiva I and Great Kiva II.
for erection of Great Kiva I, since it allowed for a simple modification of the plaza area to form the early great kiva.

Other evidence besides position strengthens the postulate that Unit E was built after Unit D's completion. Unit E is constructed using a spall rubble masonry technique which differs from the banded tuff masonry of the plaza. Another spall rubble construction similar to that of Unit E is found in the west walls of Rooms 24 and 14, Unit F. All of these spall rubble walls butt against earlier banded tuff masonry (Map 2). Two of the walls, Unit E and Room 14, rest on Floor II; the west wall of Room 24 is set slightly into sterile soil. It seems probable that Unit E and F were erected in the same general building period, since all walls in these units are of spall rubble masonry, all butt against banded tuff walls, and in two instances, Room 14 and Unit E, the spall rubble walls are stratigraphically under crude rubble masonry.

The appearance and base level of the west wall of Room 24 may indicate that this was the first spall rubble wall to be built in the communal area. This wall, which divides postulated Room Y to form Substructure 2A and Room 24, butts against the three banded tuff walls of Room 27 and Substructure 2. At this end of the wall a crude attempt was made to match the style and levels of coursing in the earlier banded walls. However the workmanship in this section of the wall is sloppy (Plate IIb); the tuff slabs are poorly shaped and small compared with the earlier walls,
and the courses are out of alignment from the beginning of the attempt. The wall disintegrates into the simpler spall rubble type after about a meter of crude banding. The base level of the wall is identical with that of the banded tuff walls it butts against at the north end. On the south end this wall butts another banded tuff wall which rests on Floor II. From the abutments it is evident that the west wall of Room 24 was erected after completion of the north and south banded tuff cross walls. This wall is precisely lined up with the west wall of Room 14 to the south. On the basis of end-to-face abutments against banded tuff walls, alignment with the spall rubble west wall of Room 14, and basic similarity of masonry technique, it is believed that the west wall of Room 24 was erected during the period of Great Kiva I construction. The imitative quality of the northern end of this wall might indicate that the builder had some knowledge of banded tuff construction technique, and a slight desire to utilize this technique. Lack of follow-through with this technique may indicate lack of materials, or skill, or positive values for this construction. The attempted use of the banded tuff technique in the northern end of the wall may also indicate that not more than two generations elapsed between time of construction of the plaza and construction of Great Kiva I; this is only speculation.

In Room 14 the west and south walls butt against the earlier banded tuff walls of Room 48 and the long wall of
Unit D. The south wall in this room was the last to be erected; it was built before the final remodeling of the area to construct Great Kiva II, as the superposition of the crude rubble wall attests. While the south wall of Room 14 contained some tuff blocks on its south face, it rested on a rubble base, and presented a rubble face on the north side. This wall is considered to be a minor variation of the spall rubble technique. The position of the wall as the final addition to Room 14 as determined by wall abutments, and the relationship of the base of this wall to Floor II upon which it rests indicates that the wall was probably built during the general construction period in which Great Kiva I was erected. A possible explanation for the use of tuff block on the south side of this wall may be found in the fact that this wall formed a section of the northern end of the entryway into Great Kiva I. All other sections of this end of the entryway, and, in fact, most of the east and west walls of the entryway, were built of banded tuff. Possibly the builders of Great Kiva I tried to match this earlier masonry to unify the appearance of the entryway. Of course, if both types of construction were plastered over, functional, rather than aesthetic reasons may have been a factor.
Great Kiva I Entrance and Entryway:

The entrance to Great Kiva I was located between the northern terminus of Unit E and the southern end of the west wall of Unit D. Support of this idea is found in the post-hole pattern of Great Kiva II, as well as the wall and entryway plans. The entrance was slightly over 3.0 m wide, thus corresponding to the width of entrances in other Pueblo III and Pueblo IV great kivas (Danson 1957: 82). No stone paving was found in the entrance or entryway to Great Kiva I, nor is there evidence of a step or riser at the entrance.

The entryway to Great Kiva I apparently followed a zigzag pattern from the southeast enclosed plaza adjoining the east gate of the pueblo. A long passageway ran north from this plaza, took an abrupt turn to the west, another abrupt turn to the north, paralleling Unit E, and a final turn to the west through the entrance to Great Kiva I. Only spotty floor levels were found in the first two sections of this entryway below the well-defined floor (III) of Great Kiva II. In the last two sections of the entryway, that is, in the area east of Unit E and south of Substructure 2A, numerous fragmentary floor levels were observed between the floor of Great Kiva II and the lowermost floor found in the area, Floor II. Since the bases of the south wall of Substructure 2A, of the wall forming Unit E, and of the west wall of Room 14 all rest on Floor II, it is assumed that this floor level was used in conjunction with the entryway to
Great Kiva I, when the structure was in its early stages of use at least.

There is no direct evidence in the form of postholes or charred beams to support the contention that this entryway was roofed. However roofing would not have been a difficult procedure. Since the maximum width of the passage is only 3.5 m, the roof could have been entirely wall and beam supported. If a roof existed over the entryway, its height and relation to the roof of Great Kiva I will remain somewhat of a question.

Peripheral and Flanking Rooms:

The number of peripheral rooms which encircle Great Kiva I can not be exactly determined because it is impossible to date the various dividing walls which separate some of the original large banded tuff rooms. Probably 16 rooms adjoined Great Kiva I on the north, west, south, and part of the east side (39, 22, 18, 31, 9, 15, 58, 53, 21, 34, 23, 17, 19, 26, Substructures 1 and 2). Rooms 17 and 19 may have been larger at this time, although the spall rubble dividing walls indicate that these rooms were reduced in size in this period. No doorways opened into Great Kiva I from these rooms apparently, although since only the stubs of the walls of Substructures 1 and 2 remained at excavation, doorways could have existed once in these rooms. No evidence of such was found.
Substructure 2A can be considered as being either a peripheral room on the east side of Great Kiva I, or a room which flanked the entrance to the ceremonial structure. This room, as discussed in the plaza section, was evidently destroyed prior to or when Floor III was laid. No lower floors were found in this room, the southeast corner of the room was torn out, and an analysis of the pottery contained in this room below Floor III reveals extensive mixing of ceramic complexes. Since the wall dividing postulated Room Y into Room 24 and Substructure 2A is believed to have been built during the construction period of Great Kiva I, Substructure 2A is thought to have existed architecturally at this time. If the southeast corner of this room were never joined, the partitioned area could have functioned as a dressing room for participants in the ceremonies in Great Kiva I. More significantly, the room could have been used to excellent advantage for segregation of the aged and infirm and the women and children during certain portions of the ceremony, thus functioning as the platforms and raised keyhole sections in other regions may have done. A room located much as this with a window through which the segregated people may watch is recorded as an integral part of the rectangular great kiva at Jemez (Ellis 1952: 150).

The relationship of Floors I and II in Substructure 2 to the Floor II level believed to be the level utilized by the entryway to Great Kiva I cannot be determined. The
assumption can be made that since Floor II is the same physical level in both areas it was the one used during life of Great Kiva I. However the lower floor could have been used initially in conjunction with the early great kiva also. The speculations lead to a dead end; I feel the problem cannot be resolved.

The question of the existence of an earlier floor level within Great Kiva I itself poses another problem. No overall lower floor was found in the area, although traces of consolidated layers were encountered. These were too fragmentary to be recorded at the time. Because of the slope of the sterile to the east, it would have been impossible to continue the floor level of the entryway (Floor II) over Great Kiva I (see Map 2, section E-F); for this reason, and because no continuous levels were found below Floor III within the confines of Great Kiva I, it is believed that the floor of Great Kiva I was higher than Floor II. The floor within the structure could have been one of the layers found within .05-.10 m below Floor III, and considered during excavation and in this paper as a part of Floor III (see discussion in data section concerning floors.) If such a level were utilized, a stepped or ramped entrance from Great Kiva I down to the entryway floor would have been necessary. The fact that no definite levels were recorded immediately to the west of Room 14 in the vicinity of the entrance of Great Kiva I may indicate that either of these types of entrances
had existed and were destroyed during construction of Great Kiva II.

The Roof:

The roof of Great Kiva I was flat or slightly pitched, probably to the east. It was supported by thirteen posts set into sterile soil (Postholes 1 through 13). Upon these posts rested the primary beams of the roof. These beams ran north-south, and rested on the north and south walls of Great Kiva I for additional support. The secondary beams or stringers ran east-west and rested on the east and west walls of Great Kiva I, and on the primary north-south beams. Further layers in the roof construction can be conjectured only, as no roofing material was recorded. Mindeleff describes several techniques of roof construction in the Hopi and Zuñi areas which conform to the general pueblo roof style, a system of layers of beams, stringers, shakes (sometimes), and grass, placed at right angles to each other and plastered over on top with mud. (1891: 149). Possibly the roof of Great Kiva I was finished in a similar manner.

Dimensions and characteristics of the postholes are given in Table 3. Analysis of the postholes in the data section demonstrates that these thirteen holes are shaped differently and are larger, deeper, and more regularly spaced than the remaining holes (14, 15, 16, and 17), which were dug later when Great Kiva II was built. Originally the posts
in Great Kiva I were arranged in three rows of four holes each, the alignment of the holes being slightly more regular in a north-south (row) direction than in an east-west direction. This regularity, in conjunction with the closeness of the north and south holes in all rows to the north and south walls respectively is the basis for the belief that the main roof beams ran in a north-south direction. The holes next to the wall could then aid in supporting the weight of the beam and the roof by distributing the weight between the upright support and the adjacent wall. If the beams ran east-west, assuming that the somewhat irregular east-west alignment of the holes permitted this, the adjacent north and south walls would bear only the negligible weight of the ends of the secondary stringers, already supported completely by the parallel beams.

Posthole #3 is the odd hole in the series, being the fifth and central hole in Row A, the western row. Because of its odd position and its round shape in contrast to all other 12 holes, it is believed to have been dug after Great Kiva I was roofed. A possible explanation for the existence and placement of this hole follows. In this area Pithouse 2 lies under the west wall of the kiva and extends eastward so that Posthole 4 (immediately south of 3) rests partially in the soft fill in the eastern side of this pithouse, rather than in sterile soil (see Map 2, section E-F). Thus from the beginning of the roofing of Great Kiva I, Pithouse 2 must have caused a problem. Posthole 4 was filled with stones, as were
all the other postholes in Great Kiva I, in an effort to steady the roof support. Evidently the trash permitted the rock wedging to slip somewhat, so that Post 4 was not too steady, thus influencing the stability of the main beam and of the roof itself in this section. Post 3, set just adjacent to the cut into sterile caused by Pithouse 2, would have served to stabilize the main beam. The placement of Post 3 may also have been an early attempt to rectify other problems caused by Pithouse 2. The fact that the west wall of the communal area was torn out and rebuilt at a later date indicates that the deep trash under the original wall, in Pithouse 2, combined with the pressure from the roof, caused the wall to sag and perhaps eventually to fall. It appears likely that Post 3 was put in place when the original banded tuff west wall was still in position, but sagging, so that the post could give imperative support to the main roof beam, in lieu of the steadyness of Post 4, and could also relieve the load and shifting of the roof on the sagging wall.

The entrance to Great Kiva I, between the opposing ends of the west wall of Unit D and the wall of Unit E, was probably roofed with the aid of a wooden lintel which paralleled the primary roof beams of the kiva, and provided support for the secondary east-west stringers.

If the entryway and the rooms along the east side of Great Kiva I were roofed, these roofs could have been at a lower level than the great kiva roof, providing the primary
beams in the room roofs ran north-south. These beams could then have supported secondary east-west stringers which fitted against the higher east wall of Great Kiva I. Such an interpretation does not take into account the evidence which indicates that the original roofs of Substructures 1, 2, and 2A became part of the roof of Great Kiva II, when it was constructed later. Assuming that the roof of Great Kiva II was of 2-story height, and that Great Kiva II used the original roofs of the substructure rooms (to be discussed later), it seems that the substructure rooms and Great Kiva I would have to have been 2-story structures also. If Great Kiva I had had only a 1-story roof over its 220 square meter area, the room would have been extremely dark, hard to ventilate, and somewhat uncomfortable and uninviting in appearance.

Floor Features:

If any floor features existed in Great Kiva I, they were either obliterated by the builders and users of Great Kiva II, or were incorporated and re-used so that their identification is in doubt. The rectangular stone-lined firebox discussed above is not considered to be associated with Great Kiva I solely on the basis of its off-center location in relation to this structure. This logic is not infallible; it is entirely possible that the firebox was built as a part of Great Kiva I and as the community expanded, necessitating construction of the larger Great Kiva II, the hearth expanded also, so that it had
outgrown the bounds of the small firebox when Great Kiva II was used.

Summary of Great Kiva I:

Great Kiva I was constructed by the addition of two units, E and F, to the existing plaza. Both of these units are composed of spall rubble masonry. The units occur stratigraphically after banded tuff masonry construction and under crude rubble construction. The entrance was centrally located in the east side, and lead into a zigzag entryway between Unit E, the west and south walls of Room 14, and the north wall of Room 20. The entryway lead into the enclosed plaza connected with the east gate of the pueblo. The level of the entryway floor is believed to have been lower than the level of the floor of Great Kiva I, initially at least, suggesting the possible presence of a stepped or ramped entrance.

Great Kiva I was roofed with a post and beam type structure, which originally utilized 12 posts, regularly spaced in 3 rows, as the main upright supports. Later, as a result of slumping of the west wall and tipping of one of the posts, both of which situations arose because of the deep trash fill in Pithouse 2, the thirteenth upright post was added (#3). Roof beams ran north-south, with the secondary poles running at right angles. The roof of Great Kiva I was probably of second-story height as was that of the
adjoining entryway, if it were roofed. No floor features can be definitely associated with Great Kiva I although any of those in Great Kiva II could have been utilized, according to the recorded evidence. It seems highly possible that the firebox may be associated with Great Kiva I.
Great Kiva II

The final structure to occupy the communal area was Great Kiva II (Map 8, Plate 1, Frontispiece). The form of this building was attained after the destruction of certain parts of Units C, D, E, and F, and the erection of Units G and H.

In Unit C a section of the west wall of Great Kiva I, against which Unit C-2 butted, was ripped out (or fell), and was replaced by the wide spalled block-rubble filled wall designated Unit G. Unit G incorporated not only the basal courses of the original banded tuff wall, but also the remaining north and south sections of the older wall, even to the extent of utilizing the original bonded corner. Evidently, then, the motive to remodel in this instance was not a desire to change the position or alignment of the west wall, or the size or shape of the communal area. The only explanations for the replacement of the original wall by one almost three times as thick and built in the same position are 1) that for some reason the original wall was not functioning properly—it collapsed or slumped east or west, or sagged over the trashy area above Pithouse 2; or 2) it was not judged sturdy enough to bear the weight of the extended roof of Great Kiva II, or of second story rooms which may have been built over Rooms 15, 58, 53, and 21; or 3) the original wall was not aesthetically pleasing. The first two reasons in combination seem to offer the most plausible explanations, and are
favored by evidence provided by Postholes 3 and 4 (discussed previously.)

In Room 15 the new widened wall made it impossible to use the double mealng bins in the southeast corner of the room. In Room 21 the alteration resulted in a peculiar offset in the common wall (Plate XIVa). In Room 58, sometime after the new wall was finished, further shortening occurred when a narrow wall (.25 m) of rubble (possible only used as a veneering technique in this instance, similar to use in the southeast corner of Great Kiva II) was thrown up against the west face of the new wall.

The base of Unit G rests on sterile, which along this side of the structure is only slightly below Floor III, except when the wall crosses the trash-filled depression of Pithouse 2.

The crude rubble wall in the southeast corner of Great Kiva II is designated Unit H. The assignment of alphabetical terms to Units G and H does not here imply that the sequence of erection of these units is in the same relationship. I know of no way to relate these units sequentially; all that can be said is that they were both built during construction of Great Kiva II, assuming the sequence of construction of Postholes 4 and 3 and Unit G, as discussed in the section on Great Kiva I, is correct.

Unit H was built coincident with the destruction of the south and west walls of Room 14. The northwest corner
Plate XIV. a. Room 21, looking east at Unit G, Great Kiva II west wall. Note original wall to right and bonded corner between old and new walls. b. Posthole 15, left, west wall of Unit D, and Pithouse 3, partially excavated. South wall of Substructure 2 immediately north of posthole.
of Room 20 was destroyed during the process of the erection of the wide wall also (Plate XVa). The rubble veneer on the north face of the south wall of Great Kiva II, in the southeast corner, was applied to this wall after destruction of Unit E (Plate XVb). This is determined by the fact that the veneer, above Floor III, crosses the area which the south end of Unit E would have butted against. Below Floor III, the veneer butts against both faces of the wall of Unit E, which stands to a height just below Floor III, and extends south to butt against the banded tuff wall. The position of this veneer at time of excavation may indicate that the space between the veneer and the earlier banded tuff south wall was filled at one time; however it may also indicate that the veneer and the banded tuff wall both slumped in opposite directions, causing the wide gap between them. The latter explanation seems more plausible, since no indications that the area was filled intentionally are recorded in the field notes.

The destruction of the rooms along the east side of Great Kiva I (Substructures 1, 2, and 2A) and of Unit E to a height below Floor III, occurred after the excavation of Postholes 14, 15, 16, and 17, and the erection of the corresponding posts was accomplished. Since the evidence for this statement is derived chiefly from the postholes, they will be discussed next.
Plate XV. South wall, Great Kiva II. a. Abutment of Unit H in southeast corner, Great Kiva II, against west wall of Room 20. Stub in foreground stands below Floor III. b. Original banded tuff south wall of Great Kiva I, background. Unit E wall stub butts at right angles against this wall. Rubble veneer, center, applied after destruction of Unit E, below Floor III.
The Roof:

The roof of Great Kiva II was the same roof utilized and constructed for Great Kiva I, the row of rooms along its eastern side, and the associated entryway. Therefore the roof of Great Kiva II was also flat or slightly pitched to the east. However four new posts were added, making a total of 17 posts which supported the roof of the last great kiva. These posts were added along the east side (14, 15, 16, 17).

Dimensions and characteristics of the postholes are given in Table 3. Analysis of the postholes in the data section indicate that these four holes are shaped differently from 12 of the 13 earlier holes, that three of the holes are smaller in diameter than any of the earlier holes, and that the two excavated holes in this row are much shallower than any of the other holes. These differences, when considered in conjunction with the irregular placement of Postholes 16 and 17, and the contiguous relationship each of the holes has with certain of the substructure walls, indicate that the holes were not made at the same time or by the same individuals (probably) as those who dug the first 13 holes.

Positioning of the four posts so close to the walls can hardly be accidental; the adjacent walls might have provided additional support for the shallow and small holes, but if this were the sole reason for their placement thus, why was Posthole 15 not dug in the northwest corner of Substructure 2A?
The evidence discussed above can best be explained by the suggested reconstruction presented in the next few pages. The holes were dug and the posts set in place before the west wall of Unit D and the wall of Unit E were destroyed. At this time the roofs of rooms 1, 2, and 2A and the Great Kiva I entryway were in place at the second story level. In order to maneuver the posts into position, sections of the south walls of Substructure 1 and Substructure 2A had to be removed. The middle portion of the south wall in Substructure 1 was torn out, leaving a sturdy stub in the southwest corner of the room to serve as additional support for post 14. The southwest corner of Substructure 2A was removed, so that post 15 could be carried into this room, and erected as detailed below. Neither of the removed wall sections supported the roof, the beams of which ran east-west and rested on the east and west walls of the structures.

South of the entrance to Great Kiva I the central section of the wall of Unit E was removed to allow for the placement of Posthole and Post 17. Post 16, larger than the others in this row if diameter of hole is a valid criteria, was placed so that the hole nearly undercut the north end of the wall of Unit E. With the posts in position, two beams, each approximately 6.5 m long, were ready to be slipped into position atop the upright posts. Before this could be accomplished in the northern half, the short cross wall between Substructure 2 and 2A had to be torn out on the west end.
When this was done the northern beam was positioned so that its northern end rested on top of the northern wall of Substructure 1, and its southern end projected to the torn out corner of Substructure 2A. This beam was pushed into place from the east side of the uprights, which were cut short enough so that the beams rested just under the western ends of the room stringers. The room stringers, having been erected during construction of the plaza, were overlain by the east-west stringers of Great Kiva I. Some overlapping of these layers of stringers must have occurred because of the narrowness of the wall upon which they rested. By placing the post as far west as possible, both sets of stringers were firmly supported.

In the southern half of Great Kiva I the same process was going on, without the complication of the crosswalls. Unit H had been constructed directly under a wooden lintel which had rested on the southwest corner of Room 14 and the north wall of Room 20 when the entryway to Great Kiva I was in use. Unit H bore the eastern ends of the stringers which formerly had rested on this lintel. The western ends of these stringers rested on Unit E, and were either alternated with or overlain by the stringers within Great Kiva I. After the upright posts, 16 and 17, were put in place, the north-south beam was placed on top and under the ends of both sets of stringers. At this point the transfer of the weight of the roof from the wall supports to the post supports was almost complete.
All that remained was the jockeying of the northern end of the wooden lintel which extended across the entrance to Great Kiva I from the northern end of Unit E to the south-western corner of Substructure 2A. Post 16 had already been slipped in place directly under the south end of the lintel. The north end of the lintel was shifted from the top of the wall east to rest on top of the end of the newly-erected north-south beam. When Unit H was constructed, the old lintel pole which had formerly extended across the entryway between Rooms 14 and 20, was pushed north as the top course of the west wall of Room 14 was removed, so that it could support the room roof and the stringers which rested at the west end on the entrance lintel. With the beam and post support of the entrance lintel arranged, all of the Substructure walls could be torn out to a level below Floor III. The floor was extended across these wall tops and into Room 14 above these torn out walls to form the new addition to the entryway.

The above description is offered as a suggestion to explain the peculiarities of the eastern row of postholes, and the sequence of construction and destruction along the east side of Great Kiva II. This explanation also answers several other questions. Posthole 16, located as it is directly in front of the entrance to Great Kiva II, seems to be placed so that it would interfere with entry into the
structure by large groups of people. The northern end of the wall of Unit E could have been removed completely so that the post could have been set southward in line with the end of Unit H and the entrance. The fact that this was not done is indicative that it could not be done, because of the desire to utilize the superstructure of Great Kiva I. The obvious explanation is that a lintel rested on the end of Unit E, and supported stringers which extended west to the long beam running between Posts 11 and 12 (and above the east floor trench, if this feature were part of Great Kiva I.) Collapse of the heavy roof in even a small area would have been disastrous to the post and beam arrangement probably; therefore appearance and convenience were forgotten and Post 16 was placed in front of the new entrance and directly under the lintel of the old entrance.

Posthole 15 is distinguished from all other postholes in Great Kiva II by the presence of two tuff slabs in the bottom of the hole (Plate Vd, XIVb). The hole itself is quite shallow, penetration into the sterile soil being only .25 m. The slabs decreased this depth considerably. It seems unreasonable to suppose these stones served to keep Post 15 from sinking into the compact conglomerate on which they rested—particularly when no other posts in the structure were set on such stones. In order to utilize the roofs of Great Kiva I and the Substructure rooms, Post 15 was put in place while most of the walls of Substructure 2A were
still standing, as mentioned above. In order to get the post into Room 2A, under the roof, and standing upright in the hole, the post would have had to be short, much shorter than those used in Great Kiva I. When the short post was finally upright in the shallow hole, the north-south beam was pushed on top of it. Of course, if the post were forked, and if Post 14 were also forked, the north-south beam could have been lashed into the crotch, and the three logs erected as a unit. However the beam was positioned, it had to fit under the roof stringers already in place, but it had to fit snugly against them so the roof wouldn't sag when the wall was removed. Post 15 was too short to push the beam tightly against the stringers, so the two flat slabs were slipped under the base of the post to jack it up for a firm fit.

The fill removed from the four postholes, and additional trash material which had to be removed from Substructures 1 and 2A in order to maneuver the posts may have been dumped into Room 24. Apparently Room 24 was abandoned prior to construction of Great Kiva II. This is indicated by the sherd content of the room which is definitely Pinedale phase, and also by the presence of several overall consolidated layers of charcoal and adobe, which occurred in the room at a level slightly below that of Floor III of Great Kiva II. Above this level in Room 24, the room was filled with trash containing paint fragments, charcoal, and a few sherds (in proportion to the volume of earth removed.) The pottery
above this level to the surface is also chiefly Pinedale Polychrome.

One important aspect of the roof of Great Kiva II has not yet been discussed. The height of the roof of this structure, and also of Great Kiva I, is thought to have been the equivalent of a 2-story building. As pointed out in the discussion of the height of the roof over Great Kiva I, a 1-story roof would have greatly decreased the amount of light able to enter the structure through the entrance, and would have hindered the ventilation also. If fires and torches had to be kept burning day and night to provide enough light for activities, the ventilation problem might be crucial. With only a 1-story height opening at the entrance and a central opening in the roof above the hearth area the danger of carbon monoxide poisoning could become a serious menace. A 2-story roof over this large an area would seem to be a necessity from this viewpoint at least.

The large and deep postholes in Great Kiva I indicate that the posts in them were large and cut longer than the length necessary to reach from floor to ceiling. The deep-seating of these posts and their size indicate that the weight of the roof was considerable.

Montgomery (1949: 241), in his study of the Franciscan church at Awatovi, estimated that a clay roof approximately 18 inches thick would weight about 162 pounds per square foot. He considers that the secondary stringers and the yucca matting
used across them weigh another 3 pounds per square foot. If these figures are applied to Great Kiva II at Point of Pines Ruin the roof would have weighed 40,400 pound, approximately, not considering the weight of the main beams which rested on the upright posts. It seems probable, in view of Mindeleff's (1891: 120, 149-150) discussion of roofing methods in Hopi and Zuñi pueblos, that the clay layer over the roof of Great Kiva II would not have been 18 inches thick; even if it were thinner, the roof would have been a heavy one to support. A 1-story structure with a maximum height of 8 feet (2.44 m) would have required the longest upright post to be only 12 feet (3.66 m) long; since the posts had to be of large girth, this would create a problem in that the large trees necessary would have had to be shortened considerably. If the uprights were forked, a condition which would seem almost imperative to facilitate handling of the two ends of the adjoining spans, only the portion of the tree nearest to the branching section could be utilized, which would seriously limit the diameter at the base of the short post. This is highly speculative reasoning; however I believe it illustrates another obstacle to the conception of a 1-story roof for either of the great kivas.

The most obvious evidence for the existence of a second story roof over the ceremonial structures is found in two rooms adjacent to Great Kiva II. Room 16, located im-
mediately northwest of the northwest corner of the kiva, contained a fallen second story hearth, half of which was found intact high in the fill above the floor (Plate XVIa). This room also had a tumbled section of wall which had fallen and was resting against the east wall of the room when it was excavated. The hearth rested on a layer of adobe which was at a steep angle in the fill and was not continuous.

In Room 27, on the east side of Great Kiva II and joining the northeast corner, another fallen second-story hearth was found (Plate XVIb). This hearth was intact except that the easternmost hearth stone had fallen into the hearth area. The photograph illustrates the fact that this high firebox was almost directly over the firebox on the lower floor of the room. Under this second story hearth, a layer of adobe or sterile soil was found in horizontal alignment with the bottom of the firebox.

In Room 24, directly south of 27 and adjoining the east wall of Great Kiva II and the north wall of the entryway to Great Kiva II, a section of fallen wall was found. This section, found in a horizontal position with the banding still intact, was located next to the south wall of the room. This wall is recorded as standing approximately 1.65 m above the floor of the room when excavated; the length of the fallen section is not recorded. The height of this wall is not known then, although it was probably not standing more than 2.0 m high by the time it fell. This statement results from
Plate XVI. Second-story hearths. a. Fallen hearth, Room 16, resting on adobe layer. b. Fallen hearth, Room 27, located above hearth of lower room floor. Fallen hearth rests on adobe layer. Great Kiva II east wall to right.
an analysis of the heights of room walls surrounding the
great kiva which reveals that even in the rooms known to
have been second story structures—Rooms 16 and 27—walls
did not stand higher than 2.0 m above the floor. In many
cases the height of the mound above the tops of the rooms
adds considerably to the impression of existence of a second-
story; in one instance the mound reached a height of 3.4 m
above the floor level (in the vicinity of Rooms 35 and 43).

The height of the mound above the walls of Great Kiva
II also indicates that higher structures had once occupied
the area. The fact that the fill in Great Kiva II was
mounded around the perimeter of the structure and sloped
steeply downward to the center of the structure, being only
.20 m deep above the central hearth area when the kiva was
cleared, indicates that debris from the high walls was re-
sponsible for the contour. The nature of the trash has al-
ready been discussed in the data section. Heindl (1955) de-
monstrates that trash such as this, which he calls "clean,"
must be the result of wall fall.

Estimates can be made concerning the maximum height
possible for the roof of the ceremonial structures. If it
be accepted that the central posts and the marginal posts in
stepped holes were raised toward the stepped-down side of
the posthole (as discussed in the data section), then it is
possible to suggest that the distance from a central posthole
to the wall behind it would limit the length of the post.
Since the shortest post would determine the height of the roof, the minimum distance between the posthole and the wall should be the determinant of roof height. An additional factor may be considered. The post was carried laboriously through the zigzag entryway and jockeyed into position between the wall and its hole; it is possible that during this maneuver, and prior to the dropping of the post end into the hole, the top end of the post was elevated the height of a man and dropped to the ground at the hole end, becoming, so to speak, the hypotenuse of a triangle formed by the kiva floor and the wall. This procedure would have allowed the post to be a little longer than the straight distance between the wall and the hole.

The minimum distance from the far edge of a central posthole (#12) to the south wall of Great Kiva II is 5.12 m. All other central holes are approximately 5.75 m from the associated walls. Since Posthole 12 is 1.18 m deep, the top of the post would have been 3.94 m above Floor III of Great Kiva II. The additional diameters of the cross beams and secondary stringers would probably raise the ceiling height of the great kiva roof to approximately 4.25 m (13.96 feet). The roof might have been a little higher, if allowance is made for additional length of the post gained by maneuvering it prior to erection. The figure given above then is the approximate maximum height of the roof of Great Kiva II; if Great Kiva I used Floor III also, as discussed previously,
the same figure would be applicable to the earlier structure.

The evidence and hypotheses marshalled above are not conclusive in their determination of the height of the roof of Great Kiva II. However they seem highly indicative of a second story height for this structure, and some, if not all, of the surrounding rooms. If this assumption is correct, the same height would be applicable to Great Kiva I.

Room X:

Room X, the small partitioned area built against the east wall of Great Kiva II in the northeast quarter of the structure, has been described in detail in the data section. Because of the fact that when excavated the west wall of this structure stood only one course high above Floor III, it is impossible to ascribe definitely any secretive functions to the enclosure. It is of course possible that a brush screen or a blanket or mat could have been used along this west side to provide privacy; it is equally as possible that originally the west wall of Room X stood much higher and was torn down by the users of Great Kiva II or by the later inhabitants of the Point of Pines phase room clusters.

The south wall of this room, originally the eastern section of the south wall of Substructure 2, stood to a height of .50 m above Floor III at time of excavation, so that concealment in the southeast corner of Room X of small objects might have been possible. Another reason for the fact that
this south wall was utilized and permitted to extend above Floor III may be suggested by the beam socket in the north wall of Great Kiva II. This socket, described in the plaza section, may well have been made at the time Great Kiva II was constructed, or it may have been made as early as the period of the plaza construction. Whenever it was cut into the building stone, the socket and pole in it could have been used in conjunction with Room X and Great Kiva II. The pole could have extended to the south wall of Room X; the socket was approximately .75 m above Floor III so that it is entirely possible that the pole could have been supported on the south by the wall of Room X, which would have needed to be only .25 m higher than found when it was excavated. Blankets, hides, or mats draped over this pole would have provided an excellent screen, which would not necessarily have had to be on .30 m west of the east wall of the room, as the socket hole is—the pole could have been set at an angle so that it rested more nearly in the southwest corner of Room X, than in the southeast.

There is another possibility to explain the existence of this partitioned area. It could have served as a shield for a small hatchway entrance into Great Kiva II. Consideration of the origin of Room X recalls the fact that during the life of Great Kiva I, a larger room enclosed the area in which Room X later was built. Substructure 2 had been postulated as being a second story height structure, the top roof of
which was saved and incorporated when Great Kiva II was built. If the reconstruction of the roofing methods and the height of the roof of Great Kiva I, Great Kiva II, and Room 27 to the east is correct, the implication is that Substructure 2 was a 2-story apartment with a ground floor room, the floor of which was somewhat below the level of the floors of Great Kiva I and II, and with an upper story room corresponding generally with the upper story in Room 27. Such a situation would mean that when the long north-south beam was placed in position on top of Posts 14 and 15, it supported the ceiling beams of the first story of Substructures 1 and 2 so that a second story room rested on this beam. In effect then a gallery type structure would be created in the northeast corner of Great Kiva II, with Posts 14 and 15 supporting a large overhanging upper room, under which, in the southeast corner, Room X partitioned off the hatchway ladder leading up to the floor of the upper room. Such an arrangement would certainly facilitate the miraculous appearances of any number of mythical or magical beings. Unfortunately, the mechanics of the construction become extremely nebulous and difficult to interpret in the vicinity of the entrances to Great Kivas I and II, and the entryways to both structures. It would seem more likely, since there is no precedent (which I am aware of at least) for overhanging post-supported second story rooms bordering a ceremonial structure, and since the mechanics are quite complicated, that the first story ceiling was destroyed so that
Posts 14 and 15 could directly support the top roof. If this were the case, and it really seems much more plausible to me, it is doubtful if Room X would have been the receiving room for a ladder reaching to the second story roof.

Great Kiva II Entrance and Entryway:

The entrance and entryway to Great Kiva II have been discussed in the data section and in relation to the roofing procedure for the structure. Little more can be added here. The zigzag plan of the entryway would have served two ways primarily. As a matter of comfort for the spectators and performers and as a physical barrier to the elements, the entryway would have helped to maintain heat within the building, would have reduced drafts to some extent, and would have prevented flooding of the structure by shunting off the rains into the enclosed patio which presumably drained through the east gate of the pueblo. The passageway would have also served as a visual and auditory barrier, permitting dance groups or visiting kachinas privacy prior to their entrance into the ceremonial area.

This speculation raises an important point which up to now has not been mentioned. It seems highly probable that a large centrally located hatchway entrance existed in the roof of Great Kiva II. No empirical evidence for this hatchway was recovered during excavation; however the existence of the central hearth must have required a smokehole above it,
if the kiva were to be habitable. Such smokeholes traditionally function in connection with a roof entry. Mindeleff (1891: 123, 125, 127, 205-207) discusses the Hopi, Zuñi, and Acoma varieties of roof openings in the small rectangular kivas in these areas, all of which combine the smokehole with the ladder entrance. Many of the modern great kivas in the Rio Grande pueblos contain roof hatchways used in conjunction with interior ladders, and often functioning also as the smokehole. The instances of occurrence of this trait in prehistoric great kivas are relatively few, probably because of the difficulty of determining definitely the presence of an entering ladder, in lieu of direct evidence provided by the presence of a roof. Although Great Kiva II had an impressive ground floor entrance system, it is still possible that the roof hatchway would have been desirable to provide a means of exit for the hearth smoke, and to allow fulfillment of certain ritualistic procedures.

Floor Features of Great Kiva II:

The central hearth and the four floor trenches which radiated toward the cardinal directions are the only floor features within Great Kiva II. Details of these features at time of excavation have been presented in the data section.

The appearance of the hearth during the lifetime of Great Kiva II cannot have been greatly different from its appearance when excavated. It is essentially a shallow ba-
sin with a bottom lined with spall-size stones in a loose and random arrangement. No great quantity of ash or burned material was found in the basin, although it was evident from the burned character of the stones and surrounding floor area that fires had been built on the spot.

Reconstruction of the appearance of the floor trenches presents a knotty problem. No other features similar to these trenches have been reported in the southwest, either from prehistoric or modern pueblos or pithouses, great kivas, or little kivas. For this reason ascription of specific form or function to these trenches is difficult. Many suggestions have been made as to the use of these trenches. These will be discussed below.

Because of the location of the trenches near the hearth, one of the most obvious explanations to be offered is that they functioned as ventilators, bringing fresh air into the hearth area. This explanation cannot be entertained seriously since the ends of the channels seem to have opened under Floor III into a series of troughs in three instances. In the east trench the end of the channel is closed off below the slab lining, since no troughs or deep pits are associated with this trench. None of the trenches extended greatly beyond the confines of the seven central posts; the east trench, nearest the entrance to Great Kiva II where the supply of air would have been the freshest and coolest, ends abruptly in the trash only a short distance from the hearth area. The
inner ends of the channels (those nearest the hearth) do not connect with the hearth area in any way which might indicate that air flowing through the ducts could reach or influence the fire. It seems impossible that the trenches could have functioned as ventilators for the reasons listed above.

Many of the same reasons can be applied to the explanation of the trenches as "heating units." While it is true that the outer ends of these trenches (at least the north, west, and south features) if overlain with boards or mats in the trough sections, could have distributed heat, the inner ends of the channels could not very well have collected the heat. Three of the trenches—the north, west, and east ones—had absolutely no connection with the basin or firebox in the hearth area. The south trench might have been connected although if so the joint was small and very shallow (Plate X). But the fact that hot air rises would seem to provide an answer to this hypothesis. Unless a strong draft were created to pull the hot air from the fireplace through the south trench, hot air would have risen toward the ceiling and smokehole. Because of the peculiarities of the inner and outer ends of the trenches, it is impossible to believe they could function as heat distributors, either. A combination-function as a "heating and ventilating unit" or a "re-circulating heater" seems even less plausible an explanation.

Another proposed explanation is that the trenches served as drains. It has already been demonstrated that the
trenches lead nowhere, and connect with nothing. It might have been possible for water to have collected in the trenches, and all their associated features, if some careless custodian had left the hatchway cover off during the rainy season; however any water in the trenches would have had to sink into the ground below in order to drain away. It is difficult to imagine that such an elaborate mechanism would have been built solely for this purpose.

Are there other functions pertaining to the physical comfort of the spectators which these trenches might fulfill? None come to my mind, nor have any more been suggested.

Then the explanation of the trenches would seem to be the old stand-by—"ceremonial." A variety of grooves, pits, tunnels, vaults, and postholes have been recorded in prehistoric great kivas—the majority of these have been considered to pertain to ceremonial usage. Justification for this explanation can be found in a number of ethnological accounts describing the construction or utilization of somewhat similar features. The only lengthily ethnological account pertaining specifically to features in great kivas is the description of Jemez kiva magic (Ellis 1952). In it Ellis describes the preparations for, and the ceremony of rededication of, the two rectangular great kivas at Jemez pueblo. Unfortunately for our interests, no trenches or similar excavations were used in this ceremony. However certain ideas are presented which may be applicable to interpretation of specific features of the trenches.
Ellis describes the necessity of shielding the entry of supernaturals from the spectators (1952:156). This may be an explanation for the postholes which occur at the outer ends of each trench. Such postholes could have supported blankets, mats, or even small evergreens, forming a visual barrier on all four sides of the central ceremonial area in the middle of which a roof entry may have been located. However, if the barrier were actually to prohibit observation of a supernatural's entrance, it seems peculiar that the postholes are confined exclusively to the immediate ends of the trenches. The regularity of their position in relation to the troughs found in three of the trenches seems to me to indicate that, while the posts may have supported barriers of brush, or other types, the barriers were designed to function in relation to activity concerning the trenches themselves. The poles could also have supported a jacal-type altar; no other evidence of such an altar was found. The most obvious explanation is that of a barrier.

The troughs in the north, west, and south trenches may have housed half or whole logs or peeled beams which served as loom anchors. No evidence of logs or log impressions were found in any of the troughs, the west ones of which would appear to be the only ones long enough for the traditional Pueblo loom. Loom holes or anchors are not a feature commonly associated with great Kivas; neither Reiter (1946: Table II) nor Wheat (1955: 57) record this trait in their
studies of Anasazi and Mogollon great kivas respectively. Therefore this explanation does not seem too valid. Placed in these troughs could also have served as support for the barriers; in fact the troughs themselves may have supported small trees, or wooden slats in an upright position.

The semi-circular subfloor rock alignments in west and south trenches rested above parts of the troughs. This might indicate that the troughs were filled when stones were put in position. The rocks apparently rest on a thin layer of trash above the troughs, but speculation as to the exact relationship cannot be answered. It seems the position of rocks above Floor III in the vicinity; subfloor semi-circles that these one-course walls may have at one time stood higher; not enough rock was present on floor to justify a height above two courses, the top of which would have rested approximately on Floor III. Superimposed position of these rock alignments might indicate a purposeful placement also. The rocks could have supported planks laid across them so that the ends of these rested on the wings of the semi-circle. A space would have existed between the planks and the bottoms of the troughs, some of which extended beyond the wings of the walls, would have produced a wide variety of pitch as which could be utilized by dancing or stomping in different rhythms.
places over the platform. In the south trench the location of the deep pit, set into a shallower oval basin, would have been directly under such a plank platform set on the subfloor rocks. This trench fits the hypothesis that it could have served as a mammoth and elaborate foot drum, because the subfloor rocks and the deep pit and some of the troughs were definitely open to, or connected with the long slab-covered channel. This would have permitted the channel to act as a resonating chamber for the sounds produced by percussion on the wooden platform over the deep pit and the northern trough. And what a drum it would have made! If all four of the trenches were used at the same time in this manner the noise would have been deafening—and somewhat frightening if it heralded the approach of a powerful deity.

The west trench could have been utilized in the above manner, even though the deep pit is set inward from the rock alignment. A plank could easily have been placed directly over this pit, with ends resting on Floor III, or slightly below it, or the planks could have bridged the gap between the stone alignment and the slabs over the channel, which method would have helped to direct the sound waves into the channel. Unfortunately, because the rock alignment had collapsed slightly, and because of the strangeness of the feature, it is impossible to say from the field notes whether or not an opening had existed in the rock alignment in line with the end of the channel. If such an opening existed,
connecting the outer troughs with the channel, the percussive possibilities would have equalled those of the south trench.

It is easy to interpret the north trench in similar manner, even though it is somewhat smaller. It contains all the features present in the west and south trenches, except for the slabs over the channel and the questionable existence of the two outer troughs, and the lack of a subfloor stone alignment. Nevertheless, planks placed directly on the ground, resting along the margins of the excavation, would have covered the deep pit and the trough(s). It is entirely possible that the planks could have extended over the channel in this trench since no evidence of stone slabs was found. Such an arrangement would have increased the stomping area in this trench.

The purpose of the upright slab and the two slabs in the end of the channel cannot be explained readily, no matter what interpretation is given the trenches. If the north trench were used as a foot drum, planks might have rested on these stones within the margins of the channel rather than extending beyond them—a sound still could have been produced if an air space were left between the planks and the bottom of the channel. Before proceeding to the east trench, a further word on the deep pits is warranted.

The deep pits in the north and south trenches are identical in placement. Both are set in the center of shallower oval basins immediately adjacent to the ends of the channels and nearly centered on the midline of the channels.
The shape of the complex of deep pit within the basin is startlingly reminiscent of certain foot drums recorded in small kivas at Point of Pines in the Point of Pines phase (Smiley 1952: Fig. 5, 36-39), possibly at Shipaulovi (Mindeloff 1891: 121-122), and at the Davis Ranch Site in southeastern Arizona (Gerald, R.E., ms.). Pits closely similar to this were found at Te'ewi also (Wendorf 1953: 48). These similarities invite interpretation of the deep pits and basins, at least, as foot drums. Although the deep pit in the west trench is somewhat different in shape and location, it is thought to be similar enough to warrant the same interpretation.

The east trench, unfortunately, lacks the deep pit and basin, the troughs, and the subfloor rock alignments. Unless sound could be produced by stomping on the surface of the slabs over the channel, it seems to contain no possibilities for functioning in this manner. I do not think it is completely impossible that some sound could have been produced by thumping on the stoneslabs, but it would not have equalled in volume or quality the sound produced in the other trenches.

Because of the problems presented by the variance of the east trench, perhaps some other interpretations of all of the trenches should be presented. Ellis (1952) describes the use of various subfloor pits during the rededication ceremony of the big kivas at Jemez. One of the pits described was large enough to hold a man in a crouching position. In the
Jemez ceremony the man in this sealed-over pit impersonates the Corn Mother. All of the channels of the trenches in Great Kiva II were large enough to hold a man in a prone position. Any number of magical manifestations, such as corn growing, smoke blowing, or spirit voices, can be imagined as resulting from such concealment of individuals.

Ellis (ibid.) also describes several other pits or walled bins which were used to contain rats, rabbits, or in earlier periods, a deer or bear. While none of the trenches in Great Kiva II could have held large (and active) animals, they certainly could have housed rats, rabbits, skunks, and the like. However because of the extent and the variety of depressions, it might have been somewhat difficult to produce the required animal at the required moment—a somewhat embarrassing situation for the magician, I should think. It seems more probable that the pottery cache to the east of the hearth in Great Kiva II (described in the data section) would have been used to hold the small animals, just as the jar cache in the Jemez great kiva was used (Ellis 1952: 151) in connection with the Mountain Lion society and the Hunt Chief.

One other suggestion will be made concerning the possible use of the floor trenches, but it meets with many difficulties. Hodge (1937: Plate XVII) pictures a rock-lined snake pen at Hawikuh. I have been unable to find any references in his text to this snake pen, its location within the site, and the basis for his interpretation of its use.
The outlines of this pen are certainly not identical with any of the floor trenches we are discussing. The snake pen consists of a channel, apparently above ground and formed by rock slabs set on end in a rock covered flat floor, over which at one end a stone ring with a hole in the center rests on the top edges of the slab and on several small supporting poles which also rest on the upright slabs. To the left of this channel, which is open at the end opposite the stone ring, is a stone-lined box. The box has a semicircular opening at the base of the front side. This opening and the open end of the channel face out upon the stone covered floor; the open end of the channel is in line with a square feature which appears to be an ash-filled firebox, with stone slabs on two sides in line with the outlines of the channel. From the description it is easy to see that the snake pen and the floor trenches are not identical. Nevertheless, the trenches could have functioned as housing for snakes—again it would have been difficult to catch the inhabitants of the trenches, but by use of a long snake whip, such as those described for the Hopi by Stephen (Parson 1936: 615, 656) the snakes could be herded where necessary, providing the troughs and deep pits were not covered. If the outer ends of the trenches were left open, shielded from the spectators perhaps by brush barriers, possibly resembling the bowers for snakes described by Stephen (Parsons 1936: 582), the snakes could have been contained in the deep pit or in the trench, and possibly even
driven through the channel to emerge at the other end when some of the slabs were lifted, or when a poker unearthed them (similar to use of the poker described by Ellis, 1952: 151). The association of the cottonwood bower (kisi) of the Hopi snake dances with a footdrum-sipapu combination feature is documented by Stephen (Parsons 1936), Dorsey and Voth (1902), and Voth (1903). It seems possible then that the specific combination of features associated in the floor trench at Point of Pines Ruin could be related to the snake pen, the bower (kisi) and the footdrum-sipapu associated with Hawikuh and the Hopi towns. Although no Snake ceremony exists in present-day Zuñi town as it does in the Hopi villages, the designation by Hodge of the stone alignments at Hawikuh as "snake pens" and the existence in Zuñi of the Rattlesnake Medicine Society may indicate association with a Snake ceremony at some earlier period.

The interpretation of the channel as a resonance chamber, associated with use of the deep pits, troughs, and subfloor rock alignments as foot drums, is based on several reasons. The first of these is obviously that the channels could physically have functioned in this manner. Secondary support is given this hypothesis by information pertaining to a certain type of Mohave drum. This Mohave drum is not identical in actual physical details with the channels; however Kroeber's description indicates a similarity of construction and intent:
... a trench perhaps 4 feet long and a few inches wide is scooped out with the foot and sprinkled to compact its walls. At one end a tray-shaped Chemehuevi basket is laid and beaten; at the other, a large pot is set as a resonance chamber....when the basket is struck with the palm, the jar gives out a deep booming, and the people assemble. ...He shouts: 'Hu; once, once, once,' the drummer smites his basket, and all clap hands. Again the runner comes, but calls: 'Twice, twice, twice...' and as all answer, 'Yes,' and clap again, the drummer and singer begin. (Kroeber 1925: 724-765).

It is not clear from this description how much open space exists between the edge of the basket and the rim of the jar, but obviously the ground trench served to conduct and amplify the percussive effects into the echoing pot. The channels in Great Kiva II may have been used in a similar fashion.

Summary:

The reconstruction section has attempted to describe the sequence of construction in the communal area of Point of Fines Ruin, and the features and extent of each of the structures which occupied this area.

The earliest occupation, the pithouse occupation, has not been discussed as it has no bearing on the ceremonial or communal use of the area.

The house block, whose south row of rooms later formed the north side of the plaza, and the two great kivas, was the earliest pueblo type unit in the vicinity to be incorporated in the later structures. The house block was built of banded tuff masonry.
The plaza was formed by the addition of several building units to the south row of the earlier house block. The plaza had a wide eastern entrance; it was built of banded tuff masonry also.

Great Kiva I was formed by the addition of Room 14 on the east side and a wing wall in the southeast corner. The roof of Great Kiva I was supported by 12 or 13 posts. Entrance was on the southeast side, leading into a zigzag passageway which connected with an enclosed plaza to the south. Construction technique used during this period was spalled rubble. It is impossible to associate specific floor features with Great Kiva I.

Great Kiva II is larger than all the previous structures, as a result of destruction of several rooms and the wing wall on the east side of Great Kiva I. The roof of the structure, believed to have stood at a height of two stories, was supported by 17 large posts. Entrance was again on the southeast side, into a somewhat extended entryway which lead to the same plaza on the south. Great Kiva II was characterized by a central basin-shaped hearth, four trenches which radiated from the hearth toward the four cardinal directions, and a small partitioned area against the northeast wall. The trenches have been analyzed in terms of their component parts, and can be compared with each other on this basis. They are unlike any other archaeological or ethnological features known to date. It is postulated that the trenches
functioned as foot drums, with elaborated resonance chambers in the form of slab-covered channels, and with a brush barrier at the outer end. There is a possibility, on the basis of analogous use of various components of these trenches, that the channels could also have been used in conjunction with a Snake ceremony, such as the well-known ceremony at Hopi, in which a bower of brush, and a plank type footdrum are used in the plaza. The channel part of the trench then may have functioned as the snake pen pictured by Hodge, as well as a resonator. Naturally, none of these suggestions can be confirmed, but if they are offered at this time, they may serve to stimulate thought and observation among others.
RELATIONSHIPS IN THE POINT OF PINES LOCALITY

Chronological relationships:

Dating methods have been discussed generally in the data section under "pottery." In general, procedure followed is standard to the field of southwestern archaeology in that certain pottery types, believed to have some temporal affiliation assigned by dendrochronological dating within the site, have been accepted as indicators of a time horizon. These types, when considered with other types occurring in the same context in Point of Pines locality, supply the basis for the assignment of phase names. Since few dendrochronological dates have been obtained from Point of Pines (Smiley 1951), dating of the phases in this locality is based primarily on ceramic cross-dating. No tree-ring dates were obtained from Great Kiva II.

Table 4 indicates the phase affiliation of various pottery samples collected within and below Great Kiva II, from adjacent rooms, and from the entryway. These affiliations were assigned, with one exception, after examination of the pottery in Tucson by Dr. Emil W. Haury and this author in the fall of 1957. Assignment of phase affiliation for rooms itemized under the caption, "Surrounding Rooms," in Table 4 was made on the basis of pottery analysis made by the individual excavator under the direction of Dr. Haury in the field labo-
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<th>OCCUPATION PERIOD</th>
<th>LOCATION OF SHERD SAMPLE</th>
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<td>TULAROSA 1150-1275</td>
<td>MAVERICK MOUNTAIN 1265-1300</td>
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<td>Great Kiva II—Entryway Fill</td>
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<td>CANYON CREEK 1325-1400</td>
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<td>Room 24—Fill to sterile</td>
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<td>Room 14—Fill (below Floor III, G.K. II)</td>
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**TABLE 4: PHASE AFFILIATIONS OF GREAT KIVA I AND II, AND ASSOCIATED STRUCTURES.**
A summary and interpretation of Table 4 reveals that Great Kiva II was built, occupied, and abandoned during the Canyon Creek phase, or from about A.D. 1325-1400. Great Kiva I was built and utilized during Pinedale phase, roughly from A.D. 1275 to 1325. Abandonment of Great Kiva I and the remodeling of this structure into Great Kiva II must have occurred practically simultaneously, thus marking the end of one phase (Pinedale) and ushering in another (Canyon Creek). The plaza and the earlier house block were built either early in the Pinedale phase, or possibly in Maverick Mountain times, if the mixed character of the subfloor pottery is interpreted correctly. These sherds, identified in Table 4 as "Great Kiva II—Subfloor," actually come from the northeast and southeast quadrants of the structure described herein as Great Kiva I. That is, the sherds do not come from within the confines of any of the Substructure rooms or wing walls. It is possible that the Maverick Mountain material was spread over this area above the sterile layer at the time Units A and C were built, and that this material was mixed with the later sherds during occupation or excavation. No record of a low over-all surface which might support this contention has been found, however. Because of the ceramic mixture and the fact that many of the excavated Maverick Mountain phase rooms in the area south of Great Kiva II are constructed of banded tuff masonry, it seems possible to speculate that
Units A and C may have been built during or at the close of this phase, and consequently that the house block and plaza may have been used by the Maverick Mountain occupants. Unfortunately because of the grossness of the excavation data within the communal area, chiefly attributable to the bulk of the fill removed and time limitations on the excavation, it is not possible to attribute construction of either of these entities to a specific phase; the house block and the plaza could have been built either in late Maverick Mountain or Pinedale phases.

The Maverick Mountain trash below the floor of the entryway to Great Kiva II comes from a section south of the south wall of Room 14. The relationship of this trash to the base of the banded tuff walls of the southern section of the entryway is not known since this area has been only slightly tested. When this relationship is determined, it may be possible to date construction of the plaza more definitely. With the present state of our knowledge, this Maverick Mountain trash seems to indicate that sometime prior to construction of both of the great kivas this area was used as a dump by the Maverick Mountain inhabitants.

The two pithouses under Great Kiva II are apparently representative of Tularosa phase. Ceramic material from Pithouse 2 is badly mixed, because of the superposition and remodeling of the spalled block wall possibly, and, more probably, because of excavations made into the pithouse trash
or adjacent sterile soil by the occupants of Rooms 53 and 58, and the diggers of Posthole 4. Pithouse 3 must have been abandoned prior to the end of the Tularosa phase, since Cremation #2, consisting of a McDonald Corrugated bowl inverted over a Tularosa Black-on-White jar, was found high up in the southwest posthole of the pithouse, resting on fill in this posthole. Fill and floor sherds from this structure were also representative of Tularosa phase.

From the information available in the room reports, it appears that the surrounding rooms, excepting Rooms 14 and 24, were last occupied during the Canyon Greek phase, and were abandoned sometime prior to the inception of the later Point of Pines phase. From architectural evidence presented in the foregoing text, it is obvious that most of these rooms were constructed prior to Canyon Creek phase, and prior to, or at the inception of Pinedale phase. Interpretation of the Canyon Creek phase pottery dating of the fill and floors of these rooms must depend upon the explanation that the rooms were continuously occupied and therefore kept clean of the day-to-day and year-to-year litter so meaningful to archaeologists. These rooms also could have been abandoned, filled, cleaned-out, and re-occupied when population pressure necessitated expansion. Because of the architectural evidence, and the ceramic dating of the Subfloor material in Great Kiva II, the conclusion seems inescapable that pottery dating, applied to these rooms, can serve only to indicate the period of final occupation of the rooms.
The long wall which runs east-west, forming the common member in Rooms 14 and 24, can be dated at least as early as Pinedale phase, since the ceramic complex in both these rooms at the wall base and resting against the wall face, is Pinedale. Unfortunately, the material below the floors of these rooms and above sterile soil is not voluminous or diagnostic enough to indicate an earlier erection of this wall. Dating of this wall can be important to interpretation of the entire site, since the eastern end of this wall butts against the inside face of the massive "Great Wall" which surrounds the main portions of the pueblo. Before any dating can be attempted, however, this wall will have to be cleared of debris for its entire length to ascertain its continuity, and to investigate the nature of the trash abutting the base of the wall, or on which the wall rests. If the wall is continuous, it appears from the strong ceramic dating of Rooms 24 and 14, that the "Great Wall" of the pueblo was built during or prior to Pinedale phase, a period believed to be sparsely represented in the Point of Pines locality.

Formal relationships:

The two great kivas discussed in this paper are the culmination of a long tradition of great kivas in the Point of Pines locality. Figure 9 illustrates this sequence of great kivas much more graphically than words can. Some may dispute the classification of the two Circle Prairie ceremonial
FIGURE 9:
SEQUENCE OF GREAT KIVAS,
POINT OF PINES, ARIZONA

North is up
POINT OF PINES VILLAGE, ARIZ. W:10:50
A.D. 1325-1400 PUEBLO IV

SIZE: 264 sq. m DEPTH: Surface
ENTRY: SE; Stepped ROOF: 17 Posts
HEARTH: Central WALLS: Stone
LOCATION: Incorporated
FEATURES: 4 Central Floor Trenches

POINT OF PINES VILLAGE, ARIZ. W:10:50
A.D. 1275-1325 PUEBLO III-IV

SIZE: 220 sq. m DEPTH: Surface
ENTRY: SE; Step, Ramp ROOF: 12 Posts
HEARTH: Central WALLS: Stone
LOCATION: Incorporated
FEATURES: ?

NANTACK VILLAGE, ARIZ. W:10:111
A.D. 900-1000 PUEBLO II

SIZE: 153 sq. m DEPTH: 0.15-1.15 m
ENTRY: E; Step, Ramp ROOF: 10 Posts
HEARTH: N. Central WALLS: Clay
LOCATION: Independent
FEATURES: None

CROOKED RIDGE VILLAGE, ARIZ. W:10:15
A.D. 400-600 MOGOLLON 2 (BM III)

SIZE: 112 sq. m DEPTH: 1.70 m
ENTRY: E; Step, Ramp ROOF: 4 Posts
HEARTH: Central WALLS: Plastered
LOCATION: Independent, Clay
FEATURES: Central Floor Grooves

CROOKED RIDGE VILLAGE, ARIZ. W:10:15
A.D. ?-400 MOGOLLON 1 (BM II)

SIZE: 64 sq. m DEPTH: 1.50 m
ENTRY: SW; Step, Ramp ROOF: 4 Posts
HEARTH: Central WALLS: Clay
LOCATION: Independent
FEATURES: Central Floor Grooves

SCALE 1:336
structures as great kivas. However the information presented by Wheat (1955: Table 57) indicates the wide extent of similar structures in the Mogollon culture areas in periods prior to A.D. 1000. The relationship of these structures to settlement pattern of the village, and the numerous peculiar floor grooves associated with these large houses indicate a ceremonial usage. I prefer not to restrict the definition of "Great Kivas" in the way Reiter (1946: 287-288) did, nor do I intend to enter into the argument over origin of the "Great Kiva complex" at this time. The documentation of the large ceremonial houses in such number and at such an early date in the Mogollon area as Wheat (1955) and Hughes (1954) have done, needs to be answered with similar documentation for the Anasazi areas before any realistic conclusions as to origin of the complex may be reached.

The great kiva at Nantack Village (Breternitz 1956: 21) is said to be unique in its eastern orientation and size when compared with other Mogollon ceremonial houses of the Mogollon 4 period. However all of these structures, with the exception of the Luna Dance Pit, are quadrangular; and of the four quadrangular structures listed by Wheat (1955: 57), three have a stepped entrance similar to that of the Nantack Village great kiva. Some parallels can be discerned then between this rectangular ceremonial structure, and other Mogollon ceremonial structures in this period.
The Pinedale phase structure, Great Kiva I at Point of Pines Ruin, while definitely in the Anasazi tradition of stone pueblo construction, does not conform to the definition of Anasazi great kivas given by Reiter (1946: 287-288). Great Kiva I seems to me to be a more formalized expression of the "antack Village great kiva, but definitely in the same tradition—rectangular, with southeastern entry, and a roof supported by numerous posts. Perhaps this seeming "formalization" or elaboration of the ceremonial complex, indicated by incorporation of the ceremonial structure within a large continuous stone-walled pueblo, is actually the result of the convergence of the Anasazi and Mogollon traditions. This convergence of ceremonial complexes apparently results in a distinct Western Pueblo style of great kiva—rectangular or square with post-supported roof. No other general statements as to internal features of Western Pueblo great kivas can be made since only 3 such structures are known—Kinishba, Great Kiva I, and Great Kiva II at Point of Pines.

Great Kiva II, the Canyon Creek phase structure, is the final and most elaborate expression of the "Western Pueblo" tradition, which evidently died, in this locality with the breakup of large villages, and the dispersal of the population during the Point of Pines phase.

Out of five great kivas excavated in the Point of Pines locality, four are quadrangular or rectangular, the same four are oriented east or southeast, all have post-supported roofs, and all are considerably larger than the domestic houses of
each site. This sequence of great kivas extends from pre-
A.D. 400 through 1400, with two noticeable gaps, from A.D.
400-900 and 1000 to 1275. These time periods are the least
investigated in the Point of Pines locality at this date,
which partially explains the hiatus in the sequence.

Functional relationships:

The question of the function of the two great kivas
at Point of Pines Ruin can only be answered by comparison
with ethnological records of various activities within great
kivas. Since no modern descendants of the Point of Pines
villagers are known, analogous reasoning from various eth­
nological groups can be critically rejected. However it seems
obvious from Ellis's work (1950: 1952) that, in the Rio Grande
area, great or "big" kivas serve today as assembly places for
the entire community (if they desire to attend) in order to
witness ceremonies connected with spirit impersonation, and
crop production. Great Kiva I and II in the Point of Pines
village probably functioned in the same way. However neither
of these structures could house the entire community at one
time if the estimate of population during the Canyon Creek
phase is anyway near correct (2000 to 3000 people). Never­
the less, there is no indication that any other great kivas
existed within walking distance of Point of Pines village,
which suggests that a moiety system was not in use, and that
these structures were not moiety houses. Because of the
ceremonial features in Great Kiva II, and the apparent lack of other large structures in the area during Pinedale and Canyon Creek phases, the ascription of "great kiva functions" (whatever these may have been at this time and place) to the buildings described herein seems justified.

These great kivas which were used primarily by inhabitants of Point of Pines village probably served a number of other villages and small farming sites in the immediate vicinity also. Gifford (1957) mentions the possibility that inhabitants of the Nantack caves may have traveled over the ridge to Point of Pines village when certain important ceremonies were to be conducted.

From the data at hand pertaining to modern usage of great kivas, and the archaeological occurrences and features of such structures, little can be inferred as to the specific activities conducted within the two great kivas at Point of Pines Ruin. If the interpretation of the four floor trenches in Great Kiva II is assumed to be correct, dancing—using the footdrums, snake handling in some form, and probably masked impersonations were part of the ritual conducted by the kiva officials. However, since the interpretation of these features rests solely on analogy with certain modern practices, it would be somewhat circuitous to derive the activities of Great Kiva II from the internal features of the structure.
GENERAL RELATIONSHIPS WITH THE GREAT KIVA COMPLEX IN THE SOUTHWEST

No attempt is made here to compare in detail the similarities or differences of the two great kivas at Point of Pines Ruin with all other great kivas in the Southwest. However certain general comparisons can be made in order to give perspective to the foregoing descriptions.

Chronological relationship:

Great Kiva II at Point of Pines Ruin can be compared with only two other excavated great kivas—those at Kinishba and the Foote Canyon Site. To my knowledge no other Pueblo IV great kivas have been excavated. Both of these structures are quite similar to Great Kiva II, in that they were built, occupied, and abandoned probably between A.D. 1325-1400. During this period no Anasazi-type great kivas are known to have existed, although it is highly probably that the round great kivas in some of the modern Rio Grande pueblos today are related to the earlier Pueblo III types.

Great Kiva I at Point of Pines Ruin can be compared with numerous Pueblo III great kivas in the Tularosa-Blue area (Danson 1957), and also at Masa Verde, the Fire Temple (Lancaster, et. al. 1954). This period was that of the heyday of the typical Anasazi great kivas described by Reiter (1946). Distribution and elaboration of the great kiva
complex seems to have reached its climax in the Pueblo III period.

The development of this complex in the Point of Pines locality has been discussed in the previous section. The extent of the independence of this development can be questioned in the late periods because of the similarity in form of the two late Point of Pines great kivas with those of the Tularosa area. The fact that no Tularosa or Reserve phase great kivas have been recorded from the Point of Pines locality suggests that the idea may have died out, and been re-introduced during the Maverick Mountain or early Pinedale phase.

Formal relationships:

The distribution of rectangular great kivas over the southwest has never been plotted. The quadrangular character of many of the early Mogollon ceremonial houses (Wheat 1955: 57) does not constitute a distinctive and numerous enough trait to warrant derivation of rectaliniarity from this source alone. The occurrence of rectangular great kivas seems to increase with the utilization of pueblo-type architecture; however this may be a function only of the general increase in all types of great kivas. It is obvious that in the areas of greatest Anasazi occupation, great kivas are round and are not incorporated within the pueblo unit.

Rectangular great kivas are known from the Tularosa area (Danson 1957: 81-82), from Springerville (Danson and
Molds 1950), from Kinishba and Point of Pines, and from Mesa Verde and the modern pueblos of Jemez (Hawley 1950; Ellis 1952) and San Juan (Stubbs 1950; 41; Hawley 1950). Unfortunately, none of these great kivas is similar to any of the others in any respect except general shape. Internal features vary from the Chacoan type paired footdrum-floor vaults in the Fire Temple at Mesa Verde (Lancaster, et. al. 1954: 50) to the ventilator shaft-fireplace arrangement at Jemez (Ellis 1952: 149), to the four floor trenches at Point of Pines. Although Kinishba is only 40 miles northwest of Point of Pines, features of the great kivas in the two areas are not similar. The only excavated great kiva in the Blue area in this late period is that at Foote Canyon Site (Martin 1955: 6-7). The ramp entryway of this structure is the only detail reported so far. The situation of these rectangular great kivas also varies, from the extreme isolation of Fire Temple, on a canyon ledge, to the incorporation of Great Kiva II at Point of Pines within encircling rooms of the pueblo.

Generalities about the characteristics of rectangular great kivas during Pueblo III and Pueblo IV periods seem impossible to arrive at because of the variety of the structures and the small number which have been excavated. Certainly their occurrence (archaeologically) appears to be confined to regions predominately Western Pueblo.
Functional relationships:

Little more can be added to the comments concerning functional relationships in the discussion of great kivas in the Point of Pines locality. It seems probable that the Western Pueblo focus on the kachina cult may have been part of the stimulus for building these large ceremonial structures; however none of the archaeological data available concerning these great kivas, with the possible exception of the wall paintings associated with Fire Temple, and the widespread footdrum trait, indicates that spirit production or impersonation were an integral function of the structures.
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Figure 2

EAST WALL PROFILE SHOWING NORTH AND SOUTH CORNERS AND WALLS

- WALLS EXTENDING INTO KIVA
- WALL BEHIND VENEER
- STERILE SOIL

METERS

0 5 10 15 20