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U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

PHYSICAL PROTECTION WORKBOOK

U.S. DEPARTMENT OF INTERIOR BUREAU OF LAND MANAGEMENT

DITTERT SITE-PHASE III

(AR-NM-01-085) SOCORRO DISTRICT

the Physical Protection Team, NMSO
Technical Services, P.O. Box 1449, Santa Fe, New Mexico 87501

DRAFT

PHYSICAL PROTECTION WORKBOOK

dittert site

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DIVISION OF TECHNICAL SERVICES
BUREAU OF LAND MANAGEMENT
U.S. DEPARTMENT OF THE INTERIOR
SANTA FE, NEW MEXICO 87501

SEPTEMBER, 1978

DITTERT SITE
(AR-NM-02-085)

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Preface

This Phase III workbook has been prepared to satisfy the request and needs of the District. The purpose was for documentation and analysis of the artifacts which were recovered during the physical protection Phase II. The Phase I, General Information was developed by Cheryl Ferguson and Elger Stauber and the physical protection completed by Nena Powell. The Phase III workbook was prepared by Curtis Lester and the artifacts which were recovered in 1976 were analyzed and interpeted by Earl Neller. Leo Flynn shared his knowledge and expertise. Michael Solan and State Engineer Harold Payne reviewed the report and drawings making valuable suggestions. Doris Herrera and Jackie Morales shared the task of converting the scrawl into a typed workbook.

ABSTRACT

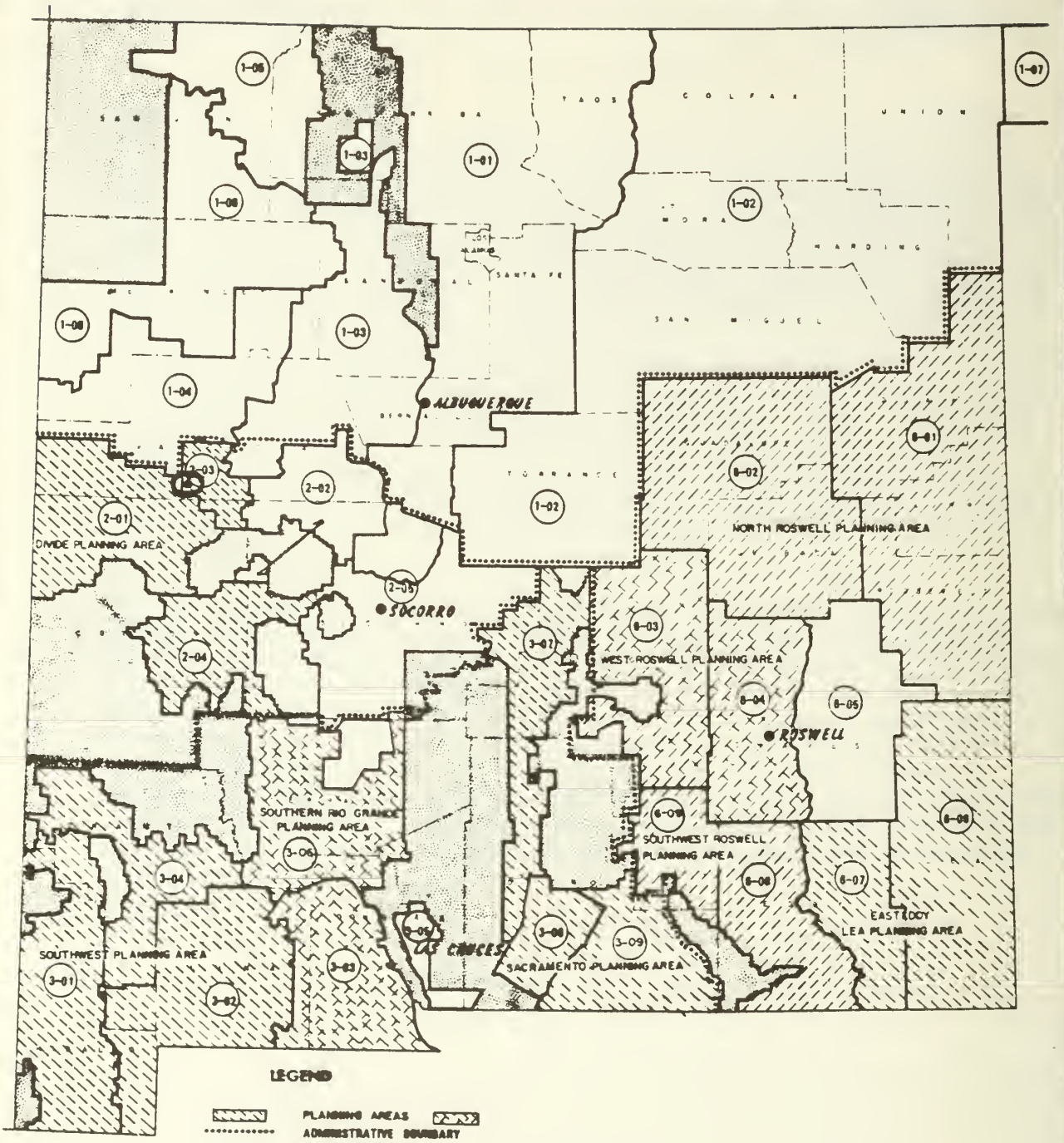
For six years, 1947-1952, Alfred E. Dittert, Jr. and Reynold J. Ruppe, Jr. investigated archaeological sites in the Cebolleta Mesa area south of Grants, New Mexico, including the Dittert Site. The results of their field work was reported in two Ph.D. dissertations: "Culture Change in the Cebolleta Mesa Region, Central Western New Mexico," by Dittert and "The Acoma Culture Province: An Archaeological Concept," by Ruppe and a number of journal articles. They concluded that the area around the Dittert Site was occupied by Anasazi peoples from A.D. 800 to 1400 and contained some earlier settlements, and some later ones. The area was a peripheral one, somewhat apart from the cultural centers of that period, and followed its own peculiar line of development. First, the people seemed to have close cultural ties with the people in Chaco Canyon. Later on, they seemed to be closer to people living along the Little Colorado and the Upper Gila Rivers. Finally, their cultural ties shifted to people living in the Rio Grande Valley. Eventually the area was abandoned.

The archaeological investigations included the survey, mapping and study of over three hundred sites. Several sites were chosen for testing, including site #LV 4: 14A, the site which the BLM now calls "The Dittert Site." The site was important because it was larger than most of the other sites, it was one of the few sites with a kiva, it might have contained intact roofs and its walls seemed to have several different kinds of masonry styles. The rooms and the kiva were eventually excavated, though Rooms 1 and 5 were never finished. Dittert discovered the site was built on the midden of a previous occupation, the ruin had been two stories high and the site had been abandoned and re-occupied during its history.

DITTERT SITE
(AR-NM-02-085)

Site Maps

1. District Map
2. Site Location Map
3. Site Contour Map
4. Ground Plan by A.E. Dittert, 1949
5. Ground Plan, CAF, March 1976
6. Location Plat, February, 1976



LEGEND

PLANNING AREAS
ADMINISTRATIVE BOUNDARY
DISTRICT OFFICE
PLANNING UNIT BOUNDARY
PLANNING UNIT NUMBER

SITE LOCATION

ALBUQUERQUE DISTRICT		SOCORRO DISTRICT	
Rio Grande	1-01	Quemado	2-01
Northeast	1-02	Ladron	2-02
Cabezon	1-03	Malpais	2-03
Grants	1-04	Driveway	2-04
San Juan	1-05	Stallion	2-05
Chaco	1-06		
Oklahoma	1-07		

LAS CRUCES DISTRICT		ROSWELL DISTRICT	
Gila	3-01	Llano	6-01
Hermanas	3-02	Pecos	6-02
Las Uvas	3-03	Lincoln	6-03
Grant	3-04	W Chaves	6-04
Organ Mtn	3-05	E Chaves	6-05
Caballo	3-06	Lea	6-06
Alamogordo	3-07	E Eddy	6-07
McGregor	3-08	W Eddy	6-08
Mesa	3-09	SW Chaves	6-09

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

PITTERT SITE (AR-NM-02-085)
SOCORRO DISTRICT
PLANNING AREA - 2-03 MALPAIS

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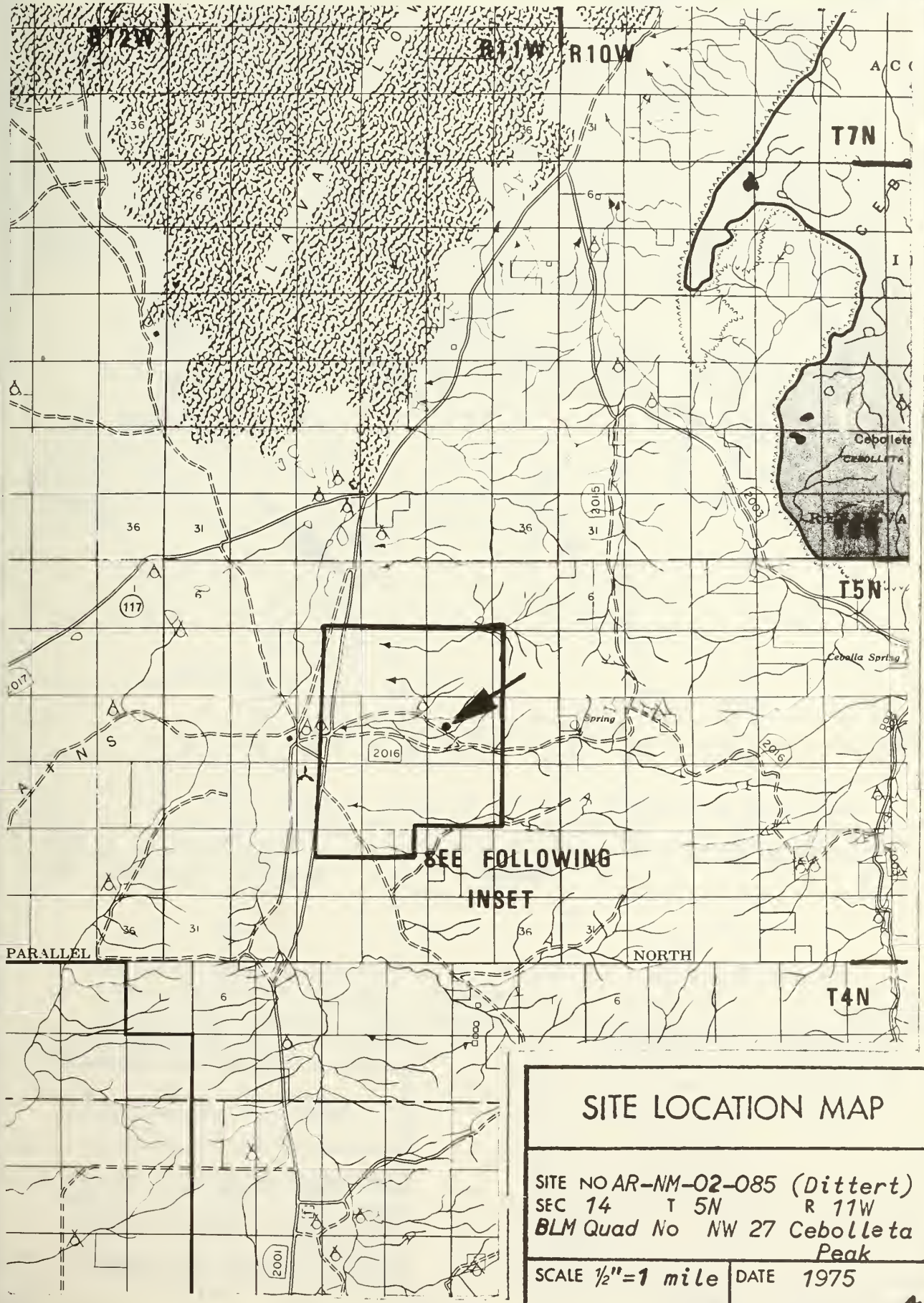
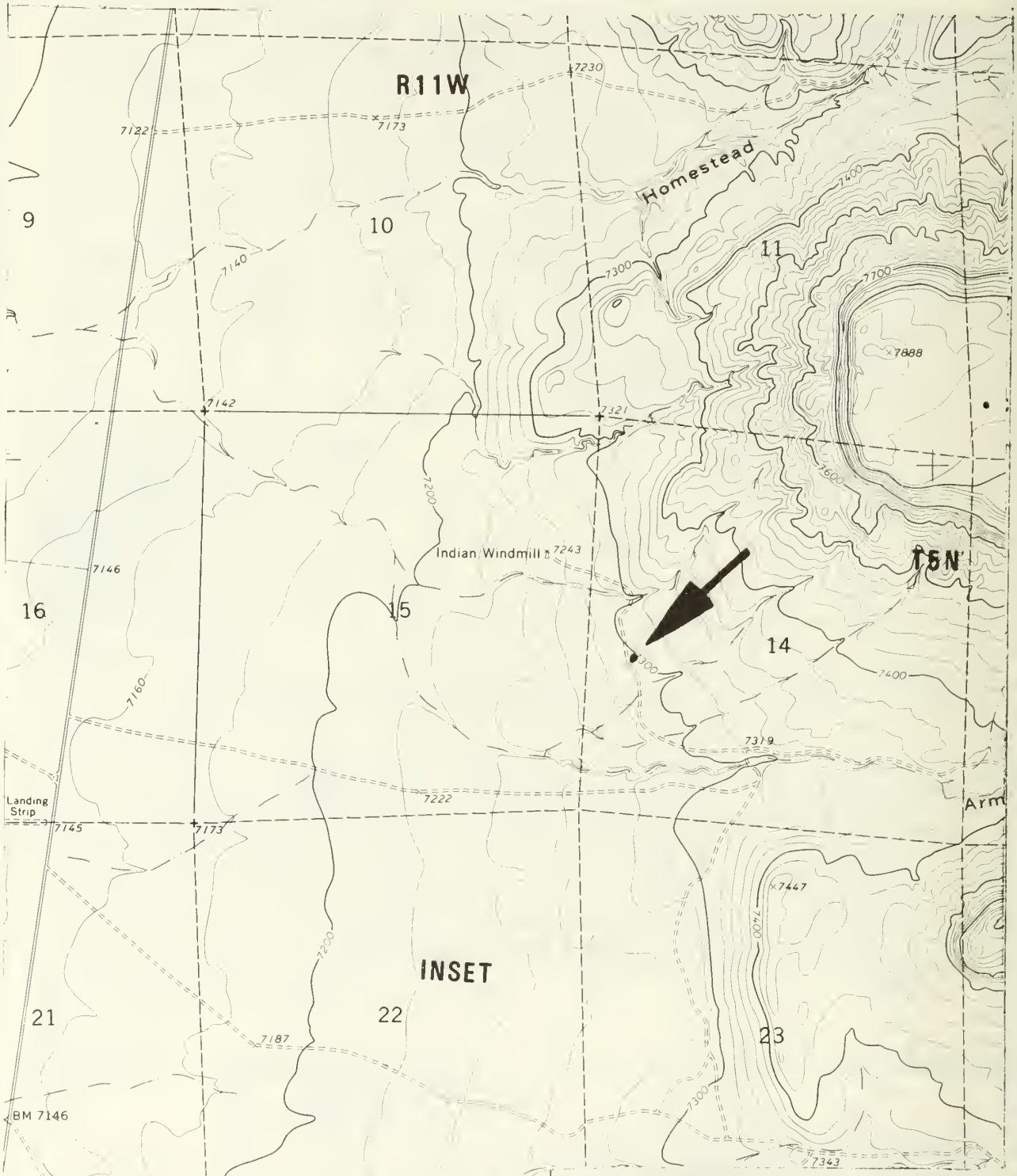


SITE LOCATION MAP

SITE NO AR-NM-02-085 (Dittert)
SEC 14 T 5N R 11W
BLM Quad No NW 27 Cebolleta Peak

SCALE ½"=1 mile | DATE 1975

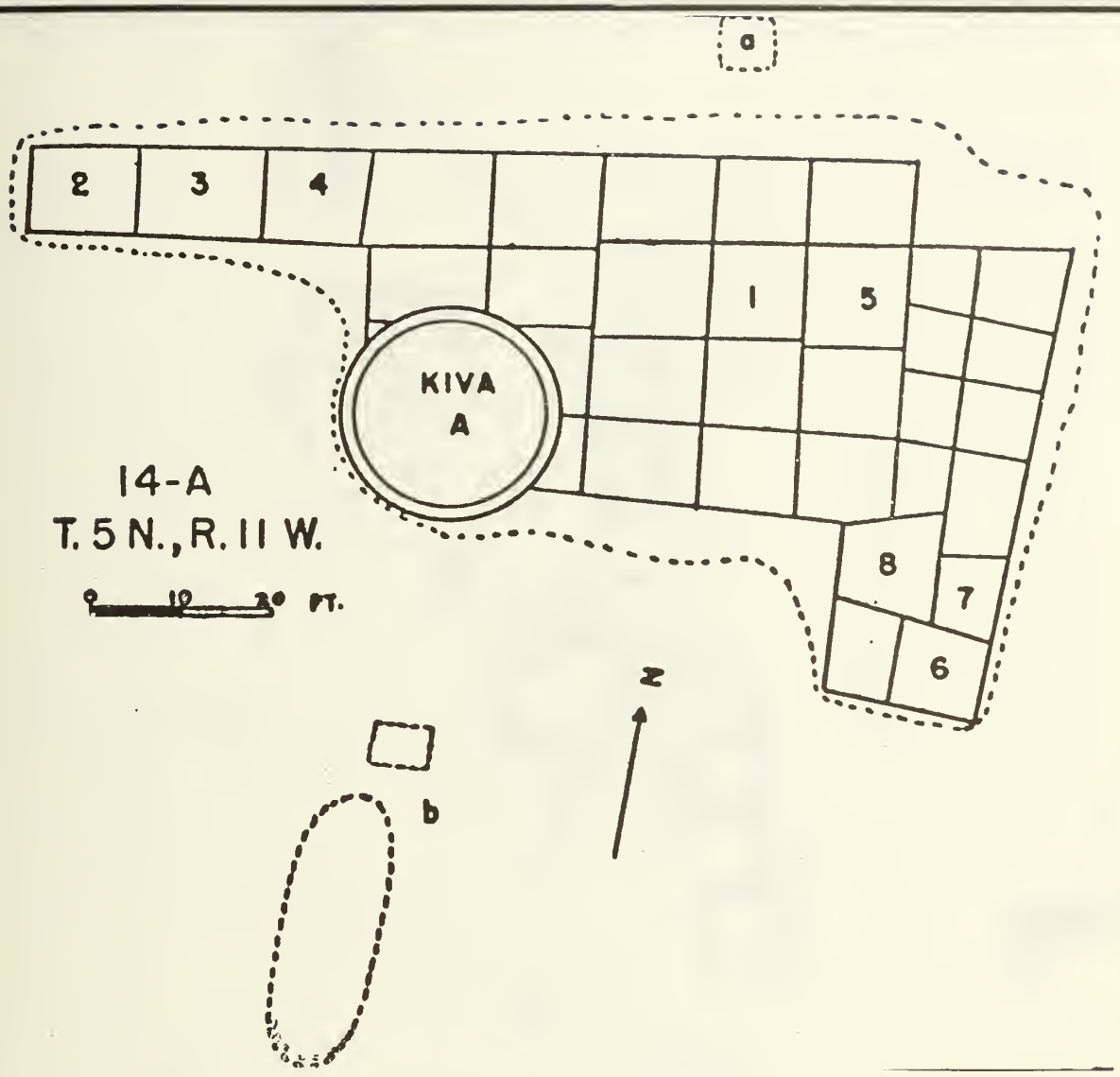


SITE LOCATION MAP

SITE NO AR-NM-02-085 (Dittert)
SEC 14 T 5N R 11W
USGS QUAD NAME Sand Canyon

SCALE 1:24,000 | DATE 1964

5



Ground plan of site 14-A showing position of the kiva and rooms which were excavated: a. bin detached from the unit and b. "turtleback" adobe site with one room of sandstone masonry.

Map drawn during excavation by A.E. Dittert and R.J. Ruppe. Appears in A.E. Dittert; "Prehistoric Population and Architecture of the Cebolleta Mesa Region, Central Western New Mexico"; Master's Thesis; University of New Mexico; 1949.

U. S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT	
Dittert Site (AR-NM-02-058) Ground Floor Plan	
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U. S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT Socorro NEW MEXICO	
DITTERT SITE (AR-NM-02-035) Ground Floor Plan	
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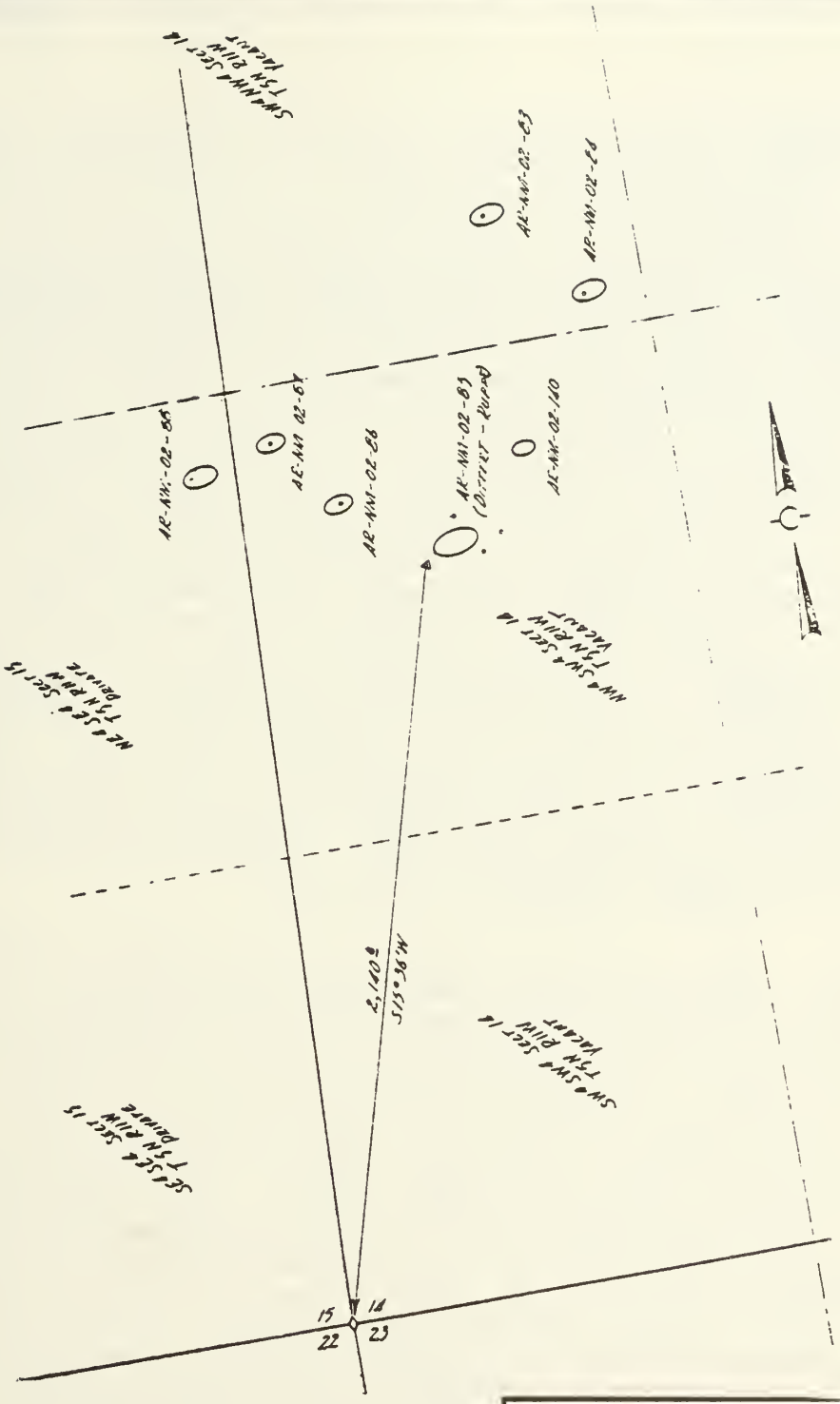

U. S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT Socorro NEW MEXICO	
Dittert Site - Location Plat (AR-NM-02-085)	
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DRAWN JMcF	RECOMM.
CHECKED CL	CHIEF, DIV. OF ENG. APPROVED
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DATE 2/76 -7/78	SHEET 6 OF 6
DRAWING NO.	PLATE 8

AR-NM-02-085
Dittert Site

GENERAL INFORMATION

1.0 General The Dittert Site, also known as LA 11723 by the Laboratory of Anthropology and as LV 4: 14-A by Dittert and Ruppe (1951), sits 7300 feet above sea level upon a gentle slope near the valley bottom close to the mouth of Los Veteados Canyon (shown as Armijo Canyon on USGS Quad). Juniper covered sandstone hills lie to the east and north. Grasslands lie to the west. A large grassy area to the south is suitable for cultivation. The ruin is oriented to the south-southeast and has a southwestern exposure. Dating from A.D. 1000 to 1350 (the Cebolleta Phase), it is of selected and pecked sandstone masonry laid in courses with adobe mortar and chinking of sherds and sandstone spalls. The smooth-faced walls average fifteen inches thick, and many have a thin adobe core. Standing walls are from 1.5 to 5.5 feet high. The L-shaped ruin was two stories high and had thirty-two rooms. A kiva, 19 feet, 8 inches in diameter, is incorporated into the room block. Several outlying rooms are nearby. A. E. Dittert, Jr. and R. J. Ruppe, Jr. excavated the kiva and eight rooms during the field seasons of 1947-1949. The site was, at that time, upon privately-owned land and the owner asked that it not be backfilled. It is now, consequently, in great need of stabilization, for the walls are rapidly deteriorating. Although yet in fairly good condition, the site's recreation use has increased during recent years, as has nonprofessional digging for artifacts.

From 1947 to 1952, Dittert and Ruppe intensively studied the Cebolleta Mesa area, which centers about twenty miles south of Grants in west-central New Mexico and includes the area between Highways 60 and 66 (now Interstate 40). Westward it includes a portion of the McCarty basalt flow (El Malpais). The Acoma Valley forms the eastern border. The area is a high tableland of sandstone capped by basalt and is in the Upper Sonoran climatic zone. Pine, pinon, juniper, manzanita, sage, yucca, Rocky Mountain bee weed and cacti are common. Fauna includes deer, antelope, coyote, prairie dog, rabbit, rodents, dove, lizards, and snakes. The Cebolleta Mesa area is bounded by culture areas more actively investigated: Chaco Canyon to the north, the Rio Grande Valley to the east, the Mogollon area to the south and the Little Colorado area to the west. Dittert and Ruppe viewed it as an important area for studies of trade, movement of people and diffusion of culture. They conducted surveys of selected areas, performed spot check surveys on the area's periphery and excavated representative sites, (one of which is AR-NM-02-085), including means and extremes as shown by the surveys. (Excavation was also performed at Acoma Pueblo). They discovered a long span of occupation in the area, stretching from before A.D. 700 to A.D. 1400 and after.

DITTERT SITE
(AR-NM-02-085)

1.1 Location- The site lies in the NW¼ of the SW¼ of Section 14, Township 5 North, Range 11 West. It is on a gentle slope near the valley bottom near the mouth of Los Veteados Canyon (Armijo Canyon). Alongside it runs a primitive road that branches off from State Road 117 about a mile from the site and continues onward to Indian Windmill. The York Ranch headquarters lies west of the ruin upon a grassy plain. Juniper covered hills are to the north and east of it.

1.2 References-

Dittert, A. E., Jr.
1949; "Prehistoric Population and Architecture of the Cebolleta Mesa Region, Central Western, New Mexico"; Masters Thesis, University of New Mexico, Albuquerque.

Dittert, A. E. Jr. and R. J. Ruppe, Jr.
1951; "The Archaeology of Cebolleta Mesa: A Preliminary Report" in El Palacio, Journal of the Museum of New Mexico; Vol. 58; No. 4; Santa Fe.

1952; "The Development of Scientific Investigation of the Cebolleta Mesa Area, Central Western New Mexico"; Kiva; Vol. 18; No. 1-2; Tucson.

Ruppe, R. J., Jr. and A. E. Dittert, Jr.
1952; "The Archaeology of Cebolleta Mesa and Acoma Pueblo: A Preliminary Report Based on Further Investigation" in El Palacio, Journal of the Museum of New Mexico; Vol. 60; No. 7; Santa Fe.

1953; "Acoma Archaeology: A Preliminary Report of the Final Season in the Cebolleta Mesa Region, New Mexico" in El Palacio, Journal of the Museum of New Mexico; Vol. 60; No. 7; Santa Fe.

Physical Protection Workplan

2.0 Work Schedule- Deterioration is rapidly taking the walls exposed by Dittert and Ruppe. Nine rooms and the kiva are suffering from the elements. Stabilization operations are planned to proceed as follows:

Sequence of Operations

2.1 Establishment of wall alignment
2.2 Clearing of rooms
2.3 Reconstruction and repair
2.4 Timber treatment
2.5 Grouting of masonry
2.6 Capping of walls
2.7 Backfilling
2.8 Drainage
2.9 Support actions

2.1 Establishment of Wall Alignment- No exposed walls are obscure, but drift sand and the haphazard placement of excavation spoil material have made difficult the exact surface definition of some walls. Precise alignments must be established so that grouting and capping operations can proceed. Excavations needed for this purpose, though they be non-extensive, must be performed under careful supervision of the Team Archaeologist. Following wall definition, grouting and capping, soil should be replaced and tamped down to avoid structural weakening and deleterious moisture retention.

2.2 Clearing of Rooms- Fill material to be added to rooms (as explained in paragraph 2.7 of this work plan) must be well consolidated in order to equalize pressure on walls. To this purpose, open rooms will be cleared of blowsand and brush to within a few inches of the floor. This clearing will proceed under guidance of the Team Archaeologist.

2.3 Reconstruction and Repair- Reconstruction and repair must be kept to a minimum and will include only those areas necessary for structural stability. Examples follow:

In the kiva-

1. The two remaining kiva pilasters are ragged and uneven at their upper surface. They will be repaired so that this surface is fairly level, but there will be no increase in their overall height. This approach will eliminate the deleterious retention of water. A slight slope will further aid in shedding moisture.

2. Gaps mark the ever-increasing separation between pilasters and the kiva wall. The eastern one is separated by one to two inches from the wall and a one to one and one-half inch opening lies between the western pilaster and the wall. Stability will be increased by the use of stabilized adobe and possibly block bond to tie the structures more securely to the kiva wall, substantially decreasing chances of their collapse.

3. The collapse of a northern section of kiva bench must be repaired in order to save the remainder of it and to eliminate pockets that would otherwise retain water.

4. Approximately five horizontal feet of the southeastern section of kiva wall and bench has suffered from a cave-in. Fall material will be cleared from it and repairs will be made. Partial reconstruction will strengthen this section and, consequently, the wall areas adjacent to it. General kiva height will not be increased.

5. A hole, nine inches high and thirteen inches wide, lies at the base of a northern section of kiva wall. It weakens the wall above it and must be repaired with sandstone to match the existing blocks.

6. A second hole, eight inches high and seventeen inches wide, lies directly across from the above-mentioned area of damage. It, too, is near the base of the wall and threatens structural stability. Before repair, the team archaeologist should determine whether this irregular opening was that of the ventilator shaft. (Position suggests a ventilator shaft, but shape of the opening has been altered by erosion. No sign of the shaft can be seen on the surface, but burial beneath excavation spoil material is a possibility). If the gap is defined to be a ventilator shaft, backfill material must be placed within it and consolidated well. If the opening is not that of a ventilator shaft, it must be repaired with sandstone blocks to match existing masonry.

In the rooms-

7. Sections of wall must be partially reconstructed if their damage endangers stability of remaining wall. A cave-in of a section of the south wall of Room 1 is such a case.

8. The cave-in of the northwest corner of Room 5 threatens the stability of three walls. Its reconstruction will strengthen all of them.

In addition to these repairs, an in-field judgment will determine whether partial walls will possess strength sufficient to stand independently. Portions of walls of Rooms 2, 3, 6, 7 and 8 are mere alignments upon the ground surface. These sections are of no structural aid to remaining walls. Recognizing that walls tied to other walls are much stronger than those standing alone, one must also realize that reconstruction of these alignments would be risky speculation, an action to avoid if at all possible.

Special in-field attention should be given the walls of Room 1. The northern wall leans approximately 5° outward, the southern one bows inward and the eastern wall leans approximately 10° inward. These walls may be endangered in spite of the proposed backfilling. Reconstruction may be necessary. If such is the case, considerable time must be allotted to excavation necessary to expose the walls for stabilization work. Untouched rooms lie to the north and south of Room 1 (see Dittert's map). In this situation, one cannot remove merely a narrow strip adjacent to the wall concerned; rather, the entire room must be excavated, most preferably to the floor and completion. Excavation time would vary with the number and experience of those available for work, but each room may require two to four weeks of effort.

2.4 Timber Treatment- No wooden elements can be seen at the site. If any are found, they will be treated in place with Pentachlorophenol to resist deterioration from fungi, moisture and insects.

2.5 Grouting of Masonry- Grouting will not destroy original fabric. Existing masonry will be cleaned of loose material and the surfaces will be dampened to aid the bonding and curing of a adobe mortar grout mix proportions are discussed in paragraph 2.10 (Materials) of this workbook.

There are approximately 1,182 square feet of exposed wall. It is not reasonable to assume that the entire surface of each wall would be grouted; rather, a concentrated grouting effort will be made on the upper two feet of the wall that zone most susceptible to damage from "frost-heave" and/or those surfaces that will be exposed after completion of the backfill operation. Grouting of the lower wall surfaces will be done only as a structural stabilizing feature. Definition of concentrated and minimal grouting zones will be clearly made before the grouting operation is started on each room.

2.6 Capping of Walls- Approximately 200 linear feet of wall will require capping. This stabilizing technique will bond additional courses of masonry to the existing wall. Capping mortar will incorporate an adobe mortar with mixed proportions, as discussed in paragraph 2.10 materials of this workbook to match the existing material. Horizontal wall surfaces will be capped.

with two or three courses of stone. Walls having vertical irregularities will have, at most, one stone's length added to the exposed end. Fall rock will be used in this operation. Surface slopes will provide moisture runoff.

2.7 Backfilling- Approximately 150 cubic yards of material will be needed for the backfill operation. It must be imported, for matters of site density and landscape aesthetics forbid the collection of nearby soils. Backfill material will be hand-placed and compacted by both hand tampers and mechanical compactors. The following procedure will be followed:

Step 1. Definition of limits of archaeological excavation by the placement of a non-biodegradable material (perforated plastic sheeting, electrical conduit marking tape, etc.) on each room floor.

Step 2. Placement of a six to eight inch layer of soil over the entire floor. Steps 1 and 2 must be done on both sides of all free-standing masonry simultaneously. Materials MUST NOT be placed and compacted on one side of a free-standing wall only.

Step 3. Compaction of material, first in the center of the room, working then toward the walls. This technique will be typical to each layer of material added.

Step 4. Placement and compaction of subsequent six inch to eight inch layers until the desired elevation is reached. The Stabilization Supervisor is cautioned to maintain equilibrium in compaction on both sides of all free-standing walls.

All room will be backfilled in the same manner. No wall plaster exists to require special treatment. The excavated tunnel extending from the kiva eastward will be filled after placement within it of a non-biodegradable material.

2.8 Drainage- Careful shaping and grading of backfill material will provide drainage from the site mound to the lower area surrounding it (see topographic information on plan view). It may be necessary to breach certain walls, but such action will be kept to a minimum.

2.9 Support Actions- A sign explaining the legal protection afforded this site by the Antiquities Act of 1906 and the Historic Preservation Act of 1966 will be placed between it and the primitive road immediately adjacent to it (see plan view). This road provides easy access to the site, cutting it in two, making vandalism and theft much easier. It cannot be blocked, however, for it is used by ranchers; neither can it be moved, for site density is too great.

2.10 Materials

The adobe mortar was made of a native soil and 3% by weight, a mixture of adhesive bond (92% by weight), linseed oil (6% by weight) and plasticizer (2% by weight). The biscidity of the adobe particles is greatly increased by the adhesive bond and pliability is added with plasticizer. Linseed oil adds flexibility to the adobe mortar. Ingredient proportions were established on the basis of a series of tests designed to reveal maximum potential for erosion prevention. The adobe mortar was close to the original material in color, texture, and original appearance. Adhesive bond will be used in situations requiring the addition of greater strength to the structure. Approximately 150 cubic yards of backfill material will be used from the site vicinity. Spoil material from 1947-1948. Excavation is too blended with natural fill to be used. Fall rock will be used for capping and reconstruction.

AR-NM-02-085 Dittert

PHYSICAL PROTECTION COMPLETED

2.1 Establishment of Wall Alignments- Minimal digging took place exposing most above ground walls (please refer to the map showing the location of stabilization trenches). At the completion of stabilization the backhoe exposed the top of the west wall of Room 11. This was stabilized. All excavation, partial as it was, was conducted under careful supervision of the Team Archaeologist. (NOTE: According to our anonymous field notes, this "minimal" digging included a trench more than five feet deep on the north side of Room 9 and trenches more than three feet deep along the walls of Rooms 4 and 5.

2.2 Clearing of Rooms- All rooms exposed as a result of the minimal excavation were cleared of blow sand and brush to within a few inches of the floor. Most of the exposed rooms were only dug to a depth of 2 feet below the free-standing masonry walls.

2.3 Reconstruction and Repair- Reconstruction and repair were kept to a minimum, and included only those areas which needed added strength in order to secure structural stability.

Each room will be discussed individually at this time as to repairs and reconstruction that took place.

Room 1: This room was never completely excavated by Dittert. It had been used by the inhabitants as a refuse area. The sandstone masonry was pecked and chinked with small spalls of sandstone and sherds. The walls were compounded with an adobe core, measuring 15" thick. Remnants of an adobe plaster were still intact in places on the walls of the room. None of the corners in this room were tied together; they were all abutted. The door in the south wall was 16" wide and 30" high. According to Dittert's excavation report, the door in the south wall probably opened onto the roof of the room located to the south.

All four walls in this room were cleared of loose material then capped and grouted. The south wall was reconstructed where it once caved in. The north wall was leaning and the northeast corner of the room was caved in before stabilization procedures began. Special attention was given to all walls in Room 1. Unfortunately, there was not adequate time to completely excavate the room, and therefore, the north wall, as completed, is still in a leaning position. It was found that if the wall were straightened, it would destroy all fabric, and the wall would have to be completely reconstructed. The decision was made to leave the wall in it's leaning position, and adequately backfill on both sides of the wall to insure sufficient stability.

Room 2: The walls of Room 2 were cleared of all loose material then capped and grouted. An 18" wide trench was dug on both interior and exterior sides of the walls. Where there were mere alignments along the

ground as the case of the south, west, and the northwest corner in this room, these walls were also cleared of all loose material and were partially reconstructed of, at most, two courses of masonry to the existing architecture. There was an opening in the south wall which may have acted as a doorway. The walls were 15" wide with an adobe core.

Room 3: A trench, 18" in width, 2' in depth was dug on both the interior and exterior sides of the standing walls. All of the walls in Room 3 were cleared of loose material, then capped and grouted. Where there were mere alignments along the ground as in the case of the south wall, the wall was partially reconstructed of, at most, two courses of masonry. There was an opening in the south wall which may have functioned as a doorway. All walls were double-faced, 15" wide, with an adobe core.

Room 4: A trench, 18" wide and 2' deep was dug along the entire length of both sides of the walls. All four walls were cleared of loose material, then capped and grouted. There was an opening in the south wall which may have served as a doorway into the next room. The entrance into this room was by use of a ladder. There was a partially sealed doorway leading to the room on the east side. The walls were double-faced with an adobe core.

Room 5: The room was not completely excavated by Dittert. It was two stories high with the first story serving as a refuse dump. The sandstone masonry used to construct the walls was pecked and chinked with small spalls of sandstone and sherds. The walls were double-faced with a thin adobe core. The adobe plaster was still intact in places on the walls of the room. None of the corners of this room were tied together; they were all abutted. There were niches 6" deep that were left in the walls and served as sockets for roof beams. In the south wall, there was probably a ventilator, but the remaining wall was not high enough to show this. The cave-in of the northwest corner of Room 5 was noted before stabilization operations began. The walls were cleared of all loose material, then capped and grouted. The northwest corner was sufficiently strengthened to insure structural stability. The west wall of Room 5 was strengthened as a result of the repairs made on the northwest corner.

Room 6: A trench 18" in width was dug on both the interior and exterior sides of all walls. The north, south, east, and west walls were all mere alignments along the ground. These alignments were cleared of unconsolidated material and were partially reconstructed of at most, two courses of masonry to the existing alignment. A. E. Dittert's excavation revealed two floor levels in this room. There was an opening in the south wall, which may have served as a doorway. All of the walls have a thickness of only one block of stone.

Room 7: A trench with a width of 18" was dug on both the interior and exterior sides of all the walls. All the walls in Room 7 were cleared of loose material then capped and grouted. Where there were mere alignments along the ground as in the case of the east wall, the wall was cleared of loose fall material and was partially reconstructed of, at most, two courses of masonry to the existing architecture. A. E. Dittert's excavations found that this room was used for a storage area. There was a small opening into Room 7 from the room to the north, which the Team Archaeologist designated as Room 14. There was also a doorway leading into Room 7 from Room 8, which was located to the west. The northeast corner of this room had a subfloor bin which was discovered as a result of Dittert's excavation. The walls have only a single block of thickness.

Room 8: A trench with a width of 18" was dug on both interior and exterior sides of all four walls. All of the walls of Room 8 were cleared of loose fall material, then capped and grouted. Where there were mere alignments along the ground as the case of the west wall and parts of the north and south wall, these walls were also cleared of loose material and were partially reconstructed of, at most, two courses of masonry to the existing alignment. There was an opening in the south wall which may have served as a window. Entrance into this room was by a ladder. During Dittert's excavation, 6 floor levels were discovered. The walls only have a thickness of a single block of masonry.

Room 9: Room 9 was designated such as a result of the minimal excavation conducted by the stabilization team. It is located to the south of Room 5. A trench was dug along the north, east and west walls to a depth of 3 feet. The walls were cleared of loose material and then capped and grouted.

Room 10: Room 10 was designated such, as a result of the minimal excavation conducted by the stabilization team. It is located to the south of Room 1. A trench was dug along the north, east, and west walls to a depth of 3 feet. The walls were cleared of loose fall material and then capped and grouted.

Room 11: Room 11 was designated such, as a result of the minimal excavation conducted by the stabilization team. It is located to the west of Room 10 and south of what was designated as Room 12 (to be discussed). A trench was dug along the east and north walls to a depth of 2-3 feet. These walls were cleared of loose material and then capped and grouted to insure structural stability of both walls.

Room 12: Room 12 was designated such, as a result of the minimal excavation conducted by the stabilization team. It is located to the west of Room 1 and north of Room 11. A trench was dug to expose most of the east wall and part of the south wall. The trenches were dug to a depth of 2 feet and measured 18" wide. These walls were cleared of loose fall material and then capped and grouted.

Room 13: Room 13 was designated such, as a result of the minimal excavation conducted by the stabilization team. It is located to the south of Room 8 and the west of Room 6. Trenches were dug along the north and east walls which were mere alignments along the ground surface. These walls were cleared of loose fall material and were partially reconstructed of, at most, two courses of masonry to the existing alignment.

Room 14: Room 14 was designated such as a result of the minimal excavation conducted by the stabilization team. It is located to the north of Room 7 and east of Room 8. Trenches were dug along the west and south walls to a depth of 2 feet, measuring 18" wide. These walls were cleared of loose fall material and then capped and grouted.

Kiva: Special attention and extra care was given to the kiva during stabilization operations. Reconstruction and repair were kept to a minimum and included only those areas where the structural stability was impaired. Trenches were dug, exposing all walls. Around the exterior of the kiva, trenches were dug to a depth of 2 to 3 feet, and on the interior fall material and blow sand were cleared away exposing 3 feet of the bench. Fall rock which was used to repair kiva features was staked in the center of the kiva. The two remaining kiva pilasters were cleared of loose material and then capped and grouted leaving a fairly level surface. There was no increase in their overall height. The gaps between the pilasters and the kiva wall were repaired. Stability of the pilasters was restored through the use of adobe mortar as described on 2.10 materials which tied the structures more securely to the kiva wall.

The northern section of the kiva bench was cleared of all loose material and was capped and grouted leaving a level surface. The hole at the base of the northern section of the kiva was repaired with sandstone and adobe mortar to match the existing masonry.

The southeastern sections of the kiva wall and bench where the walls had collapsed were repaired and partially reconstructed. Loose fall material was cleared from the area, and the walls were capped and grouted. The partial reconstruction strengthened the kiva wall and bench and consequently all areas adjacent to it.

The hole at the base of the south wall was probably a ventilator shaft, though no testing was done to make a final determination before the kiva was backfilled. No hole outside the kiva was found. The decision was made to repair the hole without further testing. A deflector was found as material in the kiva was being removed. It was lying near the base of the east bench, and was left leaning against the east wall when backfilling operations began.

2.4 Timber Treatment - No wooden elements were found during the stabilization operations.

2.5 Grouting of Masonry - Grouting was done with minimal destruction of the original fabric. The existing masonry was cleaned of loose material and the surfaces were dampened to aid in the bonding and curing of a adobe mortar. All visible grout was matched in color, texture, and behavior to the existing fabric. There were approximately 1,182 square feet of exposed wall to be grouted. Our expectations were not to grout the entire surfaces of each wall, but to grout only specific areas, depending on the stability of the masonry. On most walls, only the upper portion of the wall was grouted and capped. But in certain cases, where the lower portion of the wall was in need of repair, as in the kiva, the entire wall was grouted.

After grouting the walls were sprayed with water. Then, an "overdue" was performed to remove the pocked marks left on the surface of the grout by whiskbrooms. An "overdue" is a way of erasing these marks by rubbing the grout with a blunt stick, leaving a smoothed appearance. The walls were sprayed again leaving a natural rain-worn appearance.

2.6 Capping of Walls - Fall rock was used to cap approximately 200 linear feet of wall. This stabilization technique bonds two or more courses of masonry to the tops of existing walls.

2.7 Backfilling - Approximately 150 cubic yards of earth were used in the backfill operation at this site. The operation was perfomed with a dump truck, loader, and backhoe. The soil was collected from a nearby arroyo to the southeast of the site. The backfill material was hand-placed and compacted by a mechanical compactor.

Step 1: Before backfilling operations began, the limits of our excavations were defined by placing plastic sheeting on each room and kiva floor.
Step 2: A six to eight inch layer of soil was placed over the entire surface of the floor on both sides of wall simultaneously.
Step 3: The material was then compacted beginning in the center of the rooms and working towards the walls.
Step 4: Placement of materials and compaction took place until only a couple of feet of wall were exposed above the surface. Equal amounts of fill were added to both sides of a wall.

2.8 Drainage _ Careful shaping and grading of backfill material was performed in order to provide drainage from the site mound to the lower areas surrounding it. It was not necessary to breach any of the walls.

DITTERT SITE
(AR-NM-02-085)

Archaeological Documentation
1. Summary and Discussion

This section attempts to summarize and synthesize what we know about the Dittert Site to date, based on Dittert's research, and data gathered by the ruins stabilization team. This summary is presented to help the BLM assess the significance of this site in the preparation of their management plans. It is also presented with the hope that this information will be useful for the educational and interpretive aspects of BLM recreational programs. It is also written in recognition of the BLM's obligation to see that no information is lost due to projects affecting archaeological sites.

The site was named after Alfred E. Dittert, Jr. who excavated the site twenty-five years ago. He dug eight rooms and the kiva. Trenches were dug along the walls of the excavated rooms during BLM stabilization operations two years ago. I analyzed the data from these two excavations and came up the some novel conclusions.

The Dittert Site was built and occupied during the 1300's. Tree-ring dating of roof beams shows the kiva was built first, A.D. 1233, closely followed by Rooms 1 and 5, A.D. 1236-37. Other rooms were added later, Room 8 in A.D. 1245 and Room 6 in A.D. 1263. Wood from the kiva fireplace gave a date of A.D. 1267 indicated it was still being used at that date. The beams from Room 7 give us an interesting insight into the interpreatation of tree-ring dates. We know from its architectural relationship with other rooms that Room 7 was built at the same time as Room 8 or later. Yet, many of the beams have cutting dates of A.D. 1226-27. Obviously, the roof was built using beams from a structure built twenty years earlier. Some of the wood from Room 7 gave dates of A.D. 1279, suggesting the roof was still being repaired at that late date. Less than 25% of the site has been excavated, so final conclusions will have to remain in abeyance, but if, in fact, the kiva were built first, it would imply the original structure was built according to a plan, by people already living in the area, or people planning a move to the area. The pueblo was built on the midden of an earlier ruin, but the nature of this earlier deposit is unknown.

Apparently the Dittert Site was abandoned in good shape, with roofs intact. Perhaps its occupants intended to return in a few years when the drought was over , but never came back. The kiva was not destroyed, the rooms weren't burned, and the room furniture was left in place, all facts which suggest the inhabitants left the Dittert Site according to plan, with the intention of returning. Left on its own, the building became the ruin we see today. Unexplained is why all the trash is in the ruin instead of in a nearby trash mound. The sherds date from the 1200's, the same as the ruin, suggesting some of the rooms were used as trash dumps during habitation. If so, this is a practice that demands

explanation. (If a good number of sherds were to fit together to form restorable post, we might suspect abandonment was accompanied by pot smashing, but the site has been picked over by so many people that our chances for answering this question are almost nil).

The Dittert Site is a typical thirteenth century pueblo in the Cebolleta Mesa area, if any site can be said to be typical of that period. There are substantial numbers of all kinds of sites, small, medium and large. The Dittert Site is one of the large sites, having more than twenty rooms, more than one story, skillfully made compound masonry and a kiva. The rooms have some features worth mentioning. All of the excavated room, except for the kiva and Room 7, seem to have been living/sleeping rooms, implying that most of the storage rooms are still unexcavated. Thus, I would guess the site still has the potential of containing burials, sometimes found in trash-filled rooms (like the partially excavated deposit in the ground floor of Room 5), and perhaps a cache of items stored away at abandonment, assuming the people planned to return (or couldn't take everything with them).

Room 2 is particularly interesting because it had a fireplace in the southeast corner. A lip of adobe, 3 inches high, enclosed the hearth, and it contained ashes and a broken bowl. Archaeologists say that corner fireplaces are a feature of Pueblo architecture copies from the early Spanish settlers. This evidence from the Dittert Site suggests the possibility that some of the Pueblos were building corner fireplaces 300 hundred years before the Spanish arrived. (A similar corner fireplace was found in a P III ruin at Mesa Verde. Hayes, 1975: 86).

The kiva has some notable features. There are only 2 pilasters, arranged assymetrically. Perhaps originally there were more, but what would've been their arrangement? And why wasn't there at least one course of masonry left, marking where they were. The window in the southwest corner of the kiva, opening onto the plaza (if there was one), is in a position where it could've been used to observe the winter solstice sunset. It is positioned just far enough south so that the sunset would've been visible through it for only a few days out of the year, during the winter solstice. From ethnographic studies we know that every Pueblo group made solar observations for ceremonial purposes. And Each Pueblo had its own official "sun-watcher" just for that purpose. Although solar observations were made the year round, the winter solstice ceremony was the one rite observed in every Pueblo. Sometimes permanent markers were constructed from which observations could be made. For instance, at Cochiti the cacique monitored the sun's movements through a window in the east wall of one of the clan houses. Thus, it is reasonable to speculate that the kiva window at the Dittert Site was used to not the winter solstice sunset.

The kiva has two flagstone floors. This is interesting because most Pueblo floors are adobe. It also suggests that both floors were built by the same group of people, using the same technique. This is important, because the north wall of the kiva contains two styles of masonry,

suggesting to Dittert that the building had been abandoned, long enough for the walls and roof to deteriorate and then restored upon reoccupation, by people not using the pecked masonry skills of the original builders. However, a similar change in kiva wall masonry styles was observed by Al Hayes in the Mesa Verde region (Hayes and Lancaster, 1975: 82) and he implied the change was associated somehow with the roof. As the tree-ring dates from the Dittert Site indicate, the beams for the kiva roof were cut in 1233, the earliest roof at the site. I would seem that the kiva roof would be associated with the earliest masonry at the site, i.e., the fine, pecked sandstone masonry that characterizes most of the kiva wall. I suspect both masonry types were original. Perhaps the fine pecked masonry work was done by the women, and the less attractive, but equally servicable edge-shaped slab work was added by the men when they built the roof. We know from ethnographic accounts that women were responsible for house construction, men only helping with the heavy labor, such as bringing in beams and building the roof.

The original kiva floor included a subfloor vault, or cavity, to the west of the fireplace. This custom was not retained when the second floor was built. What was the function of the vault? A similar vault in a kiva floor in Mesa Verde was covered with a piece of ponderosa pine and was called a "resonator." Why was the custom abandoned in building the second floor?

On the kiva floor Dittert found eight thin pieces of sandstone, with pigment on one or both surfaces, arranged in lines. People from Acoma told him that these were paint stones and belonged to the heads of the different groups who used the kiva. They also suggested that the opening in the northeast wall of the kiva led to the council room. This was a room that was commonly used by the medicine societies. Such a room always adjoined a kiva. These correspondences between archaeological data and ethnographic information suggest cultural continuity between P III customs followed at the Dittert Site and PV customs in used several hundred years later. The BLM excavations revealed that the northeastern kiva opening was actually a passageway, perhaps leading to a council room, perhaps one of the original entryways. The kiva was only partially subterranean, so perhaps a side entryway was thought necessary to avoid the absurdity of having to climb up to descend into the kiva. In any event, the adobe lip of the kiva fireplace incorporated a piece of sandstone with a ladder hole carved into it. The hole was square. Whether this ladder socket was functional of vestigial remains to be verified by research at other sites in the area. P III kivas in the Mesa Verde area commonly have passageways coming in from the side.

There were two niches in the north bench of the kiva, directly opposite the ventilator. The large, lower niche had a hole in its floor, which could have been the sipapu. A sandstone slab covered the niches, suggesting that kiva furniture was found in place and the abandonment of the pueblo was planned and deliberate with the hope of returning.

Other notable kiva features included a small paint mortar on the sandstone bench near the ventilator, a central fireplace, a masonry deflector, four adobe-lined postholes for roof supports and a sandstone "damper" at the opening to the ventilator shaft, enabling the Anasazi to regulate air flow through the vent.

Who was living at the Dittert Site? Where did they come from? Where did they go? Architecturally, the ruin resembles P III ruins in other areas, so we can assume the settlers came for somewhere within the Anasazi realm, dominated by the people in Chaco Canyon a century earlier. If the site resulted from local population growth only, why were the people building with the same masonry skills used at P III ruins in Mesa Verde? Local P II ruins wer built with simple masonry walls, not compound walls with a pecked sandstone veneer, like the walls at the Dittert Site, Mesa Verde and elsewhere. Local P I ruins were jacal structures.

Interestingly enough, the architecture of the Dittert Site is strongly reminiscent of a P II ruin about 60 miles to the north, Casamero Ruin, built about two centuries earlier. The ruin was a "Chacoan outlier," so called because it was built more like the sites in Chaco Canyon than the other sites around it. Both sites had similar floor plans, an east-west orientation, a passageway leading from the kiva into an adjoining room, and walls made of carefully shaped compound masonry. The implication is that the people who built the Dittert Site could trace their cultural roots back to Chaco Canyon. This should not be too surprising, since many Pueblo groups have legends that include Chaco Canyon as part of their heritage. We also know that the population build-up around the Dittert Site roughly corresponded with the population decline in Chaco Canyon.

The thirteenth century neighbors of the Dittert Site settlers were a mixed bunch. Some of the people lived in dwellings much like the Dittert Site, with more than twenty rooms, compound masonry walls of pecked sandstone and a kiva. Some of the people lived in houses built with adobe walls, associated with large, circular depressions which look more like borrow pits than kivas. There were smaller homes, without kivas, built with simple sandstone masonry walls. There were tower-like structures and sites built like fortresses on high pinnacles. It would seem that the people in the area were grouped into different social entities, each group controlling their own particular watershed and associated farmlands. Each fiercely maintaining their own cultural identities, peculiarities and loyalties, as people will do. Thus, we see clusters of architectural styles and different patterns of pottery distribution. Unfortunately, the resources in the region differed from territory to territory, so population density varied, wealth varied and the ability to withstand ecological pressures varied. Some of the mesa top fortresses have almost no trash, suggesting they were used sporadically, perhaps on ceremonial occasions and most certainly when the people were under attack.

It would be nice for us if human population growth would level off when the amount of people living was about equal to the amount of food and other resources people could get out of the land around them. But population, whether human or not, is characterized by an abundance of immature individuals. Thus, the population grows. And thus, when parity is reached between resources and people, there are too many children for the next generation to handle.

On the other hand, the Southwestern desert had a tendency to break rather than bend when human population got too heavy. Agricultural productivity went with the wind and the rain. The soils were fertile and fragile. Trees were cut, grasses were burned, and thus the valley bottom fields were cleared, likewise the fields on the mesa tops. Corn, beans and squash were planted and harvested. Perhaps at first only a portion of the agricultural lands were cultivated. But the demand for corn grew as the population grew. Agricultural intensification led to soil depletion. The annual harvests drained the soil of its nutrients. Likewise, elimination of the natural plat communities permitted rainwater to leach the soil as well. Sapped of their strength and susceptibel to crop failures, the soils washed and blew away. Meanwhile the forests were stripped of their wood for building houses and fires. Elimination of the natural forest cover increased both wind and water erosion. A once stable environment was disrupted beyond its capacity to carry even a minimal agricultural society. Some areas were totally abandoned. Even today, centuries later, grazing is still the only economically feasible subsistence activity.

Such a scenario probably characterized the ecological history of the people living at the Dittert Site. Rough population statistics gleaned from Dittert's survey indicate the area experienced a period of geometric population growth, followed by almost total abandonment. A period of erosion and arroyo formation began sometime in the thirteenth century, when the population reached its peak, as indicated by the pottery found associated with a prehistoric arroyo in Cebolla Canyon. At the same time, tree-ring studies have shown that from A.D. 1250-1300 the area was plagued by the kind of drought conditions that would have produced crop failures yeare after year. Thus, the Dittert Site was abandoned.

Where did the people go? Not to the San Juan River country and not to the Little Colorado region, either. In both of those areas drought conditions were even worse. When they could, people moved to the Rio Grande. This population influx at the start of the fourteenth century probably was the major contributing factor to the formation of the large towns along the Rio Grande.

The people living at the Dittert Site and their neighbors, occupied a peripheral position to the major centers of Anasazi cultural development. Geographically, they lived in a closed basin, apart from the major drainages, the little Colorado, the San Juan, the Gila and the Rio Grande. Ecologically, their resources were limited. The people clustered in the areas where topsoil was best, until population pressures led to total abandonment of the area.

DITTERT SITE
(AR-NM-02-085

ARCHAEOLOGICAL DOCUMENTATION
2. Introduction and Purpose - by Earl Neller

A number of artifacts were recovered by the ruins stabilization team during the summer of 1976, including 255 potsherds, 10 rocks and minerals, 2 beads, 3 charred corn cobs and 41 bone fragments. These artifacts were recovered while digging trenches along the walls to be capped and grouted. These notes report the analysis and interpretation of those finds.

This is not a large sample to work with and the field notes are minimal. There are no control samples and our archaeological knowledge of the area is not as complete as it is for other areas. Still, in archaeology, even a pollen grain can be important and I would like to show how this little collection of artifacts can be used by an archaeologist to learn about the past.

The key to explanation in archaeology is devising some kind of theoretical orientation which provides a framework for understanding the significance of cultural variables. In jargon, this means you need to write a "research design"; in English, it means you have to conduct your analysis as if you were running an experiment.

There are four steps to the scientific process: (1) observation, (2) hypothesis formulation, (3) testing, and (4) explanation. At the Dittert Site our observations have been made for us. In this study I will attempt to answer one question. Dittert concluded that the site was occupied from A.D. 1000 to 1350, that its occupants were Anasazi peoples and that their cultural development reflected cultural patterns elsewhere, as well as, representing a local cultural phenomenon. How does our data confirm or reject these hypotheses? (These are not <u>true</u> hypotheses. Dates of occupation, cultural classifications and historical interpretations are measuring devices used to describe and compare archaeological cultures. A hypothesis would attempt to explain the relationship between cultural variables, such as: "In an agricultural society in the Southwest overpopulation leads to agricultural intensification, leading to environmental deterioration, followed by abandonment.") Briefly, I'm going to use our data as a test of Dittert's conclusions.

3. Archaeological Documentation - (8-4-76) - South Wall by Tim Valder

The room was excavated by Dittert 25 years ago. The wall is exposed to a depth of 5 feet on the inside of the room, and it is completely buried by backdirt on the outside of the room (Room9) There is a small window at the west end of the wall.

Objective: To expose the outside of the south wall of Room 5 (north wall, Room 9) so that capping can proceed.

Results: I began a trench 2½ to 3 feet wide along the wall. Unfortunately, I quickly discovered that the veneer had fallen away from this side of the wall. I continued digging until a good, veneered surface was exposed. The soil I went through, for the most part, was loose organic dirt, rich in cultural material: pottery, bone and ashes. The presence of large wall rocks and the looseness of the soil led me to believe I was digging in backdirt from Room 5 (then, why all the trash?- Earl Neller). Only when I got into the deep pit did I find any soil change. About eight inches above the lowest depth of the trench I began bringing up dark, richly organic soil without rocks. There were quite a few potsherds mixed in with this soil and they were bagged separately. Eight inches below this I found a yellow, clayish, packed, level soil. I believed this to be a floor. As I found solid wall at this place, I didn't go any lower. From two to four inches above the floor I encountered the ends of four poles, running east and west, one inch in diameter, which I supposed to be latillas. They were very rotten and could not be recovered.

3. Excavation Documentation
July-August, 1976

Depth of trenches dug during stabilization:

Location	Depth Below Surface
Room 1, north wall, exterior	3' 0"
" " interior	7"
" east wall, interior	4"
Room 2, north wall, exterior	1' 4"
" " interior	5"
" west wall, interior	4"
" east wall, interior	5"
Room 3, north wall, exterior	1' 0"
" west wall, interior	6"
Room 4, north wall, exterior	1' 4"
" east wall, exterior	3' 2"
" south wall, exterior	1' 7"
Room 5, north wall, exterior	3' 3"
" east wall, exterior	1' 6"
Room 7, north wall, interior	1' 6"
" east wall, exterior	8"
Room 8, north wall, exterior	2' 6"
Room 9, north wall, interior	5' 3"
" east wall, interior	2' 6"
" west wall, interior	2' 6"
Room 10, north wall, interior	2' 1"
" east wall, interior	2' 8"
" west wall, interior	2' 5"
Room 12, east wall, interior	4"
Room 13, north wall, interior	6"
Room 14, south wall, interior	2' 6"
kiva, north wall, exterior	2' 8"
" east wall, exterior	3' 9"
" south wall, exterior	1' 0"
" west wall, exterior	1' 2"

4. Inventory of Artifacts

July - August, 1976

FS#	Location	Description
1	Room 10, north wall trench	Sherds, 17 Gray corrugated 2 Upper Gila corrugated 3 Cebolleta B/G 1 Tularosa B/W
2	Room 2, west wall, exterior trench	Sherds, 8 gray corrugated 2 Upper Gila corrugated 2 Tularosa B/W 1 St. Johns polychrome
3	Room 2, north wall, exterior trench	1 bone fragment; sherds, 4 gray corrugated 4 Cebolleta B/G 5 Upper Gila corrugated
4	Room 3, north wall exterior trench	1 bone fragment; sherds, 11 gray corrugated 3 Tularosa B/W 2 Cebolleta B/G 1 St. Johns polychrome 1 Wingate B/R
5	Room 3	Sherds, 2 gray corrugated 1 Cebolleta B/G
6	Room 4, north wall, exterior trench	Sherds, 1 gray corrugated 2 Cebolleta B/G 1 St. Johns polychrome
7	Room 4, south wall, exterior trench	Sherds, 1 gray corrugated
8	Room 9, north wall trench, level two	1 charred corn cob, 12 bone fragments including 1 deer vertebra and 1 bird bone, 1 chert flake and sherds, 29 gray corrugated 12 Upper Gila corrugated 9 Tularosa B/W 11 Cebolleta B/G 2 St. Johns polychrome 1 Wingate polychrome 1 Puerco B/R

4. Inventory of Artifacts July-August, 1976 (cont.)

FS#	Location	Description
9	Room 5, north wall, exterior trench	1 gypsum fragment, 1 prairie dog skull sherds, 2 gray corrugated 1 Upper Gila corrugated 2 Tularosa B/W 2 Puerco B/R
10	Room 5, north wall trench	2 charred corn cobs, 16 bone fragments including a cottontail femur, 2 chert flakes, 1 stone bead (dark gray shale), 1 Ollivella shell bead, sherds, 13 gray corrugated 4 Upper Gila corrugated 6 Cebolleta B/G 1 St. Johns polychrome
11	Room 5, east wall, exterior trench	7 bone fragments including deer and a cottontail tibia, 2 chert flakes, 1 basalt flake, 1 white calcedony knife fragment and sherds 1 gray corrugated 8 Upper Gila corrugated 5 Cebolleta B/G 3 St. Johns B/R
12	Room 9, north wall trench, level one	Sherds, 7 gray corrugated 1 Upper Gila corrugated 8 Tularosa B/W
13	Room 14, south wall	1 basalt grinding stone, 2 burned adobe fragments from roof, sherds 11 gray corrugated 4 Tularosa B/W 1 Cebolleta B/G 1 Wingate polychrome
14	Room 8, east wall trench	Sherds, 4 gray corrugated 4 Upper Gila corrugated 1 Tularosa B/W
15	Surface collection, Dittert Site and nearby sites	1 chert flake and sherds 9 B/W (various) 4 Cebolleta B/G 3 St. Johns B/R 3 St. Johns polychrome 1 Springerville polychrome

5. Analytical Procedures

a. Pottery Analysis

The stabilization team saved about 255 sherds. I sorted and classified the sherds according to surface treatment and paste characteristics, with the aid of a 10X hand lens and a pliers. Design styles were only incidental and thus, I had no group of unidentifiable white sherds. No doubt, a binocular microscope would have made the job easier. Upon examining the design styles and comparing my types with those reported by Dittert, I realized something was amiss; so I decided to review the whole problem of classifying ceramics in west-central New Mexico.

Apparently, with the exception of the Cibola White Mountain redwares, the pottery type definitions for west-central New Mexico still need to be refined. The situation is not much different today than back in 1931 when Gladwin said: "The attempt to define black-on-white pottery horizons in the culture of the Little Colorado creates a situation which at once invites controversy. Our definition of types has therefore purposely been vague and no attempt has been made to draw sharp lines of cleavage; on the contrary, we believe that the evolution has been gradual and continuous."

"The determination of the status of Tularosa ware is of the greatest importance in outlining the Little Colorado culture. If it be accepted as herein proposed, it serves to bind together the chief components of the culture, Puerco black-on-white, from which it seems to have developed, and St. Johns Polychrome, to which it seems to have passed on its characteristic designs. Technically and through association it is closely related to wares that are found in the drainage of the Little Colorado. At the same time, Tularosa black-on-white was first found and is plentiful in the San Francisco Valley which is in the drainage of the Upper Gila, hence the existing classification. This present attempt to define a Little Colorado culture is not designed so much to show that Tularosa ware does not belong in the Upper Gila as that it belongs to the Little Colorado culture by descent and affinity, and that, as such, it occurs in the Upper Gila. If Tularosa black-on-white be admitted to be a part of the Little Colorado culture, two new conditions are created in the region. In the first place, it means the elimination of the decorated ware of the Upper Gila culture as that culture is at present constituted and its reduction, ceramically, to a series of corrugated wares which may or may not comprise a separate culture. In the second place, it means the extension of the revised Little Colorado culture to cover the region which has been regarded as Upper Gila." (p.33)

The problem at the Dittert Site lies in the identification of the black-on-white wares. Almost all the redware sherds are St. Johns polychrome or St. Johns black-on-red from the thirteenth century (A.D. 1175-1300). Likewise, tree-ring dates from 174 wood samples suggest the present ruin was occupied from A.D. 1233-1279+. From Dittert's excavations we know that the ruin was built on the midden of an earlier site, but we also know that our sample most likely comes from deposits representing the latest occupation at the site.

5. Analytical Procedures

The walls of excavated rooms were cleared of vegetation and loose sandstone rubble. Trenches were dug exposing the unexcavated sides of walls. Artifacts were saved in paper bags, giving basic field identification data, including location of trenches. Careful notes were taken describing the excavations along both sides of the south wall of Room 5. (Note: After examining the artifacts it is apparent that none of the excavated material was screened, since only large sherds were saved, and the number of tiny chert flakes is disproportionately low. However, to the north and east of Room 5, only tiny sherds were saved, indicating the trenches must have been made into the backfill from Dittert's excavations; i.e., the dirt had already been screened. In some cases, no attempt was made to save artifacts. For instance, we have no sherds from the kiva area, even though the trench around the kiva was almost 4 feet deep on the east side). Believe it or not, 18,000 cubic feet of dirt were disturbed during stabilization.

In the lab artifacts were catalogued, inventoried and minutely examined using a 10X hand lens and a 6 inch ruler

The sherds, rocks and bones will eventually be sent to the Socorro District Office for use as a reference collection for archaeological research.

5. Analytical Procedures
a. Pottery Analysis (cont.)

In no case did the stabilization crew dig through a room floor to an earlier stratum. In no case were they digging through a back dirt deposit that came from an earlier stratum. Likewise, the low concentration of corrugated sherds suggests our sample comes from refuse deposited around the time of site abandonment. (Normally middens contain a larger percentage of culinary sherds, because these come from the vessels that cost less and break more. The average amount of decorated sherds at a site is usually something like 7% of the total number of sherds. Only the last depositional layer comes close to representing the true proportions of decorated to non-decorated wares at a site. At the Dittert Site our sample contained 40% decorated sherds). According to the tree-ring dates, according to the redwares, according to the provenience, we're dealing with sherds from the 1200s. This is further supported by the fact that we have no sherds from earlier periods, such as Chaco B/W (A.D. 1050-1125), Gallup B/W (A.D. 1000-1125), Reserve B/W (A.D. 950-1125), or later periods, such as Fourmile polychrome (A.D. 1325-1400), Pinedale polychrome (A.D. 1275-1350), and Gila polychrome (A.D. 1300-1400). So why did Dittert say the site was occupied from A.D. 1000 to 1350. Why did he identify such types as Socorro B/W and Cebolleta B/W (A.D. 950-1050) from among the sherds from this site? I think it was because most of the designs on the black-on-white sherds don't look like classic Tularosa B/W (A.D. 1100-1250). Instead they're reminiscent of earlier styles from nearby areas. To complicate matters, I think there's a good possibility that most of the pottery at the Dittert Site came from somewhere else anyway. On the basis of paste and temper distinctions, I'm guessing that only one type of pottery at the site came from somewhere in the general malpais area. This type consists of the thin black-on-gray sherds, lacking a white slip, with a dark gray paste with sherd tempering and tiny black flecks (identified as Socorro B/W by Dittert). Most likely the black flecks came from the coarse-grained basalt manos used to grind up temper. And perhaps the absence of a white slip may be due to a local deficiency in the supply of a good white firing clay. The nearest supply is above Zuni sandstone, controlled by the people living in the Acoma Creek drainage. Pottery from the nearby Prewitt area also contained a large number of black-on-gray sherds. The gray wares were named by Hargrave as Bluewater B/G (A.D. 925-1050), Las Tusas B/G (A.D. 950-1050), and San Jose B/G (A.D. 950-1050). No P III sites were found in the Prewitt area, so no P III gray type was named. Following Dittert's lead, I'v called the B/G sherds from our sample Cebolleta B/G, though clearly I'm talking about the sherds he identified as Socorro B/W in his research, not those he grouped as Cebolleta B/W.

Our sample is far too small to make statements about the relative abundance of particular pottery types, especially since the site has been picked over by other investigators (Dittert, 1949-51, Wiseman, 1974), as well as local pothunters. But, it does suggest discrepancies may exist in the earlier studies, and points to problems that need to be considered in future research. Certainly the definition and dating of local pottery assemblages could stand refining. And a petrographic study of the pastes and tempering materials needs to be made to tie down the origin of the different kinds of sherds in the region.

5. Analytical Procedures
a. Pottery Analysis (cont)

I think this study also shows that even a few sherds have a story to tell, a story that's lost if ruins stabilization is handled like a construction project rather than an archaeological project.

The following paragraphs describe the pottery types I've isolated from the stabilization team's sample.

Tularosa B/W, A.D. 1100-1250-- These sherds have a white slip, inside and out, usually with a polished, crackled surface on the decorated side. The undecorated surface is smooth, but not polished. Designs are generally well executed in a black mineral paint. The sherds are thick (5-6 mm average), compared to the local black-on-gray type. The paste is gray and friable; the temper consists of angular fragments, white to gray to black, some of which most likely are crushed sherds, some of which seem to be crushed rock. Two of the rims are squared and ticked; the other two are more rounded. While the tempering material seems to be the same for all sherds within this group, there is a correlation between particularly well-drawn, fine-lined, parallel line designs and a white, more indurated paste, which could mean this group of sherds contains more than one pottery type. The designs resemble Puerco style as much as Tularosa style, with parallel lines, both thin and thick predominating over more typical opposing hatched and solid elements. The white slip and absence of tiny flecks of basalt in the temper suggest to me this pottery type was not made locally.

Cebolleta B/G, A.D. 1150-1300?-- These sherds have a smooth gray surface, without a white slip. Designs are poorly executed using a black mineral paint. Broad carefree strokes are the rule, rather than the carefully drawn fine-line designs seen on the Tularosa B/W sherds. The designs are a somewhat anachronistic, reminiscent of Gallup/Escavada/McElmo styles more than the characteristic P III style. The sherds are thin (4-5 mm average) compared to the black-on-white sherds in the sample, another non-P III characteristic. The paste is dark to light gray and produces a sharp break. The temper consists of angular fragments, white to gray to black, some of which most likely are crushed sherds. Tempering material also includes some tiny black flecks, perhaps resulting from the use of basalt manos in grinding up the tempering material. The absence of local white-firing clays, as well as the presence of black (basalt?) flecks in the temper, suggest this is a locally made pottery type.

St. Johns Polychrome, A.D. 1175-1300-- these sherds have a characteristic red/orange slip. The surface is polished. On the interior of vessels designs are painted with a black carbon-like paint that sometimes seems to melt into its surroundings. On the exterior designs are drawn with a white paint. The paste is generally light gray to orange, frequently with a dark gray, almost black interior. The temper consists of black, white, red, or buff angular fragments which appear to be crushed sherds, but in some cases appear to be crushed rock. The red slip tends to break off easily and the surface of these sherds shows more deterioration than the other redwares. The designs are the same as in Tularosa style designs. Sherds are 5-7 mm thick.

5. Analytical Procedures

a. Pottery Analysis

St. Johns B/R, A.D. 1175-1300-- These sherds are the same as St. Johns polychrome, without the white paint on the outer surface.

Springerville Polychrome, A.D. 1250-1300-- Our sample contains one sherd. It is identical to the St. Johns types, except that the exterior designs are drawn in both black and white paints.

Puerco B/R, A.D. 1030-1175-- These sherds (3) have a dark red slip. The surface is polished, though somewhat rough on the exterior. Designs are drawn using black mineral paint. The past is light orange to dark gray. The temper consists of angular fragments which seem to include crushed sherds, crushed rock and quartz sand. The rims are square. The sherds are different from the St. Johns types in that the slip color is a darker red, the surface is less deteriorated, the walls are thicker (6-8 mm), the paint is mineral paint, and the designs (what few we have) are more like Sosi style. Though Puerco B/R is dated at A.D. 1030-1175, it has been reported from a horizon at Pindi Pueblo which has tree-ring dates of A.D. 1215. Its presence in the Dittert Site sample lends support to the late Pindi Pueblo dates.

Wingate B/R, A.D. 1050-1200-- Our sample has one sherd. It has a red slip, polished surface, carbon paint designs, gray paste and temper consisting of variably colored angular inclusions. The red slip is deteriorated. It is distinguished from the other redwares more on the basis of its maroon-red slip than anything else.

Wingate Polychrome, A.D. 1125-1200/1300-- (Querino Polychrome) Our sample consists of two sherds. The surface is polished, paste is dark gray and angular inclusions look like crushed sherd temper. One sherd has a white slip. There are minor black paint decorations on the outside of the vessel. Designs are drawn with a maroon-red paint or slip on the bowl's interior, in typical Wingate style. The other sherd is unslipped. Decorations are drawn with white paint on the exterior and a maroon paint on the interior. The maroon paint has a metallic luster, almost like a glaze. Tiny flecks of mica (?) show through the polished surface.

Upper Gila Corrugated, A.D. 1100-1300-- These sherds have a buff exterior, sometimes plain, sometimes corrugated. They are smudged black on the interior and often highly burnished. The walls are exceptionally thin for corrugated pottery. The exteriors have exceptionally narrow and even corrugations, sometimes covering the entire surface, sometimes confined to the neck portion. Sometimes indentations are placed so as to create a design. The paste is fine and hard, orange and buff to black and temper consists of fine quartz grains.

There is one corrugated sherd with a black burnished interior and an orange exterior. The paste is orange to black. The temper consists of fine grains of quartz and mica, suggesting perhaps a relationship to micaceous wares in Arizona.

DITTERT SITE
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5. Analytical Procedures

b. Pottery Types

From Dittert's survey, sherds from the site and a ten foot radius around the site (233 sherds):

1. Cebolleta B/W 10.2% (A.D. 900-1150

2. Socorro B/W 9.0% (A.D. 950-1300)

3. Tularosa B/W 7.9% (A.D. 1100-1250)

4. Unidentifiable white 8.2%

5. Gray Corrugated 40.0% (A.D. 100-1300)

6. Los Lunas Smudged 12.2% (A.D. 1100-1300)

5. Analytical Procedures

c. Pottery Types, Dittert Site, 1976

From ruins stabilization trenches (255 sherds):

A.D.	Type	Number of Sherds	%
1100-1250	Tularosa B/W	39	
1150-1300?	Cebolleta B/G	39	
1175-1300	St. Johns polychrome	9	
1175-1300	St. Johns B/R	6	
1030-1215	Puerco B/R	3	
1250-1300	Springerville polychrome	1	
1125-1300	Wingate polychrome	2	
1050-1200	Wingate B/R	1	
1000-1300	Upper Gila corrugated	39	
1000-1300	Gray corrugated	116	

Pottery Types Not Found:

1050-1125	Chaco B/W	1300-1400	Galisteo B/W
1000-1125	Gallup B/W	1250-1300	Kayenta B/W
950-1125	Reserve B/W	1200-1300	Kayenta polychrome
1065-1200	Sunset Red	1200-1350	Santa Fe B/W
1065-1250	Walnut B/W	1200-1300	Tusayan B/W
1000-1275	Gallina B/W	1200-1300	Mesa Verde B/W
1100-1275	Flagstaff B/W	1200-1300	Wupatki B/W
1275-1325	Pinedale B/R	1200-1300	Betatakin B/W
1275-1350	Pinedale polychrome	1325-1400	Fourmile polychrome
1300-1400	Gila polychrome		

5. Analytical Procedures

d. Lithics - 1976

Code No.	Description	Total
1053	Chalcedony, white to translucent, with black mossy inclusions, probably local, one fragment came from a stone knife	3
1072	Chert, yellow-brown with black mossy inclusions, local, probably Zuni Mountains	2
1140	Silicified wood, translucent, white, milky, fibrous inclusions, probably local, Rio San Jose, Zuni Mts.	1
1142	Silicified wood, light colors, gray to amber, variegated, chalcedonic, waxy luster, probably local	1
2500	Clay, a local silty adobe, occurs in zone below surface sandy zone, mixture used in roof construction, burned, lots of rounded quartz grains	2
2651	Dark gray shale, Mancos shale, local, used to make a small bead, 3.8 mm diameter, 1 mm thick	1
2800	Rock gypsum, transparent sheets	1
3404	Basalt, coarsely crystalline, dull, gray, McCarty's basalt, local, used as a grinding stone (mano)	1
3410	Basalt, fine-grained, indurated, dull luster, Cebolleta Mesa, local	1

5. Analytical Procedures

e. Rock and Minerals

I classified all lithic material according to the coding sytem pioneered by Helene Warren (Chaco Center, Canional Park Service). The purpose of this kind of classification is to distinguish between stone artifacts from different localities, and thus examine the degree of isolation or interaction for a particular group of people. Our sample is too small to take seriously, but it indacates the people who lived at the Dittert Site got their stone from local sources.

f. Bones

I attempted to identify all faunal material, what little of it there was. I found bones from cottontail (3), deer (3) prairie dog (2), woodrat, squirrel and toad. None of the bones could be identified to the species level. No generalizations could be made about environmental changes, or prehistoric exploitation of faunal resources. Past environmental characteristics can be recognized only through the study of sensitive indicator species, such as the various Peromyscus species of mice. And the sample is much too small to make generalizations about food resources. Probably most, if not all, of the bones result from the post-occupational activities of "pack rates." Otherwise, we could say that the site's inhabitants ate a variety of small mammals, but not much in the way of big game.

There was one Olivella shell bead which, of course, had to have come from the West Coast.

g. Plant Material

Three charred cobs were saved. They were eight-row and ten-row varietyies of chapolote corn. As this kind of corn is particularly suited for cultivation under adverse conditions, and as refuse items found on the surface of a ruin generally represents discards made around the time of abandonment.

7. Recommendations for Future Use, and the Protection of Cultural Resources

In 1974, Regge Wiseman, Laboratory of Anthropology, Santa Fe, completed a study for the BLM in which he located, described and evaluated archaeological sites over much of the Cebolleta Mesa area ("The Malpais Reconnaissance," an archaeological inventory and evaluation of some prehistoric sites in the El Palpais planning unit, Socorro District, BLM, 1974). In discussing the Dittert Site, Wiseman recommended: "The Armijo Canyon area...sites...are even more crucial (to archaeological research) now that so many of the (other) sites in the area have been badly vandalized. The recreational potential of site 85 (Dittert) is great and most certainly should be developed."

"A number of sites are in immediate need of stabilization. Site 85 in Armijo Canyon area should be stabilized for possible recreational development. Rapid deterioration of the walls of the excavated portions is now underway. Continued collapse will not only destroy the great potential of the site, but the collapse of the kiva walls will cause incalculable damage to the fills and structures of adjacent rooms. Much important information on one of the extremely few two-storied structures in the region will be lost."

"BLM 85. Recommendation: Stabilize immediately as this is an excellent site for interpretive and recreational development."

Because of these recommendations, BLM stabilized the Dittert Site in 1976. Presently, the excavated rooms are back-filled, almost eliminating the site's potential for interpretive and recreational development. The site is in a stable condition, barring pot hunting. The site is on the National Register of Historic Places. The following recommendations and considerations should guide future programs at the site in priority order as follows:

Recommendations

1. Patrol/Surveillance should be made at least once annually with maintenance recommendations.

2. Cyclical maintenance should be programmed every five years if the site requires maintenance as determined by the annually inspection/surveillance.

3. Study recreational potential by visitor use.

4. Aerial Photos - discrpancies in existing maps.

5. Monitoring of deterioration and soil analysis.

6. Archaeological Research
   a. Excavation - 75% of the site has not been excavated, approximately 75 rooms and probably contain collapsed roofs, trash deposits and burials. The site is built on the midden of an earlier ruin and could produce earlier deposits of artifacts.

b. Define the plaza area.

c. Investigate the trash mound to the southeast of the site.

d. Analyze the stratigraphic deposits adjacent to the ruin for it may produce continuity of occupation at the site.

e. Detailed study of sherd characteristics is also needed to determine the raltionships between local pottery and other ceramic traditions.

f. For data necessary about the cultural processes, the site is valuable because of the ruin deposits and well-defined chronological boundaries.

8. Photography Documentation

A. Before and After Physical Protection - Phase II

Room 1, west wall: before stabilization

Room 1, west wall: after stabilization

DITTERT SITE
(AR-NM-02-085)

Room 1, north wall: before stabilization

Room 1, north wall: after digging trenches along both sides of wall.

No photo taken of stabilization completed.

Room 1, south wall: before stabilization

Room 1, south wall: after stabilization

DITTERT SITE
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Room 1, east wall: before stabilization

Room 1, east wall: after stabilization

Room 2, west wall: after stabilization

Room 2, north wall: after stabilization

DITTERT SITE
(AR-NM-02-085)

Room 2, west wall: before stabilization

Room 2, west wall: after stabilization

DITTERT SITE
(AR-NM-02-085)

Room 2, east wall: before stabilization

Room 2, east wall: after stabilization

Room 2, south wall: before stabilization

Room 2, south wall: after stabilization

Room 2, north wall: before stabilization

Room 2, north wall: after stabilization

Note strange masonry blocks at base of wall.

Room 3, north wall: before stabilization

Room 3, north wall: after stabilization

Room 3, south wall: before stabilization

Room 3, south wall: after stabilization

Room 3, west wall: before stabilization

Room 3, west wall: after stabilization

Room 3, east wall: before stabilization

Room 3, east wall: after stabilization

Room 4, north wall: before stabilization

Room 4, north wall: after stabilization

DITTERT SITE
(AR-NM-02-085)

Room 4, west wall: before stabilization

Room 4, west wall: after stabilization

DITTERT SITE
(AR-NM-02-085)

Room 4, east wall: before stabilization

Room 4, east wall: after stabilization.

DITTERT SITE
(AR-NM-02-085)

Room 4, south wall: before stabilization

Room 4, south wall: after stabilization

Room 5, east wall: before stabilization

Room 5, east wall: after stabilization

DITTERT SITE
(AR-NM-02-085)

Room 5, west wall: before stabilization

Room 5, west wall: after stabilization

Room 5, south wall: before stabilization

Room 5, south wall: after stabilization

DITTERT SITE
(AR-NM-02-085)

Room 5, north wall: before stabilization

Room 5, north wall: after digging trenches to expose wall.

No photo taken of stabilization completed.

Room 6, west wall: before stabilization

Room 6, west wall: after stabilization

DITTERT SITE
(AR-NM-02-085)

Room 6, north wall: before stabilization

Room 6, north wall: after stabilization

Room 7, west wall: before stabilization

Room 7, west wall: after stabilization

DITTERT SITE
(AR-NM-02-085)

Room 7, east wall: before stabilization

Room 7, east wall: after stabilization

DITTERT SITE
(AR-NM-02-085)

Room 7, north wall: before stabilization

Room 7, north wall: after stabilization

DITTERT SITE
(AR-NM-02-085)

Room 8, east wall: before stabilization

Room 8, east wall: after stabilization

DITTERT SITE
(AR-NM-02-085)

Room 8, north wall: before stabilization

Room 8, north wall: after stabilization

DITTERT SITE
(AR-NM-02-085)

Room 8, south wall: before stabilization

Room 8, south wall: after stabilization

DITTERT SITE
(AR-NM-02-085)

Room 8, north wall: looks like a roof beam, we have no notes.

DITTERT SITE
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Room 9, east wall: after stabilization

Room 9, exterior of east wall: after stabilization

No "before" photos taken.

DITTERT SITE
(AR-NM-02-085)

Room 9, west wall: after stabilization

Room 9, north wall: after stabilization

No "before" photos taken.

Photo shows two windows in the stabilized north wall. According to Dittert's notes, there were no windows in this wall, but there were two roof beam niches in the opposite side of the wall, 6" deep.

DITTERT SITE
(AR-NM-02-085)

Room 10, north wall: after stabilization

Room 10, east wall: after stabilization

No "before" photos taken.

Note that plugged doorway in north wall is somwhat obscured.

DITTERT SITE
(AR-NM-02-085)

Room 10, west wall: after stabilization

No "before" photo taken.

Note that the print is not sharp. This is an infrequent but disturbing characteristic of commercially processed prints that would be avoided by maintaining our own darkroom.

DITTERT SITE
(AR-NM-02-085)

Room 11, north wall, after stabilization

Room 11, east wall: after stabilization

No "before" photo taken;
room was buried.

DITTERT SITE
(AR-NM-02-085)

Room 12, south wall: after stabilization

No "before" photo taken, as wall was buried.

DITTERT SITE
(AR-NM-02-085)

Room 12, east wall: before stabilization

Room 12, east wall: after stabilization

Note that plugged doorway, visible in top photo, somewhat obscured below.

Room 13, east wall: after stabilization

Room 13, north wall: after stabilization

There were no "before" photos, because the room was buried.

DITTERT SITE
(AR-NM-02-085)

Room 14, east wall: after stabilization

Room 14, south wall: after stabilization

There were no "before" photos, because the room was buried.

Room 14, west wall: after stabilization

Room 14, north wall: after stabilization

There were no "before" photos, because the room was buried.

DITTERT SITE
(AR-NM-02-085)

Kiva, west wall: before stabilization

Kiva, west wall: after stabilization

DITTERT SITE
(AR-NM-02-085)

Kiva, east wall: before stabilization

Kiva, east wall: after stabilization

Kiva, north wall: before stabilization

Kiva, north wall: after stabilization

Note that there is one niche at the base of the stabilized kiva bench. Dittert found two. This error could have been avoided, if the site were studied in detail before field work began.

Kiva, south wall: before stabilization

Kiva, south wall: after stabilization

Wall collapse to right of photo board is location of kiva window. The location and orientation of window are crucial data for archaeo-astronomy studies.

Wall segment abutting south wall of kiva after stabilization.