

**THE JOINT MADABA PLAINS PROJECT:  
A PRELIMINARY REPORT OF THE 1992 SEASON,  
INCLUDING THE REGIONAL SURVEY AND  
EXCAVATIONS AT TELL JALUL AND TELL EL-'UMEIRI  
(June 16 to July 31, 1992)**

Randall W. Younker  
Andrews University  
Berrien, Springs, MI 49104

Larry G. Herr  
Canadian Union College  
College Heights, AB T0C 0Z0

Lawrence T. Geraty  
La Sierra University  
Riverside, CA 92515

Øystein S. LaBianca  
Andrews University  
Berrien Springs, MI, 49104

During the summer of 1992, Andrews University conducted a fourth season of archaeological research in the Madaba Plains region of Jordan (see **Plate 1**). This season the Madaba Plains Project was cosponsored by Atlantic Union College (South Lancaster, MA), Canadian Union College (College Heights, near Lacombe, Alberta, Canada), and Walla Walla College (Walla Walla, WA).<sup>1</sup> An international team of about 80 archaeologists, students,

<sup>1</sup>Once again, the authors of this report would like to express their indebtedness to each member of the staff who made these results possible. In addition to the continued financial and staff support of the consortium institutions—Andrews University (principal sponsor), Atlantic Union College, Canadian Union College, and Walla College—other funds were raised from private donations and volunteer participation fees. Individuals who contributed generously to the general dig fund included Elizabeth Platt, Leif and Grete Bakland, Wilfred Geschke, Landon and Nancy Kite, Mike Maxwell, Elmer and Darilee Sakala, Mitchell and Patsy Tyner, Gary and Carolyn Waldron, and especially Ron and Sheila Geraty. In-kind contributions to the project came from the Environmental Systems Research Institute of Redlands, CA, which provided GIS software support; Magellan Systems Corporation of San Dimas, CA, which provided a GPS receiver unit; and Worthington Foods of Worthington, OH, which provided vegetarian canned foods.

Special recognition is due to the new Director-General of Antiquities, Dr. Safwan Tell, who has continued the excellent tradition of support which that Department has provided for our project, and to Department-of-Antiquities representatives, Hanan Azar, Rula Qussous, and Adeeb Ahu Shmais. Work at our

and laypersons joined approximately 40 Jordanians in producing the results summarized in this report.<sup>2</sup>

For a detailed review of the project's specific research objectives and previous results, the reader is referred to the preliminary and final reports of the first three seasons.<sup>3</sup> However, the overall goals continue to be the illumination of the nature and causes of settlement oscillations in the Madaba Plains region and

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major excavation sites would be impossible without the gracious support of the land owners: businessman/scholar Dr. Raouf Abujaber, landowner of Tell el-'Umeiri; Gen. Acash, es-Zeben, landowner of Jalul.

The officers and staff of the American Schools of Oriental Research and its local affiliate, the American Center of Oriental Research in Amman, provided the usual invaluable assistance through the good offices of the new director Dr. Pierre Bikai and his wife, Dr. Patricia Bakai. Also, special thanks are due to Dr. Kamal Fakmawi, principal of the UNRWA-sponsored Amman Training Center, and his staff who graciously turned their excellent facilities over to us during the summer to use as our base camp.

The scientific goals and procedures of the project were approved by the Committee on Archaeological Policy of the American Schools of Oriental Research. Permission to excavate and survey in the project area was obtained from the Department of Antiquities of Jordan. ACOR provided logistical support, and provided a home away from home for staff members.

<sup>2</sup>The directors for the project this season once again included the following: Lawrence T. Geraty, Senior Project Director; Larry G. Herr, Director of the Tell el-'Umeiri Excavations; Øystein S. LaBianca, Director of the Regional Survey; and Randall W. Younker, Director of the Tell Jalul Excavations. Douglas R. Clark was the Director of the Consortium.

LaBianca, Jim Fisher, and Trudy Stokes served as dig administrators at the Institute of Archaeology during the early planning stages of this season's expedition; Bill Cash, Joseph Ghosn and Trudy Stokes served as camp administrators in Jordan. Lloyd Willis served as camp chaplain and Keith Stokes was camp handyman. Leila Mashini served as head cook, assisted by Stokes and others. Pottery registrar was Stephanie Merling, assisted by David Merling. Processing of small finds was supervised by the Objects Registrar, Elizabeth Platt, assisted by Richard Brenecke. Objects were photographed by Brenecke and Jennifer Groves. Objects were drawn by Brenecke, Stephanie Elkins, and Rhonda Root. Brenecke also served as draftsman for Tell el-'Umeiri and Jalul. The surveyor was Abbas Khammash.

<sup>3</sup>See Lawrence T. Geraty, "A Preliminary Report on the First Season at Tell el-'Umeiri (June 18 to August 8, 1984)," *AUSS* 23 (1985): 85-110; Lawrence T. Geraty, Larry G. Herr, and Øystein S. LaBianca, "The Joint Madaba Plains Project: A Preliminary Report on the Second Season at Tell El-'Umeiri and Vicinity (June 18 to August 6, 1987)," *AUSS* 26 (1988): 217-252; Randall W. Younker, Lawrence T. Geraty, Larry G. Herr, and Øystein S. LaBianca, "The Joint Madaba Plains Project: A Preliminary Report of the 1989 Season, Including the Regional Survey and Excavations at El-Dreijat, Tell Jawa, and Tell el-'Umeiri (June 19 to August 8, 1989)," *AUSS* 28 (1990): 5-52.

how these relate to other factors which contribute to sociocultural change in the area. Understanding the causes of change will, in turn, provide additional insights into the region's historical and political development.

### 1. *The Regional Survey*<sup>4</sup>

Investigations of the hinterland within a 5-km radius of Tell el-'Umeiri—which were begun in 1984 and continued during the 1987, 1989, and 1991 field seasons—culminated during the 1992 season. To a large degree, these investigations had been inspired by many unanswered questions resulting from our previous research at Tell Hesban and vicinity. While the Hesban project had brought into focus the question of how people in this region went about providing for their food, water, and security needs during successive historical periods, the fact that this question had come into focus after the fieldwork had been completed meant that there were many gaps in the information on hand. Reports on efforts during previous field seasons to fill these gaps have been published in the seasonal reports of the Madaba Plains Project.<sup>5</sup>

As in previous seasons, the 1992 field season carried on several concurrent lines of investigation, most of which had begun during previous seasons of fieldwork, from 1984 through 1989. These included an environment survey, an archaeological site survey, an ethnoarchaeological survey focusing on habitation caves and water provisioning, excavation of a habitation cave containing pre-Islamic Arabic inscriptions, excavation of a Bronze Age cemetery, and a subsurface mapping project. All these surveys were carried out in the region inside a 5-km radius of Tell el-'Umeiri (see Plate 1).

#### *The Environment Survey*<sup>6</sup>

The principal objective of the environment survey remained the same as during previous seasons: to gather data and insights that would enable reconstruction of environmental correlates of food system changes in the past. The specific objective of the 1992

<sup>4</sup>As in previous seasons, the director responsible for planning and execution of hinterland surveys was Øystein S. LaBianca from Andrews University.

<sup>5</sup>See Note 3.

<sup>6</sup>Doug Schnurrenberger (University of Maryland) was responsible for the environmental survey.

season was to complete a bedrock geology map and a soil map of the project area as it appears today. The data needed to produce these maps was successfully obtained from maps of the geology and soils of Transjordan, aerial photographs of the project area, and field observations. These maps will be used to help reconstruct changes taking place over time in land forms and distribution of agricultural soils throughout the project area.

### *The Site Survey*<sup>7</sup>

As in previous seasons, the major objective of the site survey has been to document in as much detail as possible changes over time in settlement and landuse patterns within the project area. Completion of the site survey, which over four field seasons has recorded a total of 134 sites, involved five specific tasks:

1. To revisit and rerecord sites from the 1984 and 1989 seasons which had not been documented according to the standardized recording system perfected during the 1989 field season. This was done to provide in the final report on the survey a uniform presentation of all sites surveyed and to facilitate GIS (geographical information system)-assisted spatial analysis of all sites and site features, so as to ascertain their relationship to agricultural soils, water sources, and roads.

2. To complete a tour of all sites with predominantly Iron Age pottery, followed by a tour of all sites with predominantly Byzantine pottery. This was done to get an even better feel for the locational and archaeological features which distinguish these two periods of settlement. An observation yielded by these tours was that whereas sites with predominantly Iron Age pottery tended to be located primarily in gently rolling hills and level areas, the sites with Byzantine pottery were found in all types of terrain.

3. To improve further the recording of hinterland sites through utilization of a survey artist. A total of 175 drawings were completed, including detailed drawings of installations related to production of olive oil—such as olive crushers, olive presses, and olive oil separation vats—and drawings of farmstead layouts,

<sup>7</sup>Gary Christopherson (University of Arizona) headed the site survey. He was assisted by David Hopkins (Wesley Theological Seminary)—team leader, Gerald Mattingly (Johnson Bible College)—team leader, Rhonda Root (Andrews University)—artist, Mailen Kootsey (Andrews University)—GPS testing, Mazin Razmy (University of Jordan)—translator, Tischa Ives—photographer, and Phillip Slaughter—student assistant. Hinterland probes were carried out by David Hopkins with the assistance of Mazen Razmy.



herding stations, entrances to habitation caves, and wine presses (see Plate 2).

4. To test GPS (global positioning system) technology for use in recording the precise geographic location of archaeological sites. The equipment tested were two Magellan GPS NAV 1000 PRO receivers made by Magellan Systems Corporation of San Dimas, California. An exterior antenna kit arrived too late to be used in the field. It was found that the precision with which locations could be pinpointed varied, depending on how many satellites were within communication range. Greatest precision (3 m accuracy) was obtained by use of two receivers during times when signals from four satellites could be picked up simultaneously.

5. To experiment with the use of limited archaeological probes to ascertain more precisely the date of construction of selected "rectilinear structures" located by the site survey. To this end, four probes were carried out at three different sites containing such structures. Three of these probes—at sites 52, 69, and 85—succeeded in establishing the most probable date for construction of the structures in question. Whereas the date of construction of the structures 52:1 and 69:2 could be fixed to the Iron 2 period, a Byzantine construction date was fixed for the structure at 85:1.

### *The Ethnoarchaeological Survey*<sup>8</sup>

Our studies of recent changes in settlement and landuse patterns have been an important source of insight into the process of food-system intensification and abatement within the project area. In past seasons these studies have focused on delineating various archaeological correlates of how individual households and villages have converted over the past several decades from primarily subsistence production of cereals, sheep, and goats to market production of fruits and vegetables.

During the 1992 season two important correlates of this process were investigated. The first had to do with the manner in which the use of habitation caves and whole cave villages were abandoned in favor of village housing. A major goal, in this regard, was to locate and document abandoned habitation caves and cave villages, and to find out about the factors which contributed to their abandonment. The 1992 season added four such abandoned cave villages to those already discovered and studied during previous seasons (see Plate 3).

<sup>8</sup>The ethnoarchaeological survey was carried out primarily by Dorothy Irvin (Durham, North Carolina) and Azar. They were assisted part-time by LaBianca, Qussous, and Neife Issa (University of Jordan).

The second correlate had to do with the process of abandonment of cistern-use in favor of reliance on the integrated water network. To this end "water interviews" were carried out to learn more about what the project area's present-day residents could tell us about how they used to provide for their water needs before the integrated water network came into use. Interviews included questions about the different kinds of cisterns that had previously been maintained, and which in some cases continue to be maintained. Who owned them and who had the right to use these cisterns? How were they cleaned and filled? Why had the majority of cisterns been abandoned? What did it cost to repair abandoned cisterns? What were the pros and cons of relying on cisterns vs. relying on the integrated water system?

Perhaps the most significant insight gained from these interviews was that connecting to the integrated system led villagers to gradually cease maintaining their cisterns; thus, increasingly they gave up personal responsibility for collecting and storing rainwater. This situation has led to increased pressure on the underground aquifers on which the integrated system depends for its supplies, while rainfall and surface runoff is going to waste to a greater extent than was the case when individual households used to collect and store rainwater. Consequently, in some villages, when the integrated water system is shut off due to shortages, the poor are worse off today than they used to be when they had access to cistern water, because they cannot afford to buy water as often and are, therefore, forced to make do with less.<sup>9</sup>

*Khirbet Rufeisah Inscription Cave (Site 22:6, Field A)*<sup>10</sup>

During the second week of July—in the course of a routine search for habitation caves—Dorothy Irvin and Hanan Azar came upon what may be the largest assemblage discovered to date in Jordan of pre-Islamic Arab alphabet characters, tribal signs, and

<sup>9</sup>These "water interviews" were spurred in part by efforts underway to obtain funding for "Project Rainkeep." This project entails a plan for development of incentives for local residents to clean, repair, and bring back into use their abandoned cisterns as a way to improve water security and socioeconomic conditions in the project area. Funding for the project is being sought from USAID, NORAD, and other potential sources of support.

<sup>10</sup>Excavation of the inscription cave at Khirbet Rufeisah was carried out by LaBianca, assisted by Zayyadin and Qussous, both of the Department of Antiquities. Two students assisted: Sameh Foud Khamis (University of Jordan) and Ibrahim Feyome (University of Jordan). The Department of Antiquities supplied wheelbarrows, picks, and other equipment, along with assistance in dealing with press inquiries about the discovery.

pictographs. Inscribed on a 25 m long and 1.5 m high black-painted plastered panel located inside an otherwise unremarkable habitation cave at Khirbet Rufeisah, near Jadoudeh, were well over 1000 engraved characters and pictographs (see **Plate 4**).

Preliminary reading of the inscription by Fawzi Zayyadin of the Department of Antiquities and David Graf of the University of Miami indicated that it contains characters belonging to a succession of pre-Islamic Arabic alphabets. The panel with engravings appears to be a palimpsest which, in addition to the most recent set of inscriptions, contains the partially erased remains of earlier ones. Thus, the panel appears to have been used by Arab tribesmen as a sort of "tribal bulletin board" throughout most of the Classical Era.

Because of the obvious significance of the inscription, the entire cave complex was cleaned of all debris, and excavations were undertaken in order to establish a chronological framework for the site and to ascertain more precisely by whom and for what the cave had been used. To this end excavations were undertaken immediately inside the walled-off entrance to the cave (Squares 1 and 2) and immediately outside the opening (Square 5). Square 1 covered approximately 10 square m; squares 2 and 5 covered approximately 4 square m each.

Eleven loci were isolated in Squares 1 and 2 primarily on the basis of soil composition and texture changes. On the same basis, Square 5 was subdivided into eight loci. Due to the short time between the finding of the cave and the expedition's closing date, excavations ceased in all three squares before bedrock could be reached.

Square 1 yielded a total of 345 sherds, of which only 95 were judged diagnostic; Square 2 yielded 181 sherds of which only 30 were diagnostic; and Square 5 produced 411 sherds, of which 165 were diagnostic. The periods represented by these sherds include Roman, Byzantine, Umayyad, Late Islamic, and Modern. Two sherds were judged to be possibly Iron Age. More analysis will be needed before any successional patterning can be said to exist on the basis of the sherds recovered to date.

The most interesting objects recovered in the excavations were one tent pin, one needle fragment, and one earring. These objects are consistent with the interpretation of the site as having been used primarily by tent- and cave-dwelling bedouin. Further archaeological investigations are planned in order to try to learn more about past users of this cave complex.

### *Bronze Age Cemetery Excavations*<sup>11</sup>

In 1987, a survey team working south of Khirbet Bisharat, Site 73, observed several shaft openings in the ground, made visible by recent robbings. Preliminary observations led us to believe that a few of these shafts were examples of Early Bronze shaft tombs. The tombs' locations and type, along with the sites, were recorded and noted for future work.

We went back to this site in 1992 because of new encroaching construction near the cemetery and because of the possibility of documenting Bronze Age tombs there. Since no tombs from this period had been documented yet within the project area, and since the nature of the area's Bronze Age occupation has remained elusive, it was deemed all the more worthwhile to devote some time to careful excavation of this site.

Of more than a dozen tombs in the cemetery, three were excavated. The first excavated was Tomb 1. Even though it had been robbed, it was cleared to gain a fuller understanding of its architectural type and to document the history of its use. The rock-cut chamber (3.25 x 2.30 x 1.60 m), which exhibited tool marks and a small ledge around three of its sides, was semicircular with a sloping ceiling. Most of the pottery in the chamber was Iron age, although older sherds were found. The chamber also had a plaster-like substance on the wall, thus supporting a theory of reuse.

In an area marked by a slight depression in the bedrock a probe revealed a shaft designated as Tomb 11. The bottom of the shaft opened into two chambers, on the north and south sides. The entrance to the north chamber was blocked by nari stones, which crumbled quite easily. The north chamber (3.20 x 2.81 x 1.8 m), square with rounded corners, was filled with soil that almost reached the ceiling. Tool marks were evident where the stone had been cut. The fill contained fragmentary skeletal remains. The grave goods consisted of two globular, strap-handled vessels; one rounded-base four-spouted lamp; and one small hemispherical cup (see Plate 5a). This kind of globular jug is well attested in Jordan. The lamps with the rounded bottom have parallels in Dhar Mirzbaneh, El Husn, and Amman. All the pottery, including the

<sup>11</sup>Excavation of the Bronze Age cemetery was carried out by Howard Krug (Rochester, NY), Doug Waterhouse (Andrews University), Jalal Abu Hamdan (University of Jordan), and Stacy Knapp (Dubuque, IA).

little cup, are common and characteristic of the EB IV tomb repertoire.

The second chamber, on the south side of the shaft, was somewhat larger than the north chamber. While it was similar in design, only a few sherds dated the construction of the tomb to the EB IV period. The grave assemblage, indicative of a later Bronze Age period, consisted of four ovoid jars, a burnished juglet, a small juglet, a carinated bowl, and a toggle pin (see *Plate 5b*). The chamber contained a secondary and a tertiary commingled burial of at least seven adults.

Due to significant roof collapse in the area around and involving the shaft, the last tomb, Tomb 12 (4.10 x 2.60 x 1.16 m), was accessed through a hole in the west wall of the north chamber of Tomb 11. The chamber contained only disturbed fragmented skeletal remains and a typical EB IV assemblage, which included three four-spouted lamps, a cup, one globular strap-handled jug, and one bronze dagger. The dagger is in very good condition, with rivets still evident on each side of the blade above the tang, although the handle is missing.

While the analysis is preliminary, Tomb 11's north chamber and Tomb 12 seem to date to the EB IV period, while Tomb 11's south chamber was probably reused in a later period. More detailed analysis of the tombs's contents, including its skeletal remains, will be forthcoming.<sup>12</sup>

### *Subsurface Mapping Project*<sup>13</sup>

Using a variety of technologies—including seismic refraction (SR), ground-penetrating radar (GPR) and electromagnetic induction (EMI)—the subsurface mapping team collected data for eight different projects during the summer of 1992.

On Tell el-Umeiri, the extent of the western defense system was investigated, using GPR transects. This investigation was a continuation of a 1989 season project in which GPR was used along the southern balk of the Field B excavations for correlation of radar

<sup>12</sup>A preliminary study of the human skeletal remains from Tombs 11 and 12 has been supplied by Knapp. Her report indicates that Tomb 11 contained at least seven individuals, one of which appears to be a secondary burial, and the rest of which appear to be tertiary burials. Tomb 12 contained the remains of only one person in a primary burial arrangement.

<sup>13</sup>The subsurface mapping project was done by Jon Cole (Walla Walla College) and Gerald and Scott Sandness (Richland, WA).

signals with observed structural features. GPR was also used during the 1992 season to extend the measurement area in the region south of Field A to a total of approximately 350 square m on a 0.6-m grid layout. The location of a possible gate and approach on the upper south slope of the tell was investigated by a 1.0-m GPR grid pattern over a 30 by 45-m section. Electromagnetic induction was used along a 150-m transect on the south hillside of the wadi south of the tell to locate possible tombs in an area of rock outcropping.

At Site 73 (Khirbet Bisharat), a variety of data was collected in order to be able to evaluate the efficacy of various techniques for locating tombs. Electromagnetic induction data were obtained on a 900-square-m area in a 1 x 1-m grid using Geonics model EM31. GPR data were collected on the same grid by use of 300- and 500-megahertz antennae. As a part of the tomb-finding-technique development, four parallel 40-m EMI transects explored an area of bedrock outcropping immediately north of the fertile bottom lands of Wadi el Bisharat.

The radar antennae also provided profiles along eight transects in Madaba in an attempt to locate a possible cistern. Unfortunately, surface clutter limited the effectiveness of the GPR units.

Seismic refraction was used on Tell Jalul to obtain additional data along the transect line used in 1989 for collecting seismic refraction and GPR data. This line passes through a depression which is considered a possible water-collection feature.

The data obtained in July will be analyzed in the Battelle Pacific Northwest Laboratories and Walla Walla College laboratories during the forthcoming months and made available in planning for the next season's excavations.

## 2. *Tell Jalul*<sup>14</sup>

This summer marked the first season of excavations at a new major site in the Madaba Plains region (Plate 6a).<sup>15</sup> Located about

<sup>14</sup>The excavations at Tell Jalul were directed by Randall W. Younker (Andrews University). Associate Director was David Merling (Andrews University). Field Supervisors included David Merling, Jim Fisher (Andrews University), and Penny Clifford (University of Arizona). Square Supervisors included Michael Hasel, Zeljko Gregor, Richard Dorsett, Jennifer Groves, and Jalal Abu Hamdan (University of Jordan). Volunteers included Richard Aguilero, Artur Stele, Stephanie Elkins, Walter Lazenby, Paul Oakely, Richard Perkins, and Claoma Fearing. The Department of Antiquities representative was Adeeb Ahu Shmais.

<sup>15</sup>Readers of our previous reports in *AUSS* (for references, see n. 3, above) may recall that excavations were initiated by R. W. Younker and P.M.M. Daviau at Tell

5 kilometers east of the modern town of Madaba, Tell Jalul is the largest tell in the Madaba Plains, covering an area of about 18 acres. Although a number of well-known scholars have visited the site (e.g., W. F. Albright in 1933 and Nelson Glueck in 1934),<sup>16</sup> the first intensive and comprehensive survey was undertaken by a team from the Andrews University expedition to Tell Hesbân.<sup>17</sup>

When Siegfried Horn failed to find at Tell Hesbân any remains from earlier than ca. 1200 B.C., he suggested that the Heshbon of Sihon (described in Num 21, etc.) might be located at nearby Tell Jalul. This suggestion has been taken up by a number of other scholars as well.<sup>18</sup> Most recently, however, Andrew Dearman has suggested that Jalul should be identified with biblical Bezer, one of the cities of refuge mentioned in Josh 20:8.<sup>19</sup> Future excavations should shed light on this question.

Because the focus on the social, cultural, and political development of the inhabitants of this region is necessarily diachronic, one of the first objectives for the new excavations at Tell Jalul was to establish a chronological framework for the site. Therefore, it was decided to open a trench at the northeast corner of the tell (Field A), where it was obvious that a considerable amount of occupational debris had accumulated and where the incline of the slope was great enough that an excavation trench could quickly expose a vertical section through the occupational

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Jawa, a major Iron Age city just west of Tell el-'Umeiri. We are pleased to announce that Daviau has been able to obtain independent funding to carry on research at Jawa for Wilfred Laurier University, and the Madaba Plains Project has, therefore, turned the investigation of that site over to Daviau and her capable team. This new arrangement has freed Younker to commence excavations at Tell Jalul, a site for which a permit had been impossible to obtain until this season. The permit was procured, thanks to the good offices of Safwan Tell. Daviau's Tell Jawa Project will cooperate closely with the Madaba Plains Project so that both can continue to pursue regional research objectives.

<sup>16</sup>William F. Albright, "Archaeological and Topological Explorations in Palestine and Syria," *BASOR* 49 (1933): 23-31; Nelson Glueck, "Explorations in Eastern Palestine, I," *AASOR* 14 (1934): 5.

<sup>17</sup>Robert D. Ibach, *Archaeological Survey of the Hesban Region*, Hesban 5 (Berrien Springs, MI: Institute of Archaeology, 1987).

<sup>18</sup>Robert Boling, *The Early Biblical Community in Transjordan* (Sheffield: Almond, 1988), 47.

<sup>19</sup>Andrew Dearman, "Levitical Cities of Reuben and Moabite Toponymy," *BASOR* 276 (1989): 55-66.

levels (see **Plate 6b**). A second field was opened on the eastern side of the tell (Field B), where surface remains pointed to the possible presence of a monumental gateway.

### *Late Bronze Age*

Although no architectural remains from the Late Bronze Age were exposed during this season, fills below Iron II pavements and walls in both Fields A and B contained some typical Late Bronze Age pottery, including biconical vessels.

### *Iron I*

As with the Late Bronze Age, no Iron I occupational levels were uncovered during this season. However, a series of what appeared to be wind-blown ash layers, totaling 1 m of accumulation, contained virtually nothing but Iron I pottery sherds, including collared-rim storejars, carinated bowls, etc. Since these ash layers appeared in all the lower levels in both Fields A and B, it would appear that a major destruction occurred on the tell sometime during the Iron I period.

### *Early Iron II*

The earliest architectural remains came from the early Iron II period (9th century B.C.) and were found in both Fields A and B. These included a city(?) wall in Field A and what appears to be an approach ramp to a city gate in Field B. The wall (of which a 5-m stretch was exposed) runs in an east-west direction on the northern edge of the tell, where one might suspect that a city wall would be located (see **Plate 7a**). However, the stones with which the wall is built seem small for a major city wall. The total width of the wall is still uncertain, although this season's excavation shows that it is at least 1 m wide. This wall could be the exterior one of a large public building that stood just inside the actual city wall. If this is the case, the city wall itself has not yet been discovered.

The approach ramp in Field B (of which approx. 10 m were exposed in two squares) was paved with flagstones, in a fashion similar to those found at Tel Dan and Tel Beersheba in Israel (see **Plate 7b**). The upslope/western side of the rampway was bordered by a retaining wall (c. 50 cm thick). The downslope/eastern edge of the approach ramp was not excavated this season.

Above this approach ramp, but separated by approximately a meter of accumulated soil debris, was a *later* approach ramp (see **Plates 7b and 8a**). The fill under this later ramp indicated that it,



too, had been constructed sometime during the early Iron II period, perhaps later in the 9th or early 8th century B.C. Like its predecessor, this later approach ramp was paved with flagstones and was bordered on the upslope/western side by a wall. This ramp was exposed across the entire length of at least three adjacent squares. Again, the downslope/eastern edge of the later ramp was not exposed this season.

Contemporary with this ramp in Field A was a later phase of the city wall (see **Plate 7a**). Pottery from the foundation trench of this later wall phase dated it to the 9th/8th centuries B.C.

### *Late Iron II*

The only remains from the late Iron II period were some pits excavated in Field A. The most interesting of these pits was fairly large (nearly 2.5 m across) and contained late Iron II pottery, including burnished bowls, several bone spatulae, a bone pendant shaped like a hammer, and a ceramic figurine head of a horse (see **Plate 8b**). A smaller pit had been dug into this larger pit at a slightly later time. Both pits were then sealed by a plastered threshing(?) floor of uncertain date.

### *19th Century A.D.*

By the 19th century A.D., after a considerable period when activity was ephemeral or nonexistent, parts of the lower city were utilized as a burial ground for local Beni Sakr slaves. Eighteen such burials were excavated in Field A, and six additional burials were uncovered in Field B. The persons buried were mostly adults, but there were also several children and a teenager. The only artifacts in the graves were some plain copper bracelets found on the arms of some of the females. The paucity of grave goods confirms the lower social status of the people buried here. All of the skeletons were facing south (toward Mecca), thus indicating that the people were Muslims. Local workers reinterred the skeletal remains in the modern cemetery, which is on the acropolis.

### 3. *Tell el-‘Umeiri*<sup>20</sup>

The previous seasons at ‘Umeiri focused on expanding horizontal exposure to obtain a coherent picture of the remains. This season, the focus changed to that of deepening the excavation

<sup>20</sup>The director of excavations at Tell el-‘Umeiri was Larry G. Herr (Canadian Union College). Supervisors included Doug Clark (Walla Walla College), John Lawlor (Baptist Theological Seminary), Tim Harrison (University of Chicago), and Rusty Low (University of Maryland).

units already begun (see **Plates 9 and 10**). Although this procedure was successful in most places, in a few locations (especially Field A) it was thwarted due to the confinements of previously standing architecture.

### *Early Bronze Age*

Previous seasons uncovered a complex of domestic structures from the Early Bronze Age III (mid-3d millennium B.C.) on the southern shelf in Field D.<sup>21</sup> The objective this season was to excavate beneath the houses to expose possible EB II and earlier remains (early 3d-millennium B.C.). Bedrock was reached in all four excavation units, but two new phases of domestic architecture were uncovered before bedrock was reached. (The most coherent remains are illustrated in **Plate 11**.) Three sides of a large room are visible in the center of the excavation, separated from the corner of another house by a narrow street to the west. The houses and street lay on a broad terrace below a bedrock shelf that is visible on the northern side of the excavation. Above this terrace, and only partially seen in **Plate 11**, was another terrace that supported domestic remains excavated in 1987.<sup>22</sup>

Fragments of earlier remains were uncovered below the stratum shown in **Plate 11**, but more detailed analysis is necessary to suggest a coherent plan. However, dating the earlier remains brought a surprise. Although diagnostic EB II pottery appeared in higher quantities in these lower levels, small numbers of clearly EB III pottery continued to be found, including two fragments of Khirbet Kerak ware. A few EB I sherds were also found, but were not connected with *in situ* remains.

Taking the results of all four seasons into account, we have, therefore, a total of six EB III phases in Field D. The first four reused the walls of the first phase, but always with new alignments. They were not simply rebuilds of the same structure. These phases included a small storage cave dug out of bedrock (in **Plate 11**, the two small holes near the bedrock).

### *Middle Bronze Age*

On the western slope, Field B, where the fortification system is being examined (see **Plate 12**), the MB IIC rampart or *glacis* (see **Plate 13**, no. 9) was excavated to bedrock (no. 10). The rampart was constructed of a series of thin, wedge-shaped layers of dark

<sup>21</sup>Yunker and others, 40-41.

<sup>22</sup>Geraty and others, 241.

earth, gradually steepening to 30 degrees about 3 m above bedrock. The top of the rampart was coated with a thin layer of crushed limestone and is visible in **Plate 12**, immediately west of the Iron I outer casemate wall. At the base of the slope was a flat-bottomed dry moat (no. 12) dug out of the bedrock ridge which adjoined the site to the west (no. 15). The bottom of the moat was at least 5 m wide, but the eastern edge of the Middle Bronze Age moat has not yet been found.

### *Late Bronze Age*

The only place that produced Late Bronze Age remains was the very bottom of our excavation in one Square in Field A on the western edge of the site. The fill debris was below the three large boulders at the bottom right in **Plate 14**.

### *Iron I Period*

The most extensive remains excavated during this season were from the early Iron I period, the 12th century B.C. They included one of the most complete and extensive Iron I fortification systems found thus far in Palestine (see **Plates 12, 13, and 15**). Immediately above the MB IIC rampart (no. 9 in **Plate 12**), another rampart (no. 8), 1.5 m thick, was constructed against the outer of two parallel walls (a casemate wall system—nos. 5 and 7). At the bottom of the rampart, ca. 16 m to the west of, and below, the outer casemate wall, the MB II moat (no. 13) was reused, with a thin layer of MB II debris remaining at the bottom (no. 14). The moat was separated from the rampart above by a sloping retaining wall ca. 5 m high (no. 11). The western side of the moat was not sheer, but stepped (no. 15). It seems that the moat was intended, not to restrict entrance, but rather to make climbing the slope to the city more difficult.

Inside the casemate wall and buried beneath almost 2.5 m of destruction debris (made up of mudbricks and wooden beams), were portions of two domestic houses (see **Plates 12, 13 nos. 1 to 5; and 15**). In the southern house, a row of pillar bases (no. 3, running perpendicular to the sketch) separated a cobbled floor lying against the inner casemate wall (no. 5) from an earth surface (courtyard?) that included a stone bin and a hearth (see **Plate 15**). In the cobbled room, leaning against the inner casemate wall was a carefully made standing stone (see no. 4 in **Plate 12, and Plate 15**). No inscription or artistic scene was visible. Lying flat on the cobbles in front of the standing stone was another flat, but thicker, stone.

To the north, across a wall that still stood almost 2.5 m high, was the second house, of which only one room has so far been uncovered (see **Plate 12**). The room was paved with flagstones, and the mudbrick destruction debris from the upper floors contained over 20 crates of pottery, mostly from large, collared-rim storejars.

Evidence of the violent destruction of this town was also found at the eastern edge of the site in Field F where another thick destruction layer contained fallen mudbricks over a single wall (see **Plate 15**, in the shaded portion of the upper left corner; the Iron I wall is immediately to the left of the shading). It covered a floor with mortar embedded in the surface. A frit seal with stick figures and a bronze axe head were found here.

Fragments of six Iron I walls emerged in Field A, but since they were exposed in only three small patches, coherent remains could not be planned. One of the walls was made of boulders over 1.5 m long (see **Plate 13**, lower right corner). The violent destruction of Fields B and F was lacking in Field A. There are enough remains, however, to tell us that this Iron I city was one of the most significant at the site. The well-organized remains suggest a strong central government. This was a surprise for this region at the time, given our present understanding of the contemporary political situation there.

### *Iron II Interlude*

The site was only slightly reoccupied in the 9th century for a short span in what may be called an Iron II interlude. Additional fragments of this settlement were found this season in Field A.

### *Late Iron II/Early Persian*

A much more substantial town was constructed in the 7th century, probably to serve the administrative needs of the Ammonite central government. Three large public buildings were discovered on the western edge of the site in previous seasons. This year two rooms from another large building (possibly a "four-room house") with cobbled floors were found on the eastern side in Field F, near the probable gateway to the site (see **Plate 16**, at extreme left of the excavations). This 7th-century occupation continued into the Persian period, perhaps as late as the end of the 5th century, as suggested by the presence of two Attic potsherds.

Two Aramaic seal impressions of the Persian provincial government from ca. 500 B.C. were found in 1989. They contained the name of an official (Shuba) and the name of the province of

"Ammon."<sup>23</sup> This find provides the first solid evidence for the existence of a Persian province of Ammon. During the 1992 season a faience seal was found in Field F with the following reading: *lnsr' l bn 'lmsl*, "belonging to Nasar'il son of 'lmmashal" (see Plate 17a and b). Both Nasar'il and 'lmmashal are known from the Ammonite onomasticon.<sup>24</sup>

<sup>23</sup>Larry G. Herr, "Epigraphic Finds from Tell el-'Umeiri During the 1989 Season," *AUSS* 30 (Autumn 1992):187-200.

<sup>24</sup>W. E. Aufrecht, *A Corpus of Ammonite Inscriptions* (Lewiston, NY: Edwin Mellen, 1989), 65, 303, 473, 507.

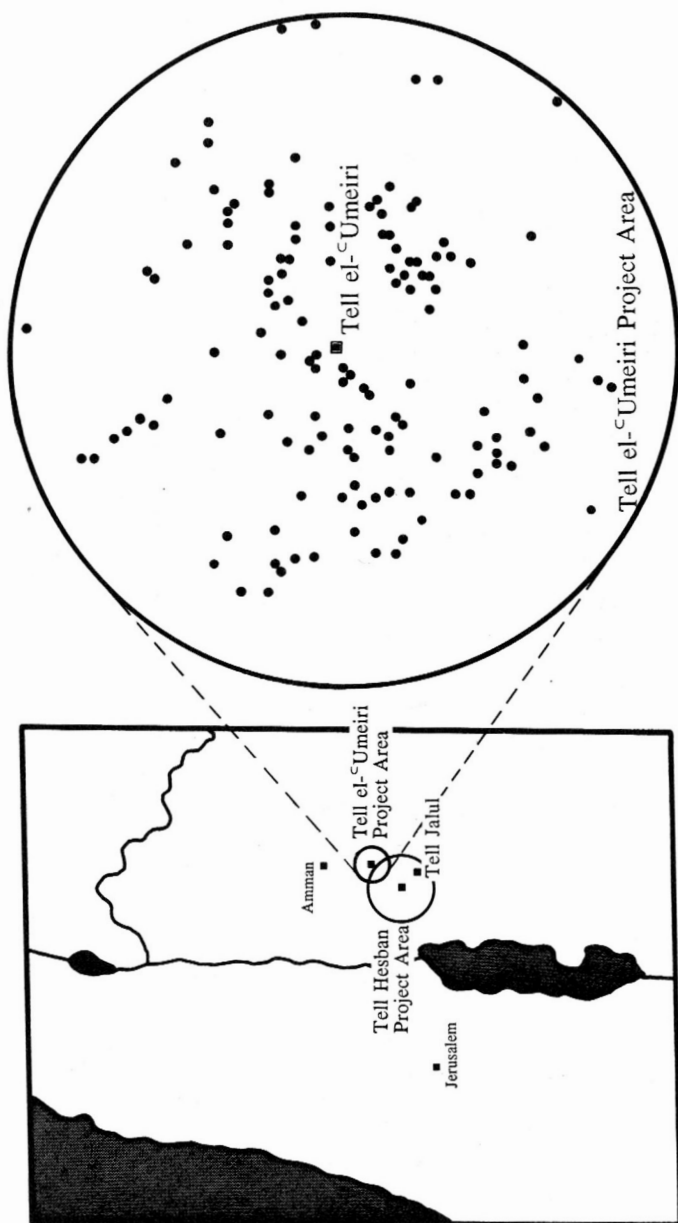


Plate 1. Map of Tell el-Umeiri Project and Survey Area

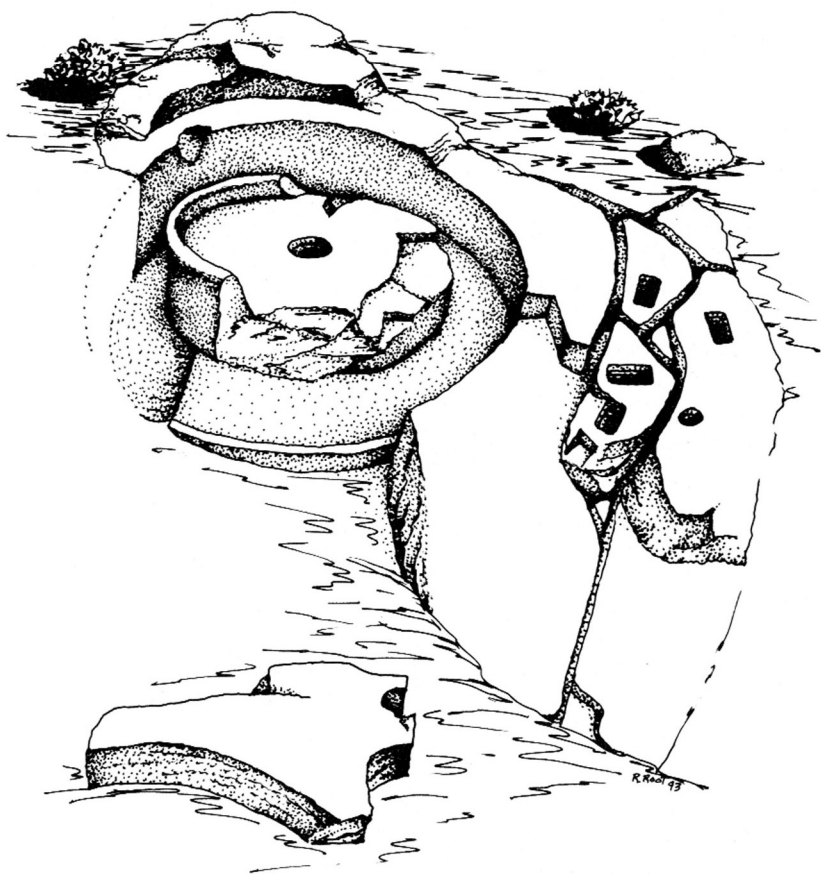
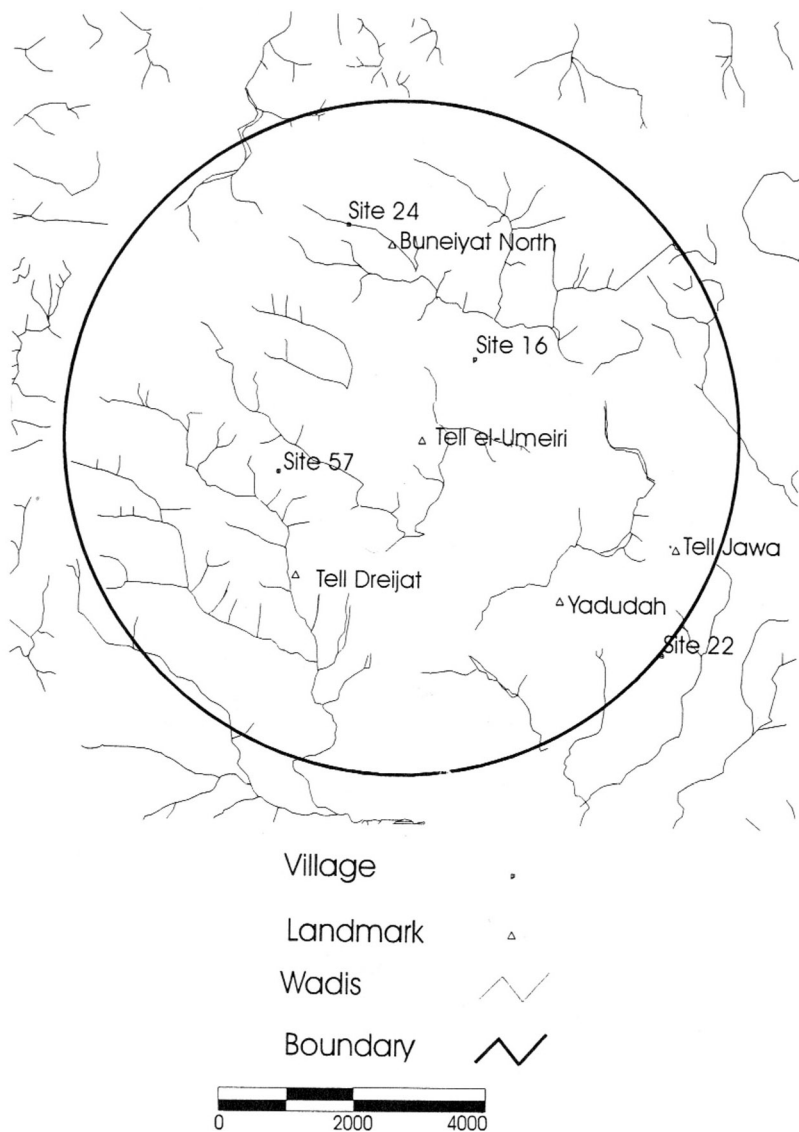


Plate 2. Drawing of olive-pressing installation. (Rhonda Root, artist)



**Plate 3.** Map showing location of seasonal villages and sites with cisterns.



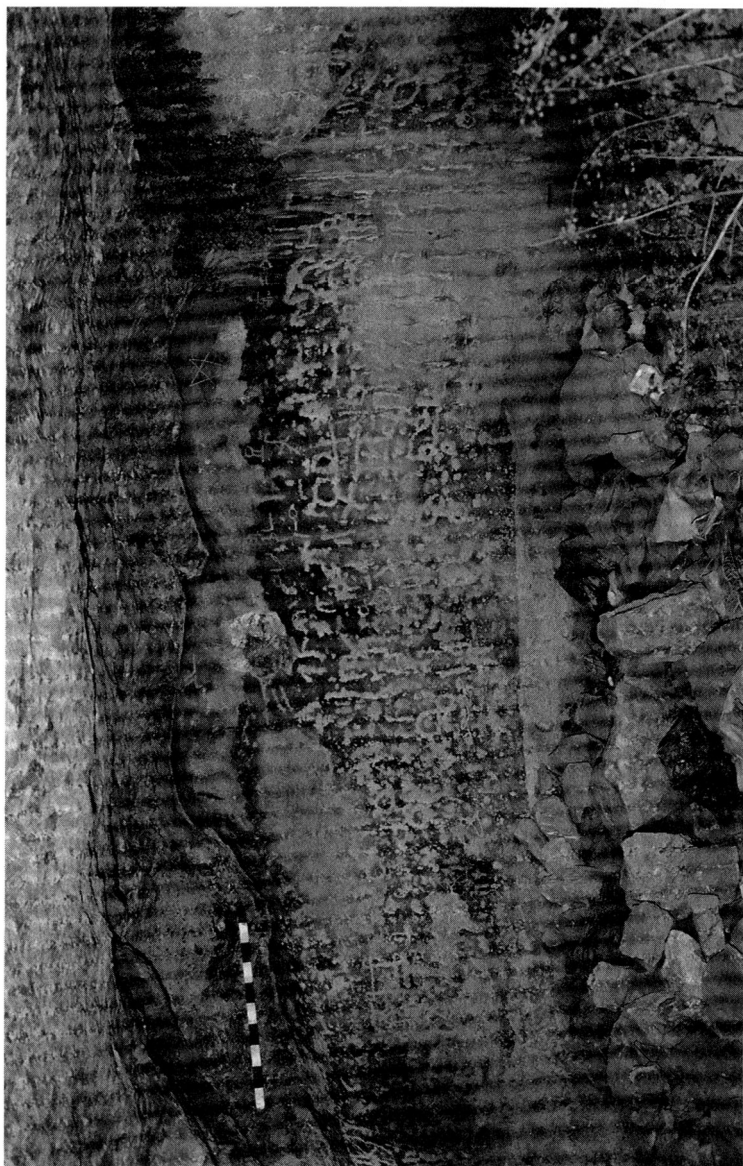


Plate 4. Khirbet Rufeisah cave inscription.

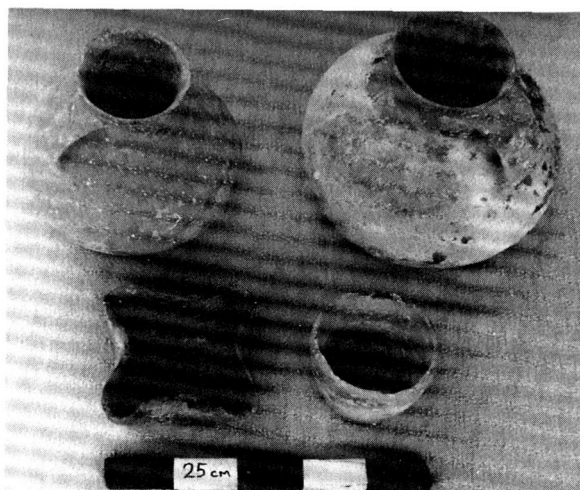


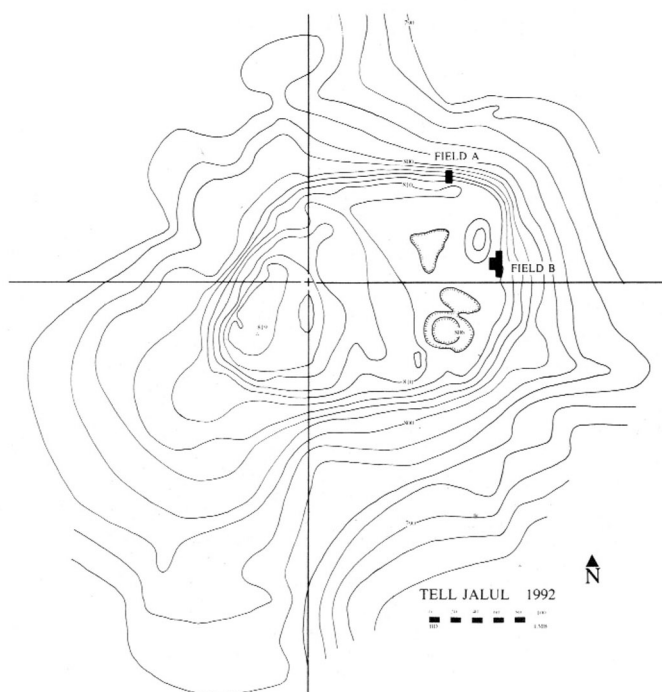
Plate 5a. Early Bronze IV tomb group from north chamber of Tomb 11.



Plate 5b. Middle Bronze tomb group, Tomb 11.



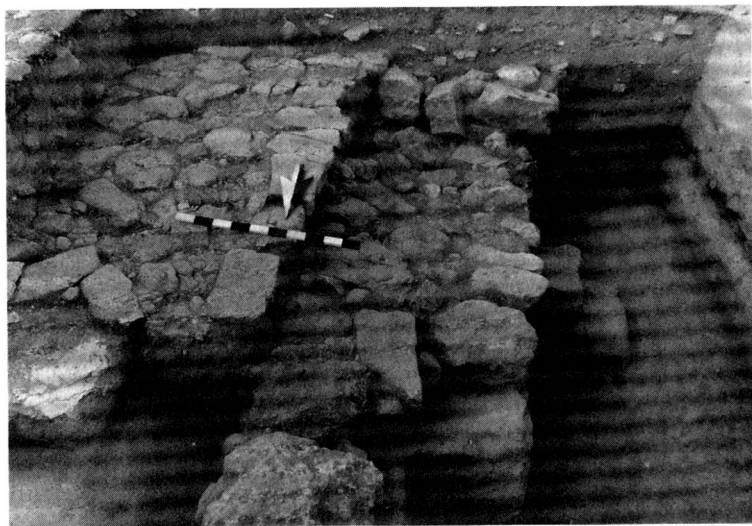
**Plate 6a.** Tell Jalul from the north.



**Plate 6b.** Topographic Map of Tell Jalul showing excavation areas.



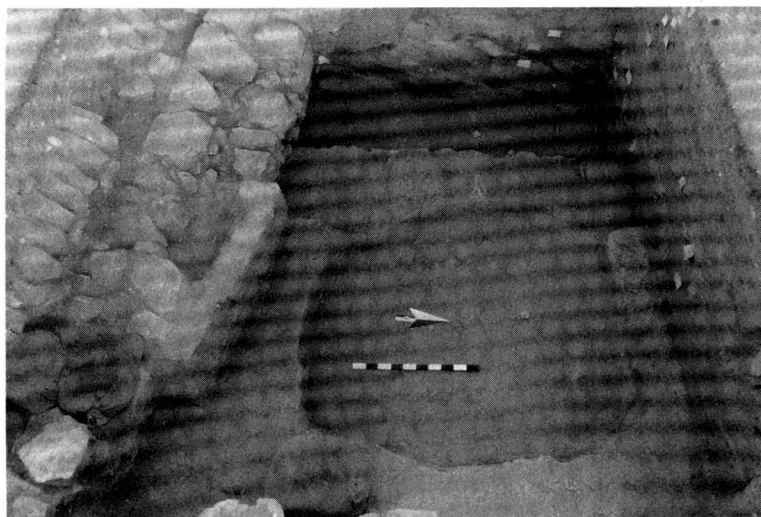
**Plate 7a.** Two phases of Iron II city wall in Field A. The lower phase dates from the early 9th century B.C. and the upper phase to the 9th-8th century B.C.



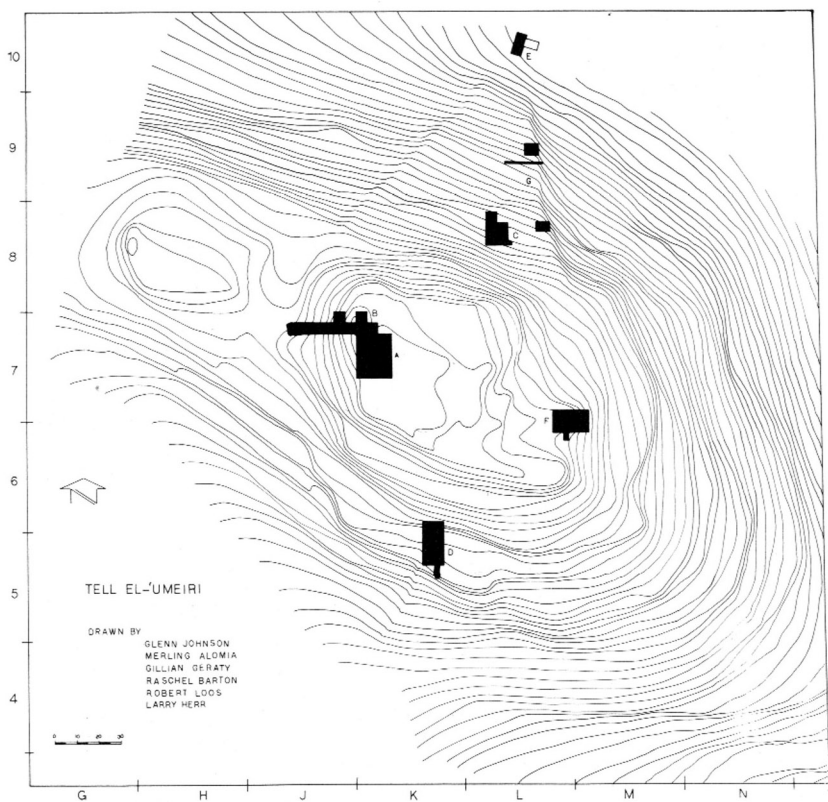
**Plate 7b.** Early Iron II (early 9th century B.C.) approach ramp, Field B.



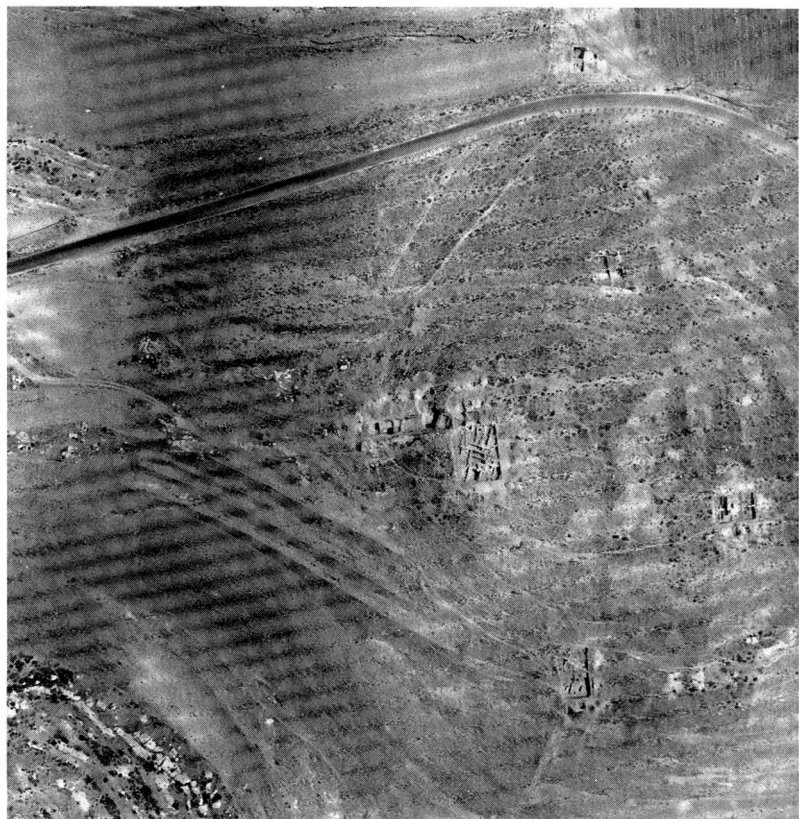
**Plate 8a.** Iron II (9th-8th centuries B.C.) approach ramp, Field B.



**Plate 8b.** Late Iron II pit, Field A.



**Plate 9.** Topographic map of Tell el-Umeiri showing areas excavated before 1992.



**Plate 10.** Aerial photo of Tell el-Umeiri at conclusion of 1992 season.





Plate 11. Early Bronze remains from Field D.



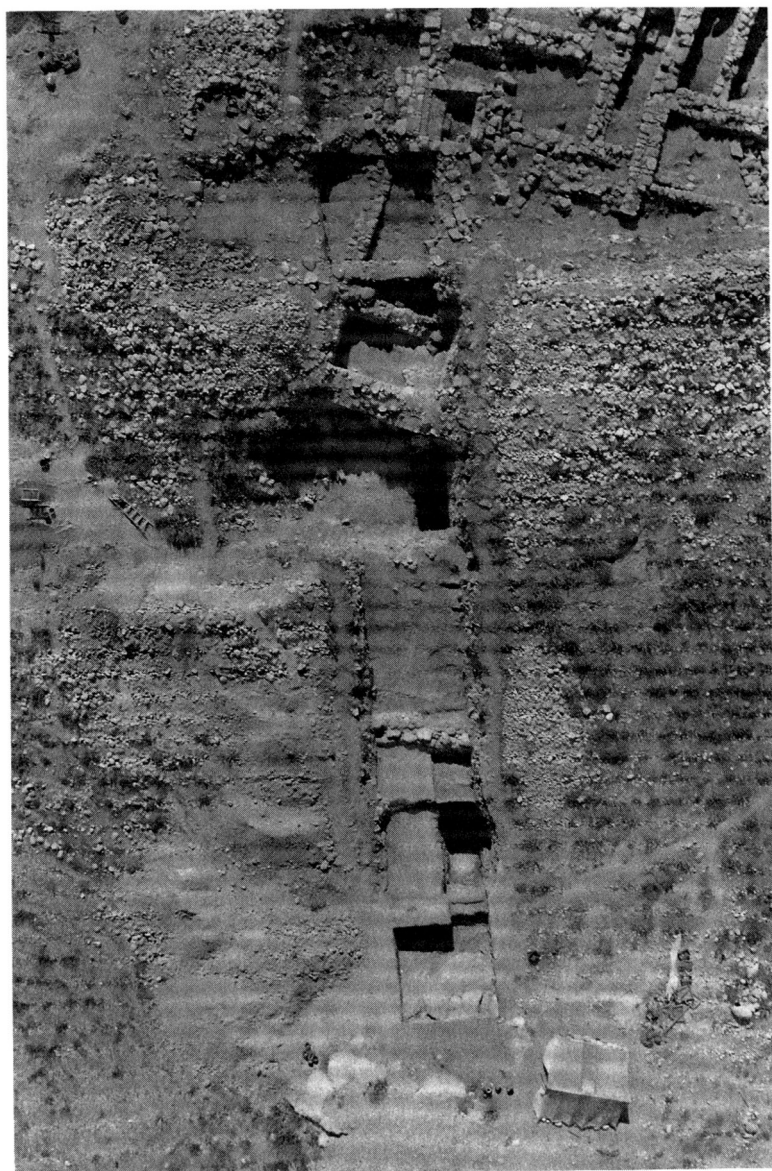


Plate 12. Trench in Field A showing fortification system.

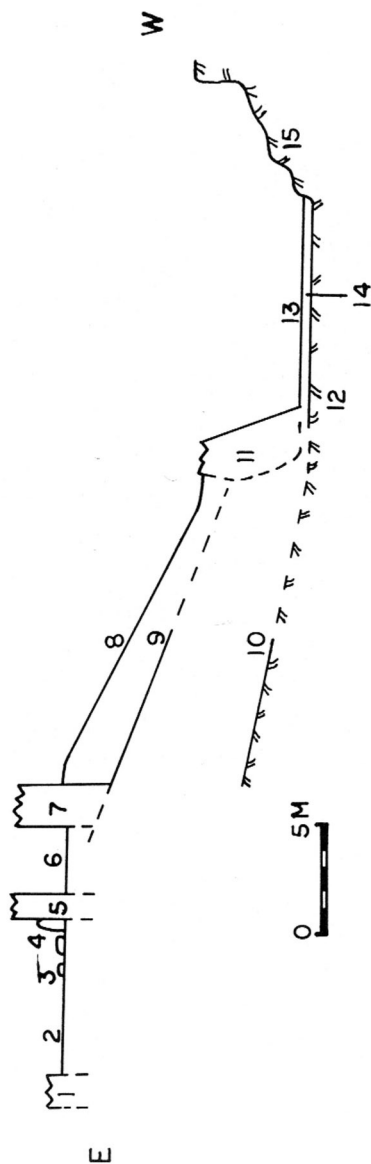
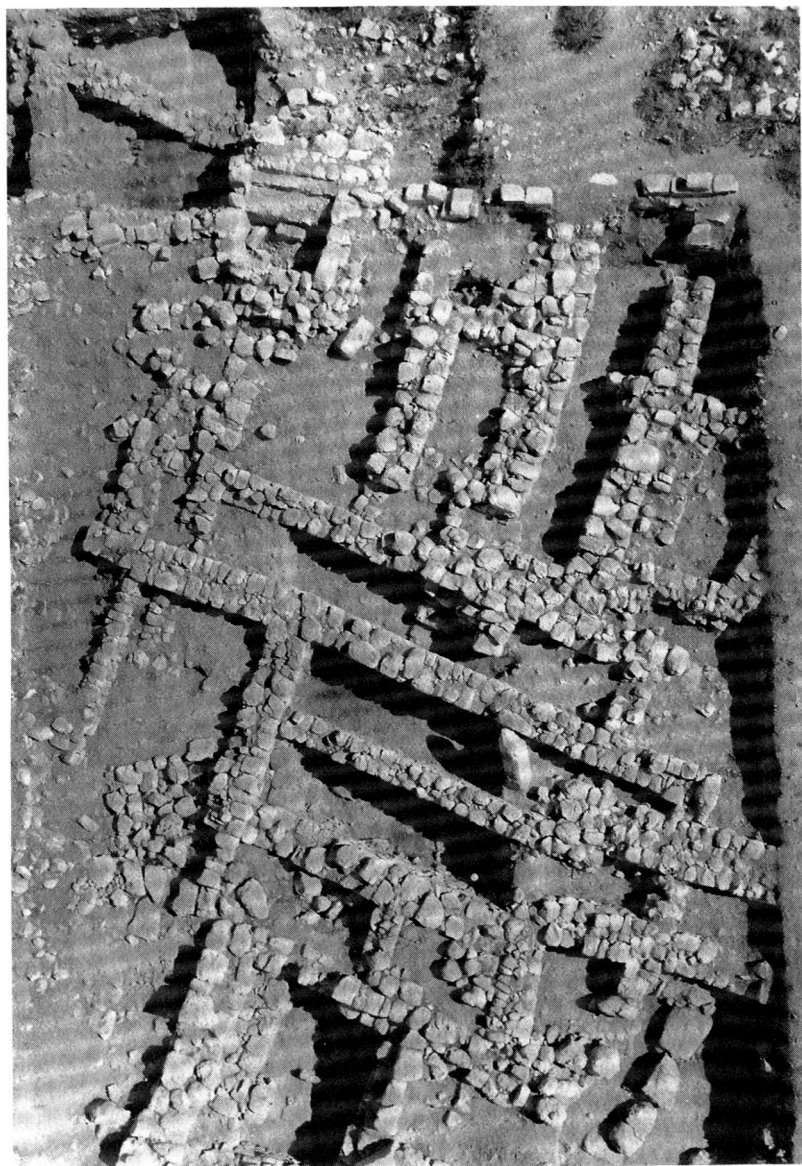


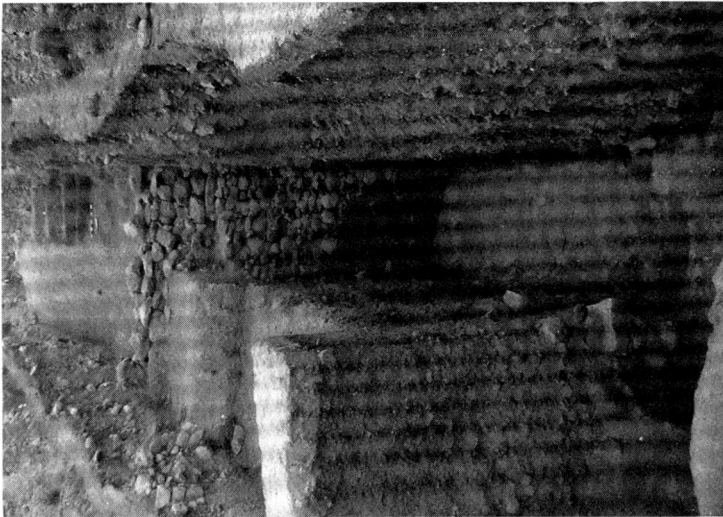
Plate 13. Cross section of fortification system in Field A.



**Plate 14.** Field A: Late Bronze pottery found below three large boulders in lower right corner of photo; north is at top of photo.



**Plate 15b.** Cobbled room inside casemate wall.  
Note standing stone against wall.



**Plate 15a.** Frontal view of fortification system  
in Field B.

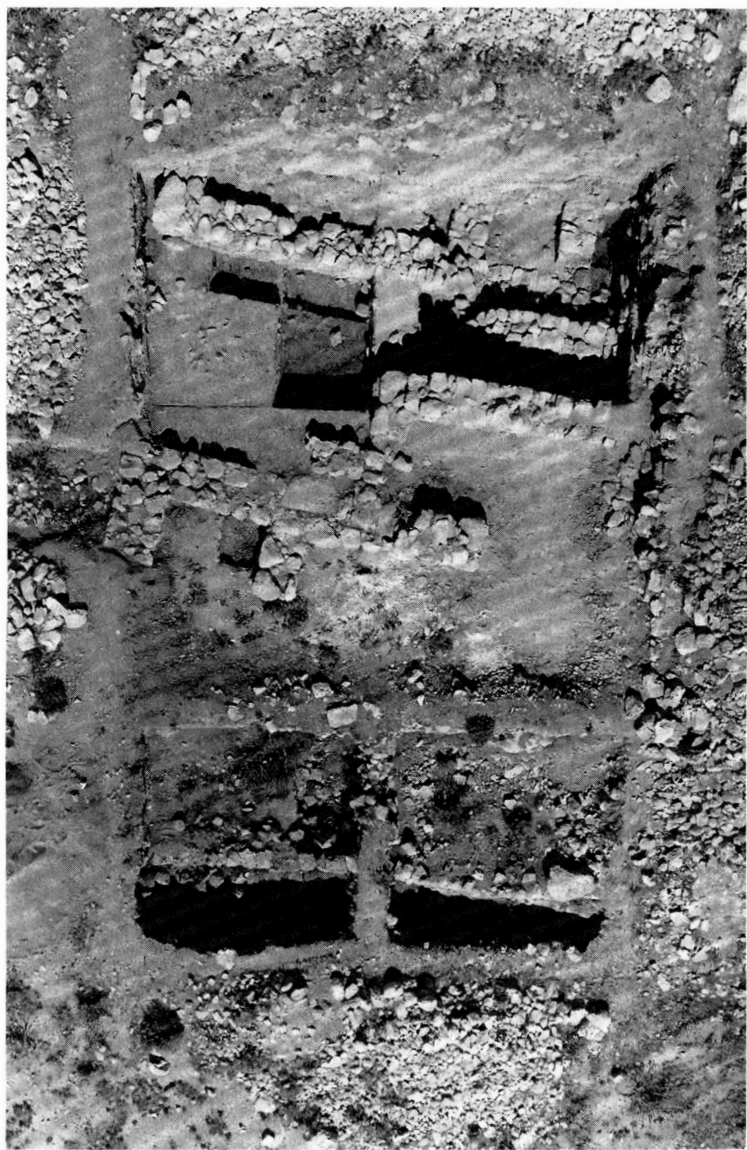


Plate 16. Excavations in Field F.



Plate 17. Faience seal from Field F reading: *"lnsr'l bn 'lmsl*  
 ("belonging to Nasar'il son of 'Ilmashal").