

# **Report on Damage to the Site of Babylon, Iraq**

compiled by

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for the

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## **Executive Summary**

### **Authority**

2005 Senate Report 108-344 from the Senate Committee on Appropriations states:

“The Committee is aware that the ancient temple area of Babylon in Iraq has been damaged as a result of the operation of a U.S. military base, Camp Alpha, located directly on top of this significant site. The Department of State and Department of Defense had committed to protect archaeological sites and cultural antiquities in Iraq after widespread looting last year. The Committee directs the Department's Cultural Antiquities Task Force to investigate this incident and provide the necessary funding to restore the historic site.”

This report is a compilation of damage assessments carried out between 2004 and 2009 in support of the ongoing preservation project for the site..

### **Introduction**

Evoking popular images of majesty and decadence, Babylon has held a place in the history, heritage, and memory of numerous cultures since ancient times. Beginning with the story of the Tower of Babel in Genesis 11, Babylon is referred to throughout the Old and New Testaments. Apart from Jerusalem, it is by far the most frequently mentioned city in the Bible. In the early Classical tradition, the Greek historian Herodotus offered an account of the Hanging Gardens, and in the first catalog of the Seven Wonders of the World, a poem by Antipater of Sidon in the second century BC, both the “Hanging Gardens” and the “walls of impregnable Babylon” are cited, making Babylon the only city in the list to be mentioned twice.

The site of Babylon, on a branch of the Euphrates River in southern Iraq near the modern city of Hillah, was inhabited as early as 7000 years ago. With the rise of the Babylonian empire under Hammurabi around 1800 BC, Babylon grew to become the imperial capital. During the early sixth century BC under king Nebuchadnezzar II (604-562 BC), Babylon flourished as a center for culture and technology. The city was renowned for its art and architecture, its temples, libraries, and royal collections. The famous “Walls of Babylon,” with their colorful imagery and defensive system of moats and towers, encompassed an area of some 900 hectares (2200 acres) at this time.

Today, Babylon is an archaeological site overlaid with a few areas of reconstructed ancient buildings, extensive areas of modern construction dating to the rule of Saddam Hussein, and several villages. It is critical to recognize that the entire area within Babylon's outer city wall and the 500 meter buffer zone that surrounds it is an archaeological site. Not only the mounds, but even flat areas that appear featureless nevertheless represent millennia of accumulation of archaeological deposits. In consequence, any disturbance to the site has the potential to destroy irreplaceable evidence of past cultures.

This report is based on a variety of sources: personal visits to the site by the author (John Russell), reports prepared by Iraqi and Coalition personnel at the site, satellite imagery, maps of the site, and photographs taken by Iraqi and Coalition personnel. The report investigates two substantial periods of recent destructive interventions to the site:

1. Interventions during the 1980's at the order of Iraqi president Saddam Hussein. These interventions were intended to promote tourism by building modern replicas on the foundations of the original archaeological remains, to turn the site into a center for festivals and conferences, and to glorify Saddam himself through massive constructions that explicitly connected him with the fabled kings of Babylon's past.
2. The use of the archaeological site as a Coalition military base ("Camp Babylon", "Camp Alpha") between April 2003 and January 2005. This involved the placement of a major military facility, some 150 hectares (370 acres) in extent, directly on the center of the archaeological site.

In numeric terms, the Saddam and Coalition interventions cover an area of roughly 97 hectares and 26 hectares respectively.

### **Assessment of Saddam alterations to the Babylon site**

The magnitude of the alterations to the Babylon site during Saddam's rule is astounding, impacting a total surface area of at least 969,192 m<sup>2</sup> (96.9 hectares or 239.5 acres), nearly a full square kilometer. This is an area equivalent to 181 US football fields, and comprises more than 10% of the site's total area.

The most archaeologically destructive of these interventions were the digging projects (the canal, lakes, and trenches) and areas of extensive bulldozing (landing zone and parking lots). Digging should be avoided on an archaeological site except for research purposes, and the Saddam digging projects were carried out without scientific justification or method.

The three huge artificial mounds may have had less archaeological impact, but they have destroyed the effect of the archaeological landscape, so that now these mounds—and not the ancient remains—dominate the landscape. The modern conference center and lakeside villas are also intrusive, but less so. All of these modern intrusions have no association with the historical Babylon. Their fate, and that of the variously-executed modern reconstructions of ancient buildings, should be determined in the context of a comprehensive preservation and management plan for the site.

### **Assessment of the archaeological impact of Camp Babylon**

The surface area affected by the three major types of archaeological disturbance may be summarized as follows, in order of decreasing severity of archaeological impact:

#### Digging: cuts, trenches, and pits

The most archaeologically invasive activity at Camp Babylon was digging: cutting and flattening mounds, and digging trenches and pits. The most serious such impacts were the flattening of archaeological mounds throughout the KBR yard, four large cuts into the Homera mound, and two long trenches through the temple enclosure to the north of the ziggurat. These and numerous smaller interventions are documented in the Appendices. The total area of Babylon impacted by Coalition digging activities was roughly 30,000 m<sup>2</sup> (about 7.4 acres), an area equivalent to five and a half US football fields.

To give this figure some perspective, archaeologists typically lay out their excavations in a grid of 10 x 10 meter squares. In terms of its potential for scientific archaeological research, therefore, the area of archaeological matrix destroyed by digging activities at Camp Babylon is equivalent to three hundred 10 x 10 meter squares, an area that would require 60 years for a large team to excavate scientifically.

#### Grading: new utility/parking areas and roads

The construction of new utility/parking areas and roads was by far the most widespread type of damage at Camp Babylon, covering a known total area of about 224,000 m<sup>2</sup> (more than 55 acres), distributed throughout the site. This area is equivalent to 42 US football fields. This falls far short of the extent of Saddam's area of impact on the site, but the figure is nevertheless quite substantial, especially as it represents only areas that were newly prepared by Coalition Forces.

Since central Babylon has never been deep-plowed for farming, undisturbed archaeological deposits are often at or near the surface. Therefore this extensive disruption of the surface of such a large area of the site would have disturbed a huge part of the site's surface remains. Furthermore, the initial use of heavy equipment to prepare these areas, often with the addition of gravel from outside the site, would certainly have affected the archaeological deposits for some depth beneath. Thereafter, the continued use of these prepared areas for heavy vehicles, containers, and helicopters, combined with the constant expansion and frequent changes of function for many of these areas, would have had a continuing impact on archaeological remains near the surface.

#### Piled earth: berms and HESCO barriers

The total area known to have been covered by berms and HESCO barriers is roughly 5900 m<sup>2</sup> (about 1.5 acres), and these effects are distributed throughout the site. Berms, HESCO barriers, and sandbags sit on the surface and therefore do not by themselves necessarily damage the archaeological deposits underneath, although the heavy equipment used to create the barriers would certainly have disturbed the surface layer. In addition, the earth they contain and deposit modifies the original surface topography, obscures archaeological features on the surface, and contaminates archaeological surface deposits by introducing earth and objects from unrelated contexts—in some cases even from contexts outside the site.

### **Conclusion**

Combining the areas impacted by digging, grading, and piled earth gives the total area altered by Coalition activities at Camp Babylon as 259,645 m<sup>2</sup> (26.0 ha or 64.2 acres), an area equivalent to 48.5 U.S. football fields. Although this falls far short of the area equivalent to 181 football fields damaged by a decade of interventions at the orders of Saddam, the relatively short duration of the Coalition occupation of Camp Babylon and the magnitude of the damage caused during that period highlights the need for cultural heritage awareness in the selection of sites for US military bases abroad.

**REPORT ON DAMAGE TO THE SITE OF BABYLON, IRAQ**

**Authority**

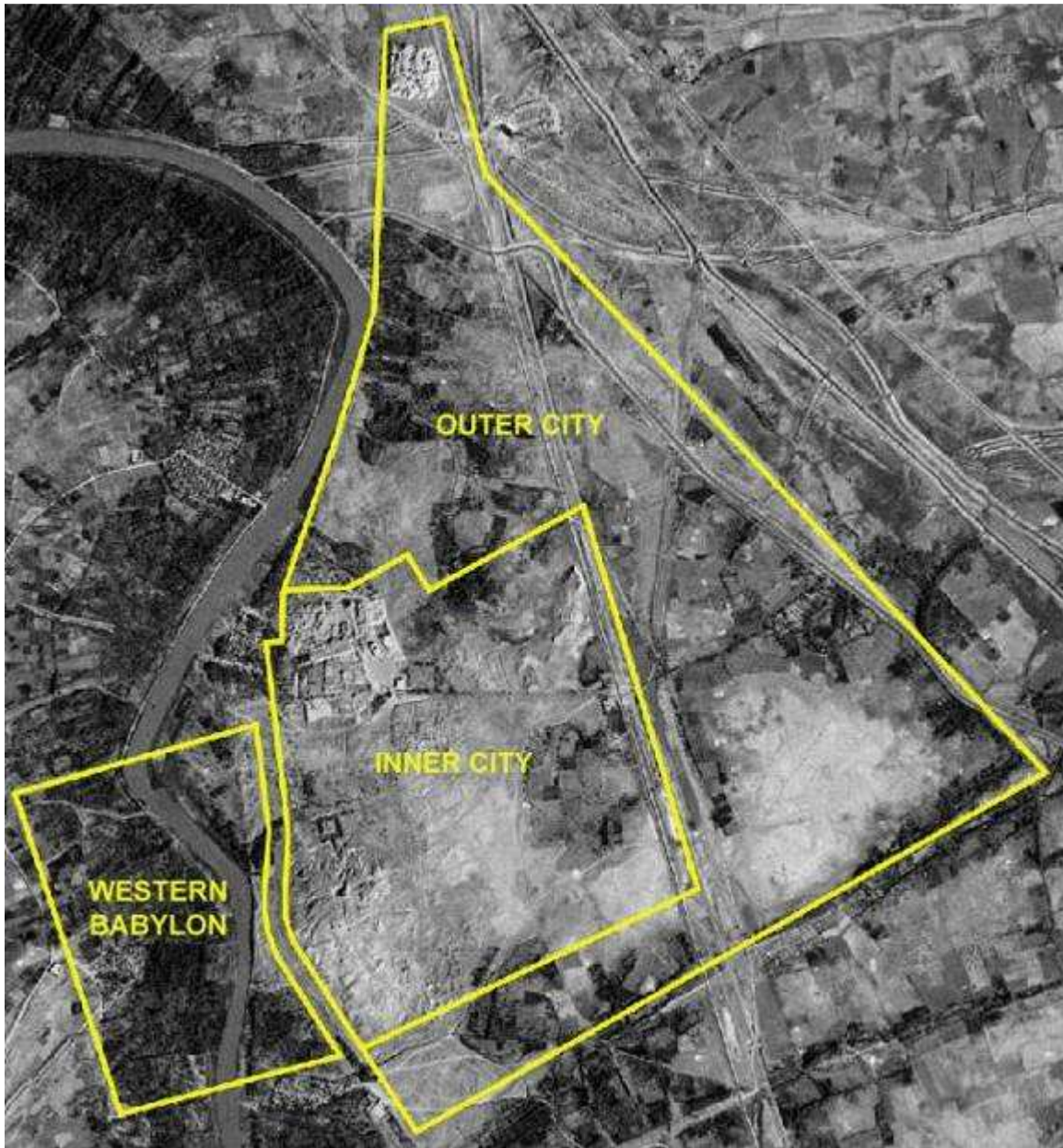
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“The Committee is aware that the ancient temple area of Babylon in Iraq has been damaged as a result of the operation of a U.S. military base, Camp Alpha, located directly on top of this significant site. The Department of State and Department of Defense had committed to protect archaeological sites and cultural antiquities in Iraq after widespread looting last year. The Committee directs the Department's Cultural Antiquities Task Force to investigate this incident and provide the necessary funding to restore the historic site.”

This report is a compilation of damage assessments carried out between 2004 and 2009 in support of the ongoing preservation project for the site.



## Introduction



Map 1: Course of the city walls of ancient Babylon, 13 October 1965, Russell composite.

Evoking popular images of majesty and decadence, Babylon has held a place in the history, heritage, and memory of numerous cultures since ancient times. Beginning with the story of the Tower of Babel in Genesis 11, Babylon is referred to throughout the Old and New Testaments. Apart from Jerusalem, it is by far the most frequently mentioned city in the Bible. In the early Classical tradition, the Greek historian Herodotus offered an account of the Hanging Gardens, and in the first catalog of the Seven Wonders of the World, a poem by Antipater of Sidon in the second century BC, both the “Hanging Gardens” and the “walls of impregnable Babylon” are cited, making Babylon the only city in the list to be mentioned twice (later lists include Wonders from seven different cities).

The site of Babylon, on a branch of the Euphrates River in southern Iraq near the modern city of Hillah, was inhabited as early as 7000 years ago. With the rise of the Babylonian empire under Hammurabi around 1800 BC, Babylon grew to become the imperial capital. During the early sixth century BC under king Nebuchadnezzar II (604-562 BC), Babylon flourished as a center for culture and technology. The city was renowned for its art and architecture, its temples, libraries, and royal collections. The “Hanging Gardens” – landscaped, irrigated terraces – and the famous “Walls of Babylon,” with their colorful imagery and defensive system of moats and towers, were constructed during this time. At this time, the city walls encompassed an area of some 900 hectares (2200 acres), including the Inner City, Outer City, and Western Babylon.

In 539 BC, Babylon was conquered by the Persian king Cyrus, followed by Alexander the Great in the fourth century BC, who planned to make Babylon his imperial capital before he died of fever in a palace on its river bank. Although its grandeur declined, Babylon continued to be occupied into Roman times. But by AD 115, when the Roman emperor Trajan visited, the city seems to have been deserted. Babylon's legacy continues to play a role in Christian, Jewish, Persian, and Arab cultures around the world.

Today, Babylon is an archaeological site overlaid with a few areas of reconstructed ancient buildings, extensive areas of modern construction dating to the rule of Saddam Hussein, and several villages. It is critical to recognize that the entire area within Babylon's outer city wall and the 500 meter buffer zone that surrounds it is an archaeological site. Not only the mounds, but even flat areas that appear featureless nevertheless represent millennia of accumulation of archaeological deposits. In consequence, any disturbance to the site has the potential to destroy irreplaceable evidence of past cultures.

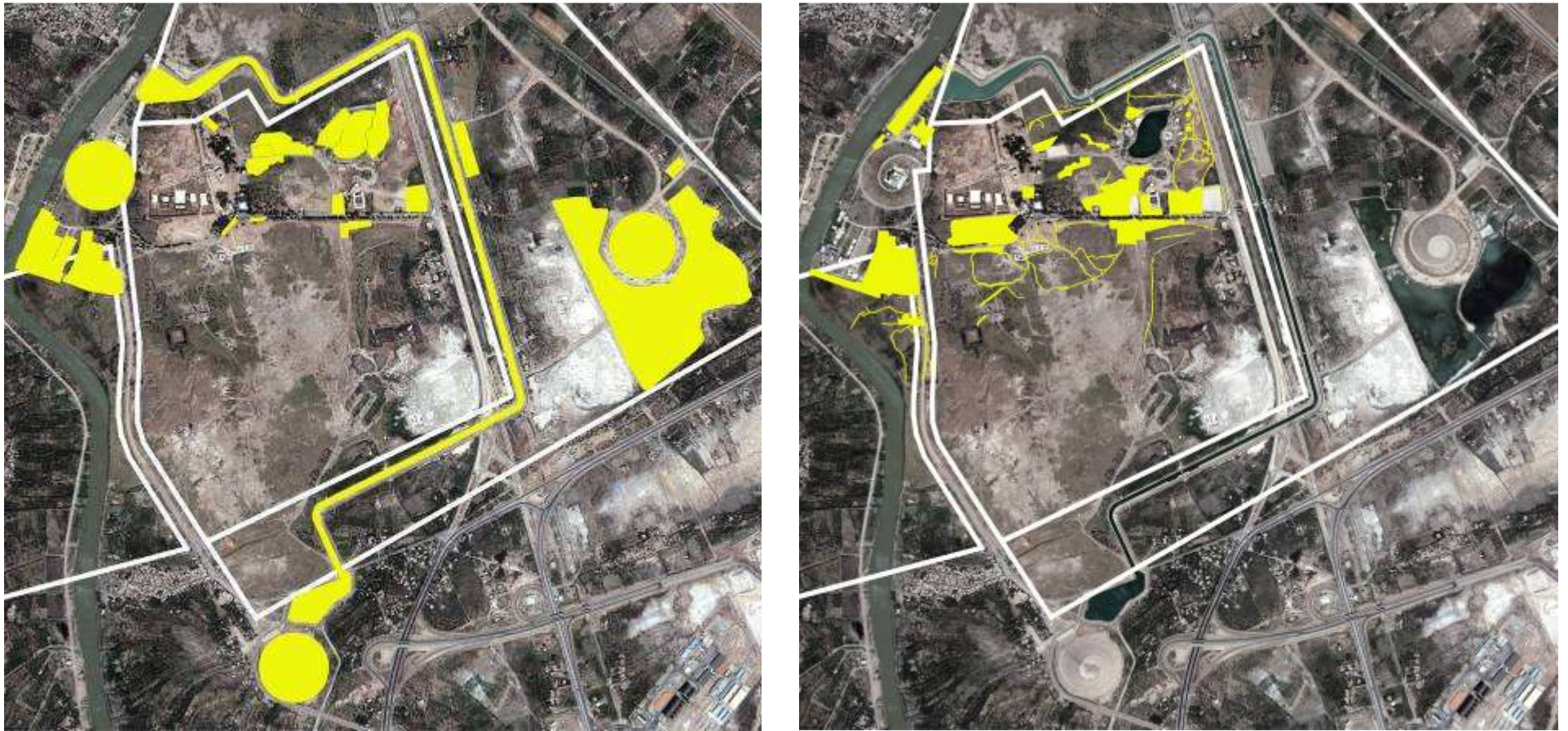
This report is based on a variety of sources: personal visits to the site by the author (John Russell), reports prepared by Iraqi and Coalition personnel at the site, satellite imagery, maps of the site, and photographs taken by Iraqi and Coalition personnel. A full list of sources is in Appendix 1.

The report investigates two substantial periods of recent destructive interventions to the site:

1. Interventions during the 1980's at the order of Iraqi president Saddam Hussein. These interventions were intended to promote tourism by building modern replicas on the foundations of the original archaeological remains, to turn the site into a center for festivals and conferences, and to glorify Saddam himself through massive constructions that explicitly connected him with the fabled kings of Babylon's past.
2. The use of the archaeological site as a Coalition military base ("Camp Babylon", "Camp Alpha") between April 2003 and January 2005. This involved the placement of a major military facility, some 150 hectares (370 acres) in extent, directly on the center of the archaeological site.



The extent of the alterations to the Babylon site during the periods of the Saddam and Coalition interventions can be seen in Map 2 below, and are roughly quantified in the tables in Appendix 1, which are based on dimensions given in the Iraqi final report and estimated from the satellite map images. In numeric terms, the Saddam and Coalition interventions cover an area of roughly 97 hectares and 26 hectares respectively. A summary of the general types of interventions is given below, with full details in the Appendices.



Map 2: Comparison of alterations to Babylon by Saddam (left) and Camp Babylon (right) shown in yellow, with line of ancient city wall in white, Russell composite.



**Assessment of Saddam alterations to the Babylon site**



Map 3: Major Saddam alterations to Babylon (yellow) in relation to the city walls (white), 5 July 2002, Russell composite.

The alterations to the Babylon site during the period of Saddam are roughly quantified in Map 3 and Table 1. The magnitude of Saddam's alterations is astounding, impacting a total surface area of at least 969,192 m<sup>2</sup> (96.9 hectares or 239.5 acres), nearly a full square kilometer, comprising more than 10% of the site's total area. In terms of the area measure most familiar to US readers, this is equivalent to an area of 181 US football fields.

The most archaeologically destructive of these interventions were the digging projects (the canal, lakes, and trenches) and areas of extensive bulldozing (landing zone and parking lots). As discussed below, digging should be avoided on an archaeological site except for research purposes, and the Saddam digging projects were carried out without scientific justification or method.

The three huge artificial mounds may have had less archaeological impact, but they have destroyed the effect of the archaeological landscape, so that now these mounds—and not the ancient remains—dominate the landscape. The modern conference center and lakeside villas are also intrusive, but less so. All of these modern intrusions have no association with the historical Babylon. Their fate, and that of the variously-executed modern reconstructions of ancient buildings, should be determined in the context of a comprehensive preservation and management plan for the site.



### Assessment of the archaeological impact of Camp Babylon

Maps 4-7 and Appendix 1, Tables 2-5, present documented instances of damage to the Babylon site caused by the Coalition military base. These are discussed below in order of the severity of the damage, with digging as the most severe, followed by grading, and piled earth.

#### Digging: cuts, trenches, and pits (Map 4 and Table 2):

- Total area of cuts and trenches:  $29,918 \text{ m}^2 = 3.0 \text{ ha} = 7.4 \text{ acres}$



Map 4: Location of cuts, trenches, and pits (yellow) at Camp Babylon in relation to city walls (white), 8 October 2004, Russell composite.

The most archaeologically invasive activity at Camp Babylon was digging: cutting and flattening mounds, and digging trenches and pits. The most serious such impacts were the flattening of archaeological mounds throughout the KBR yard, four large cuts into the Homera mound, and two long trenches through the temple enclosure to the north of the ziggurat. These and numerous smaller interventions are documented in the Appendices. The total area of Babylon impacted by Coalition digging activities was roughly 30,000 m<sup>2</sup> (about 7.4 acres). This can be expressed in familiar units as destruction of an area equal to five and a half US football fields, but it is more compelling to think of this in terms of what digging means at an archaeological site.

Archaeological sites are formed from the accumulation of the debris of human activities over time. At sites in southern Iraq such as Babylon, the principal material shaped and left behind by these activities is earth: formed into mud-brick structures for habitation, protection, worship, and administration, dug into for burials and for materials to make bricks and pottery, blown into every corner by frequent dust storms and washed in by floods, a constant cycle of building and decay forming the setting for countless lives.

The record of these past lives now survives only in the earthen matrix of the archaeological site. The purpose of archaeology is to reconstruct these activities through painstaking excavation, documenting everything, and thereby recovering the memory of these past people. Any part of this record can only be excavated once—whether carefully documented or plowed through by a bulldozer, the matrix is destroyed and there is no second chance.

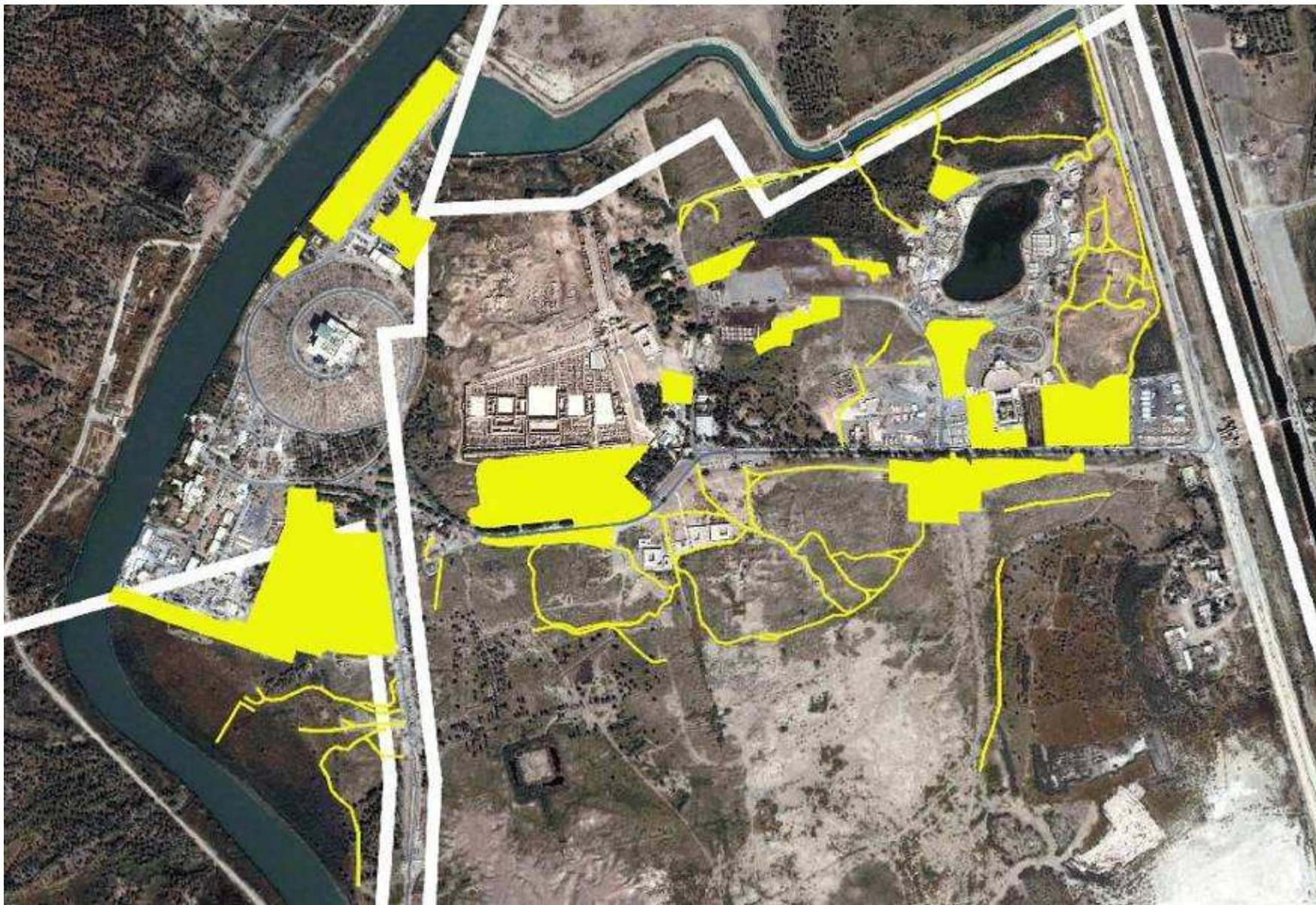
It is instructive to contrast the unscientific Saddam-era and Coalition digging activities with the way archaeologists would conduct a scientific excavation on an area of this scale. Archaeologists typically lay out their excavations in a grid of 10 x 10 meter squares. Scientifically excavating a single 10 x 10 m square to a depth of 1.5 m—the apparent average depth of the Coalition interventions—is a substantial undertaking, requiring the supervision of 1-2 archaeologists, the labor of 10 diggers, and several other specialists in documentation. The actual excavation may require 2-3 months, followed by 1-2 years of data analysis and publication preparation. A large team might excavate and study five 10 x 10 meter squares in an annual season.

Viewed in terms of its potential for archaeological research, therefore, the area of archaeological matrix destroyed by Coalition digging activities at Camp Babylon is equivalent to three hundred 10 x 10 meter squares, which would require 60 years for a large team to excavate scientifically.



Grading: new utility/parking areas and roads (Map 5 and Table 3):

- Total area of utility/parking areas and roads:  $223,820 \text{ m}^2 = 22.4 \text{ ha} = 55.3 \text{ acres}$



Map 5: Location of utility/parking areas and roads (yellow) at Camp Babylon in relation to city walls (white), 8 October 2004, Russell composite.



The construction of new utility/parking areas and roads was by far the most widespread type of damage at Camp Babylon, covering a known total area of about 224,000 m<sup>2</sup> (more than 55 acres), distributed throughout the site. To use the most familiar US measure of area, this is equivalent to 42 US football fields.

This falls far short of the extent of Saddam's area of impact on the site, but the figure is nevertheless quite substantial, especially as it represents only areas that were newly prepared by Coalition Forces. Although the impact in areas that were graded and flattened cannot be fully assessed without knowing the pre-2003 elevations of the affected areas, the satellite imagery, site photos, and site visits give the impression that these activities were generally confined to surfaces that were already mostly flat, so that usually this work did not involve removal of archaeological mounding.

Nevertheless, since central Babylon has never been deep-plowed for farming, undisturbed archaeological deposits are often at or near the surface. Therefore this extensive disruption of the surface of such a large area of the site would have disturbed a huge part of the site's surface remains. Furthermore, the initial use of heavy equipment to prepare these areas, often with the addition of gravel from outside the site, would certainly have affected the archaeological deposits for some depth beneath. Thereafter, the continued use of these prepared areas for heavy vehicles, containers, and helicopters, combined with the constant expansion and frequent changes of function for many of these areas, would have had a continuing impact on archaeological remains near the surface.

Because archaeological deposits on the surface are normally used to identify the archaeological character of the area where they occur, it is critical to document the location of surfaces altered by grading and flattening activities, and maintain this documentation as part of the permanent scientific record of the site.

Piled earth: berms and HESCO barriers (Map 6 and Table 4):

- Total length of berms and HESCO barriers: 3071 m = 1.91 miles
- Total area covered by berms and HESCO barriers: 5907 m<sup>2</sup> = 0.6 ha = 1.5 acres



Map 6: Location of berms and HESCO barriers (yellow) at Camp Babylon in relation to city walls (white), 8 October 2004, Russell composite.



Berms are ridges of loose piled earth used as defensive or protective barriers. The earth can be taken from an adjacent excavation or brought in from a different location. Examples of both were present in the Euphrates North area of Camp Babylon, as illustrated below.



Euphrates North, north gate, 5th trench and adjacent berm, Iraqi final report 26



Euphrates North, artifact-filled earth evidently brought from another location for a berm between Lots 5 and 6, Polish report p. 6

In Camp Babylon, defensive trenches and berms were usually paired, so that the trench serves as the outer obstacle, backed by the berm formed from the trench fill, as shown at left above. When the fortification is abandoned, the berm can be pushed back into the trench, leaving little visible surface disturbance. In the case of an archaeological site such as Babylon, however, the archaeological stratigraphy of the trench has nevertheless been destroyed, so it is important that the location of any such filled trenches be recorded.

The earth used to form berms appears sometimes to have been brought from a different location, rather than being excavated from directly adjacent to the berm. In Lot 6 in the Euphrates North area, shown at right above, the earth in the berm was filled with artifacts, even though the surrounding terrain appears to be clean alluvial soil from the former riverbed.

HESCO containers are heavy-gauge galvanized steel mesh containers lined with a thick synthetic felt fabric. These are attached together and filled with earth to form protective barriers against projectiles and vehicles. The typical size of the containers used at Babylon was roughly 1.1 x 1.1 x 1.5 meters.



Euphrates North, Lot 6, HESCO barriers along east and north sides, Curtis photo 7625 (photo © John Curtis)



Euphrates North, Lot 6, artifact-filled earth in HESCO barrier along east side, Curtis photo 7624 (photo © John Curtis)

As with berms, the earth used to fill HESCO barriers at Babylon seems sometimes to have been brought from a different location, rather than being excavated from directly adjacent to the barrier. In Lot 6 in the Euphrates North area, shown above, the earth in the HESCO barrier was filled with artifacts, even though the surrounding terrain appears to be clean alluvial soil from the former riverbed.



HESCO containers maintain a constant thickness of earth protection from top to bottom, and therefore use earth more efficiently than berms, but they introduce the additional intrusive materials of fabric and steel mesh. The fabric eventually degrades when exposed to the environment, but the steel mesh has an anti-corrosion coating and may be expected to endure for quite some time. When Camp Babylon was abandoned, many HESCO barriers were left in place, where they are now deteriorating, with their contents spilling out onto the adjacent soil, as seen below.



Merkes, Landing Zone 3, deteriorating HESCO containers, July 2008, Russell photo 195 (photo © John Russell)



Merkes, Landing Zone 3, deteriorating HESCO containers, July 2008, Russell photo 196 (photo © John Russell)

In other cases, the HESCO containers were dumped out, leaving new mounds of earth on the surface, as seen at left below, or they were pushed aside in a mangled mixture of earth, steel mesh, and fabric, as illustrated below at right.



Ka-Dingir-Ra, ammunition storage facility, berm (right) surrounded by dumped fill from HESCO bags (center), Curtis photo 7615 (photo © John Curtis)



Merkes, Landing Zone 3, debris from demolished HESCO containers, July 2008, Russell photo 201 (photo © John Russell)



Sandbags were used by the tens of thousands at Camp Babylon. At the time of John Russell's visits to Babylon in late May and early June 2004, more than 40,000 sandbags were stacked on pallets in the KBR yard (Newtown area) ready for use, with extensive piles of earth nearby to fill further sandbags. According to subsequent satellite imagery, all of the sandbags and filler earth eventually disappeared, presumably distributed as needed throughout the site. Sandbags are not particularly durable. Over time, birds pull the fabric apart for nesting material, leaving behind a pile of earth.



Newtown, sandbags on pallets in KBR yard, 8 June 2004, Russell photo 124\_2436 (photo © John Russell)



Newtown, sandbags deteriorating, December 2004, Curtis photo 7577 (photo © John Curtis)

Berms, HESCO barriers, and sandbags do not by themselves necessarily damage the archaeological deposits underneath, although the heavy equipment used to create the barriers would certainly have disturbed the surface layer. In addition, the earth they contain modifies the original surface topography, obscures archaeological features on the surface, and contaminates archaeological surface deposits by introducing earth and objects from unrelated contexts—in some cases even from contexts outside the site. John Curtis observed that when he visited Babylon in December 2004, he "was informed that on 3<sup>rd</sup> November 2003, an order was issued requiring that the bags should only be filled with sand and earth brought in from outside Babylon," creating the potential for archaeological earth from outside the site to be brought in and spread around Babylon (Curtis report).

The total area known to have been obscured by berms and HESCO barriers is roughly 5900 m<sup>2</sup> (about 1.5 acres), and these effects are distributed throughout the site. In consequence, it is critical to document the location of berms, HESCO barriers, and sandbags, and maintain this documentation as part of the permanent scientific record of the site.

#### Other archaeological impacts during the period of Camp Babylon

In addition to the three major sources of damage discussed above, other impacts included:

- Erecting 2790 m (1.73 miles) of concrete barriers and concrete above-ground bunkers (Table 5)
- A huge but unknown number of sandbags used throughout the site
- An unknown but substantial quantity of gravel spread on some of the areas used by vehicles
- Contamination from fuel spills around the fuel storage area in Homera
- Wheel ruts and broken pavement bricks caused by vehicles, observed in the Palace, Ka-Dingir-Ra, and Merkes areas
- Steel stakes driven into archaeological features to hold barbed wire, throughout Camp Babylon
- Vandalism to sculptured figures in the Ishtar Gate
- Deterioration of restored structures because Coalition Forces prevented the Babylon staff from performing maintenance
- Modern construction, including 18 watch towers around the camp and new structures near the Homera lake and in Western Babylon
- Additional digging activity included a trash pit of unknown size in Euphrates South and an unknown number of bunkers in Western Babylon



## Conclusion

Combining the areas impacted by digging, grading, and piled earth gives the total area altered by Coalition activities at Camp Babylon as 259,645 m<sup>2</sup> (26.0 ha or 64.2 acres), an area equivalent to 48.5 U.S. football fields. Although this falls far short of the area equivalent to 181 football fields damaged by a decade of interventions at the orders of Saddam, the relatively short duration of the Coalition occupation of Camp Babylon and the magnitude of the damage caused during that period highlights the need for cultural heritage awareness in the selection of sites for US military bases abroad.



Map 7: Location of all Coalition impacts (yellow) at Camp Babylon in relation to city walls (white), 8 October 2004, Russell composite.

**Appendix 1: Tables showing the extent of alterations to the site****Table 1: Summary of Saddam alterations to the Babylon site**

<b>Feature</b>	<b>Location</b>	<b>Area, m<sup>2</sup></b>
Al-Hawliyah moat or canal	just outside the north, east, and south sides of inner city wall	67,500
Lake 1	east part of outer town, between inner and outer city walls	290,000
Lake 2	outer town, just north of palace	40,000
Lake 3	just outside outer wall at south	42,500
Lake 4	just inside northeast corner of inner city wall	25,000
Mt. Tammuz	just outside outer wall at south	75,000
Mt. Nissan	just inside the east corner of the outer city wall	75,000
Mt. Saddam	atop west side of palace, extending to modern river	75,000
Parking Lot 1	just inside outer city wall at east	6728
Parking Lot 2	just outside inner city wall at east	70,460
Parking Lot 3	Homera, southeast corner	12,600
Parking Lot 4	Homera, southwest corner	5194
Parking Lot 5	Newtown, east of Ninmah temple	5292
Parking Lot 6	Merkes, north of Ishtar temple	1206
Parking Lot 7	Merkes, northwest corner	1600
Parking Lot 8	Western Babylon and Suburbs, south of the Saddam palace	6604
Parking Lot 9	Merkes, south of theater	6250
conference center with 12 buildings	Western Babylon and Suburbs, south of the Saddam palace	66,000
cleared area	east of conference center (later Landing Zone 2)	30,000
7 large buildings plus parks and roads	Homera, around Lake 4	33,000
71 defensive trenches	distributed throughout inner city	213
1 large trench ("Trench 9")	Ka-Dingir-Ra, south side	45
expansion for landing zone	Newtown, north and east of Parking Lot 5	20,000
parking area	Newtown, south of landing zone	10,000
parking area	North Bastion, near north end of Processional Street	4000
<b>TOTAL AREA</b>		<b>969,192 m<sup>2</sup></b>

**Table 2: Digging: cuts, trenches, and pits.** (The volume of cuts cannot be determined due to the uneven original surface of the mounds being cut.)

Feature	Location	Area, m <sup>2</sup>	Volume, m <sup>3</sup>
Cut 1	Homera, north	56	unknown
Cut 2	Homera, north	570	unknown
Cut 3	Homera, north	552	unknown
Cut 4	Homera, north	192	unknown
Cut 5	Euphrates South, south of camp gate	228	unknown
Cut 6	Euphrates South, south of camp gate	240	unknown
Cut 7	Western Babylon and Suburbs, south border of Tent City #2	180	unknown
Cut 8	Western Babylon and Suburbs, Observation Tower 6	600	unknown
Cut 9	Western Babylon and Suburbs, south border of Tent City #2	500	unknown
Cut 10	Ka-Dingir-Ra, Tent City #1	150	unknown
Cut 11	Merkes, Observation Tower 4	6	unknown
Cut 12	Newtown, Containers and parking area south of airstrip	750	unknown
Cut 13	Newtown, Expansion of LZ 1	900	unknown
Cut 14	Newtown, northeast corner of KBR yard	156	unknown
Cut	Newtown, KBR yard	23,800	unknown
Trench 1	Homera, along the inner wall of the city	75	112
Trench 2	Homera, along the inner wall of the city	32	37
Trench 3	Homera, along the inner wall of the city	28	56
Trench 4	Merkes, west of Marduk Gate	60	30
Trench 5	Euphrates North, at north gate to camp	36	41
Trench 6	Euphrates North, at north gate to camp	62	72
Trench 7	Ziggurra Enclosure, near the ziggurra	155	388
Trench 8	Ziggurra Enclosure, north of the ziggurra	258	516
Pit 10	Euphrates South, south of the south camp gate	38	77
Pit 11	Euphrates South, south of the south camp gate	78	157
Trench	Ka-Dingir-Ra, Tent City #1	70	35
Bunker	Palace	24	24
Pit	Euphrates North, north of camp gate	36	108
Pit	Ka-Dingir-Ra, Tent City #1	6	9
Bunker	Western Babylon, Tent City #2	40	60
Pit	Western Babylon, Tent City #2	40	60
<b>TOTALS</b>		<b>29,918 m<sup>2</sup></b>	<b>1782 m<sup>3</sup></b>

**Table 3: Grading: new utility/parking areas and roads**

<b>Feature</b>	<b>Location</b>	<b>Area, m<sup>2</sup></b>
Parking Area/Landing Zone 3	Merkes, south of theater	11,500
Parking Area	Homera, east of theater	15,500
Parking Area	Homera, south of theater	1500
Parking Area	Homera, west of theater	3600
Landing Zone 1	Newtown	5100
Utility Area	Newtown, south of LZ 1	5200
Lot 2	Euphrates North, north of Saddam palace	5000
Lots 3-7	Euphrates North, north of Saddam palace	22,800
Utility Area/ Landing Zone 2, Tent City #2	Western Babylon, south of Saddam palace	64,200
Utility Area	Newtown, south of the Ninmah Temple	3000
Parking Area	Homera, northwest of lake	1800
Fuel Depot	Homera, northwest of theater	7200
Parking Area	Homera, north of fuel depot	1000
Utility Area, Tent City #1	Ka-Dingir-Ra	33,300
Parking Area	Ka-Dingir-Ra, south of Tent City #1	5000
New Roads: 9530 m = 5.92 miles	Homera, Newtown, Merkes, Ka-Dingir-Ra, Ziggurat Enclosure	38,120
<b>TOTAL AREA</b>		<b>223,820 m<sup>2</sup></b>

**Table 4: Piled earth: berms and HESCO barriers**

<b>Feature</b>	<b>Location</b>	<b>Length, m</b>
Berm	Homera, northeast camp entrance	80
Berm	Homera, fuel depot	310
Berm	Homera, west of the Marduk Gate	35
Berm	Euphrates North, Lots 3-7	390
Berm	Euphrates North, North Gate, beside Trench 5	18
Berm	Euphrates North, North Gate, beside Trench 6	25
Berm	Ka-Dingir-Ra, Ammunition storage facility	80
Berm	Ziggurat Enclosure, near the ziggurat, beside Trench 7	62
Berm	Ziggurat Enclosure, north of the ziggurat, beside Trench 8	172
Berm	Ziggurat Enclosure, berm across road north of Trench 8	10
Berm	Western Babylon, near Observation Tower 6	50
Berm	Homera, beside Trench 2	13
Berm	Homera, beside Trench 3	14
Berm	Newtown, east of Landing Zone 1	12
Berm	Euphrates North, north of camp gate	60
HESCO	Euphrates North, Lots 3-7	460
HESCO	Ka-Dingir-Ra, Ammunition storage facility	140
HESCO	Merkes, Parking area/Landing zone 3	305
HESCO	Euphrates South, south gate	610
HESCO	Homera, fuel depot	30
HESCO	Homera, east lot by Marduk Gate	195
<b>TOTAL</b>		<b>3071 m</b>

**Table 5: Portable barriers: concrete barriers and bunkers**

<b>Feature</b>	<b>Location</b>	<b>Length, m</b>
Barrier	Homera, east lot by Marduk Gate	255
Barrier	Homera, approach to east gate	1430
Barrier	Merkes, Parking Area/Landing Zone 3	250
Barrier	Euphrates South, south gate	260
Barrier	Newtown, north of Landing Zone 1	130
Barrier	Homera, west of theater	165
Barrier	Newtown, KBR yard	110
Bunkers	Ka-Dingir-Ra, Tent City #1	190
<b>TOTAL LENGTH</b>		<b>2790 m</b>

## **Appendix 2: Sources and site subdivisions used in compiling the report**

### **Sources used in compiling the report**

#### **Satellite imagery**

Digital Globe satellite 0.6 meter resolution natural color digital images from the following dates:

5 July 2002  
1 April 2003  
31 August 2003  
4 June 2004  
25 August 2004  
8 October 2004  
26 November 2005

Comment: The chronological spread of these images is excellent for our purposes. The first two predate the establishment of the Coalition camp on Babylon, the third one falls at the transition of the camp from the US MEF to the multinational MNF-I, and the last one shows the condition of Babylon after the camp was removed.

CORONA satellite black-and-white film images from the following dates:

15 December 1962  
13 October 1965  
28 February 1967  
16 August 1968  
1 October 1968  
4 June 1970  
12 July 1975  
31 July 1976  
31 March 1979

Comment: The quality of these images is variable, but the best have excellent detail, and all of them have the advantage of predating the Saddam-era restorations and new constructions.

## Maps

Wall maps prepared by the Geographic Information Unit, Office of the Geographer and Global Issues, Bureau of Intelligence and Research, Department of State based on Digital Globe images of the following dates:

25 August 2004 (produced 20 September 2005)

26 November 2005 (produced 1 May 2006)

Koldewey 1913 map: detail of central Babylon, published in Robert Koldewey, Das wieder erstehende Babylon, Leipzig, J. C. Hinrichs, 1913, fig. 256.

Iraqi 1980 map: detailed topographic map prepared by General Establishment for Surveys, Baghdad, 1980.

Iraqi 2006 final report map: map of the whole site based on the Iraqi 1980 map, with color-coding showing areas of intervention. Included in Dr. Maryam Umran Musa et al, Report on the Current Situation of the Babylon Archeological Site, 2006, unnumbered figure

Curtis 2005 map: map of Camp Alpha posted inside the camp, Curtis photo DSCN7582.

George 1992 map: reconstruction map of Babylon's ancient features, published in Andrew George, Babylonian Topographical Texts, Leuven: Peeters, 1992, fig. 4.

## Reports

"McDonald report": Tour of the MEF modifications at camp Babylon made 25th July 03 and added to on 29th July [2003], prepared by Helen McDonald, archaeological advisor to the Marine Expeditionary Force, Babylon. This is the earliest report on damage to archaeological areas due to the military base at Babylon, written by a professional archaeologist with expertise in Mesopotamia.

"Iraqi preliminary report": Preliminary report on the damage to the archaeological site of Babylon, December 2004, prepared by Dr. Maryam Umran Musa et al, on behalf of the State Board of Antiquities and Heritage, Ministry of Culture, Republic of Iraq. Two versions of the initial Iraqi report on the damage to Babylon were made available for this report. Version "B," which is more complete, has been used as the base text for this report, with additions from version "A" in brackets when they provide additional information. The original language of both versions is Arabic. The English translations used in this report were provided by the Office of Translation Services of the US Department of State.

- Version "B": This version was provided directly to John Russell by Mr. Burhan Shakr, the Director General for Excavations of the Iraq State Board of Antiquities and Heritage, on the occasion of the "Special session on the archaeological site of Babylon" on 24 June 2005 at UNESCO Headquarters, Paris. It includes more detail than does version "A" and appears to be the original version of this report.



- Version "A": This version was distributed to participants in the "Special session on the archaeological site of Babylon" on 24 June 2005 at UNESCO Headquarters, Paris. It has been edited down somewhat from version "A," and sometimes contains variant information.

"Iraqi final report": Report on the Current Situation of the Babylon Archeological Site, 2006, prepared by Dr. Maryam Umran Musa et al, on behalf of the State Board of Antiquities and Heritage, Ministry of Culture, Republic of Iraq. The original language of the report is Arabic. The English translation used in this report was provided by the Office of Translation Services of the US Department of State.

"Polish report": Report on the current condition of the Babylon archaeological site (the military Camp Alpha site. "Description and photographs by the Polish specialists in archaeology and protection of cultural heritage sites between the 5<sup>th</sup> and 30<sup>th</sup> November 2004."The current report made use only of Part 1. Catalogue of the open areas, prepared by Miss Agnieszka Dolatowska M.A. This report was prepared by the three Polish archaeologists stationed with MNF-I at Camp Babylon, for the occasion of the return of the site to Iraqi SBAH administration.

"Curtis report": John Curtis, Report on Meeting at Babylon 11<sup>th</sup> – 13<sup>th</sup> December 2004. Report on the site survey that was carried out by Dr. John Curtis, Keeper of the Department of Ancient Near East, The British Museum, on the occasion of the return of the site to Iraqi SBAH administration.

"Stone report": Assessment of Damage to Babylon based on Digital Globe Satellite Imagery, prepared by Dr. Elizabeth C. Stone, Stony Brook University, March 2008. Prepared at the request of UNESCO for the ICC Babylon Subcommittee.

### Photographs

Russell: Photographs taken by John Russell, Senior Advisor for Culture, Coalition Provisional Authority, during visits to Babylon on May 27, 2004 (123\_2332 to 123\_2371) and June 8, 2004 (124\_2431 to 124\_2471).

Bahrani: Photographs taken by Zainab Bahrani, Edith Porada Professor of Art History and Archaeology, Columbia University, New York, who served in 2004 as Senior Consultant for Culture, Coalition Provisional Authority. Her photos were taken during visits to Babylon on May 27, 2004 (DSCN1803 to DSCN 1873) and June 14, 2004 (DSCN2038 to DSCN2156). Used by permission.

Polish: Photographs taken by the Polish archaeological consultants at Camp Babylon, prior to the return of the site to Iraqi SBAH administration. The aerial photos used in this report were taken on November 12, 2004 (numbered 0 to 160). Photos copyright Ministry of Culture and National Heritage, Republic of Poland. Used by permission.

Curtis: Photographs taken by John Curtis during the site survey of December 11-13, 2004 (DSCN7512 to DSCN7707), prior to the return of the site to Iraqi SBAH administration. Used by permission.

Iraqi

Composite images

As a tool to aid in the identification and illustration of damage to Babylon during the period of the Coalition military base, John Russell used the layer feature of Adobe Photoshop to create overlays of all of the Digital Globe images together with several of the site maps. With this image, layers can be turned on and off to highlight changes, and layers can be added to illustrate particular features.

### Subdivisions of the Site of Babylon

The Iraqi, Curtis, and McDonald reports on Camp Babylon describe the base as a whole, and locate individual areas of damage in relation to prominent features, such as gates, roads, and buildings. Due to the large size of Camp Babylon, however, it is useful in a detailed study to subdivide



the site into areas that can be described separately. The Polish and Stone reports employ such divisions, which correspond to the military uses of each area (Tent City #1, KBR #1). The Iraqi report rightly observes that these divisions bear no relationship to the archaeological and topographic features of ancient Babylon itself, and that such names encourage the perception of the site as just another military base, and not as a major heritage site. The present report divides the camp into areas, but these are defined by the ancient features of the city that they include. In consequence, the reader is consistently reminded of the types of ancient features were disrupted by the modern base.

Central Babylon, without area subdivisions, 1 April 2003, Russell composite.





Central Babylon, Koldewey 1913 map showing archaeological and topographic features, Russell composite.





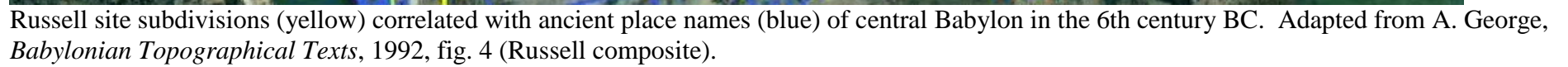
Subdivisions of Camp Babylon used in the Polish report. These labels are largely unrelated to the archaeological features (Russell composite).





Central Babylon, 1 April 2003, with the subdivisions used in this report (yellow), correlated with ancient features on Koldewey 1913 map (red), Russell composite.









Reference map, site subdivisions of this report (yellow) correlated with Polish report subdivisions (white), Russell composite.

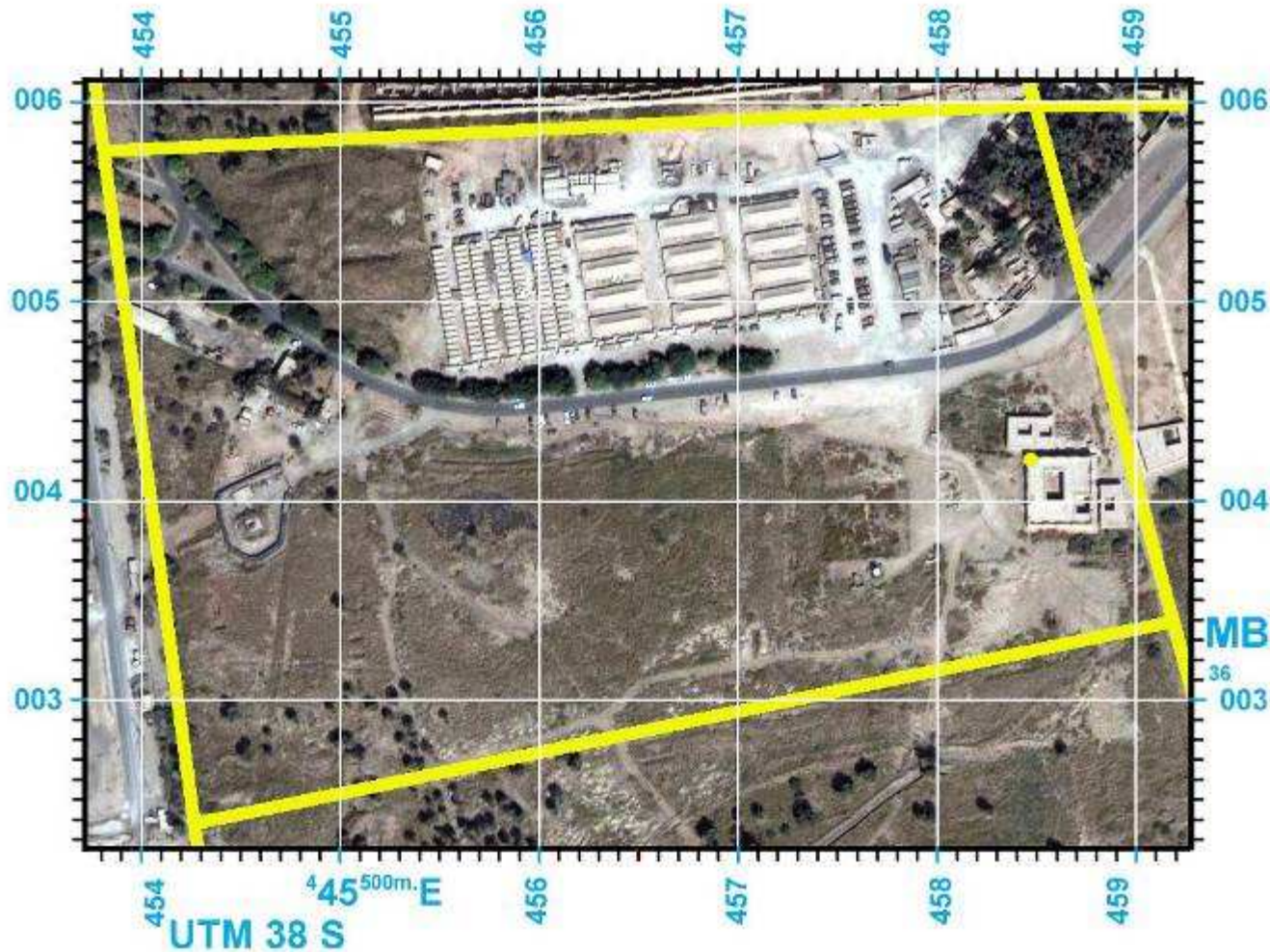


**Map coordinates**

Map grid reference maps are included at the beginning of Chapters 3-10. These can be used to determine approximate coordinates of features in the UTM and MGRS systems. In the example below, the location of the northwest corner of the Nabu sha-Hare temple (yellow dot) can be determined from the map as:

UTM 38 S 445845mE 3600420mN

MGRS 38 S MB 45845 00420



Coordinates can also be determined by using Google Earth, although this may not be as accurate as the reference maps. According to Google Earth, the coordinates of the yellow dot above are:

UTM 38 S 445815mE 3600420mN

MGRS 38 S MB 45815 00420



**Appendix 3: Pre-2003 alterations to the Babylon site**

Much of the information in this appendix is quoted from the section "Pre-2003 Damage" of the *Report on the Current Situation of the Babylon Archeological Site – 2006*, compiled by members of the Babylon staff of the Iraq State Board of Antiquities and Heritage.

**Iraqi final report:**

“Scientific excavations were conducted in the city of Babylon by a German expedition headed by Robert Koldewey in 1899-1917. This expedition revealed important parts of the city. Other parts were uncovered during the excavations of the Babylon Archeological Restoration Project that began in 1977. Many parts of Babylon have yet to be excavated. See Photo 1 (satellite photo) and the map of Babylon below.

“The city of Babylon was included in the preservation works under the plan for the Babylon Archeological Restoration Project and the Babylon International Festival Authority (the festival began in 1987 and was held annually, mainly in the Greek theater, the Throne Room, and the Temple of Nanmakh). The preservation works treated archeological structures found during the excavations conducted by the German expedition and the restoration project. However, the preservation works were neither up to par nor suited to the city. The city’s archeological value has been compromised by some of the modifications and additions that were made and by modern buildings and installations that have been built in scattered areas of the city, as mentioned below” (Iraqi final report p. 1).

Iraqi final report, “Map of Babylon Showing Pre-2003 and Post-2003 Damage”





13 October 1965, Russell composite  
Reference images, Babylon before (left) and after (right) Saddam.



5 July 2002, Russell composite





Reference image, Babylon before Saddam, 13 October 1965, Russell composite.





Reference image, central Babylon after Saddam, 5 July 2003, Russell composite.





**"Al-Hawliyah moat or canal.** It surrounds the city of Babylon on the east and partially on the north and south. Its length is 4.5 km and its width is 15 m. The trench is lined on the bottom and sides with cement. This trench is crossed from the north by the main street that links the city of Babylon with the outer perimeter" (Iraqi final report p. 3 and fig. 3).





Before building canal, 13 October 1965, Russell composite



Canal, 5 July 2002, Russell composite



**"The new lakes.** The moat is linked to three lakes on the north, south, and east. A fourth lake north of the Greek Theater is connected to Babylon Stream to the north" (Iraqi final report p. 3).



**"Lake No. 1:** Called Nissan Lake, it is located in the southeast part of the city between the inner and outer walls. With an area of 116 dunams [29 ha, 71.65 acres], it is the largest of the lakes" (Iraqi final report p. 3 and fig. 4).





Before Lake No. 1 was built, 1965, Russell composite



Lake No. 1, 2002, Russell composite





**"Lake No. 2:** Called Saddam Lake, it is located in the northern part of the city and has an area of 16 dunams [4 ha, 9.9 acres]" (Iraqi final report p. 3 and fig. 5).





Before Lake No. 2 was built, 1965, Russell composite

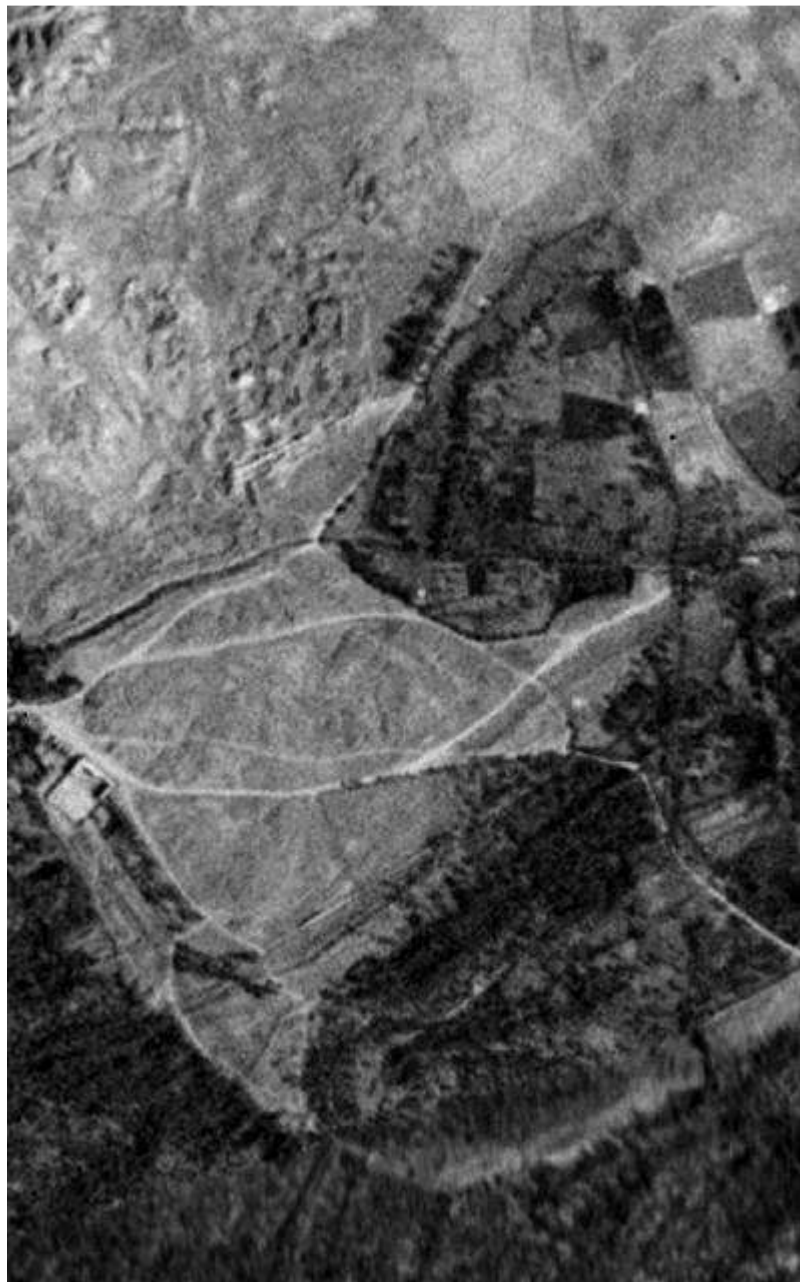


Lake No. 2, 2002, Russell composite





**"Lake No. 3:** Called Tammuz Lake, it is located on the south of and within the buffer zone of the city, near the village of al-Jumjumah. It has an area of 17 dunams [4.25 ha, 10.5 acres]" (Iraqi final report p. 3 and fig. 6).



Before Lake No. 3 was built, 1965, Russell composite



Lake No. 3, 2002, Russell composite





**"Lake No. 4:** Located in the northeast part of the city, inside the inner wall north of the Greek Theater, it has an area of 10 dunams [2.5 ha, 6.2 acres]" (Iraqi final report p. 3 and fig. 7).





Before Lake No. 4 was built, 1965, Russell composite



Lake No. 4, 2002, Russell composite



**"Earthen mounds.** Three artificial mounds were established under the International Babylon Festival plan. Each has a height of 30 m, an area of 30 dunams [7.5 ha, 18.5 acres], and a slope of 100 m. These mounds include" (Iraqi final report p. 3):



**"Mt. Tammuz:** It is in the south of the city, within its sacred precincts" (Iraqi final report p. 3 and fig. 8).



Before Mt. Tammuz was built, 1965, Russell composite



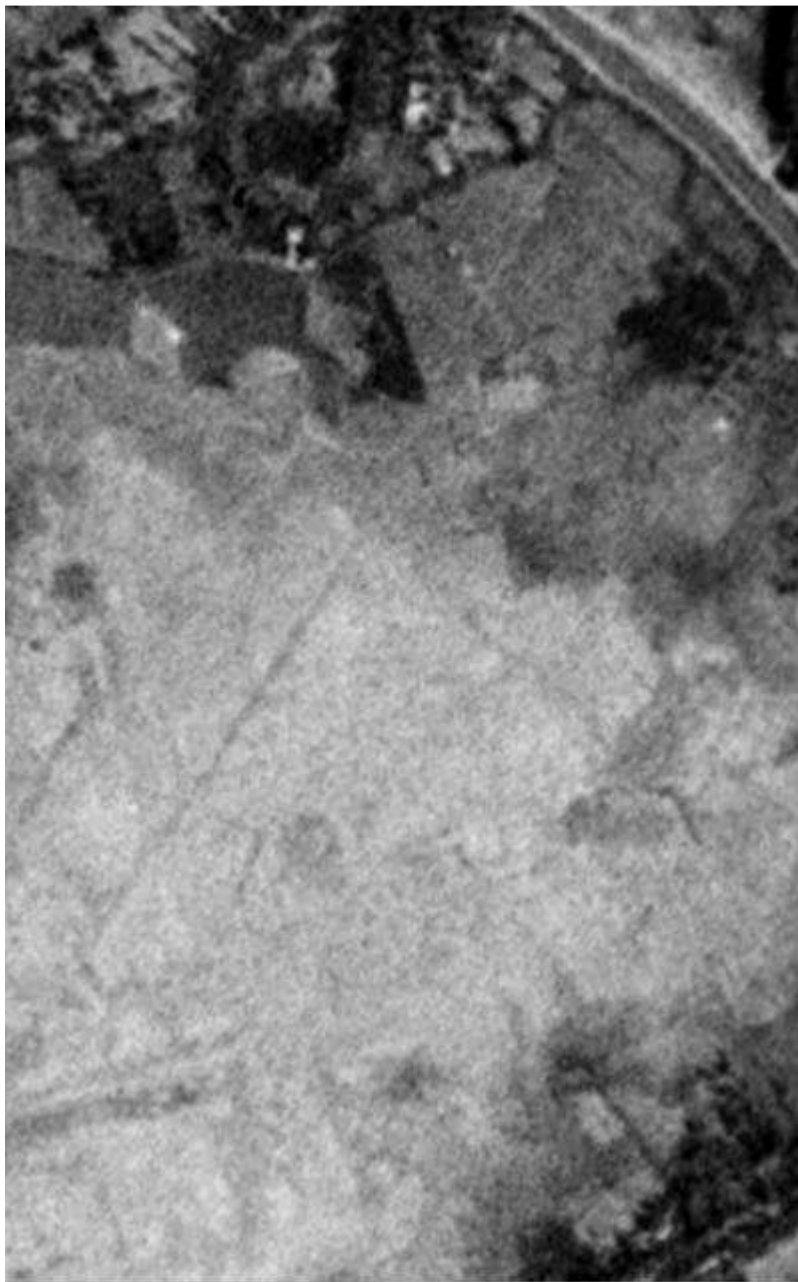
Mt. Tammuz, 2002, Russell composite



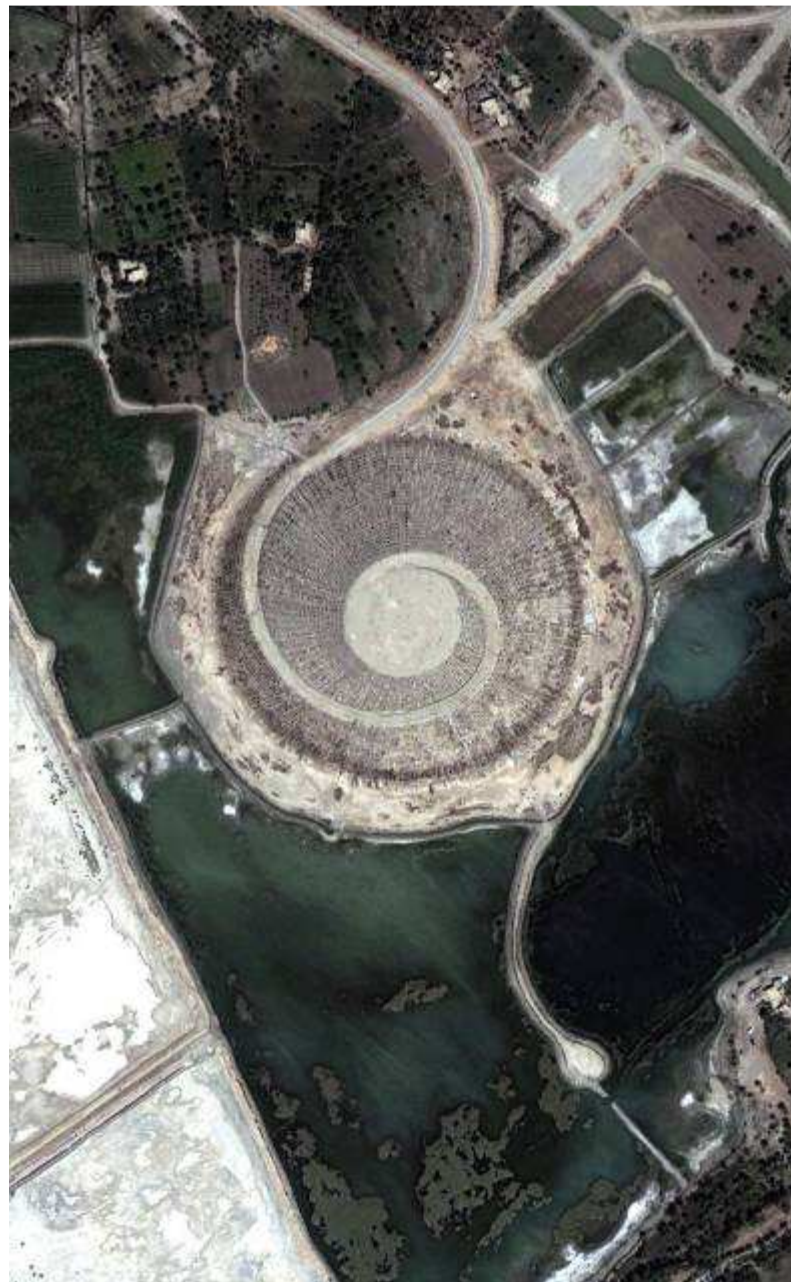


**"Mt. Nissan:** It is southeast of the city" (Iraqi final report p. 3 and fig. 9).



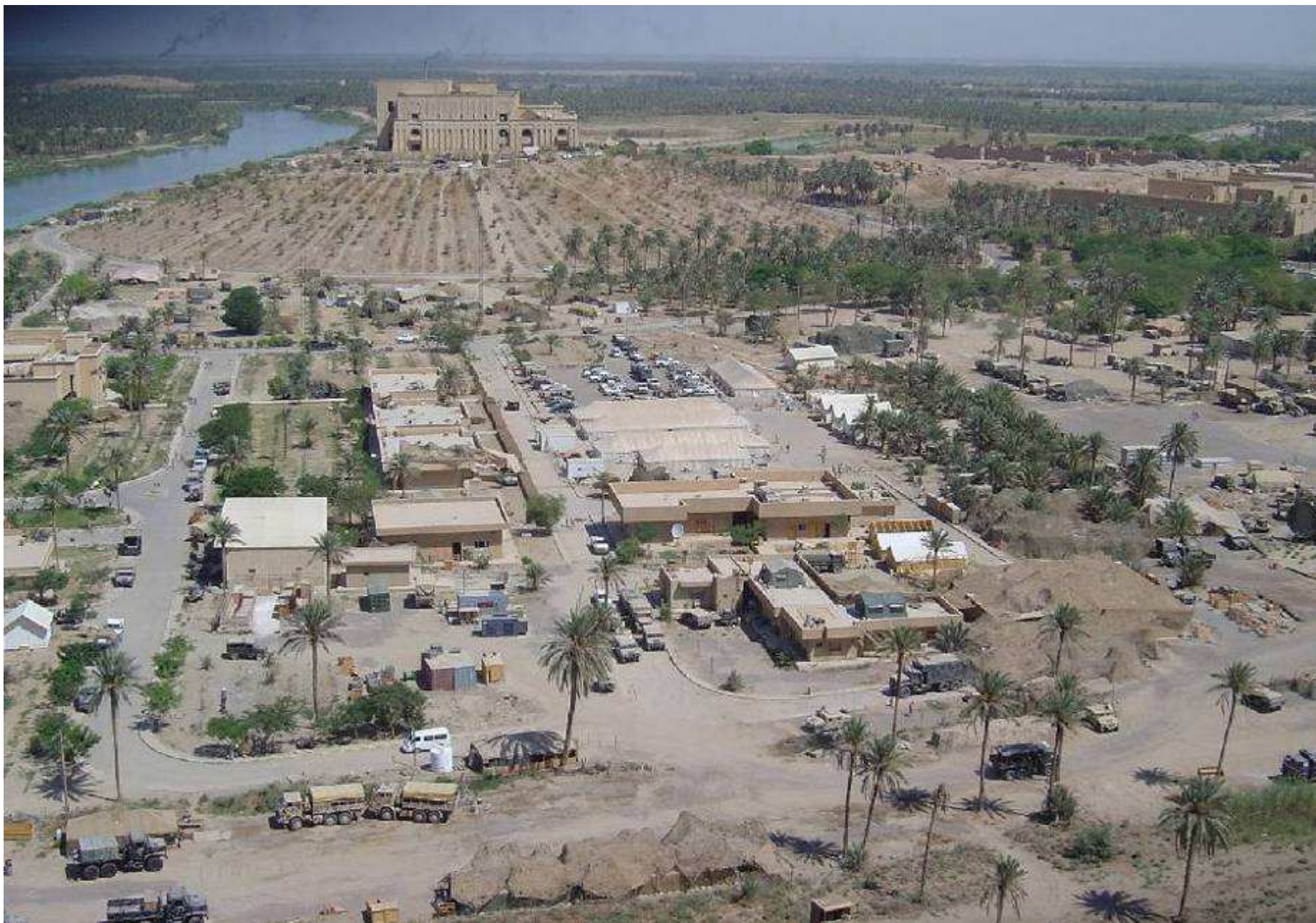


Before Mt. Nissan was built, 1965, Russell composite



Mt. Nissan, 2002, Russell composite





**"Mt. Saddam:** It is north of the city, overlooking the Euphrates River from the east. One of the presidential palaces was built on it" (Iraqi final report p. 3 and fig. 10).





Mt. Saddam, Iraqi final report fig. 10





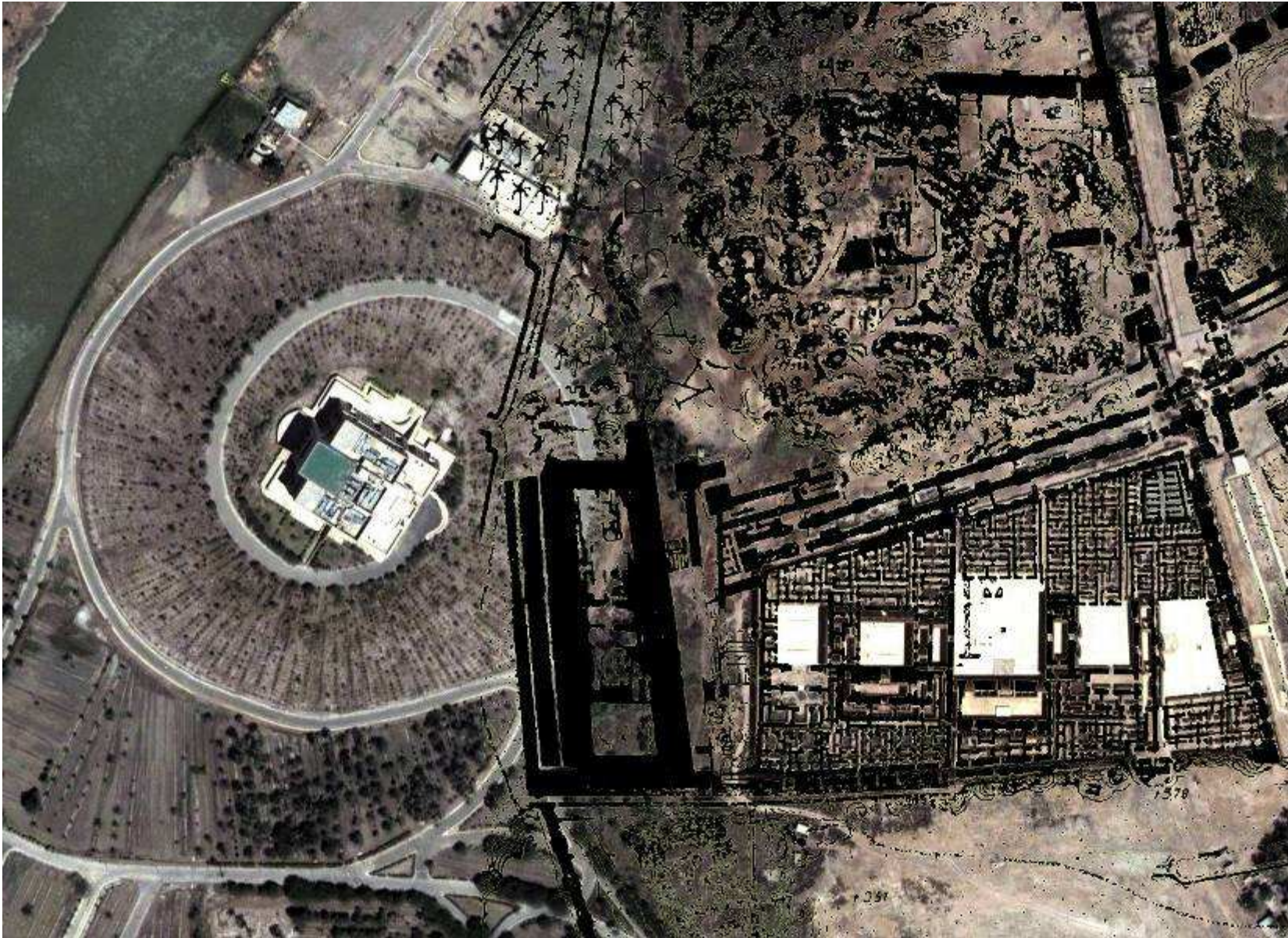
Before Mt. Saddam, 1965, Russell composite



Mt. Saddam, 2002, Russell composite



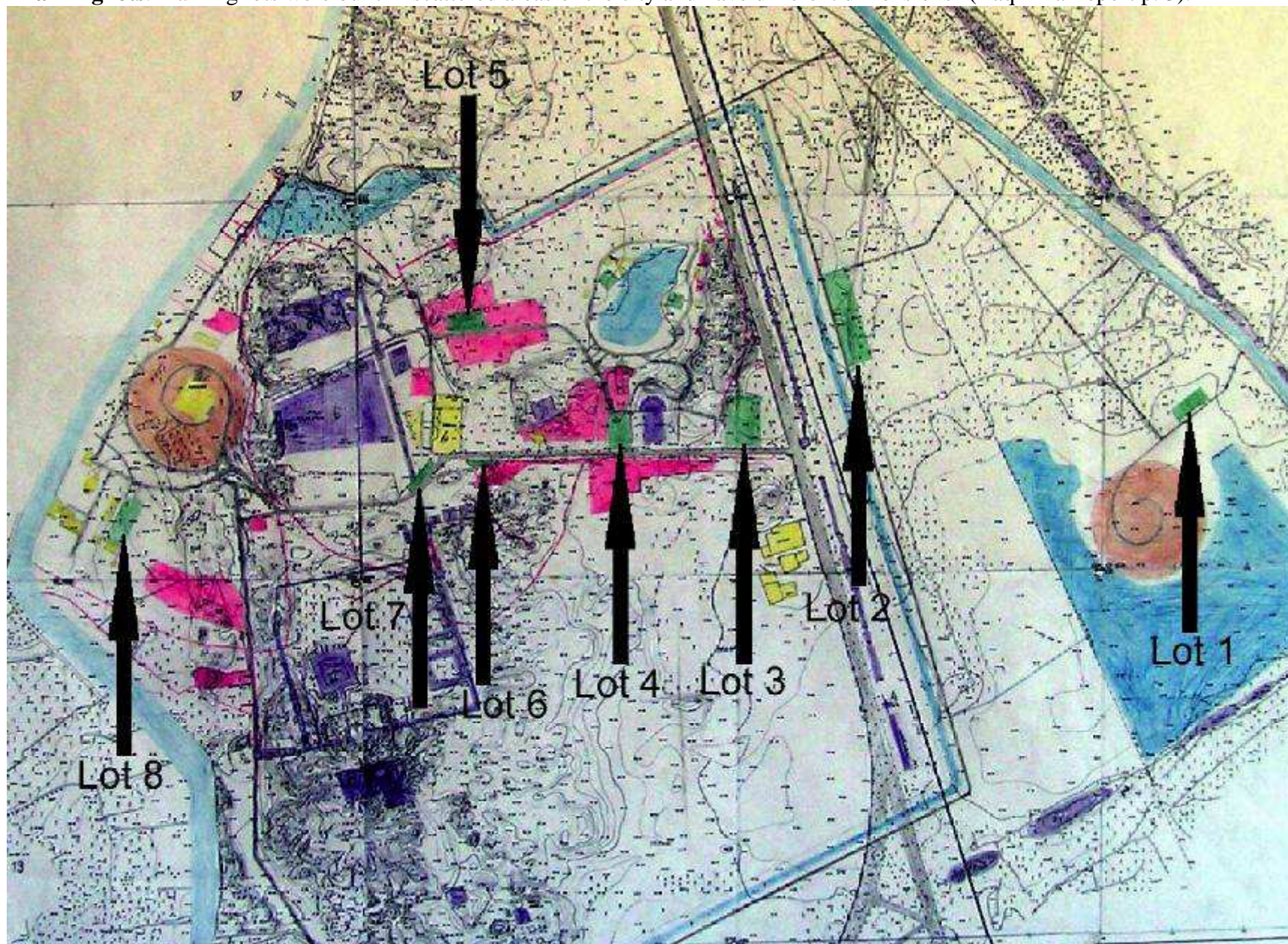
**Russell comment:** Although Mt. Saddam is said to have been built in the old bed of the Euphrates, on the site of the modern village of Kuwayrish, in fact it also covers a large part of the western bastion of the Neo-Babylonian palace.



Location of Neo-Babylonian western bastion beneath Mt. Saddam, Russell composite



**"Parking lots.** Parking lots were built in scattered areas of the city and have different dimensions" (Iraqi final report p. 3):



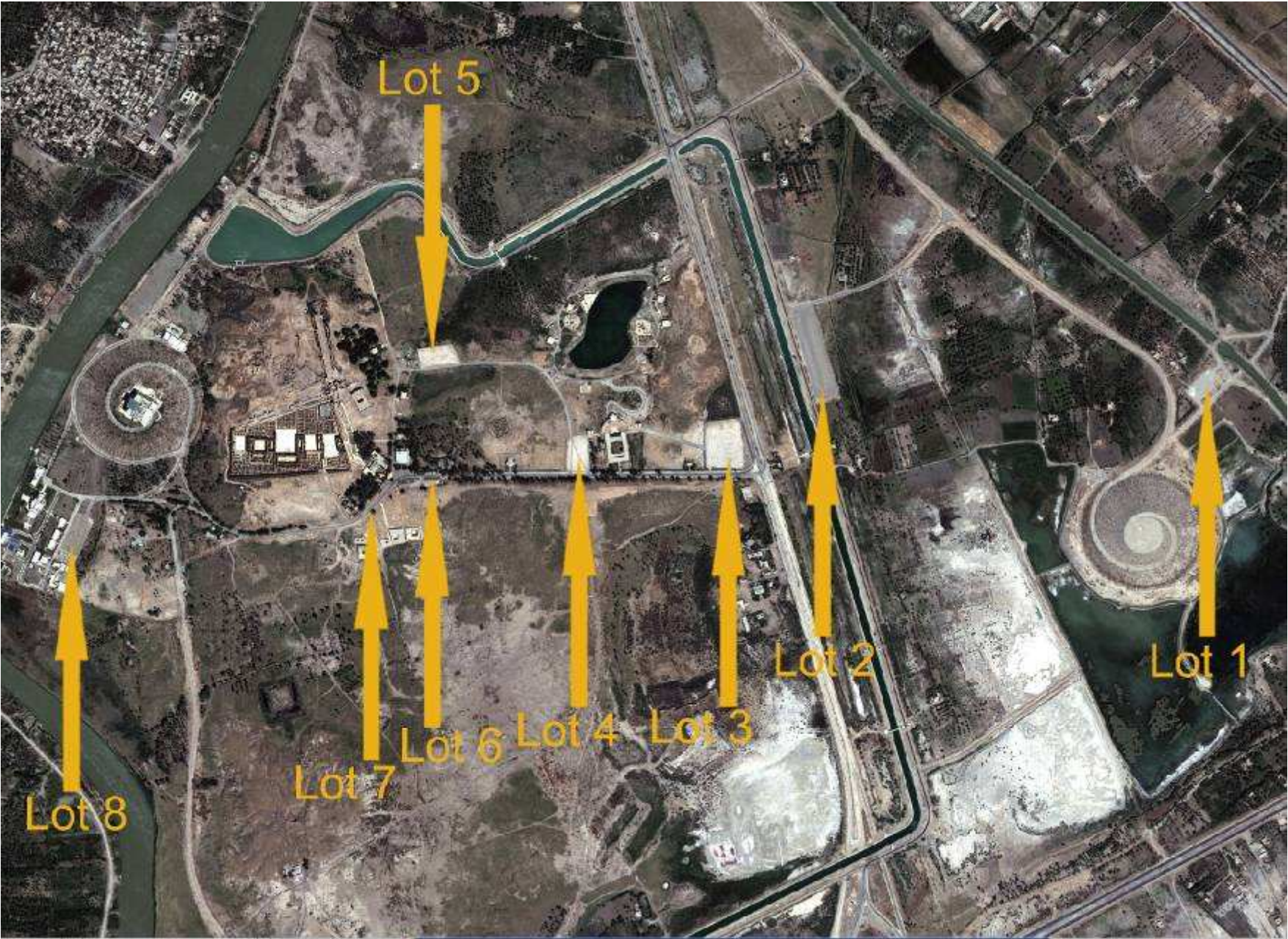
Parking lots, shown in green, Iraqi final report map





Before parking lots were built, 1965, Russell composite





Parking lots, 2002, Russell composite





**"1<sup>st</sup> lot:** Southeast of the city, it has an area of 58 x 116 m, a part of which (26 x 16) is unpaved" (Iraqi final report p. 3 and fig. 11).



**"2<sup>nd</sup> lot:** Alongside the eastern part of the inner wall on the east and the moat, it has an area of 260 x 271 m" (Iraqi final report p. 3 and fig. 12).





**"3<sup>rd</sup> lot:** Located opposite the interior side of Marduk Gate, at the start of the street leading to the archeological city, it has an area of 100 x 126 m" (Iraqi final report p. 3 and fig. 13).



"4<sup>th</sup> lot: West of the theater, it has an area of 53 x 98 m" (Iraqi final report p. 4 and fig. 14).





**"5<sup>th</sup> lot:** North of the Babylonian House (area of the airfield built by the MF), it has an area of 98 x 54 m" (Iraqi final report p. 4 and fig. 15).



**"6<sup>th</sup> lot:** Across from the rest house north of the Ishtar Temple, it has an area of 18 x 67 m" (Iraqi final report p. 4 and fig. 16).





**"7<sup>th</sup> lot:** Alongside the road leading to the presidential palace on the north, near the new Ishtar Gate, it has an area of 16 x 100 m" (Iraqi final report p. 4 and fig. 17).



**"8<sup>th</sup> lot:** It is located south of the presidential palace, across from three modern buildings. Its area is 52 x 127 m" (Iraqi final report p. 4 and fig. 18).

**Russell comment:** In addition to the above, a 9th lot was located south of the theater, across the paved road. Its area was 6250 m<sup>2</sup>.



**"Modern structures.** They include:

"Restaurants and service buildings in the center of the city, around the lake north of the theater, and in the pavilions area.

"The palace and buildings surrounding it (Iraqi final report fig. 2). [reproduced above]

"In addition, there are old encroachments, consisting of: the main street, which cuts through the city from the north to the south, from the Summer Palace to the moat in the southern part; the street that branches off from it, which formerly led to the village of Kuwayrish (currently the area of the presidential palace); the street running alongside the outer side of the moat on the north, east, and south of the city; the road linking the village of al-Jumjumah and the archaeological city of Babylon from the south to the city of al-Hillah; and the road built on the southern and eastern side, along the outer wall of the city (the road may cut through the wall); other streets in the north of the city that link the presidential palace with modern buildings (Iraqi final report fig. 1, satellite photo).

"In addition, the Nebuchadnezzar Museum, Hammurabi Museum, the Studies Headquarters, office, and rest house were built in the center of the city" (Iraqi final report p. 4 and fig. 19).



Iraqi final report fig. 19



**Russell comment:** The following image pairs show areas with modern construction, and compare the situation in 1965 with that in 2002.

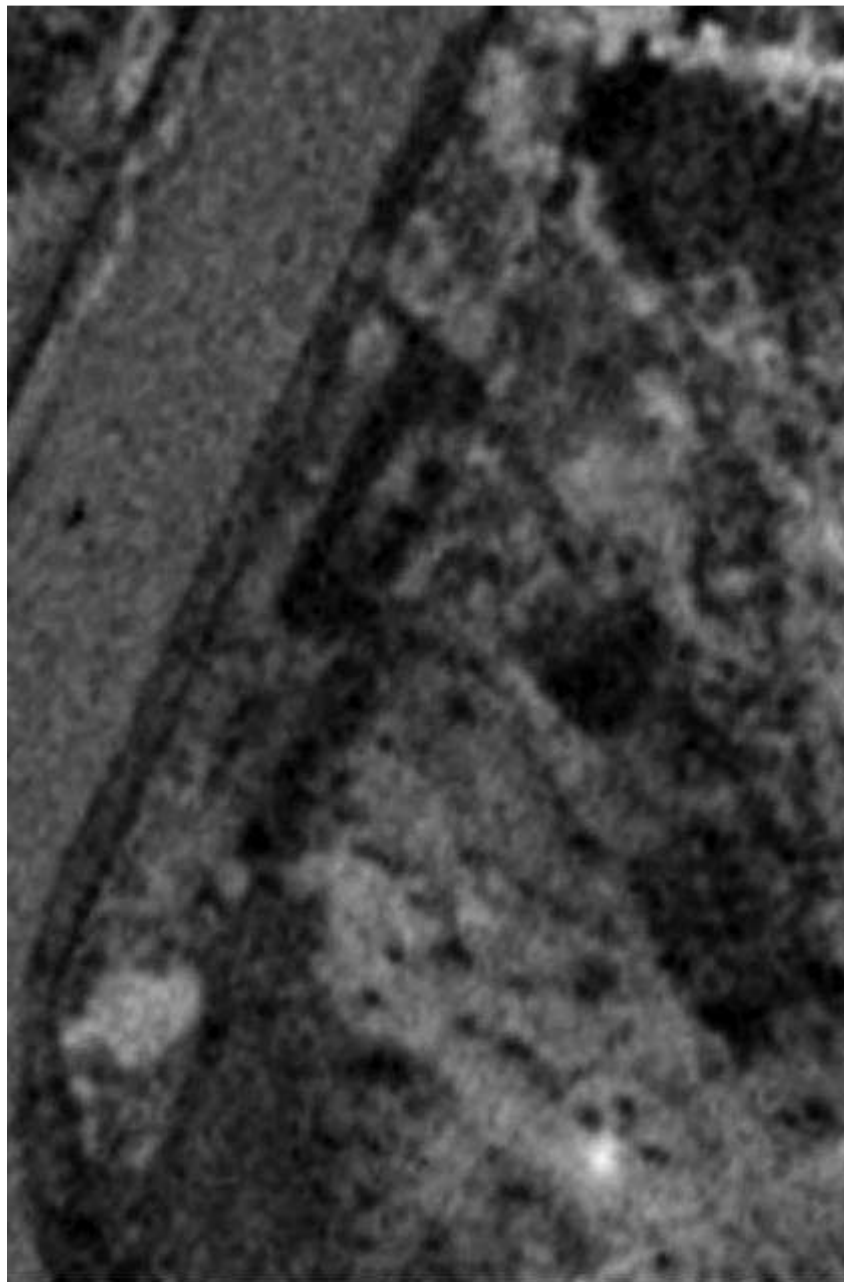


Overview, 1965, Russell composite



Overview, 2002, Russell composite





Area of modern buildings south of Mt. Saddam, 1965



Area of modern buildings south of Mt. Saddam, 2002



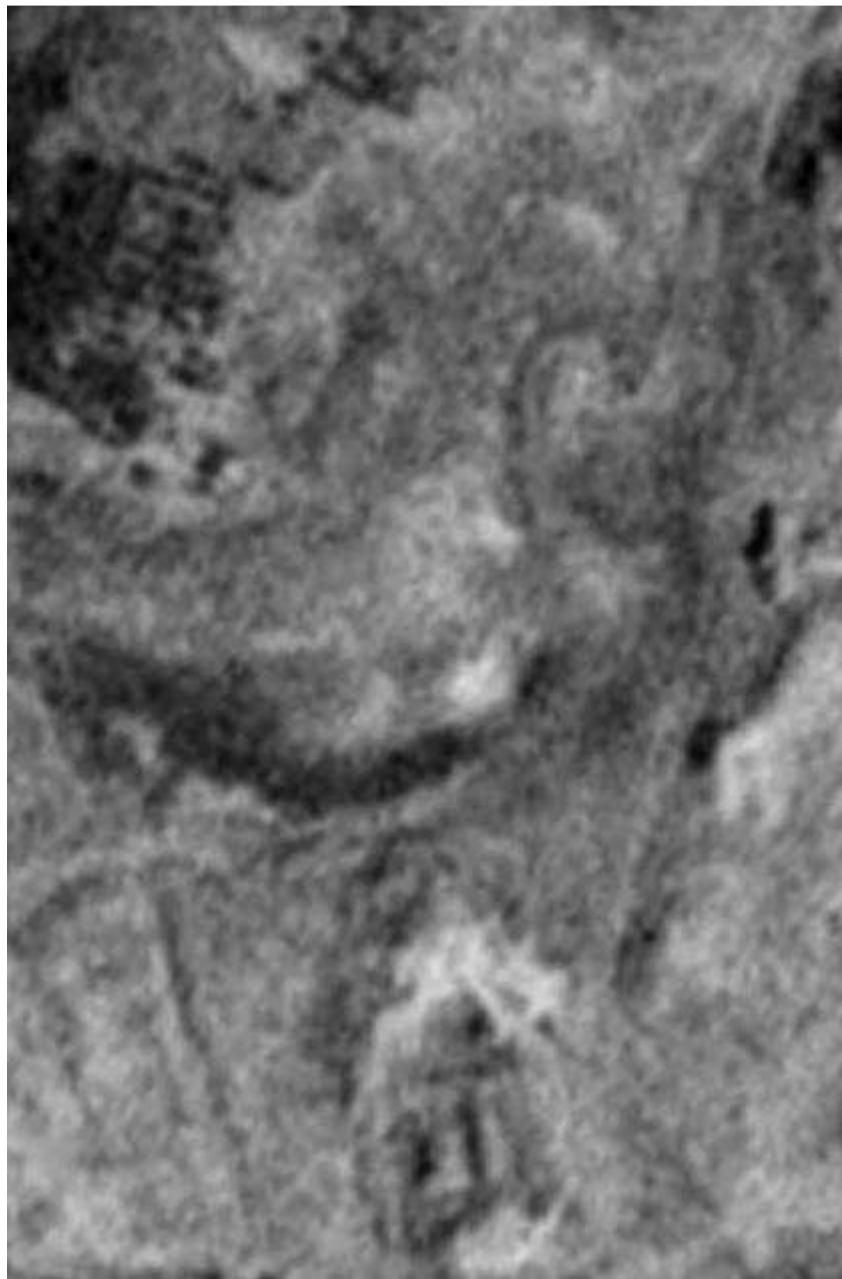


Area of Ninmah Temple, 1965, Russell composite



Area of Ninmah Temple, 2002, Russell composite





Area of Theatre and Lake 4, 1965, Russell composite



Area of Theatre and Lake 4, 2002, Russell composite





Area south of Marduk Gate, 1965, Russell composite

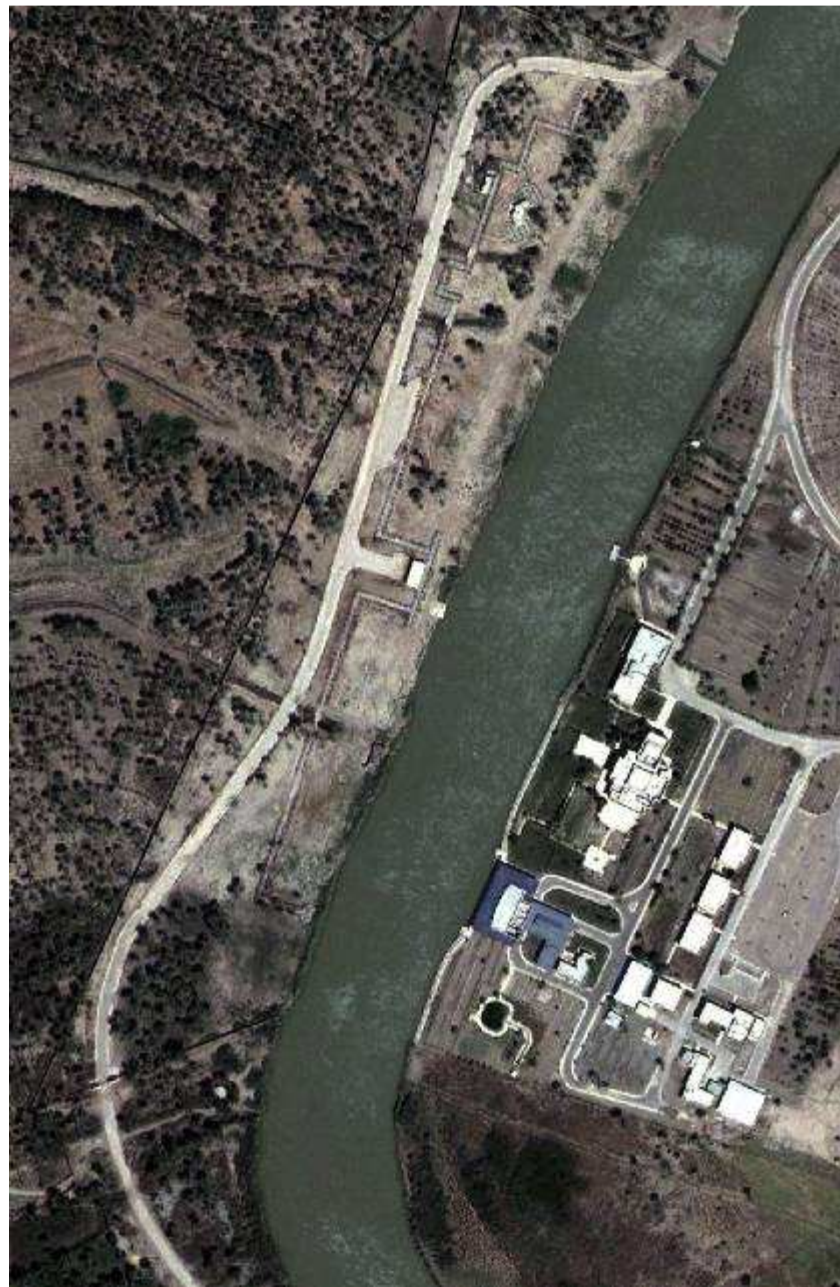


Area south of Marduk Gate, 2002, Russell composite





Area west of the river, 1965, Russell composite



Area west of the river, 2002, Russell composite





Outer town, eastern part, 1965, Russell composite



Outer town, eastern part, 2002, Russell composite





Outer town, northern part, 1965, Russell composite



Outer town, northern part, 2002, Russell composite





**"Parks scattered throughout the city.** These include the so-called "Pavilions Park" located in the center of the city, near the inner wall and near the Temple of Nanmakh, in addition to parks located in the area of the presidential palace" (Iraqi final report p. 4 and fig. 20).



**"Encroachments caused by agriculture and construction.** These encroachments, caused by citizens who own the land, have resulted in the removal of parts of the walls. Much of the land—specifically the western part of the city, the village of Sinjar, and other parts of the village of al-Jumjumah on the eastern side—is still private property.

"The features of the western side of the city of Babylon disappeared many years ago due to encroachment by agriculture and development on the archaeological zone, excluding a small portion of the remains of the city wall in the southwestern part.

"On the eastern side of the city, one can observe the remains of the outer wall in the form of extended tells. Between the tells are areas from which the remains of the wall have been removed in the eastern and southern portions. Some houses incorporate remnants of the outer wall. Encroachments have also been caused by traffic on the Hillah-Baghdad Road and the secondary road parallel to the wall, which was built during the International Babylon Festival in 1987" (Iraqi final report pp. 4-5).



Western wall, NW corner, 1965



Western wall, NW corner, 1965



Western wall, NW corner, 2002

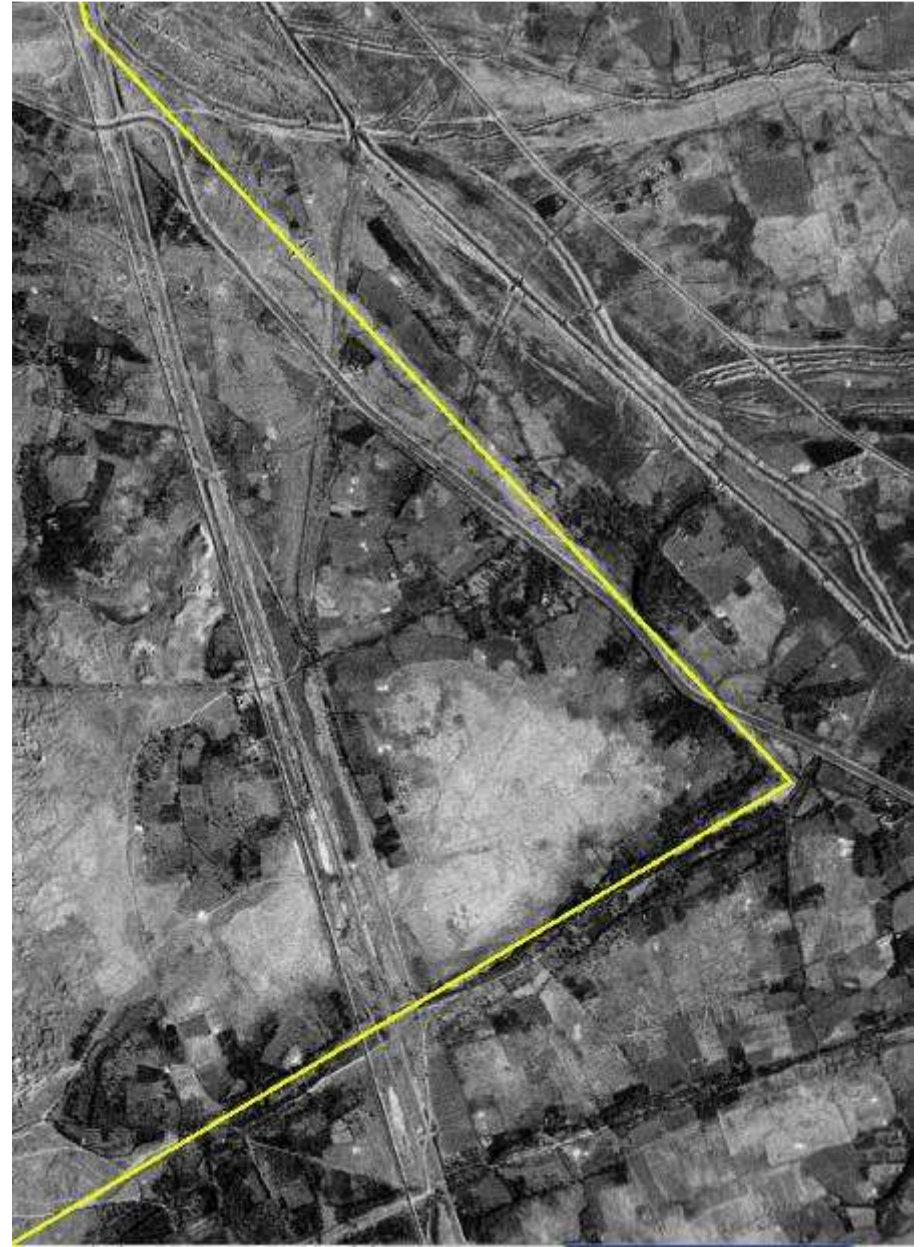
**Russell comment:** It is difficult to determine the state of preservation of the NW corner of the western part of the city wall from the satellite images. Traces of its course are still visible in the 2002 image.





Eastern outer wall, 1965, Russell composite

**Russell comment:** The eastern outer wall appears to have been relatively untouched by development, apart from being cut by a canal near its eastern corner sometime prior to 1965.



Eastern outer wall, 1965, Russell composite





Eastern outer wall, 2002, Russell composite

**Russell comment:** More recent construction largely avoided the eastern outer wall.



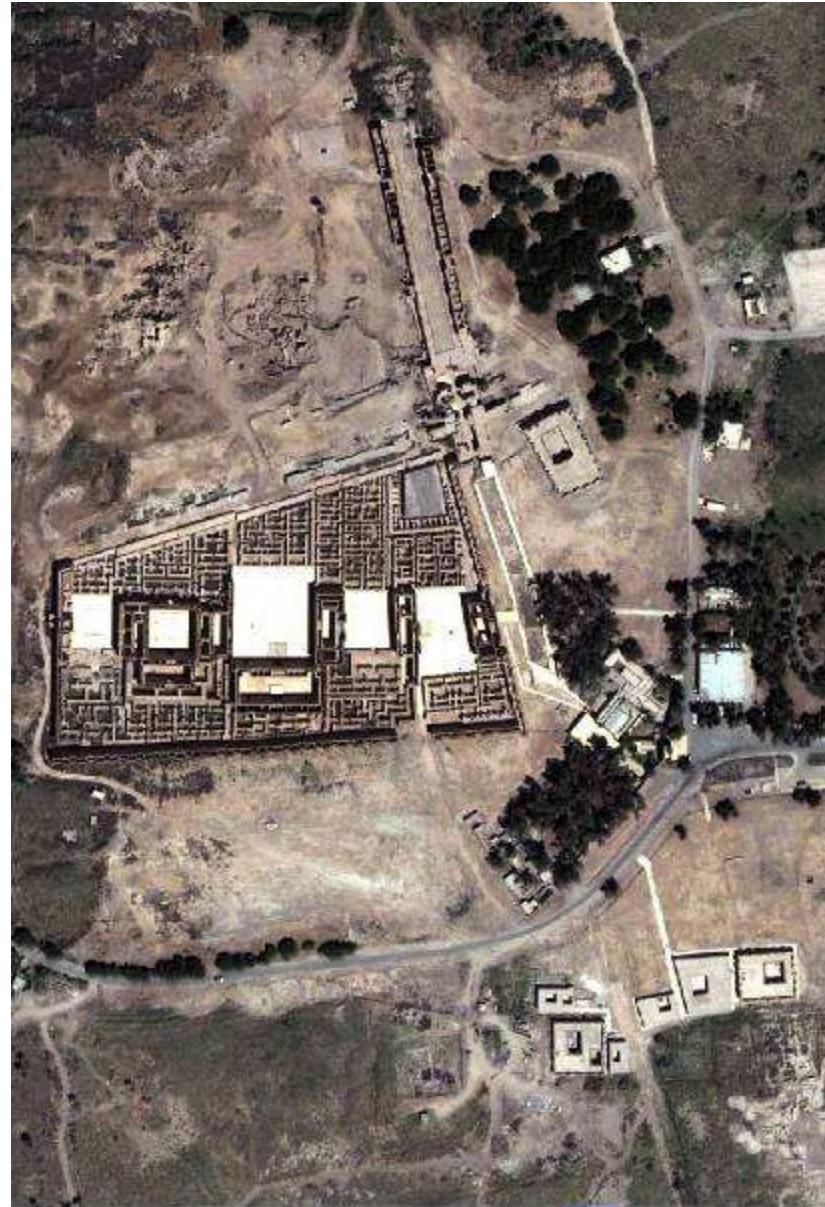
Eastern outer wall, 2002, Russell composite



**"Unscientific preservation.** Additions and modifications have been made to numerous archeological structures in the city, particularly the Southern Palace, the northern portion of Processional Way, several temples, the eastern portion of the inner wall, the Babylonian houses, and the Greek Theater" (Iraqi final report p. 5).



Southern Palace and temples, before reconstruction, 1965

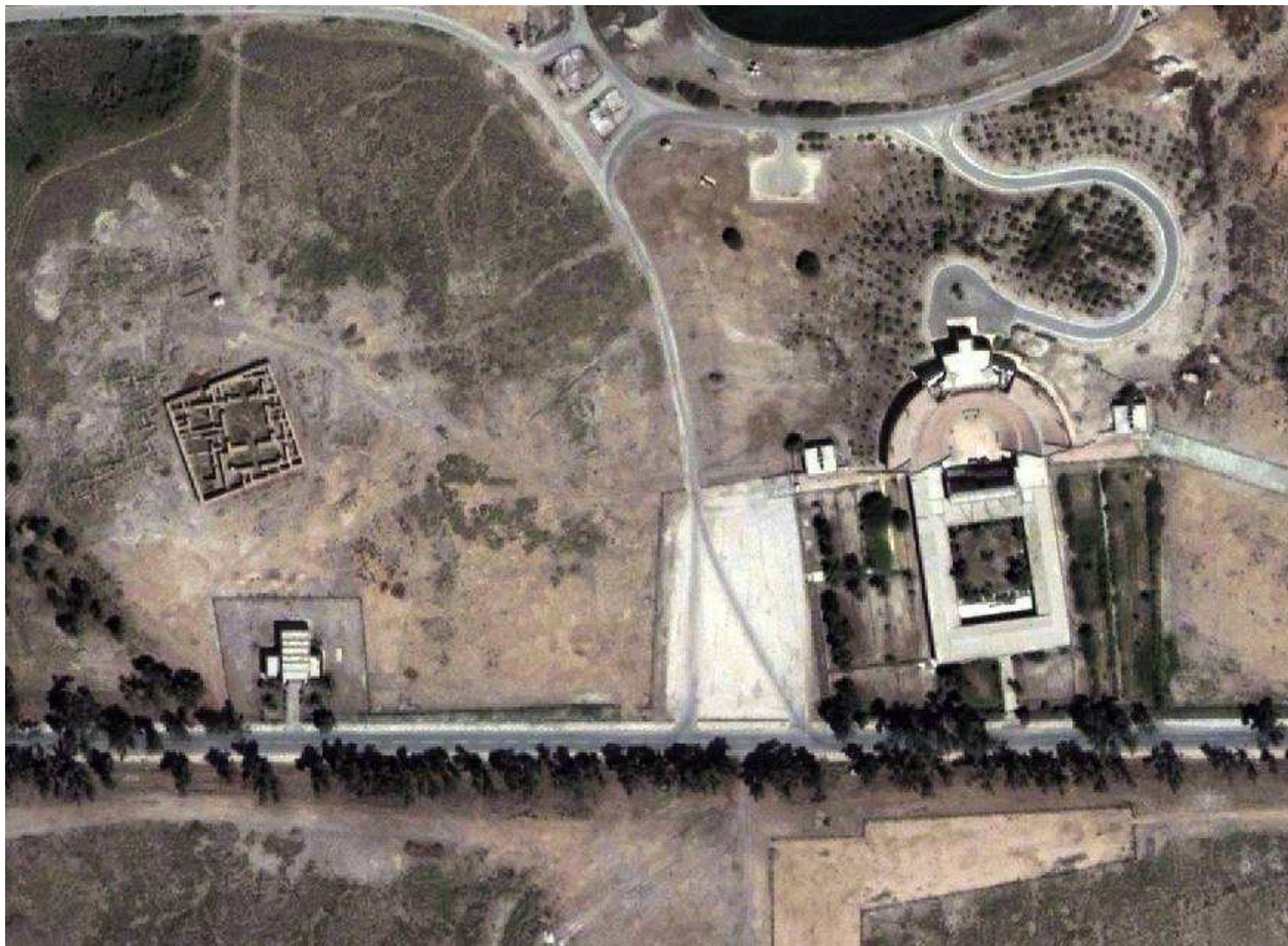


Southern Palace and temples, after reconstruction, 2002



Babylonian House and Greek Theatre, before reconstruction, 1965, Russell composite





Babylonian House and Greek Theatre, after reconstruction, 2002, Russell composite



### Defensive Trenches

**"Excavation works.** These consist of a series of defensive trenches dug prior to the recent war in 2003 in scattered areas of the city near the presidential palace, the Southern Palace, and the Greek theater. The square footages of the trenches are approximately the same" (Iraqi final report p. 5 and fig. 21).





**Russell comment:** Dozens of firing positions were dug prior to April 2003, evidently to protect Saddam's palace. The Iraqi final report gives only the above information about them, so they are discussed in detail below on the basis of the satellite imagery.



Firing positions in place by 5 July 2002, Russell composite





Firing positions dug between July 2002 and 1 April 2003, Russell composite

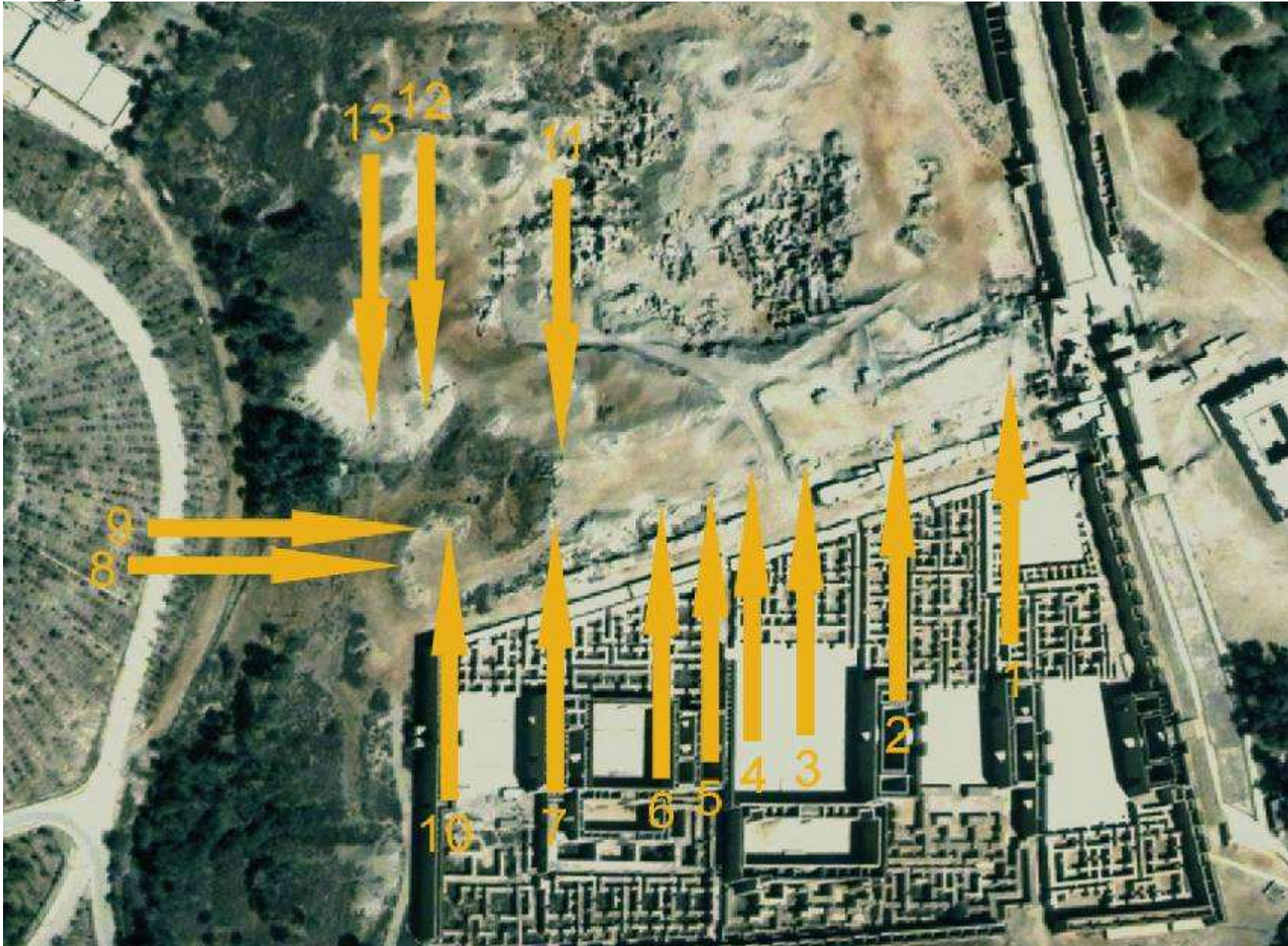




All firing positions as of 1 April 2003, Russell composite



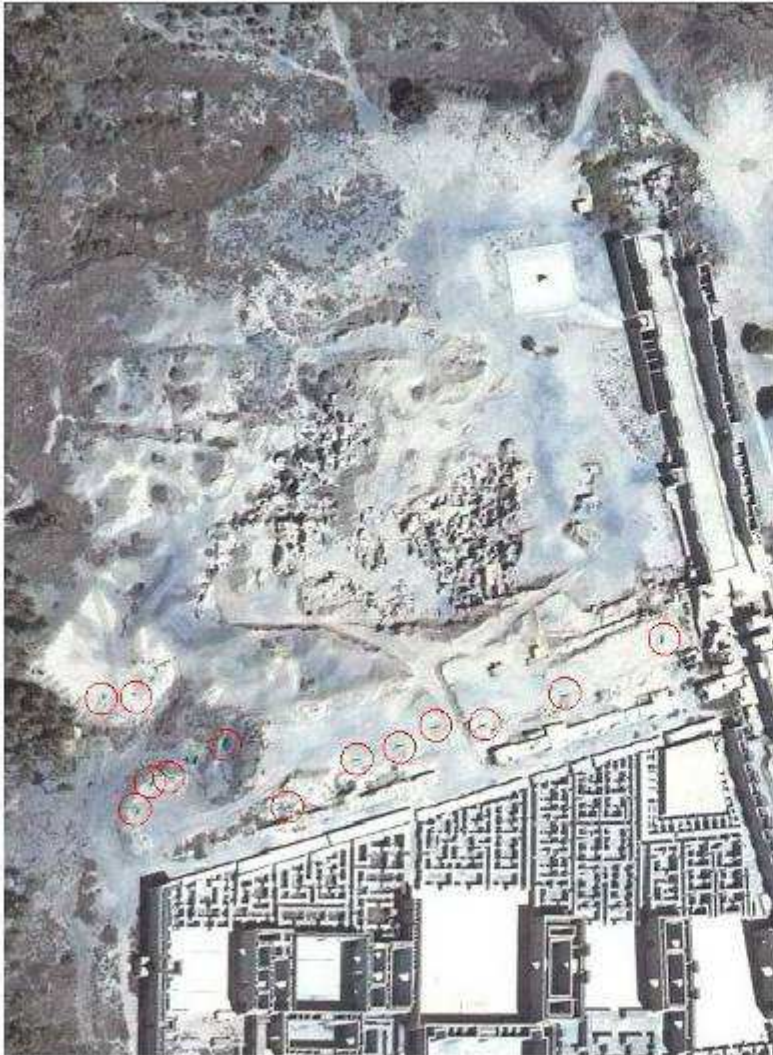
**Firing positions in the Northern Palace**



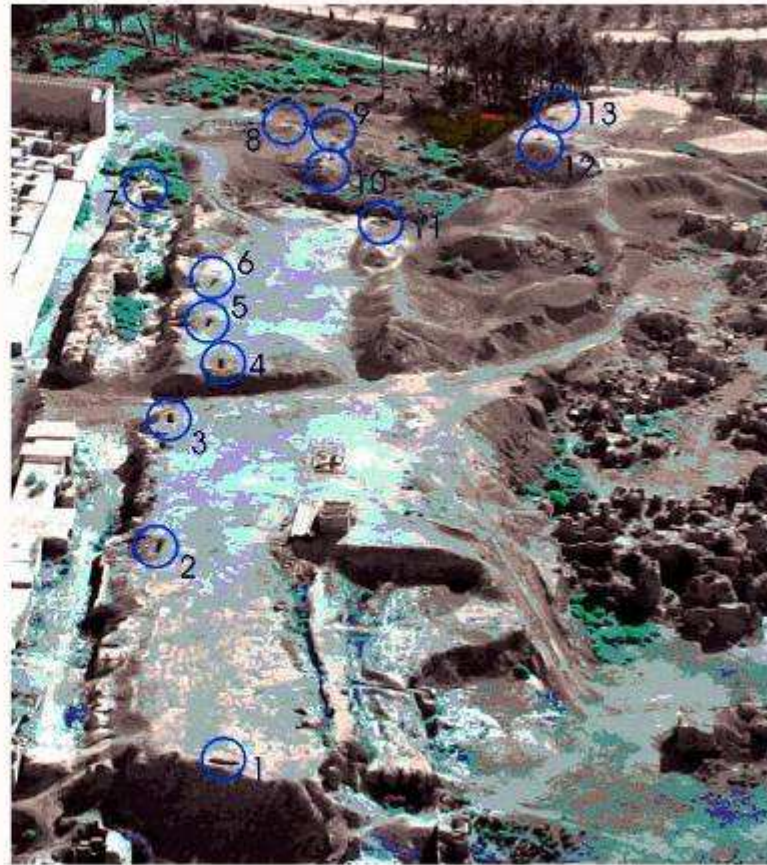
Firing positions 8, 9, 10, 12, 13 are already on the July 2002 image. Firing positions 1-7, 11 first appear on the April 1, 2003 map (image 1 April 2003, Russell composite).



**1 April 2003**



**Polish Report**



**Stone report:** The thirteen “firing positions” are clearly visible in the April 2003 imagery, an indication that they preceded the formation of Camp Alpha. In Fig. 3 they are identified by red circles.



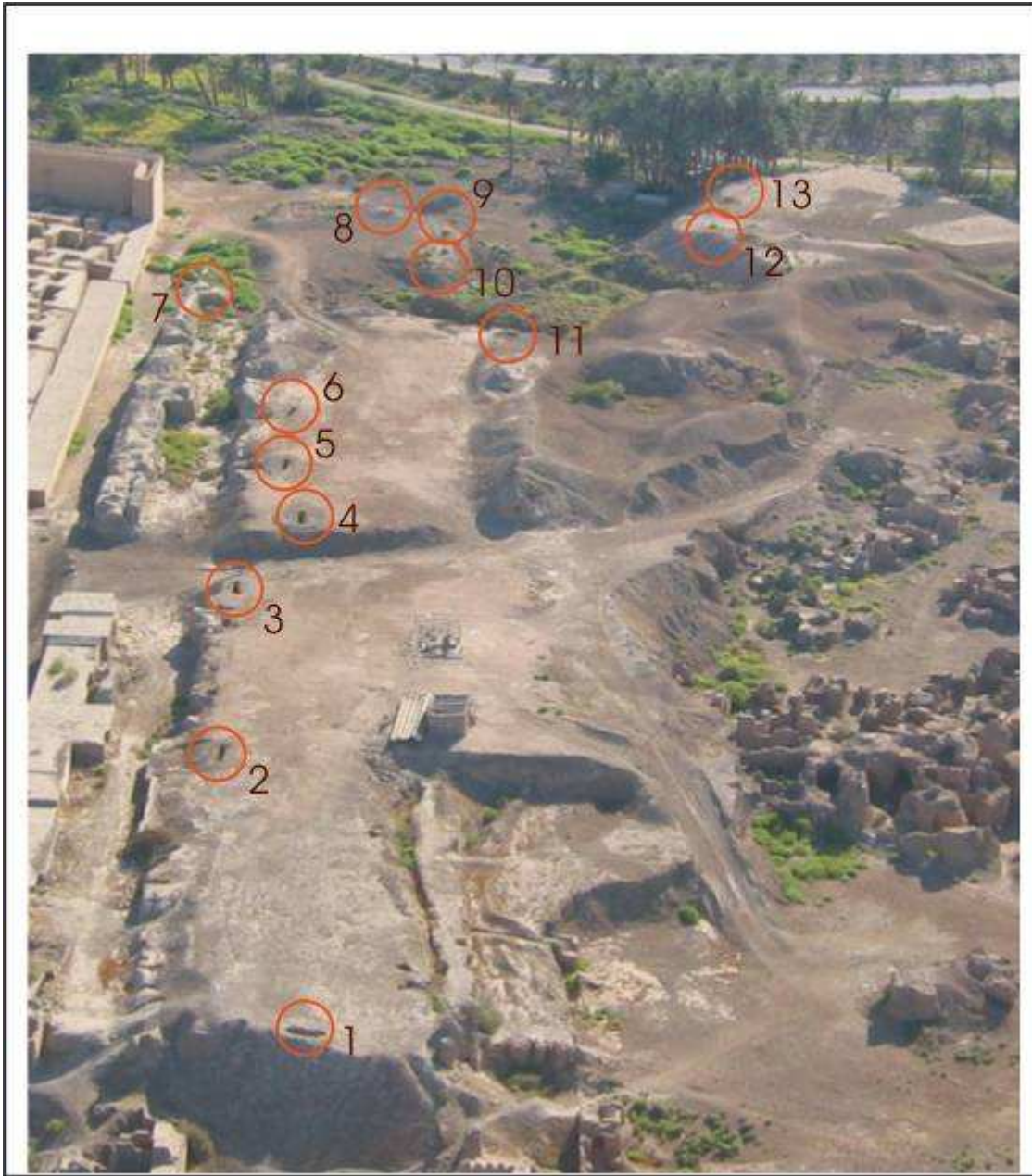
**1 April 2003**

**5 July 2002**



**Stone report:** Firing positions 8-13 are visible in the February 2002 imagery (Fig. 4).





There are 13 firing positions located between the Southern Palace reconstruction and the Northern (or Principal) Palace shown in the pictures below [above], Polish report p. 8 (photo © Ministry of Culture and National Heritage, Republic of Poland)



firing pit #1, Polish report p. 9



firing pit #2, Polish report p. 9



firing pit #3, Polish report p. 10

Photos © Ministry of Culture and National Heritage, Republic of Poland.





firing pit #4, Polish report p. 10



firing pit #5, Polish report p. 11



firing pit #6, Polish report p. 11

Photos © Ministry of Culture and National Heritage, Republic of Poland.





firing pit #7, Polish report p. 12



firing pit #8, Polish report p. 12



firing pit #9, Polish report p. 12



firing pit #10, Polish report p. 13





firing pit #11, Polish report p. 13



firing pit #12, Polish report p. 13



firing pit #13, Polish report p. 14 (photos © Ministry of Culture and National Heritage, Republic of Poland)



**Firing positions north of the canal**



Firing positions north of the canal, all dug between July 2002 and 1 April 2003 (image 1 April 2003, Russell composite)



**Firing positions south of the Southern Palace:** These pits apparently served to protect the eastern approach to Saddam's palace.



26 firing pits can be seen in the satellite images in the area south of the Southern Palace (image 1 April 2003, Russell composite).





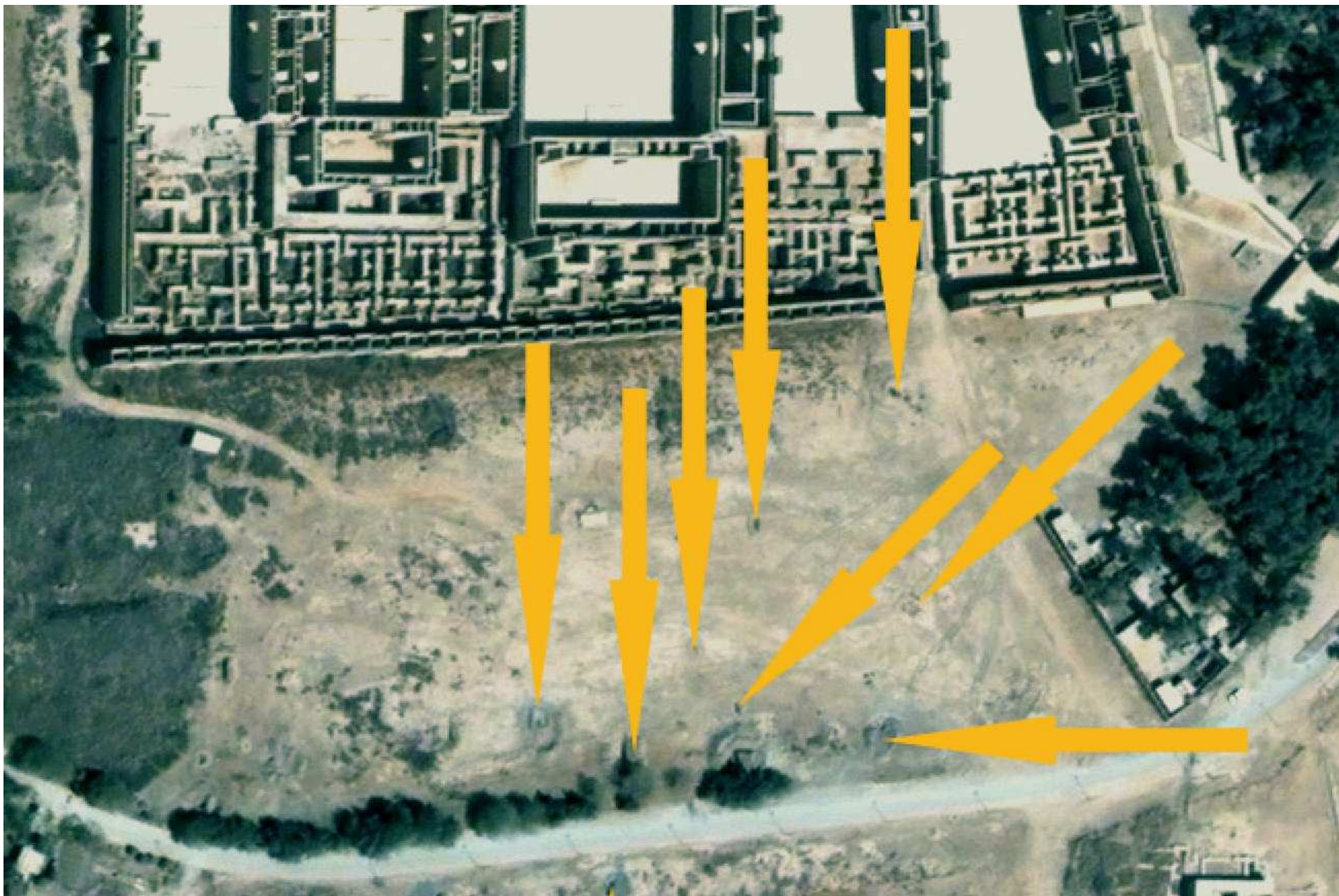
10 firing positions to the north of the road are already visible in the image of 5 July 2002, Russell composite image





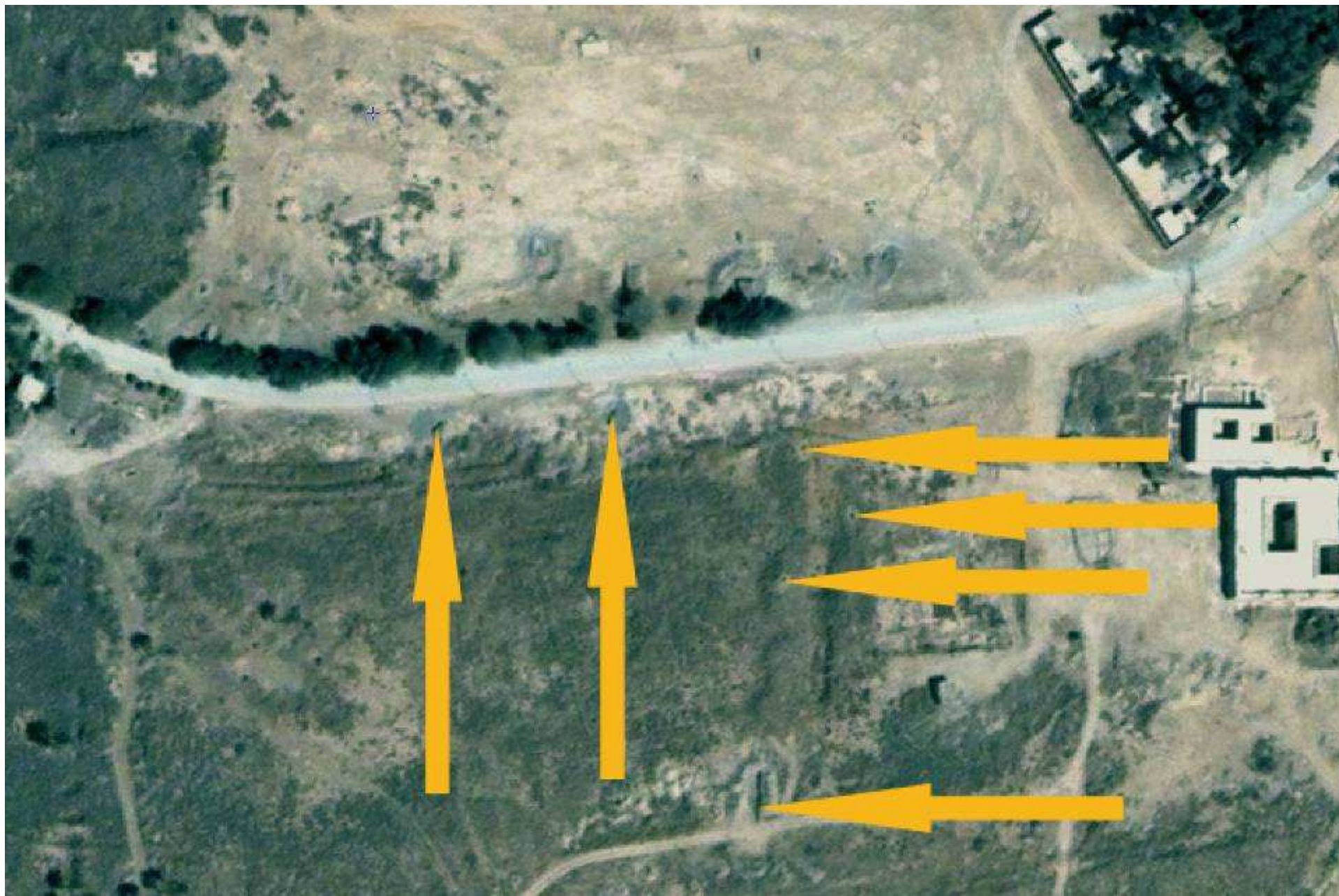
2 firing positions to the south of the road are already visible in the image of 5 July 2002, Russell composite image





8 new firing positions to the north of the road are visible in the image of 1 April 2003, Russell composite image





6 new firing positions to the south of the road, including Trench 9 (below), are visible in the image of 1 April 2003, Russell composite image

**Trench 9, near Nabu-sha-Hare temple**

Iraqi preliminary report	Iraqi final report	Curtis report	Polish report
<p>The third trench is located south of the second trench, to the west of the Nabu-sha-Hare Temple, near the</p> <p>[A adds: according to the report, has a length of 25 m. However, we could not gain access to it because it is surrounded by barbed wire. This trench is near an]</p> <p>area of excavations conducted by the Babel Archaeological Restoration Mission in 1982.</p>	<p>9. Ninth trench: This trench is located approximately 50 m north of the seventh trench, southwest of the Nabu-sha-Hare Temple, near the area of the excavations conducted by the Babylon Archeological Restoration Project in 1982. It has a length of 15 m, a width of 3 m, and a depth of 2 m. This trench is surrounded by dirt that has been removed from it. The dirt contains various archeological fragments, including pottery, baked bricks, and bone. The salient pieces include a glass pottery vessel, part of which is missing. The vessel was found in the western part of the trench (see Photo 36).</p>	<p>We were not able to see the third trench (Trench C in the <i>Polish Report</i>, figs. on pp. 53, 58-59) as it is inside the wire surrounding the camp.</p>	<p>5) Trench 'C': South from the boundary of the camp on the level of Tent City #1, is located a trench about 15 meters long, 3 meters wide, and 2 meters deep. Its depth reaches around 2 meters. On the piles of dirt around the trench are scattered numerous fragments of ceramic. In taking the photographic documentation an olive lamp was found. Fragments of bricks can be found as well.</p>





Trench 9, Iraqi final report fig. 36



View before Trench 9 was dug, July 2002, Russell composite



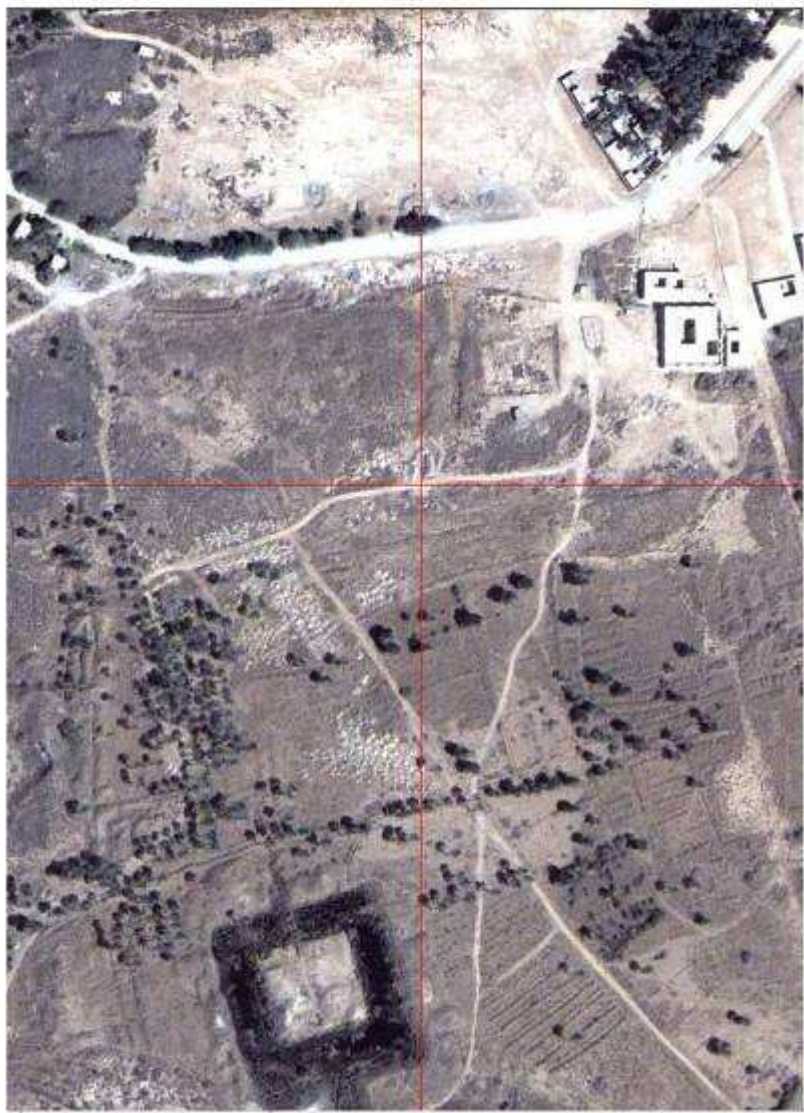


Trench 9 was dug between July 2002 and 1 April 2003, before Coalition forces arrived at Babylon. (image 1 April 2003, Russell composite).



**1 April 2003**

**8 October 2004**



**Stone report:** The third cut (Fig 33) was already in existence before the war.





Trench 9 (center), Polish photo 30 (photo © Ministry of Culture and National Heritage, Republic of Poland)



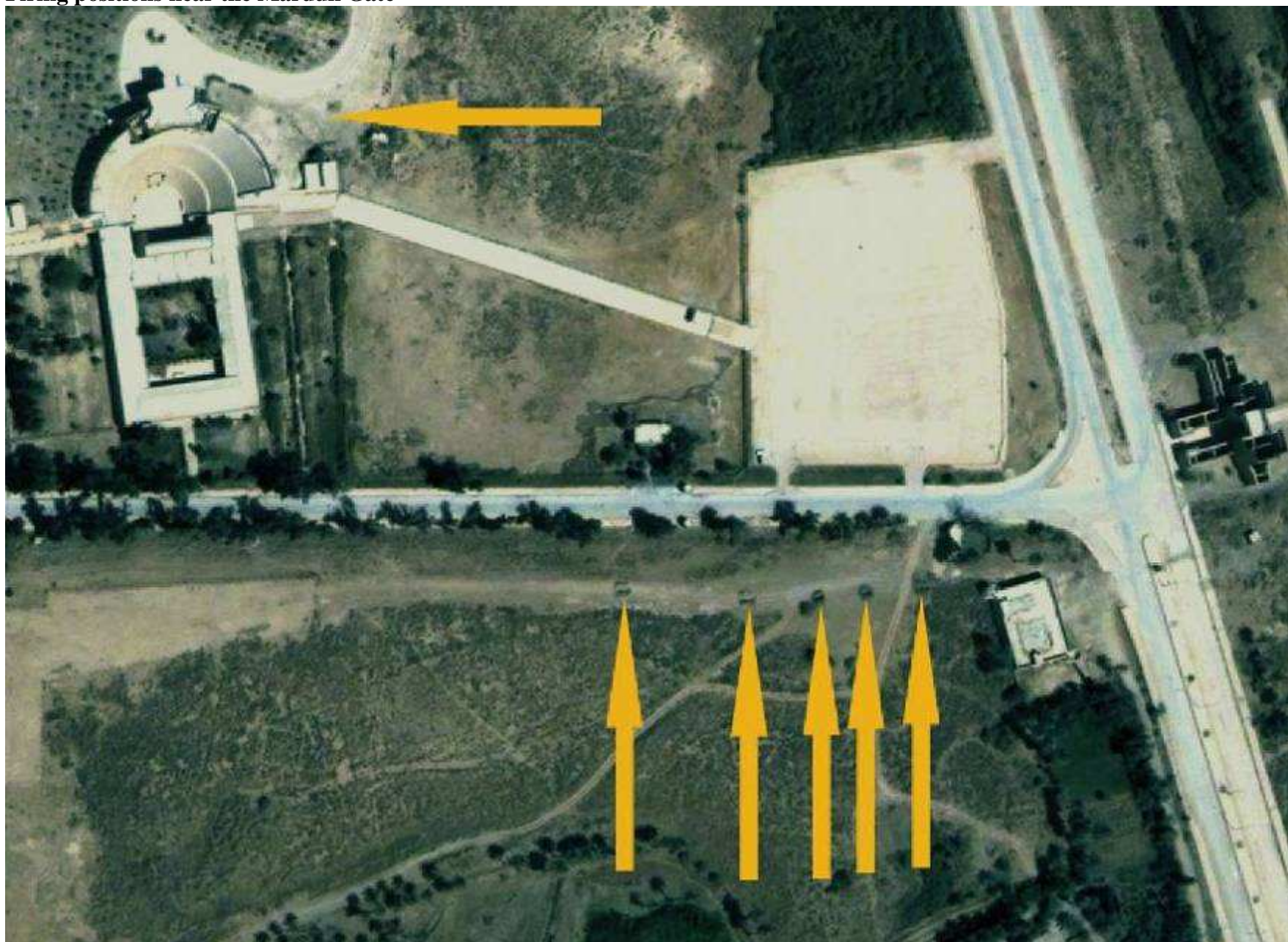
**Firing positions on the road to the south toward al-Jamjah**



The 8 to the north were dug by 5 July 2002, and the remaining 8 by 1 April 2003 (image 1 April 2003, Russell composite).

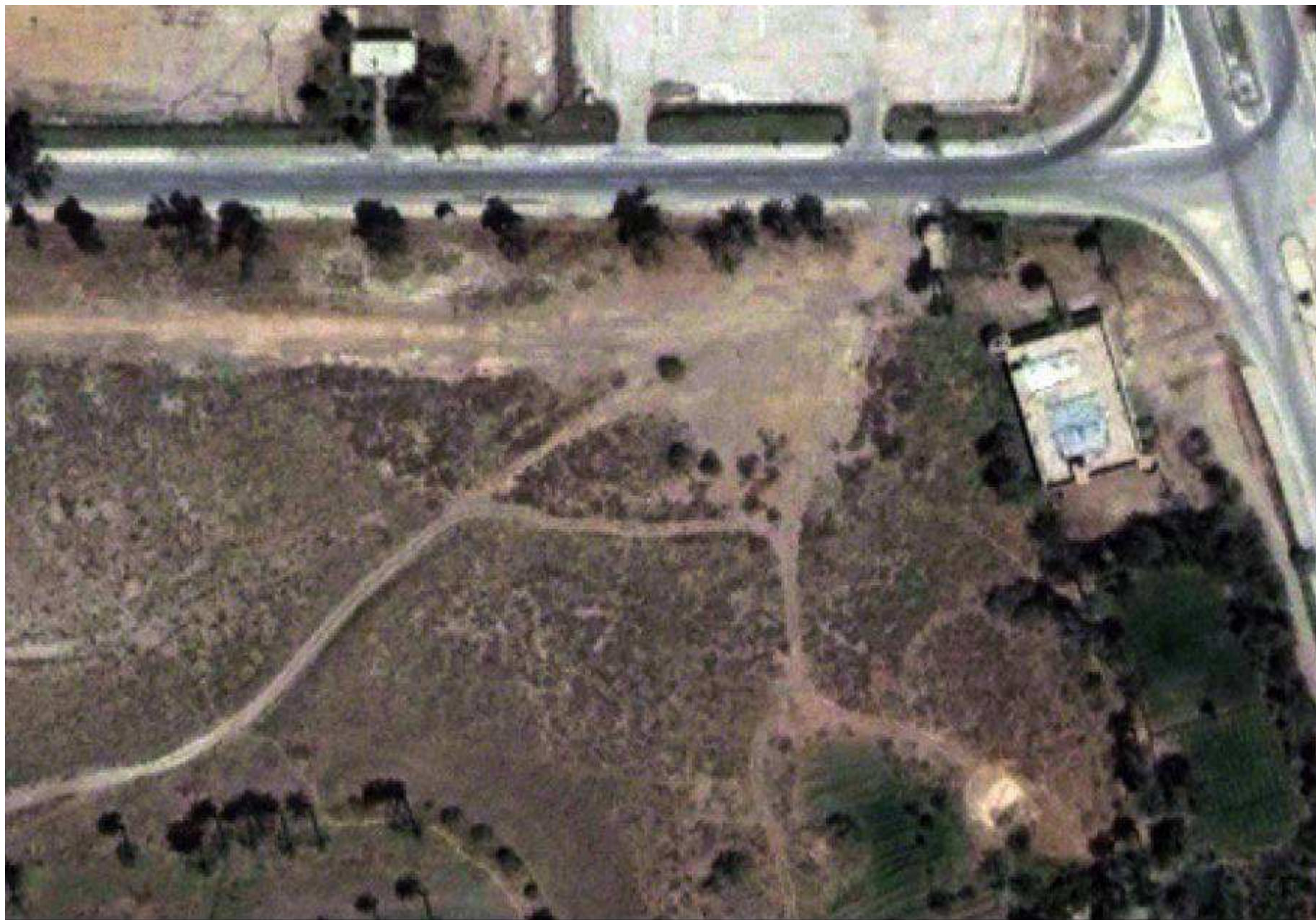


**Firing positions near the Marduk Gate**



Firing positions near the Marduk Gate, 1 April 2003, Russell composite





South of the road, no firing positions visible, 5 July 2002, Russell composite





South of the road, five new firing positions visible, 1 April 2003, Russell composite





South of the road, firing positions, now overgrown, visible in road at upper left center, Polish photo 14 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Firing position on the road embankment northeast of the theater**

**Polish report:** 5) On the slopes of the Amphitheatre are firing position. On the picture at the beginning [below] it is annotated by the letter “F”.



Polish report p. 34 (photo © Ministry of Culture and National Heritage, Republic of Poland)

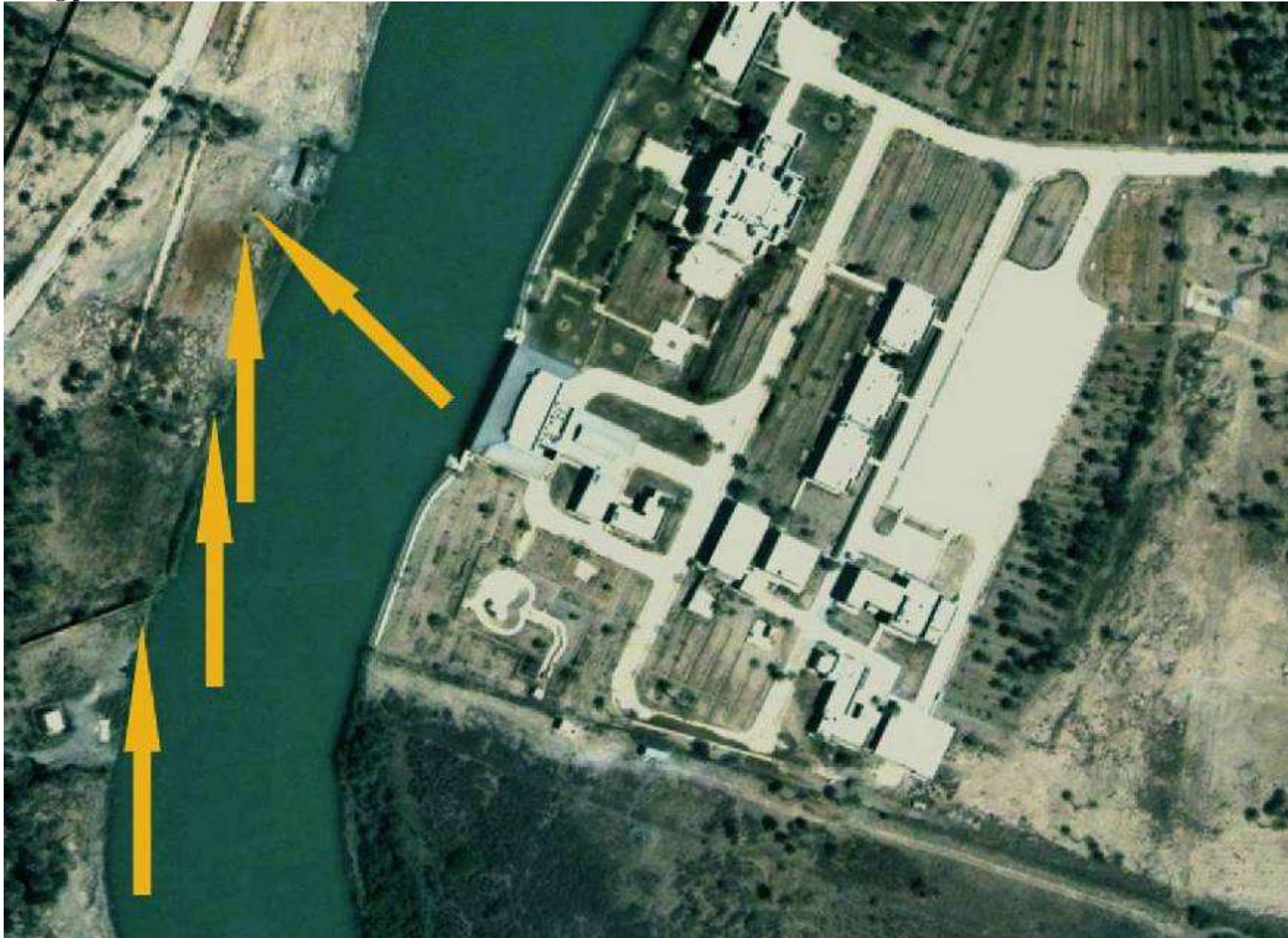




View of embankment beside theatre, with firing position visible, Polish photo 84 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Firing positions on the west bank of the river**



Counting from the north, the 1st and 3rd were dug by 5 July 2002, and the 2nd and 4th by 1 April 2003 (image 1 April 2003, Russell composite).



**"The German excavations.** The German excavations covered important parts of the city, e.g., the temples, palaces, streets, gates, etc. These excavations yielded valuable information. However, they also caused major damage, because the excavated areas were left exposed to the elements—e.g., rain, wind, ground water, salt, plants and human activity—without the barest preservation or protection requirements being met.

"These factors in the aggregate have directly or indirectly affected the site and exposed all the structures excavated by the Germans to general damage and destruction" (Iraqi final report p. 5).

### **ADDITIONAL PRE-2003 DAMAGE**

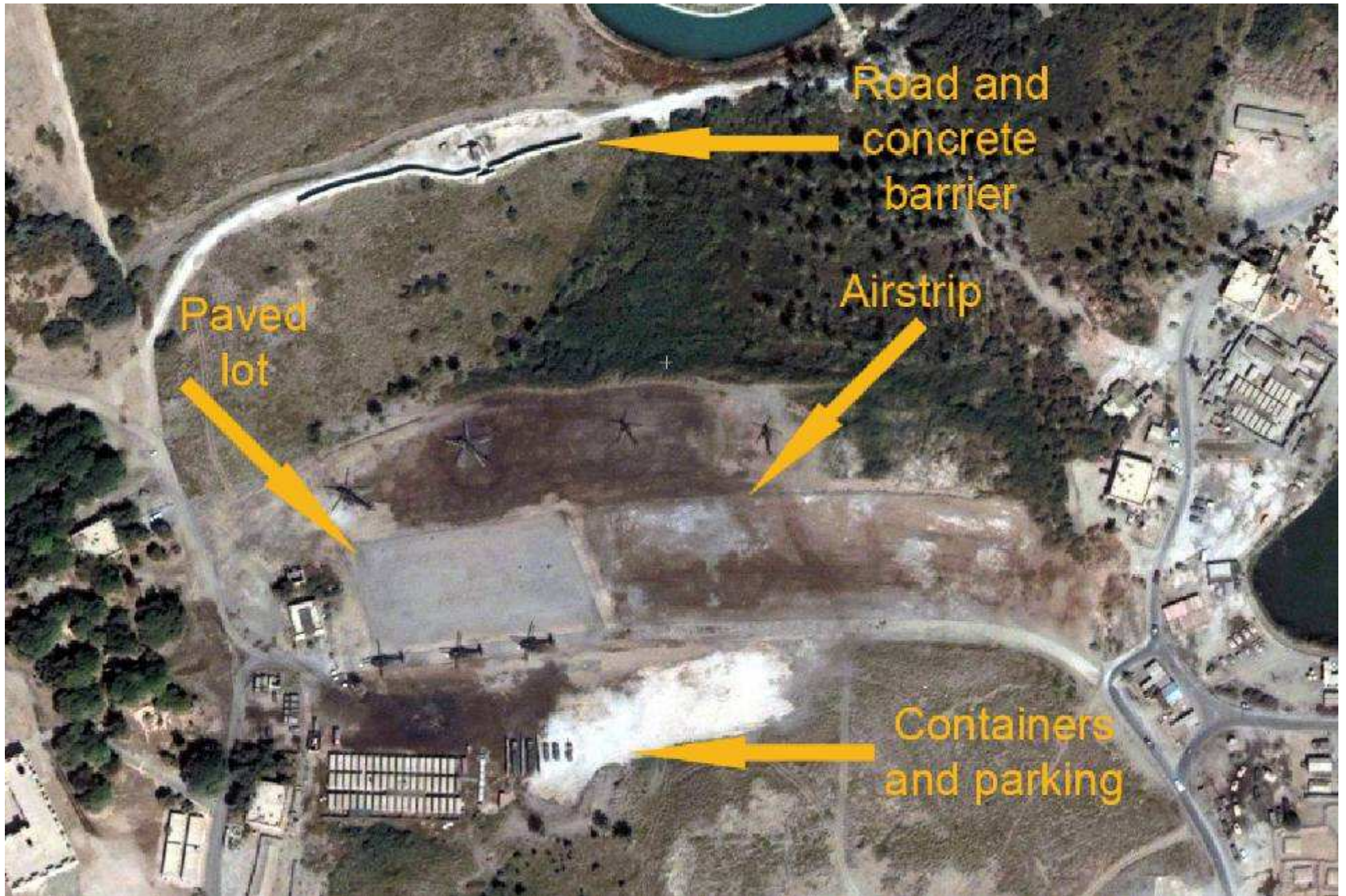
In addition to the damage reported above in the Iraqi final report, the following examples of pre-2003 damage to the site are visible in the satellite photos.

#### **Landing zone and parking area**

Contrary to what is usually supposed, the satellite images show that the large airstrip to the north of the road and the parking area to the south of the road were both constructed prior to the founding of Camp Babylon. One wonders why such a large airstrip was being constructed at Babylon prior to the 2003 war.

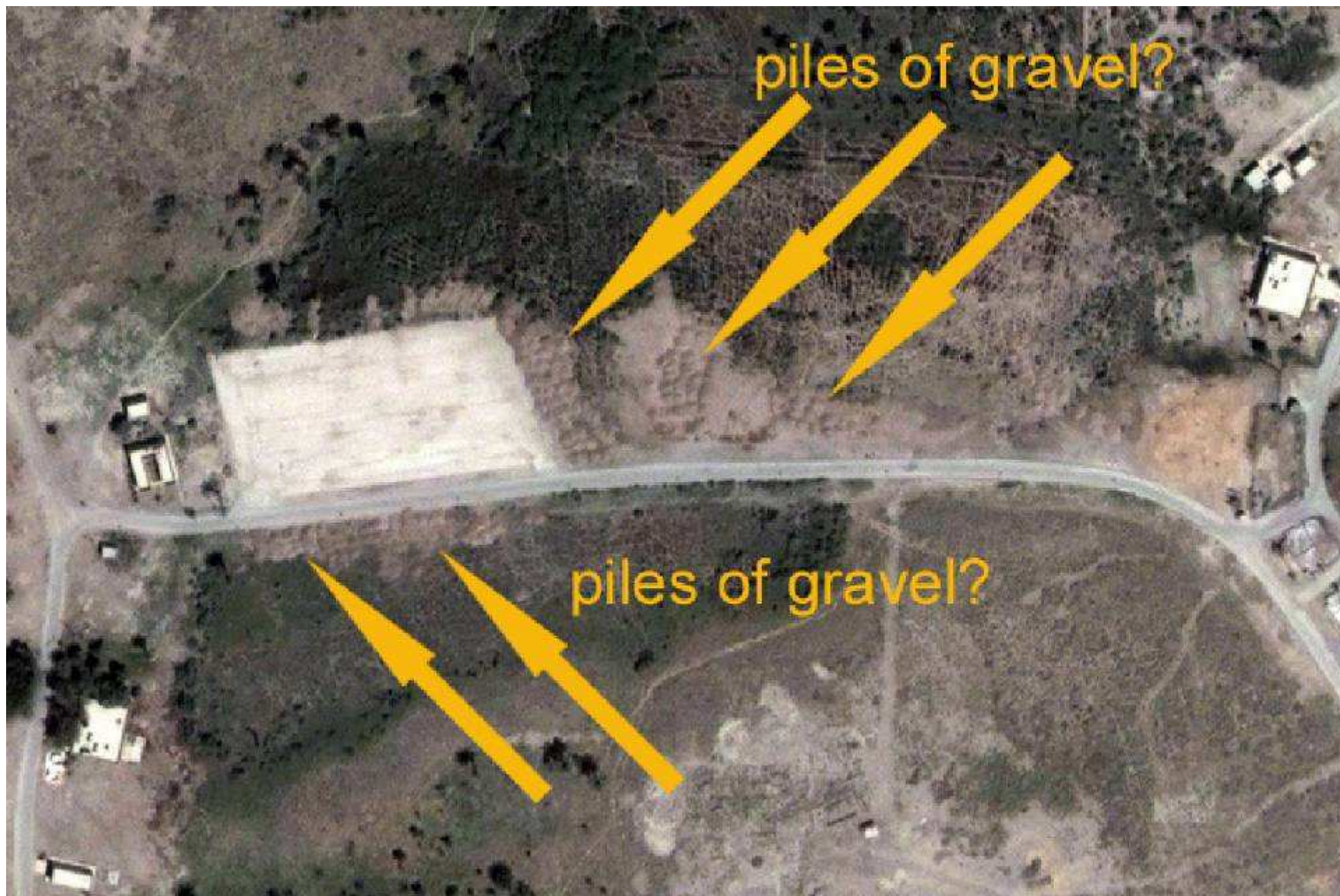
Piles of gravel for the project are visible in the image of 5 July 2002, and this gravel had been spread and apparently oiled by 1 April 2003. This work was apparently still underway when Coalition forces occupied the area, as the eastern corner of the airstrip was still unfinished and an irregular bulldozer cut is visible in this area.

The Koldewey map of 1912 and the Iraqi map of 1980 both show the area of the landing zone to be relatively flat, so that the construction of the airstrip and parking lot probably involved spreading gravel and oil but not substantial bulldozing of the topography.



Reference image with features labeled, 8 October 2004, Russell composite





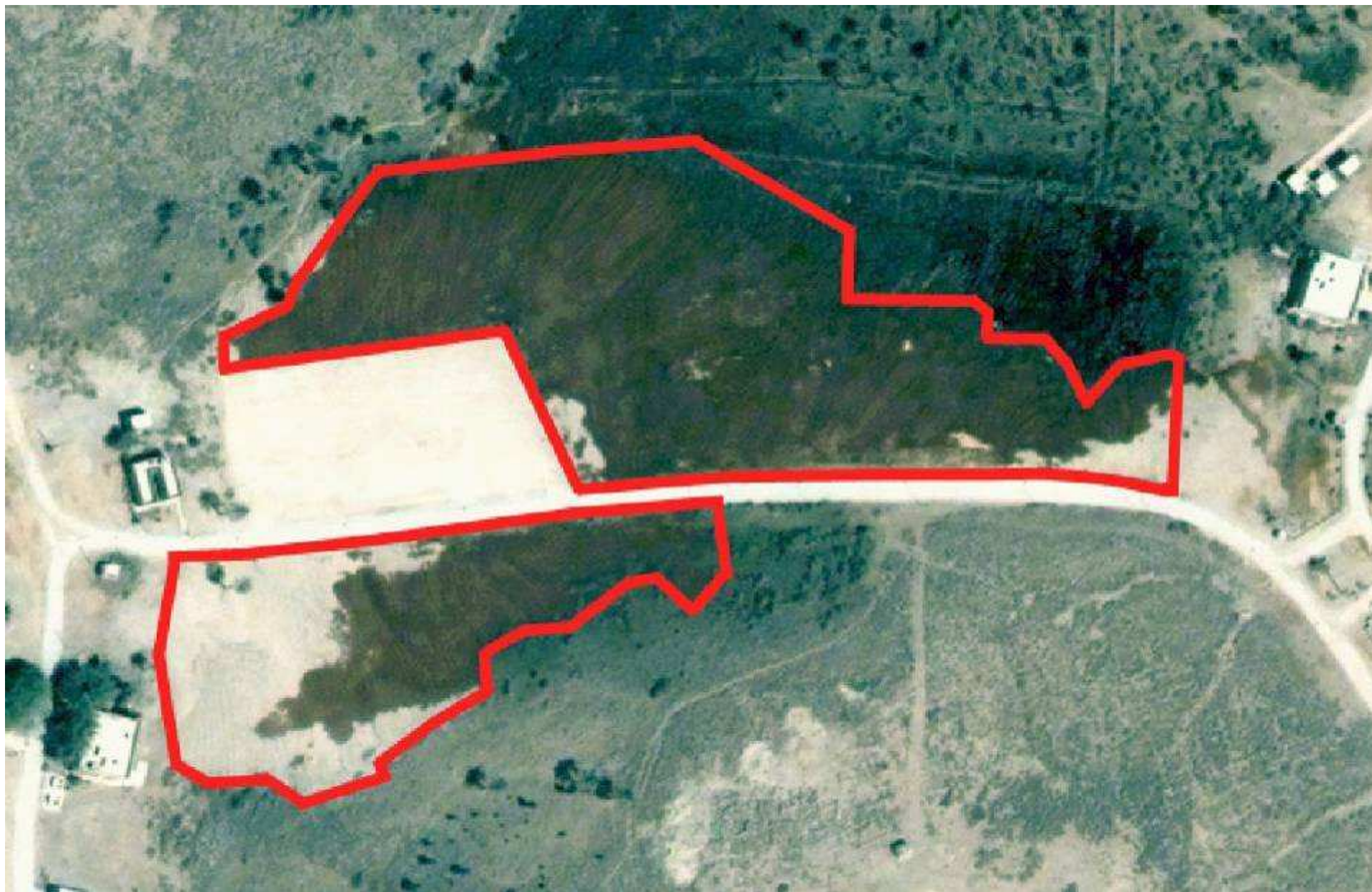
View prior to construction of Landing Zone, with piles of gravel visible in both areas, 5 July 2002, Russell composite





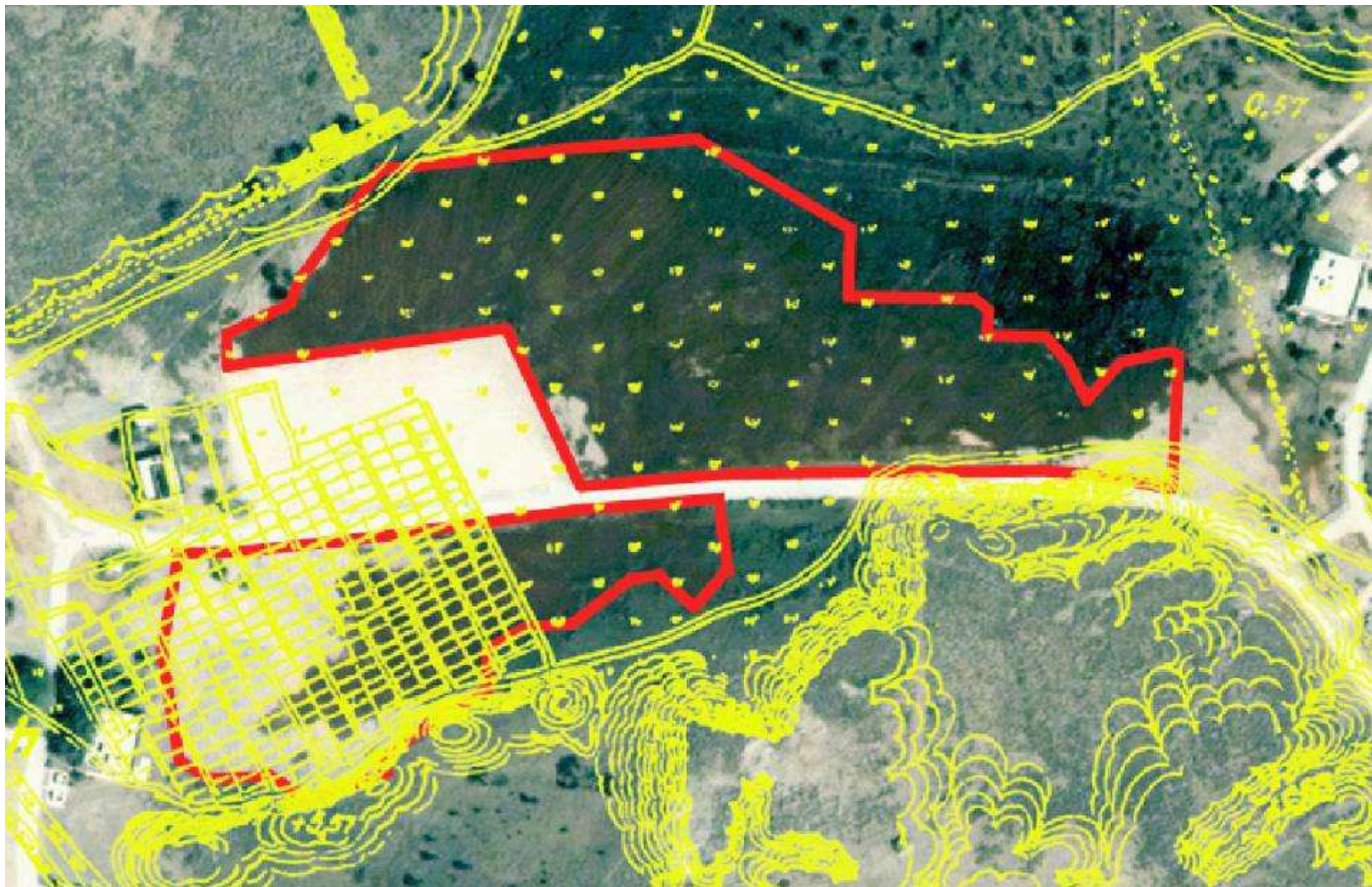
After construction of Landing Zone, prior to founding of Camp Babylon. Surface north and south of road has been bulldozed, graveled and oiled, 1 April 2003, Russell composite





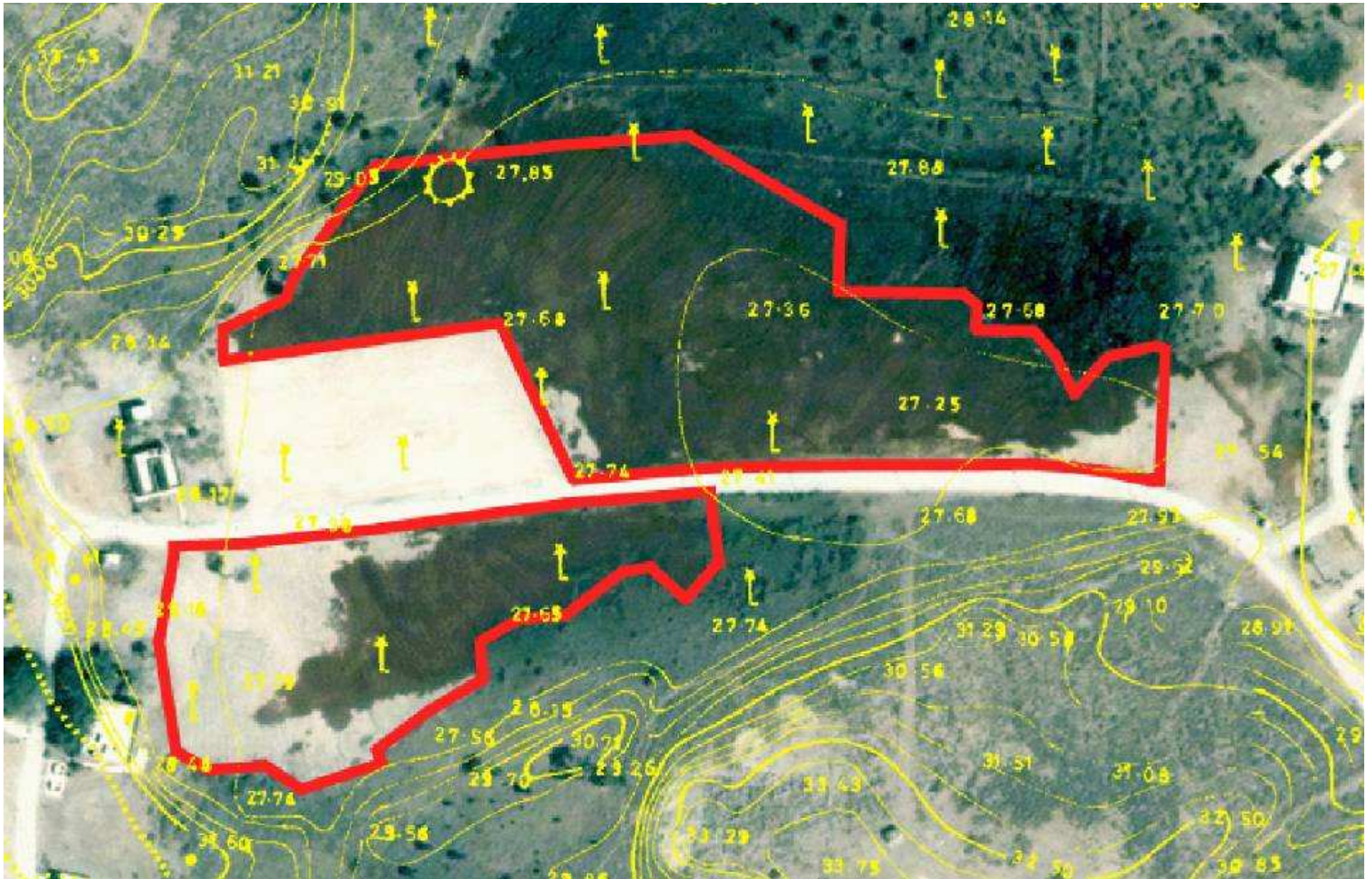
Same as above, with Landing Zone outlined in red, 1 April 2003, Russell composite





Koldewey 1912 map showing the area of the landing zone as flat, Russell composite





Iraqi 1980 map showing that the area of the landing zone is relatively flat, Russell composite



**Bulldozing near the north end of the Processional Street:** It is not clear why this area was bulldozed and graveled.



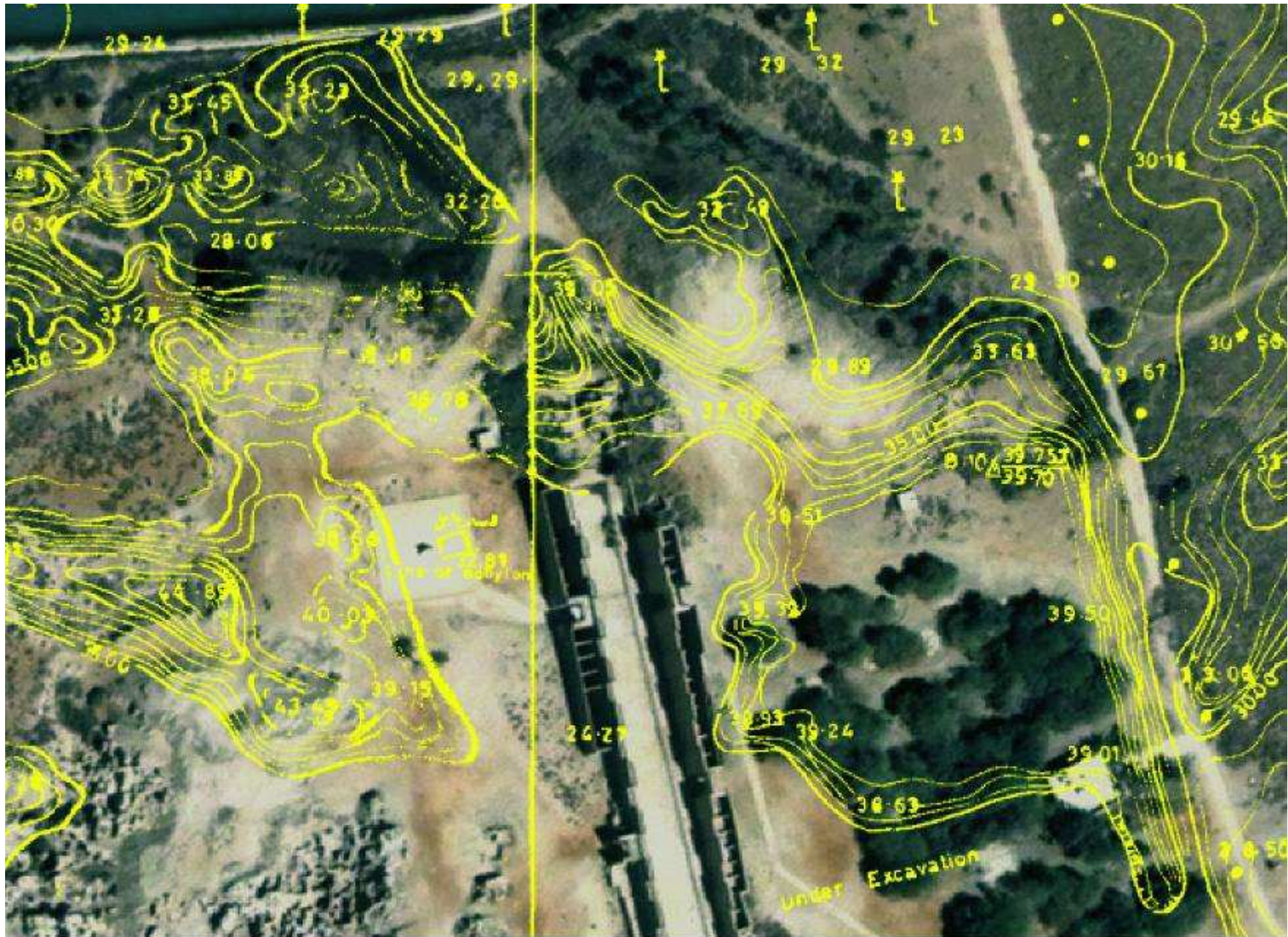
View prior to Coalition occupation, with piles of gravel, 5 July 2002, Russell composite





Gravel has been bulldozed to the north and east, enlarging the lot, 1 April 2003, Russell composite





1980 map overlay showing topography that was affected by bulldozing, 1 April 2003, Russell composite



### **Pit near the Ishtar Temple**

**Russell comment:** As Stone reports, this pit is already present in the 5 July 2002 satellite image, and appears to be an archaeological trench.



**Polish report:** "On the "Reconstructions" area, in the northern direction from the reconstructed Ishtar Temple, is located a hole about 4 meters by 4 meters and 2.5 meters deep" (Polish report pp. 23-24, photo © Ministry of Culture and National Heritage, Republic of Poland).

4 June 2004



8 October 2004



**Stone report:** The square hole mentioned in the Polish report was also present before the war—indeed it was already present in 2002 (Fig. 13). Its orientation and size suggests that it was the result of archaeological research.



**Debris field north of the ziggurat:** The debris field is already present in the earliest satellite image of 5 July 2002.

Polish report	Stone report
6) Debris dump: In between the ditches described above (A and B) is a debris dump. The dump has been used to dispose of pieces of bricks, concrete slabs, stones and sand.	The debris field noted by the Polish report appears to have already been present at the time of the war.



1 April 2003, showing debris field already present, Russell composite





Debris field, Polish photo 111 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Appendix 4. Homera, damage during the period of Camp Babylon**

This area is named after the chain of massive artificial mounds of mud brick debris at the east side of the area. Koldewey speculated that these mounds were formed from the debris of the ziggurat when Alexander the Great cleared it down to its foundations prior to its planned restoration. The Homera area is bordered on the east and north by the inner city wall, on the south by the modern road, and on the west by an arbitrary line to the west of the Greek Theater and Saddam's small lake. It is roughly equivalent to areas VIII and IX in the Polish report.



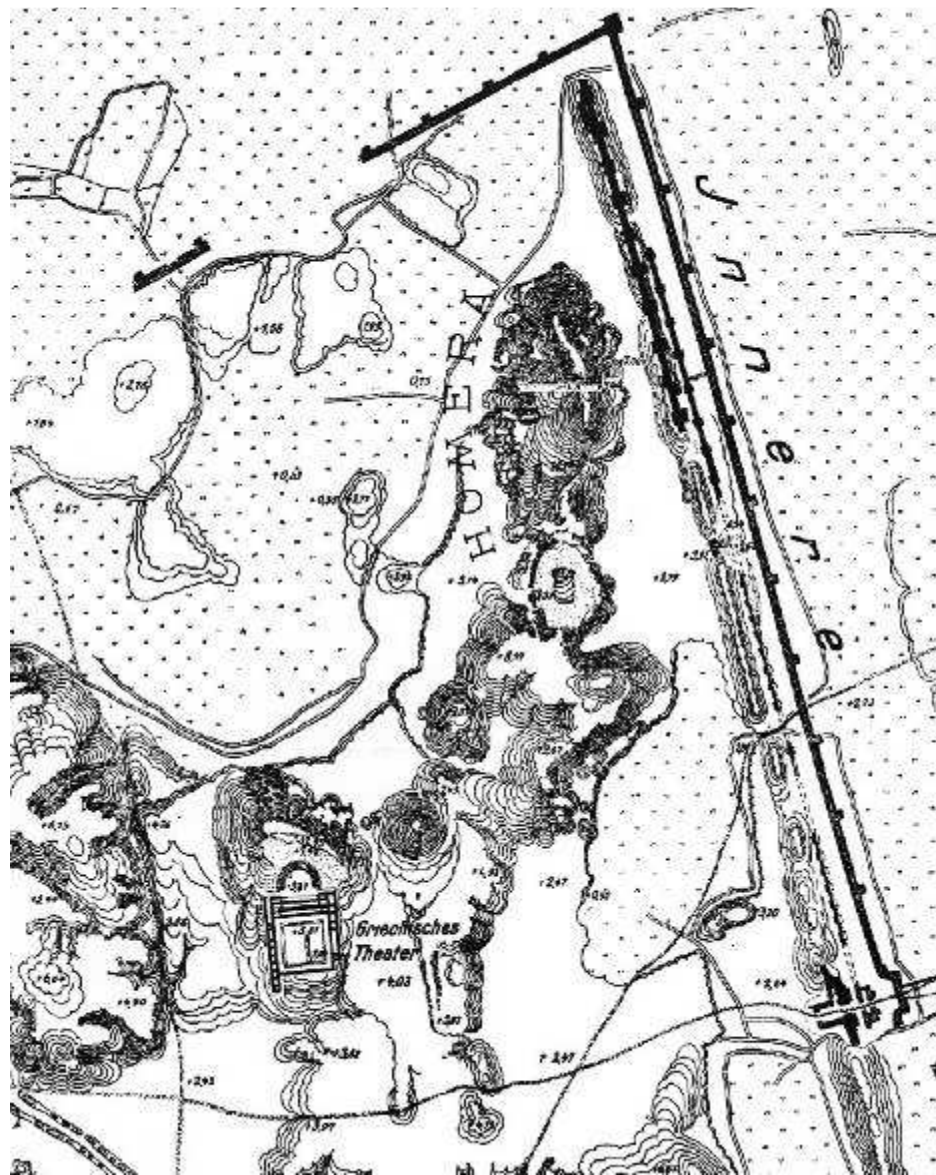
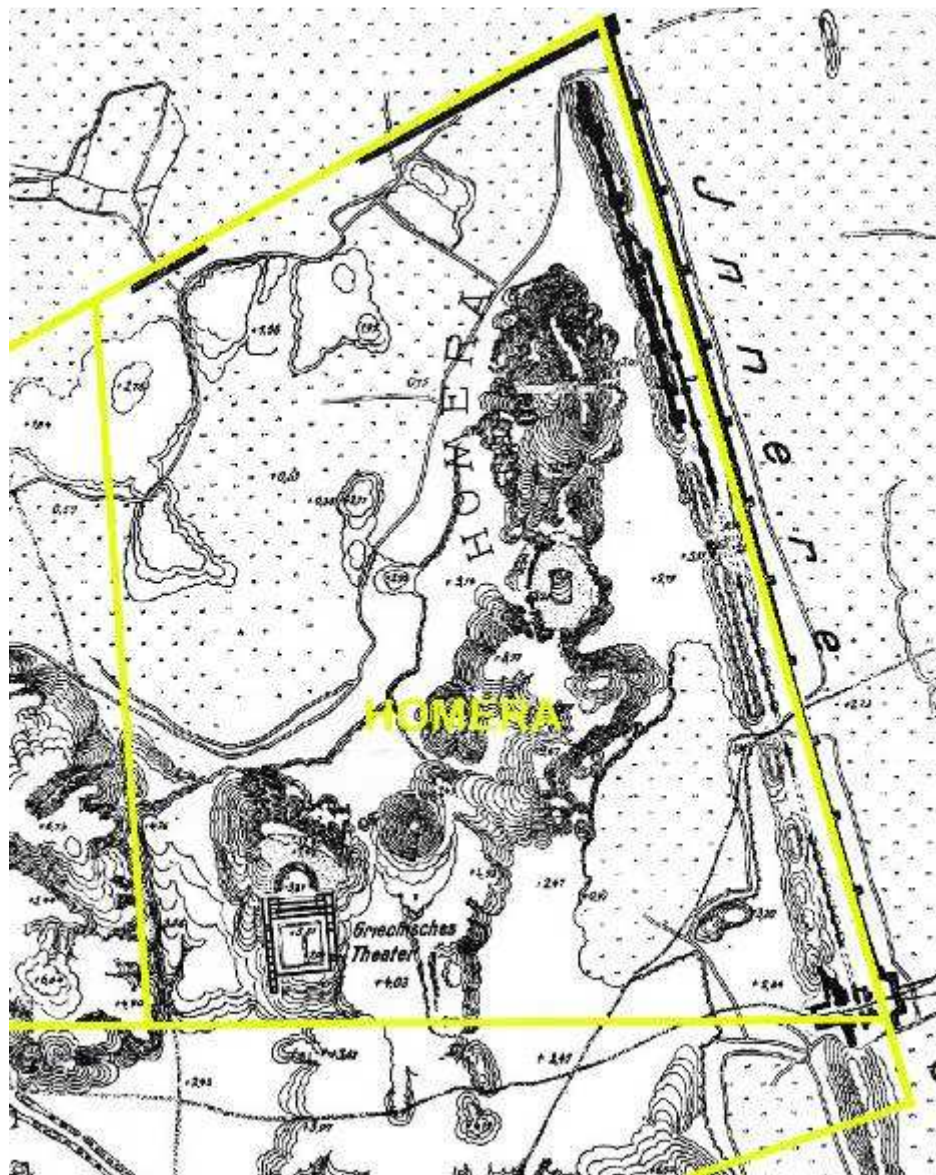


Homera area, 1 April 2003, Russell composite.



Homera area correlated with Polish areas VIII and IX, Russell composite.





Homera area correlated with archaeological features from 1913 Koldewey map, Russell composite.

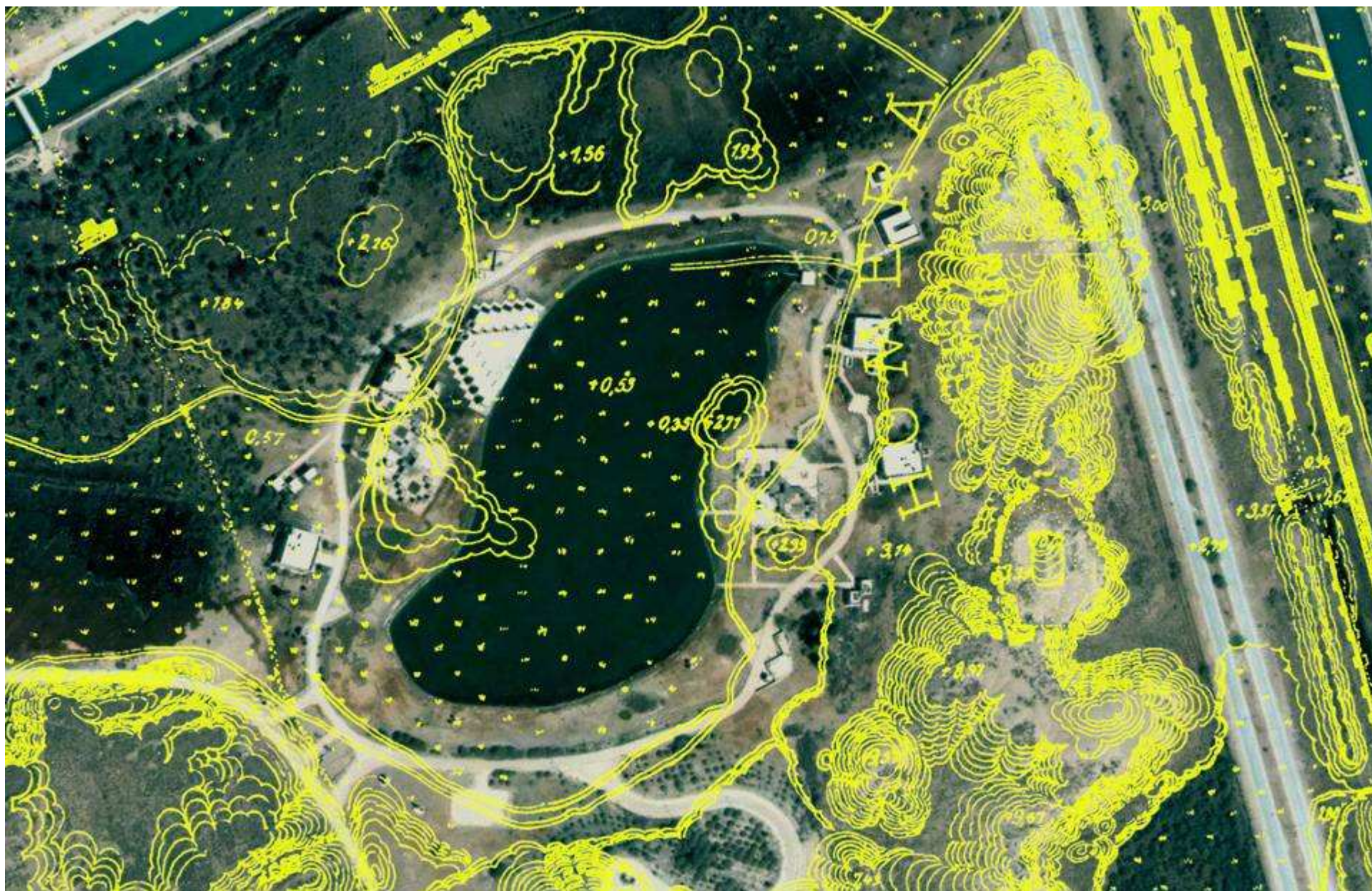


**Features in the northern part of Homera area, near the lake**



Overview, 25 August 2004, Russell composite





Koldewey 1912 map showing Homera mounds, Russell composite





Iraqi 1980 map showing Homera mounds, Russell composite





Location of Cuts 2 (A) and 3 (B), Polish report p. 31 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Cuts into Homera mound**

**Russell comment:** Some of the worst damage from the Coalition occupation was in this area.

<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Curtis report</b>	<b>Polish report</b>
d. The area north and east of the theater: There are cuts in a chain of hills extending along the length of the main road between Baghdad and Babel, starting at the northeast corner of the inner wall and extending to the Marduk Gate in four separate areas distributed along this chain. The German Mission's excavation activities account for a large portion of them.	<p>1. First cut: Its dimensions are 8 x 7 x 6 m. It is located northeast of the theater in a chain of tells that extends along the length of the former main road between Baghdad and al-Hillah (al-Humayrah area). The cut begins approximately in the northeastern corner of the inner wall. The results of the German excavations in Babylon in this area indicate that most of the dirt in the area was originally transported from the area of the ziggurat after Alexander attempted to rebuild the ziggurat after it had been subjected to acts of destruction numerous times. They cleaned the ziggurat and transported the rubble to this area. This area has not been excavated and may contain many antiquities. We will mention the other cuts according to where they were found, moving from north to south (Photo 39).</p> <p>2. Second cut: It is south of, and bigger than, the first cut. It has an area of 30 x 19 x 7 m (Photo 40).</p> <p>3. Third cut: It is south of the second cut (23 x 24 x 5 m) (Photo 41).</p> <p>4. Fourth cut: 5 x 16 x 12 m (Photo 42).</p>	<p>Dr Maryam reported that there were 5 cuttings in this area. We were shown four of the cuttings: -</p> <p>A cutting c. 35m x 20m, depth 6m (<i>Polish Report</i>, pp.43-44, cutting no. A).</p> <p>A cutting "of similar size" (<i>Polish Report</i>, pp.43-44, cutting no. B).</p> <p>A cutting c. 15m x 10m, up to 3m deep; now covered with new vegetation (not in <i>Polish Report</i>).</p> <p>A cutting c. 5m square (not in <i>Polish Report</i>).</p>	<p>Between the pond and the border of the camp there are two places where original material has been cut from the ancient tells.</p> <p>The first cutting area [Cut 2] is marked on the picture by the letter "A." The dimensions of the cutting are about 35 x 20 meters and 6 meters deep. There are two layers in the cutting. The original layers are on the bottom and about halfway up the cutting is heavily mixed soil.</p> <p>Second cutting [Cut 3] (marked on the picture by the letter "B") is of similar size.</p>





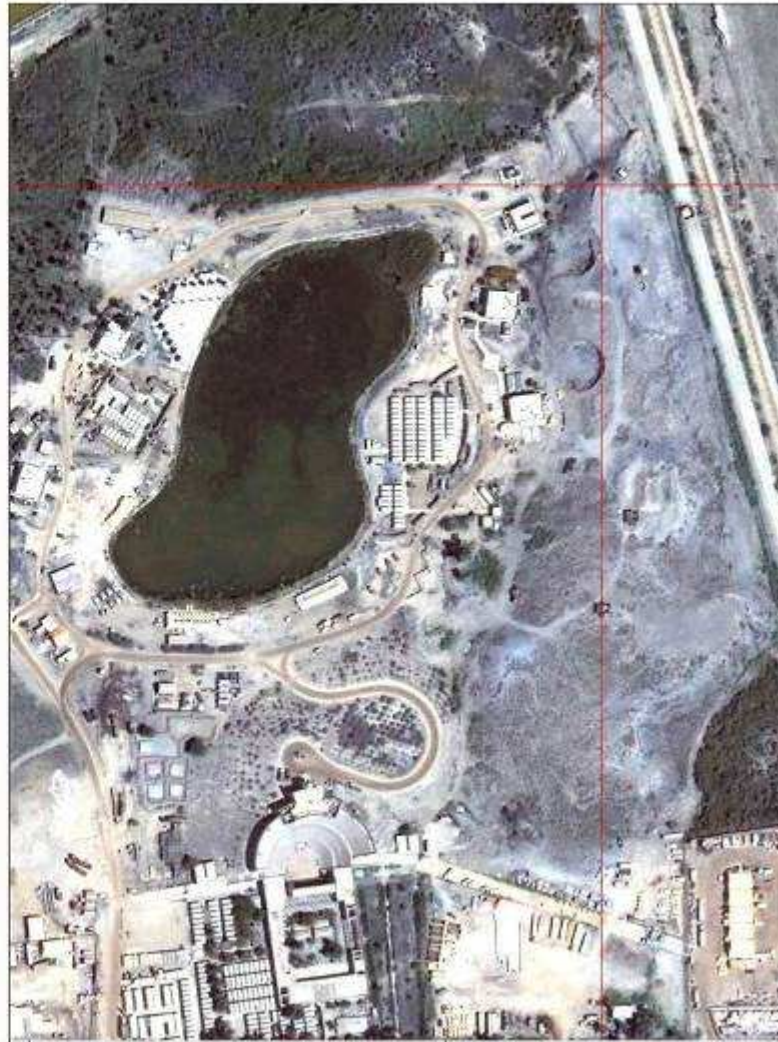
1 April 2003, Russell composite

31 August 2003, Russell composite

4 June 2004, Russell composite

Cuts 1, 2, and 3 occurred between 1 April and 31 August 2003. Cut 4 appeared between 31 August 2003 and 4 June 2004.



**1 April 2003****31 August 2003**

**Stone report:** This is the area with the most egregious damage to the archaeological site. Three areas were excavated into the archaeological site—reportedly for soil to fill sandbags. These were all dug between the end of the war and August 2003 (Fig. 23). Most of the remaining area around the lake had already been disturbed. There are new structures immediately to the east of the excavated areas, linked by a dirt road.





View of berms at entrance and Cuts 1, 2, and 3, Polish photo 157 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Cut 1, Iraqi final report fig. 39





Cuts 2 (left) and 3, Polish photo 149 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Cut 2, Polish photo 158 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Cut 2, Iraqi final report fig. 40





Cut 3, Polish photo 160 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Cut 3, Iraqi final report fig. 41





Cut 4 (overgrown at lower right) and truck E, Polish photo 150 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Cut 4 (overgrown), Polish photo 151 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Cut 4, Iraqi final report fig. 42



**Berms at camp entrance**

<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Polish report</b>
<p>a. The area northeast of the theater contains earthen barriers with different dimensions in the form of two parallel lines. The first is 29 meters long, the second is 21 meters long, and the third is [formed with dirt] from a nearby trench and is 30 meters long.</p> <p>[same as last above:] In addition to these two barriers, east of the theater, there is another barrier formed [with dirt] from the same area and has a length of 30 meters.</p>	<p>1. There are three, linear earthen barriers of varying lengths northeast of the theater, running parallel to each other. The dirt removed from the first trench was used to make one of these. The length of the first barrier (Photo 63) is 30 m. The length of the second barrier (Photo 64) is 29 m. The length of the third barrier (Photo 65) is 21 m.</p>	<p>In the northeastern corner of the camp, on the northern end of the tell there are three banks (marked on the pictures as letter “C”). On these banks are pieces of ancient pottery and bricks.</p>

**Russell comment:** This entrance, which provides access to the lake area, was partially blocked with 2 berms by 31 August 2003. A third berm and trench were added by 4 June 2004, completely blocking this entrance, which then apparently went out of use. The earth for the outer berm came from the trench dug at its base. The earth for the middle berm, and possibly also the inner berm, evidently came from Cut 1.





1 April 2003, Russell composite



31 August 2003, Russell composite



4 June 2004, Russell composite





Berms at entrance, Polish photo 155 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Berms at entrance, Cut 1 (beside end of middle berm), and Cuts 2 and 3 (right middle ground), Polish photo 156 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Outer berm and trench, Iraqi final report fig. 63





Middle berm, Iraqi final report fig. 64





Inner berm, Iraqi final report fig. 65



**Trenches along the inner wall of the city, northeast of the Greek theater**

<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Curtis report</b>
<p>a. Along the inner wall of the city, northeast and east of the Greek theater, there are three trenches not mentioned in their [i.e. the Polish] report.</p> <p>The first trench has a length of 30 meters, a width of 2-3 meters, and a depth of 1.5-2 meters.</p> <p>The second trench is also located along on the same inner wall. It has a length of 12 meters, a width of 2-3 meters, and a depth of 1.5 meters.</p> <p>The third trench is south of the second trench. It has a length of 14 meters, a width of 2 meters, and a depth of 2 meters.</p> <p>The dirt removed from these trenches contains pottery fragments of different sizes and shapes and fragments of an ancient baked brick, part of which bears an impression of the seal of the Babylonian king, Nebuchadnezzar.</p>	<p>Heavy machinery excavated along the inner wall of the city, on the east, in the so-called al-Humayrah area northeast of the theater. The MF dug three trenches running approximately alongside the inner wall, with different dimensions, as follows:</p> <ol style="list-style-type: none"> <li>1. First trench: 30 m x 2-3 m x 1.15-2 m (Photo 22).</li> <li>2. Second trench: 13 m x 2-3 m x 1.15 m (Photo 23).</li> <li>3. Third trench: 14 m x 2 m x 2 m, south of the second trench, alongside it (Photo 24).</li> </ol> <p>The dirt removed from each of these trenches was used to create a barrier that contains pottery fragments with different shapes and sizes and fragments of ancient baked bricks, some of which bear cuneiform writing in the form of an impression of the stamp of the Babylonian King Nebuchadnezzar II.</p>	<p>We were also shown 3 trenches, which apparently cut into ancient deposits:</p> <p>A trench <i>c.</i>30m long (<i>Polish Report</i>, fig. on p.45, trench at bottom of picture).</p> <p>A trench <i>c.</i>10m x 4m, <i>c.</i>2m deep, to the west of the Inner Wall, between the 'Ronson Gate' and the observation post known as 'Dragon no.3' (not in <i>Polish Report</i>).</p> <p>A crescent-shaped trench, <i>c.</i>10m in length, and 1m deep, in the same location as above, but nearer the Ronson Gate (not in <i>Polish Report</i>).</p>





**Russell comment:** The first trench is at the NW gate and was dug at the same time that the outer berm was added, between August 2003 and June 2004, completely blocking this entrance, which then apparently went out of use (image Iraqi final report 22).





Second trench, 1 April 2003, Russell composite



31 August 2003, Russell composite



26 November 2005, Russell composite

**Russell comment:** The second trench is at the base of the flat-topped center mound of Homera, between the mound and the main road. This appeared between August 2003 and June 2004, and was apparently dug to block the road leading from the main road up to the top of the flat-topped mound.





Second trench, Iraqi final report 23





Second trench at lower left, at base of flat-topped mound, Polish photo 16 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Second trench at right center, at base of flat-topped mound, Polish photo 153 (photo © Ministry of Culture and National Heritage, Republic of Poland)





31 August 2003, Russell composite



Third trench, 4 June 2004



26 November 2005

**Russell comment:** The third trench also appeared between August 2003 and June 2004, and was apparently dug to block the road leading from the main road to the NW corner of the eastern-most parking lot.





Third trench (lower center), Russell photo 124\_2440, detail (photo © John Russell)





Third trench, Curtis photo 7543 (photo © John Curtis)





Third trench, Iraqi final report 24



**New structures**



1 April 2003, Russell composite

Observation tower 3 and another building were constructed atop the Homera mounds, and were still there after the military camp was removed.



New buildings, 26 November 2005, Russell composite



**Parking lot**



1 April 2003, Russell composite



31 August 2003, Russell composite

A large parking lot was constructed northwest of the lake between 1 April and 31 August 2003.



**New roads :** A watch tower (“Dragon 2”) and access roads were built to the north and northeast of the lake.



Area north of lake, 1 April 2003, Russell composite





New roads and watch tower north of lake, 31 August 2003, Russell composite





New roads and observation tower 2 north of lake, 31 August 2003, Russell composite



**New roads:** New roads were also built around and across the Homera mounds to the east of the lake.



East of lake, 1 April 2003, Russell composite



New roads east of lake, 31 August 2003, Russell composite



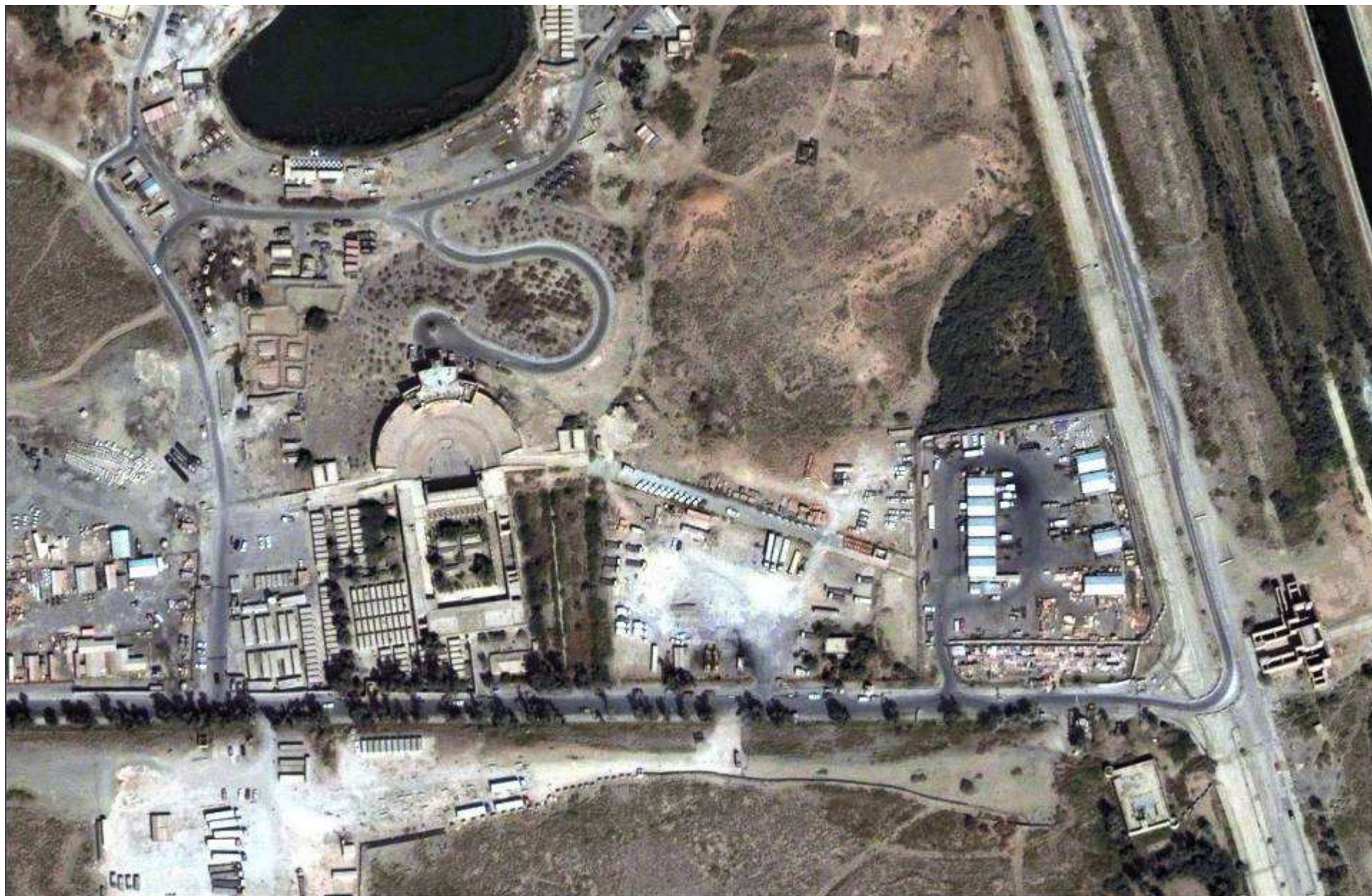


**Features in the southern part of Homera area, near the Greek Theater**



Area of Greek Theater prior to Camp Babylon, 5 July 2002, Russell composite





Area of Greek Theater during Coalition occupation, 8 October 2004, Russell composite





General view looking north, Polish photo 11





Features described in Polish report, Polish report, p. 34 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Fuel storage area**

<b>McDonald report</b>	<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Curtis report</b>	<b>Polish report</b>
To the north west of the amphitheatre are two fuel bladders surrounded by earth birms (ridges). It is not entirely clear where the earth for these came from, whether it was trucked in from outside the camp or the result of earth moving within the camp. Also in this area is a possible Iraqi army bunker position the construction of which is different to the Coalition bunkers.	c. West of the Greek theater, there is an area surrounded by earthen barriers divided into five or six segments in the shape of squares. These barriers are intended to prepare areas for the storage of fuel. The dirt of these barriers contains fragments of pottery and ancient baked bricks, some of which bear cuneiform writing, which indicates that the dirt is from Babel itself. In addition, the fuel has leaked or may in the future leak into the soil, causing it to lose its archeological character. The affected area is 1200 sq meters. To the south of this area is an area of 1300 sq meters that has been covered by large stones and clearly shows the tracks of heavy vehicle wheels.	3. West of the Greek Theatre, there is a 1200 sq m area surrounded by earthen barriers divided into seven squares. These barriers are intended to create areas for the storage of fuel. The dirt used to make these barriers contains pottery fragments and ancient baked brick fragments. Some of the baked brick fragments bear Sumerian writing. This indicates that the dirt is from Babylon itself. This dirt may lose its archeological value as it has been removed from its context. To the south is a 1300 sq m area that has been covered with gravel. Traces of heavy vehicles are clear in this area (Photo 67).	This is to the north-west of the Greek theatre in the area referred to as KBR #1 in the <i>Polish Report</i> . There are six places here where fuel containers (bags) were positioned, four of them c.10m sq. and one of them c.30m x 10m. See figs. on pp.46-47 of the <i>Polish Report</i> . Earth probably from the surrounding areas was heaped up around them to form banks between and around the bags. There is evidence of environmental contamination here in the form of fuel leakage. Just nearby are tankers from which vehicles are currently being refuelled. There are signs of further serious fuel seepage here.	<p>“Fuel Farm” – on the picture it is marked as a letter “A”</p> <p>In this place there are six pits with fuel bags inside.</p> <p>In the banks of five pits there are many pieces of ancient pottery and bricks. Some of the bricks have cuneiform inscriptions. In the banks of the sixth pit are also pieces of pottery and brick but in lesser quantities.</p> <p>The ground in and around the petrol station area is contaminated.</p>





1 April 2003, Russell composite

Before the establishing of Camp Babylon, this was an open flat area to the northwest of the theater. By the time of McDonald's report (29 July 2003), earthen berms had been constructed around 2 fuel bladders.



31 August 2003, Russell composite





4 June 2004, Russell composite

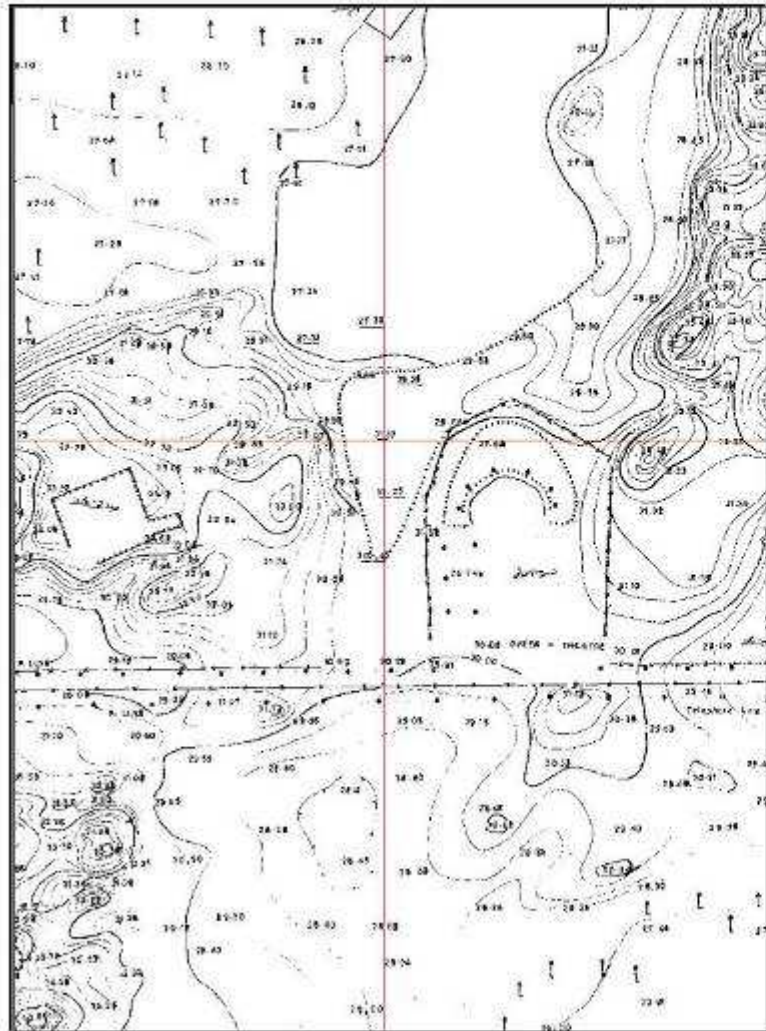
By June 2004, the berms had been expanded to the east and north to house 5 fuel bladders, plus an additional rectangular area at the northwest of uncertain function. The satellite images show the progressive contamination of the lot to the north of the fuel bladders, presumably with spilled fuel.



8 October 2004, Russell composite



Contour Map



31 August 2003

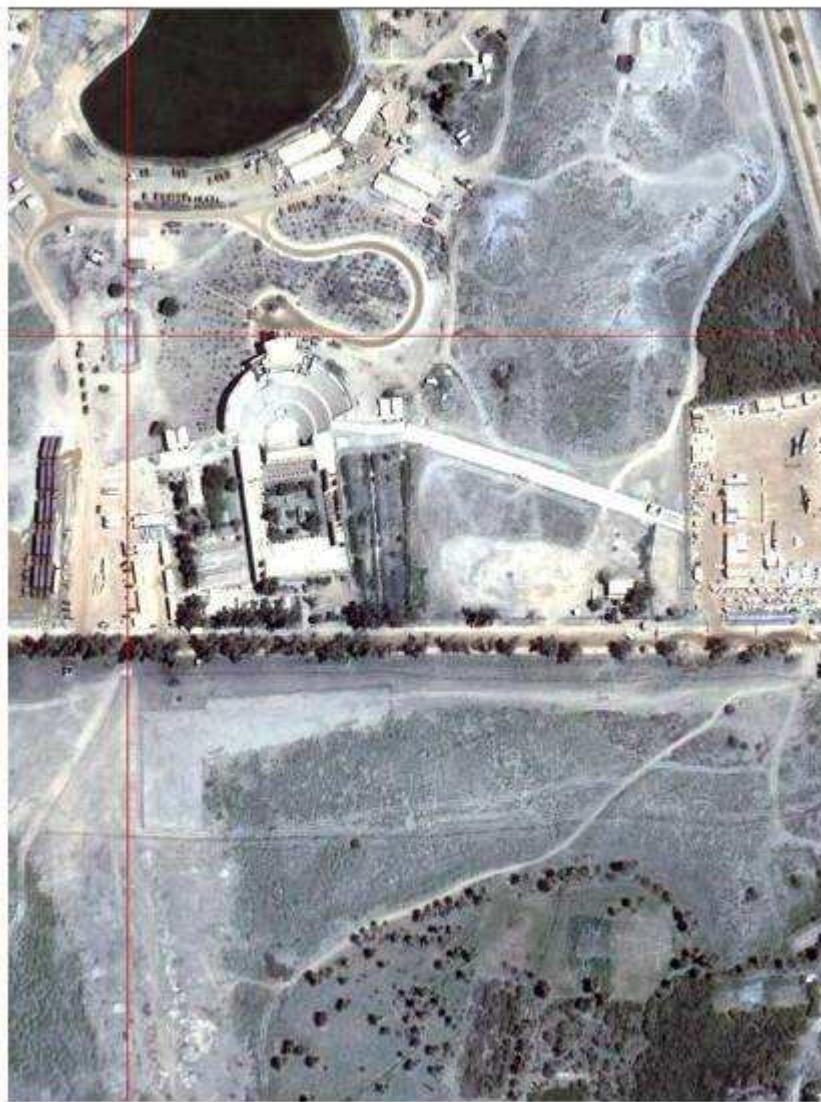


**Stone report:** This area experienced somewhat less occupation than many of the other areas under consideration. However, the fuel storage areas located between the Greek Theater and the lake represent a considerable threat to the site, even though they were built in an area which was not heavily mounded (Fig. 24).



**1 April 2003**

**31 August 2003**

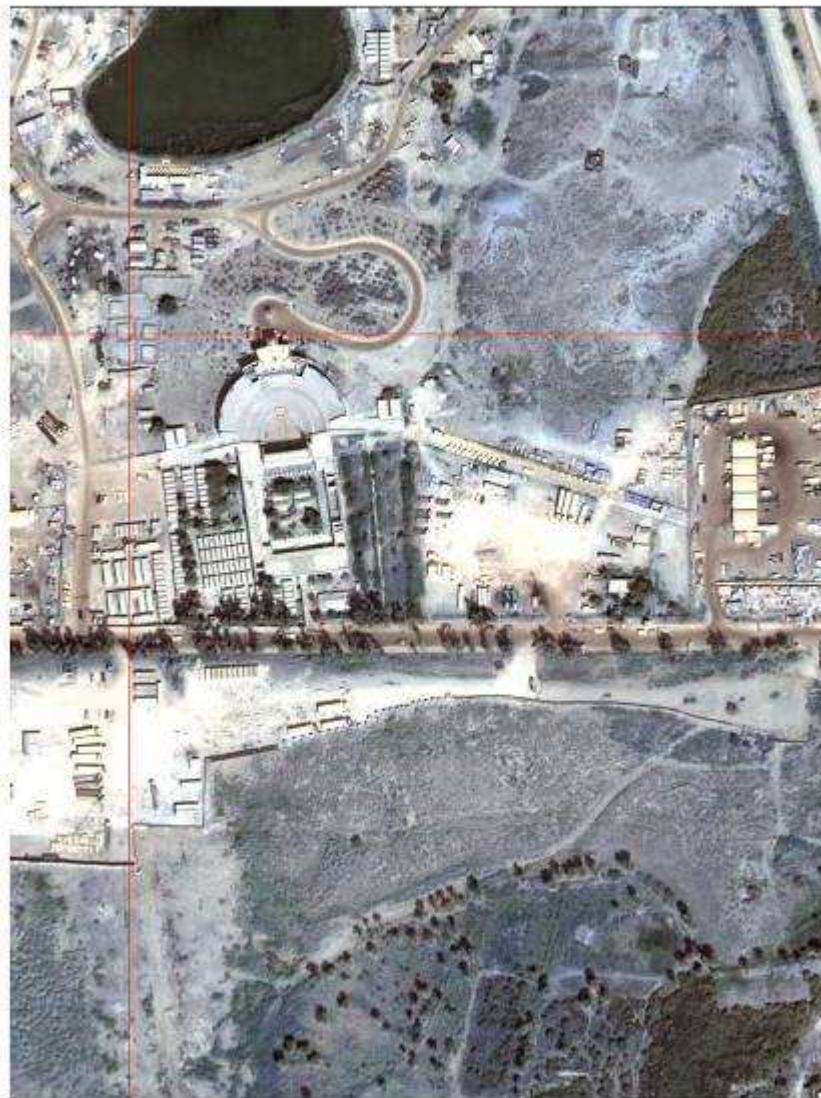


**Stone report:** Two had been constructed by August 2003 (Fig 25), ...



**1 April 2003**

**8 October 2004**



**Stone report:** ...but these increased to five by October 2004 (Fig. 26).





Fuel depot from the south, June 2004, Russell photo 124\_2436 (photo © John Russell)





View of fuel depot and fueling area looking northeast, November 2004, Polish photo 65 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Fuel bladders, Polish photo 87 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Berms after the evacuation of Camp Babylon, Iraqi final report fig. 67





Brick fragments in berm, Curtis photo 7574 (photo © John Curtis)





Fuel trucks at NW corner of fuel storage area, Curtis photo 7569 (photo © John Curtis)





Contamination of surface to NW of fuel storage, Polish report p. 35 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Contamination of surface to west of fuel storage, Curtis photo 7576 (photo © John Curtis)



**Parking lot northeast of fuel storage area**



**Polish report:** The area at the northeastern portion of the “Fuel Farm” is covered with gravel. This place is marked on the picture at the beginning as letter “B” (photo Polish report p. 36, © Ministry of Culture and National Heritage, Republic of Poland).





The new gravelled area is at the upper right, beside the old paved lot, Polish photo 66 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Parking lots west, south, and east of the theater**

<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Curtis report</b>	<b>Polish report</b>
A 2000 sq meters area surrounding the theater from the south and the west was covered with coarse gravel, as was the area located east of the theater, which was used as a parking lot for various types of vehicles.	The area surrounding the theater to its south and west, which is 2000 sq m, has been covered with coarse gravel, as has the area located east of the theater, which was used as a parking lot for different vehicles (Photo 57).	<p>To the south of the Theatre, and on the north side of the road, is an area c.15m x 20m, covered with gravel and large stones, that is said to be a “tent position”.</p> <p>To the east of the Greek theatre, to the north of the road, is another area (referred to as KBR #1 in the <i>Polish Report</i>) that has been levelled and covered with gravel. These areas are shown as C and D in the fig. on p. 46 of the <i>Polish Report</i>.</p> <p>In the west part of this area is a bunker built of concrete slabs and sandbags; the latter are now disintegrating.</p>	<p>3) Parking lot - situated close to the main road. On the picture is marked as letters “C” and “D”.</p> <p>The KBR parking area is located between the KBR parking/vehicle maintenance area and the Amphitheater. Currently, both sides of the terrazzo walkway are cordoned by concertina wire. On the surface of this area are tire tracks.</p>

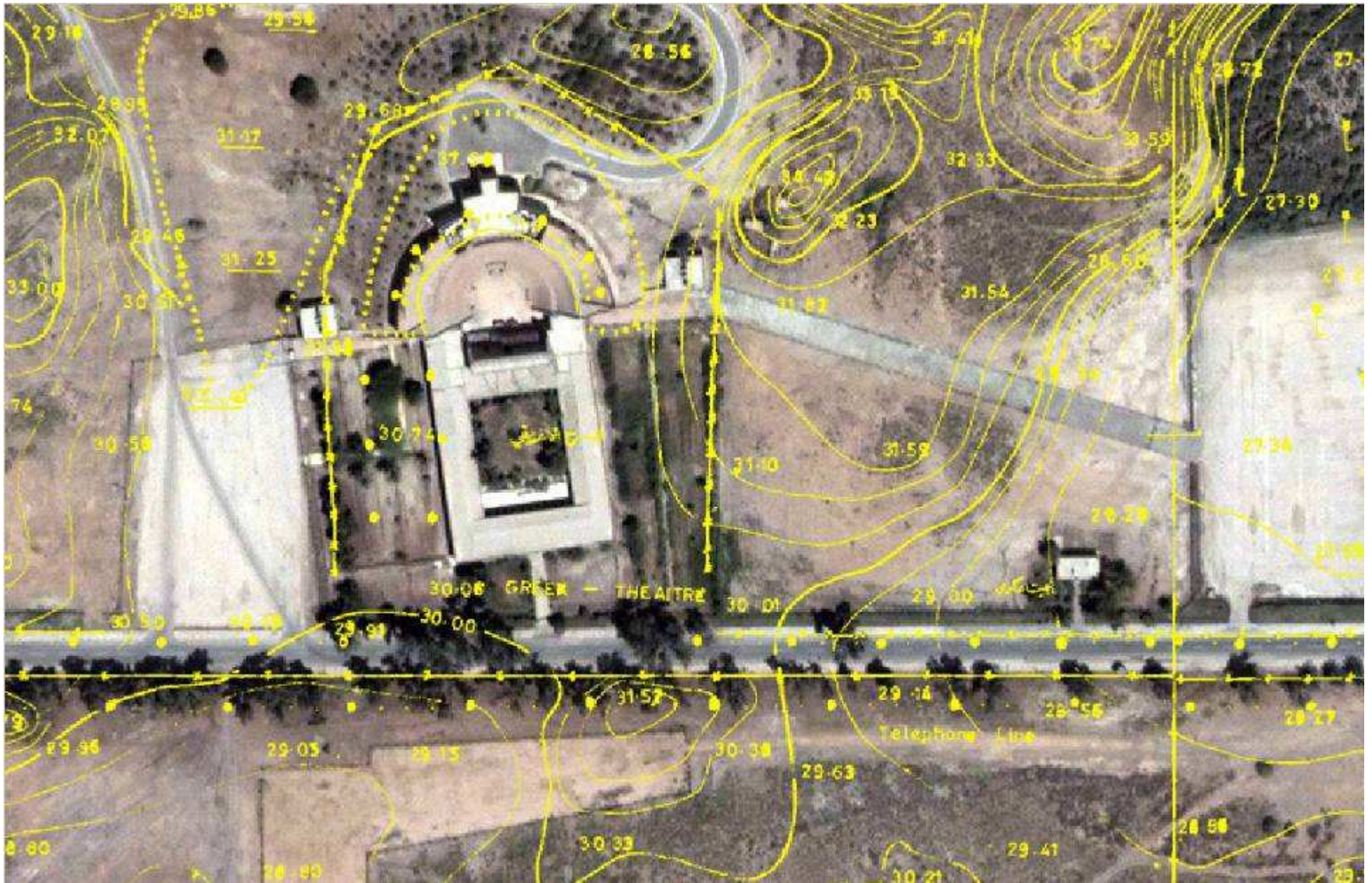
**Russell comment:** Prior to the Coalition occupation of the site, the areas immediately west and south of the theatre were gardens, and the area beyond the garden at the east was a slightly mounded open area. All of these areas were converted to parking by the Coalition.





5 July 2002, prior to Coalition occupation, Russell composite





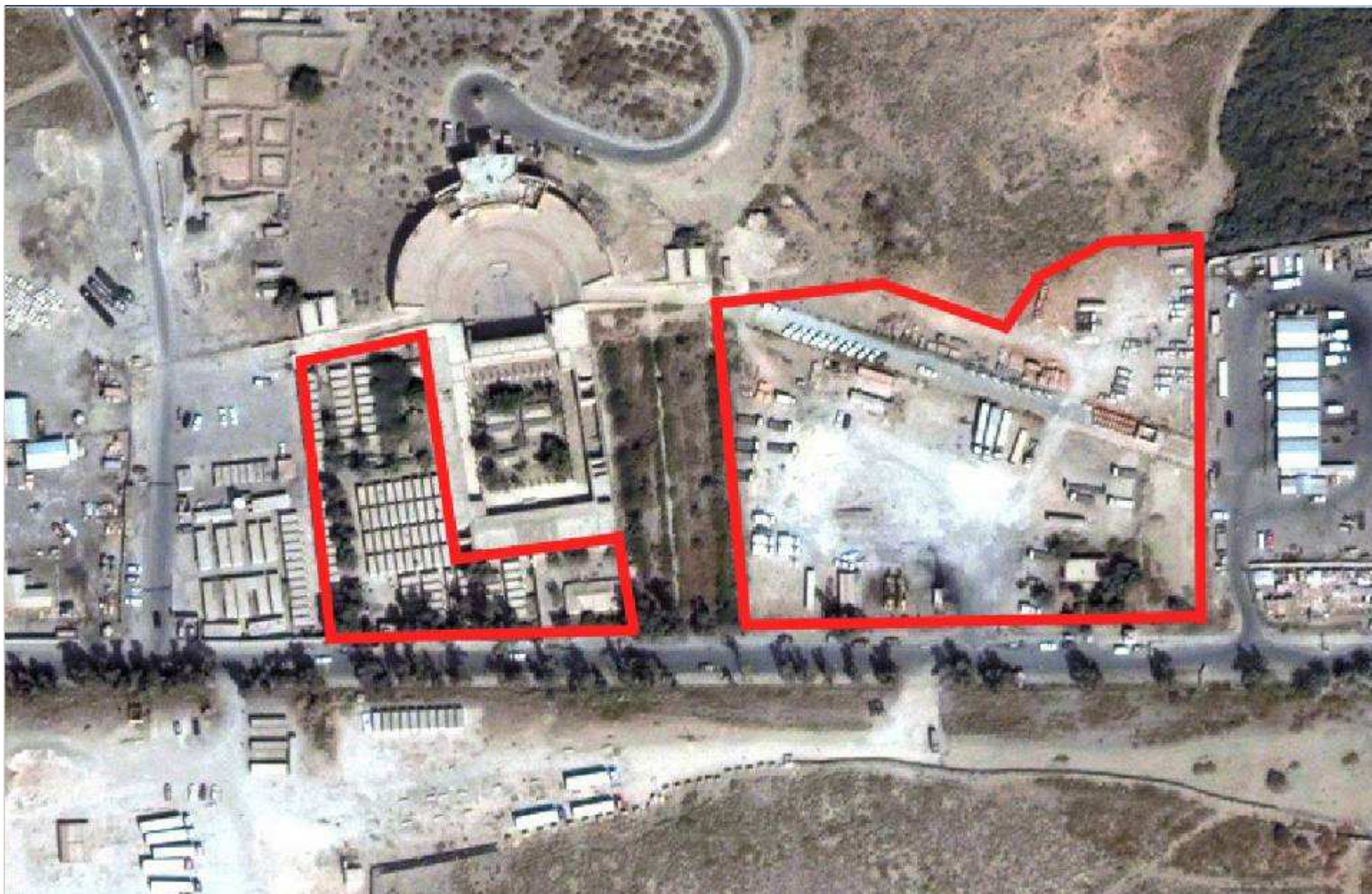
5 July 2002, with Iraqi map overlay showing mounding in area east of the theatre, Russell composite





8 October 2004, showing new parking areas, Russell composite

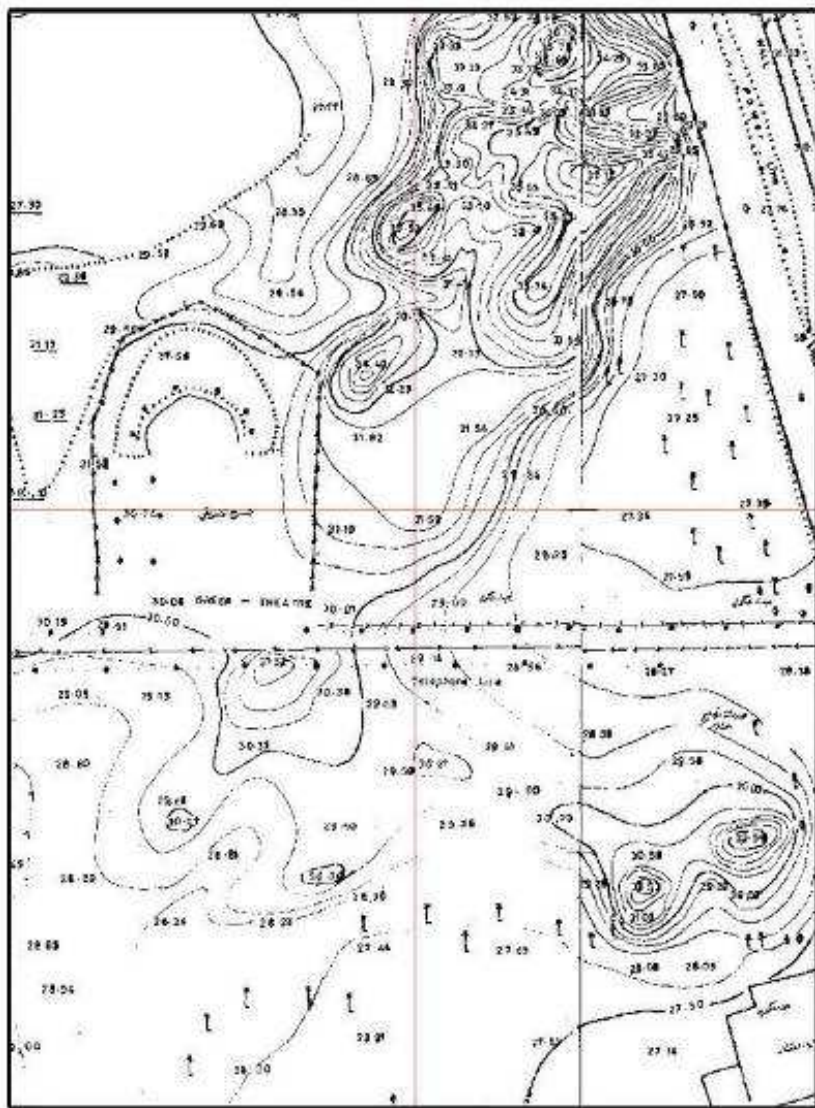




8 October 2004, with new parking areas outlined in red, Russell composite



**31 August 2003**



**Stone report:** The area immediately to the east of the Greek Theater was mounded, as seen in the contour map (Fig. 27).



1 April 2003



8 October 2004



**Stone report:** Some development in this area began in August 2003, but it was not fully developed until 2004 (Fig. 28).





View of parking areas west (left), south, and east of the theatre, June 2004, Russell photo 124\_1437 (photo © John Russell)





Development west of the theatre, Iraqi final report fig. 57





Development west of the theatre, Polish photo 133 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Parking area east of the theatre, Polish photo 15 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Parking area east of the theatre, Polish photo 130 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Parking lot east of the theatre ("Lot C"), Polish report p. 36 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Parking lot east of the theatre ("Lot C"), showing the topography in this area, Polish report p. 37 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Parking area east of the theatre and north of the walkway ("Lot D"), Polish report p. 37 (photo © Ministry of Culture and National Heritage, Republic of Poland)



Parking lot west of the Marduk Gate

Polish report	Stone report
4) The KBR parking/vehicle maintenance area (marked on the picture by letter “E”) is located North of the market and Ronson gate. This area is enclosed within a chain link fence and asphalt surface. The dimensions for the area are about 100 x 100 meters.	The area further east does not appear to have been mounded based on the contour map, and had already been prepared as a parking area before the war.

**Russell comment:** Note the extensive use of HESCO and concrete block barriers around the lot and on the approach to the east gate.



The KBR parking/vehicle maintenance area, Polish report p. 37 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Parking lot west of the Marduk Gate, view from south, Russell photo 124\_2438 (photo © John Russell)





Parking lot west of the Marduk Gate, view from northeast, Russell photo 124\_2440 (photo © John Russell)



**Berm west of the Marduk Gate**

Iraqi final report	Curtis report
2. East of the theater is an earthen barrier with a length of 35 m. It contains pottery fragments that can be seen to the right of the road leading to the center of the city. This barrier is made with surrounding earth that was cut into (Photo 66).	Outside [actually inside] the so-called Ronson Gate, on the north side of the road, topsoil has been scooped off an area c.60m x 20m to create an earthen bank.



5 July 2002, Russell composite



31 August 2003, Russell composite



8 October 2004, Russell composite

**Russell comment:** This berm forms the eastern boundary of the parking lot located east of the theater. It appears to have served as part of the defenses at the east (“Ronson”) gate. It is already visible in the 31 August 2003 image.





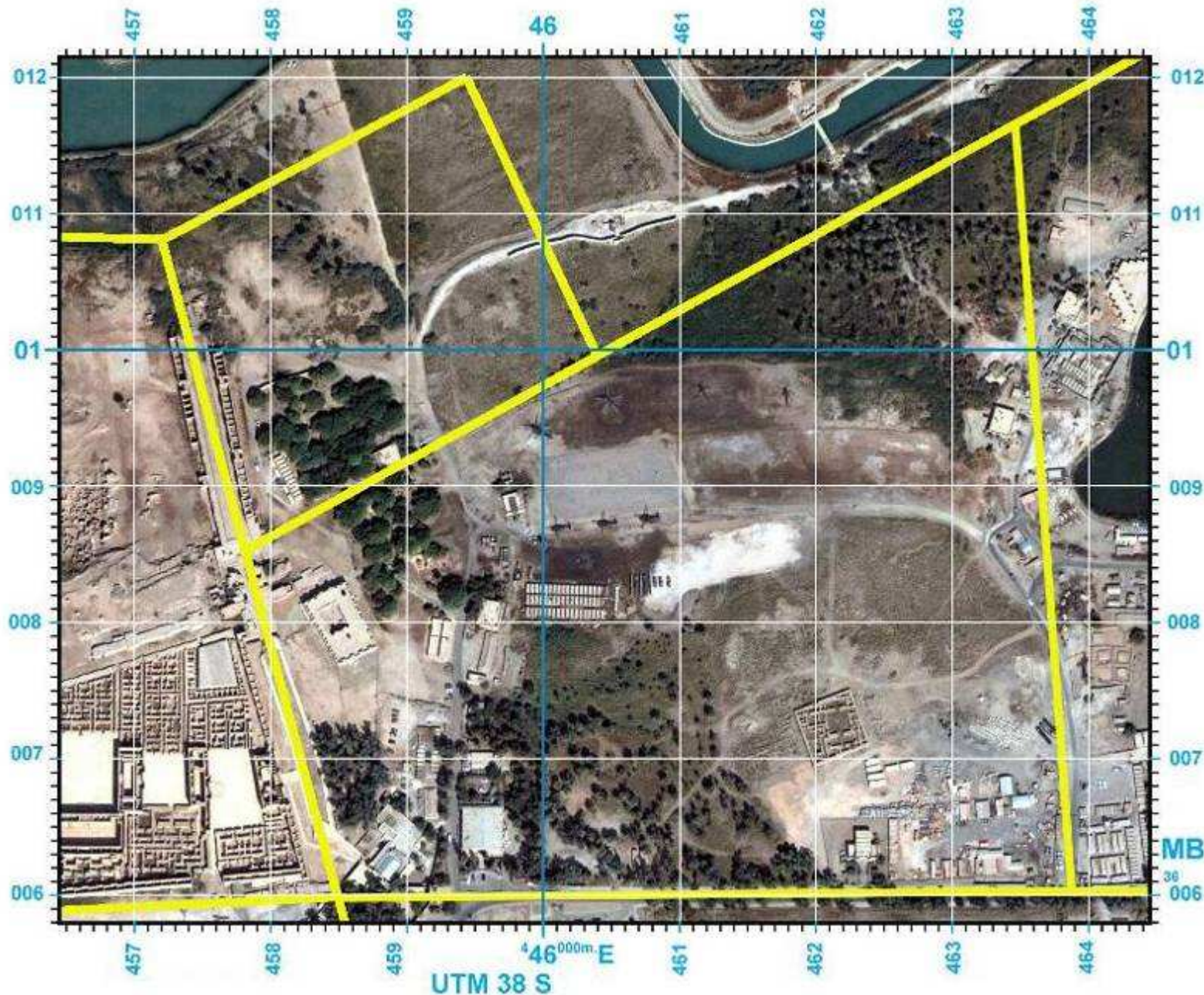
Earthen berm (center) separating the two eastern parking areas, June 2004, Russell photo 124\_2438, detail (photo © John Russell)





Iraqi final report fig. 66



**Appendix 5. Newtown and North Bastion, damage during the period of Camp Babylon**

Newtown is the designation in Old Babylonian (18th century BC) texts for the eastward expansion of the city during the period of the Old Babylonian empire. By the time of Nebuchadnezzar II, this area was the heart of the inner city. The Newtown area is bordered on the north by the inner city wall, on the west by the Processional Way, on the south by the modern road, and on the east by an arbitrary line that runs between the Newtown and Homera mounds. The North Bastion is a Neo-Babylonian fortification wall built to protect the approach to the Ishtar Gate. These areas correspond roughly to areas VI and VII plus the eastern part of area II in the Polish report.



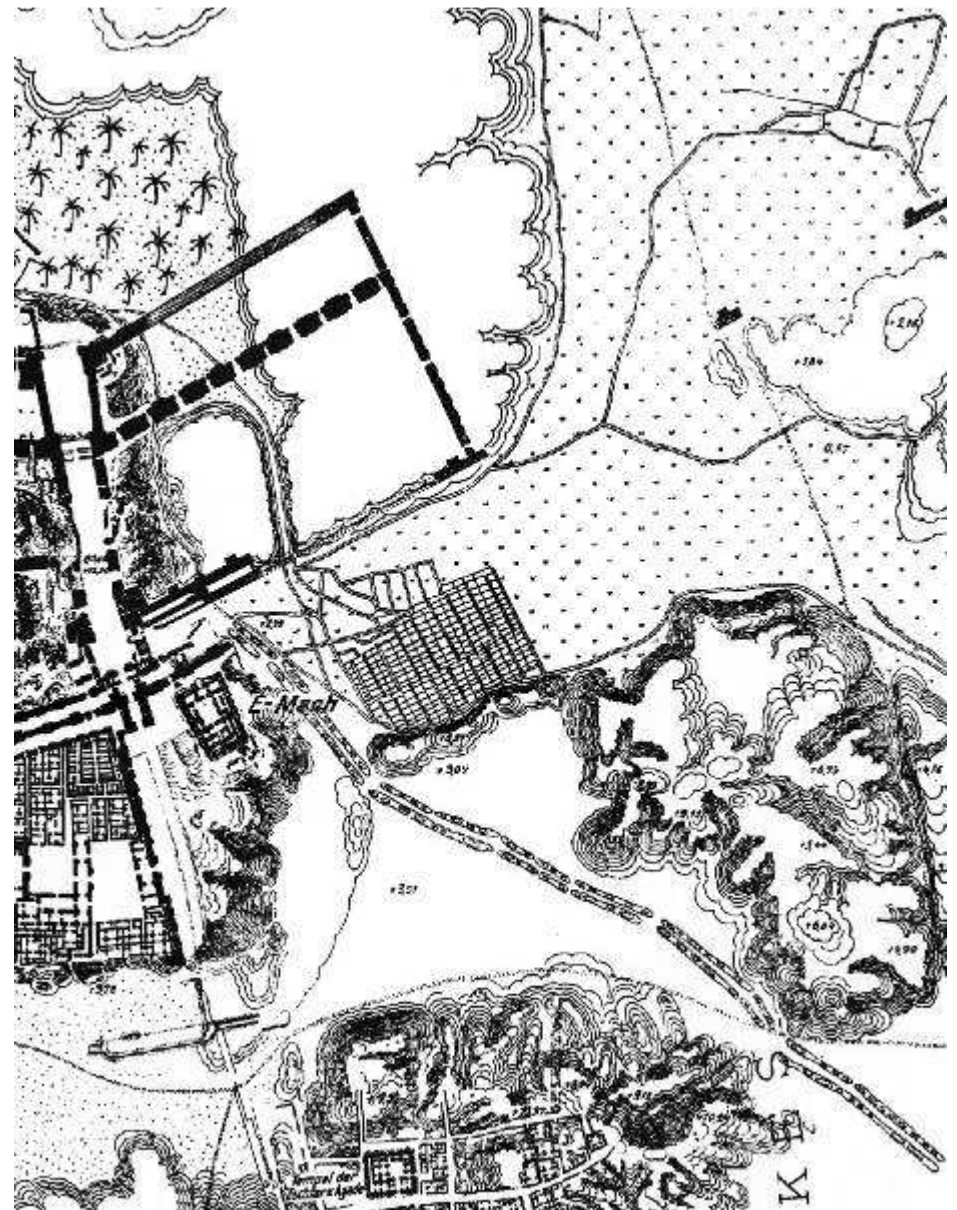
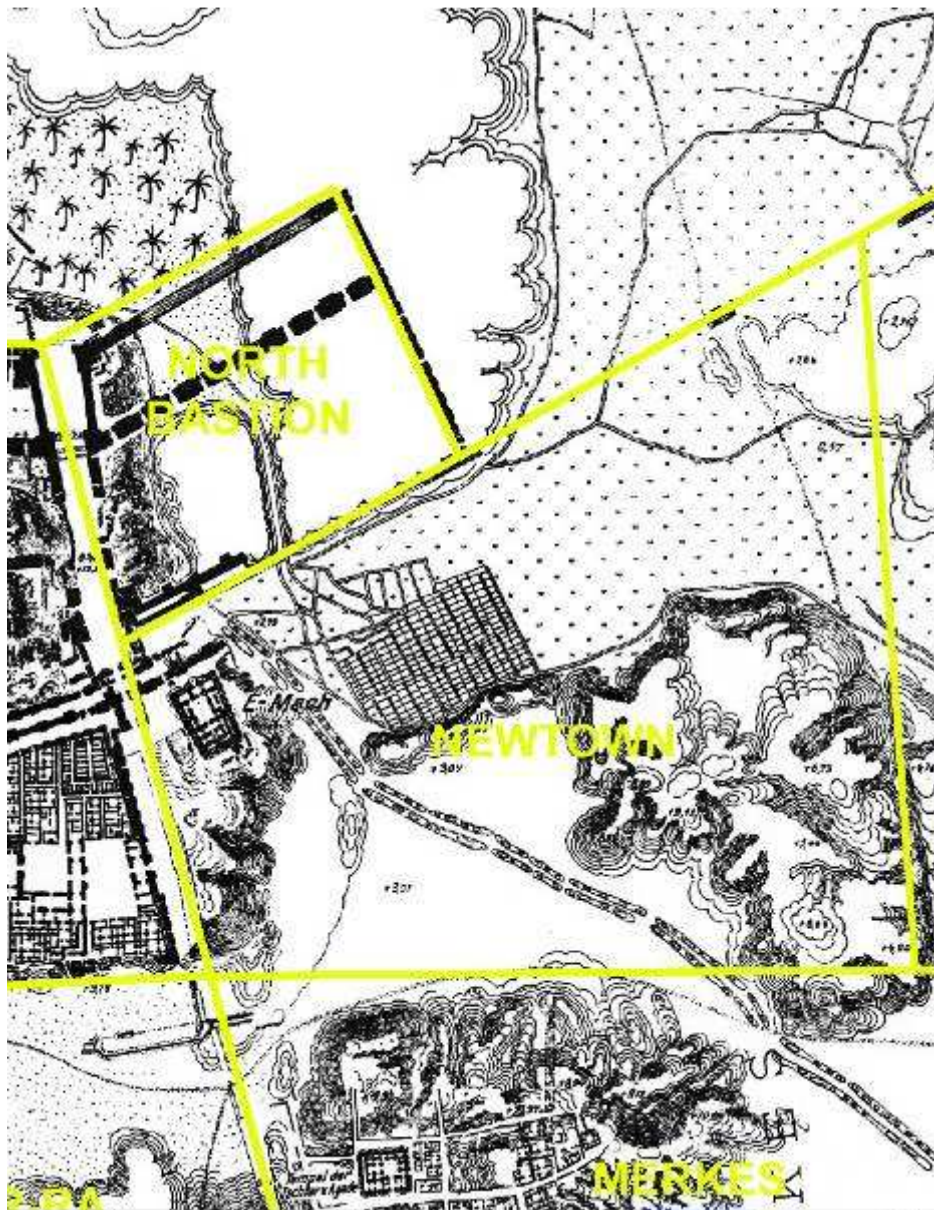


Newtown and North Bastion areas, 1 April 2003, Russell composite.



Newtown and North Bastion areas correlated with Polish areas VI, VII.





Newtown and North Bastion areas correlated with archaeological features on 1913 Koldewey map, Russell composite.



**Area around the Babylonian House**

<b>McDonald report</b>	<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Curtis report</b>	<b>Polish report</b>
<p>In the area west of the amphitheatre where archaeological deposits are right at the surface the trucking of heavy machinery is likely to cause considerable damage.</p> <p>On the 25th July [2003] a 'ditch witch' was observed in use in this area, cutting into an area of mound to lay a cable. The driver was asked to desist and agreed, his work does not seem to have authorized by LTC Lebidine.</p>	<p>b. The area surrounding the Babylonian House and the Hammurabi Museum: This area, which served as the headquarters of the KBR Company, was leveled and covered with gravel and sand in all directions.</p> <p>Military equipment and trailers of various types and sizes weighed heavily on this part of the city, especially in the area south and east of the Babylonian House (measuring 10,000 sq meters) and the western part of the Babylonian house.</p>	<p>The Area Surrounding the Babylonian House and the Hammurabi Museum: This 10,000 sq m area, which served as the headquarters of the American KBR Company, was leveled, covered with gravel and sand, and occupied by various pieces of military equipment of varying shapes and sizes and caravans [travel trailers] (Photo 57).</p>	<p>The entire area between the Hammurabi Museum and the Greek Theatre has been levelled and covered with gravel (see <i>Polish Report</i>, fig. on p. 39, centre).</p> <p>At the east end of the area between the Hammurabi Museum and the Greek Theatre, on the north side of the main road, an area <i>c.</i>20m sq. has been scooped out to a depth of <i>c.</i>1m.</p>	<p>Just to the West of the road running from the Amphitheater to the lake there is an area about 120 x 60 meters used as a transportation and storage yard. This area is divided into two parts.</p> <p>The first part, close to the main road is fenced and the ground is covered with gravel (marked on the picture at the beginning of this document by letter "B").</p> <p>The second part (marked on the picture at the beginning of this document by letter "C") is covered with a layer of sand.</p> <p>On the area of the "Babylonian House" there are ruts from cars and trucks.</p>





Polish report p. 25 (photo © Ministry of Culture and National Heritage, Republic of Poland)





General view, Iraqi final report fig. 57





Graveled surface of car park “B” close to the Babylonian House, Polish report p. 27 (photo © Ministry of Culture and National Heritage, Republic of Poland)

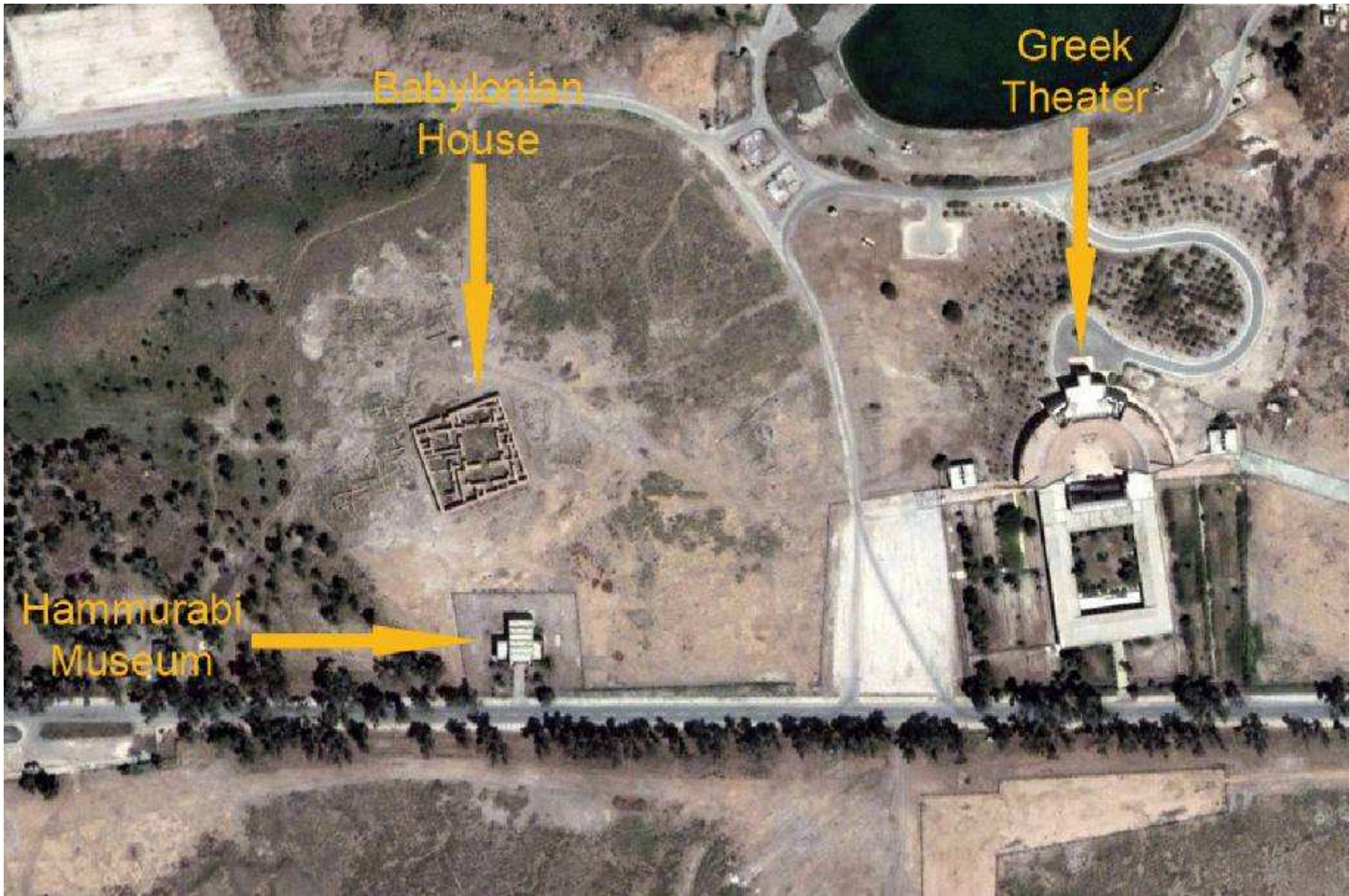




Vehicle wheel ruts close to archaeological features around the Babylonian House, November 2004, Polish photo 81 (photo © Ministry of Culture and National Heritage, Republic of Poland)

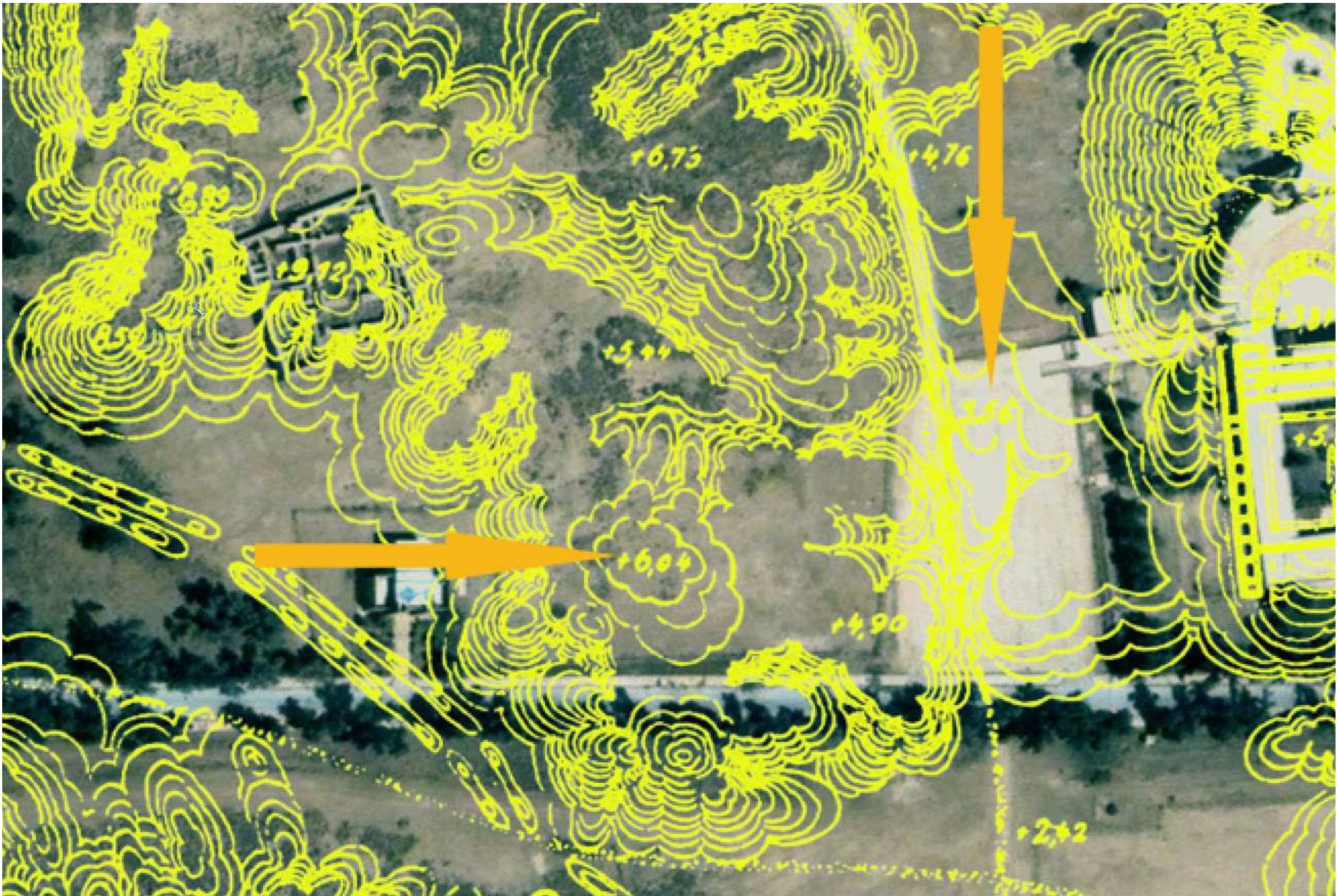


**Development of the area:** This is one of the worst areas for damage under Coalition occupation.



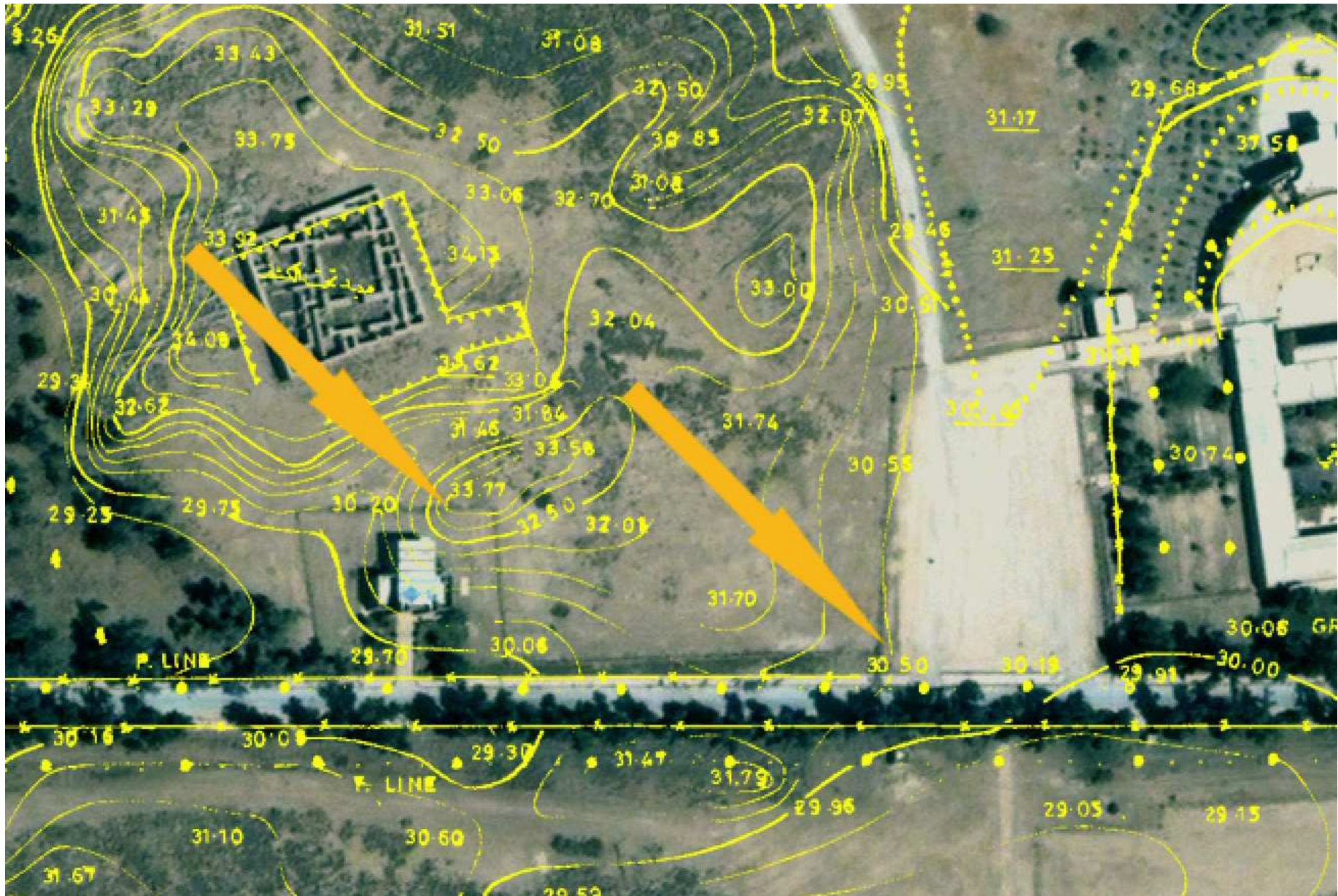
Orientation view with major buildings, also showing archaeological remains directly on the surface just west of the Babylonian House. 5 July 2002, Russell composite





1 April 2003 with Koldewey map overlay, Russell composite. The Koldewey map of 1912 shows a substantial mound in the space between the Greek Theater and the Hammurabi Museum, rising 2.5 meters between the level of the parking lot just west of the Greek Theater (3.56 meters) and the top of the mound between the theater and the Hammurabi Museum (6.04 meters).





1 April 2003 with Iraqi contour map overlay, Russell composite. Similarly, the Iraqi survey map of 1980 shows a rise of more than 3 meters between the parking lot and the top of the mound northwest of the Hammurabi Museum. We do not have a topographic map that postdates the construction of the Hammurabi Museum. The southwest side of this mound must have been cut back somewhat in order to construct the museum.





1 April 2003, Russell composite. It is clear that there was still considerable mounding in this area on 1 April 2003..





31 August 2003, Russell composite. The earliest expansion is the new graveled lot to the west of the paved lot beside the theater, as described by MacDonald. Further planned expansion as far as the east fence of the Hammurabi Museum was halted after the Iraqi site staff objected that much archaeological material was being disturbed. A new road running from the paved road to the top of the mound north of the Babylonian House can also be seen in this image.





4 June 2004, Russell composite. By this time the cleared area had reached its maximum extent, with the leveling of all the terrain from the theater to well beyond the western side of the Hammurabi Museum. Even the eastern fence of the museum had been crossed, with containers stored directly adjacent to the museum. The area to the north has also been leveled and covered with piles of sandbags and sand. In this image, leveling work was taking place on the final western extension, to the west of the museum, as described in the Iraqi report. This area was evidently never put into use.





25 August 2004, Russell composite





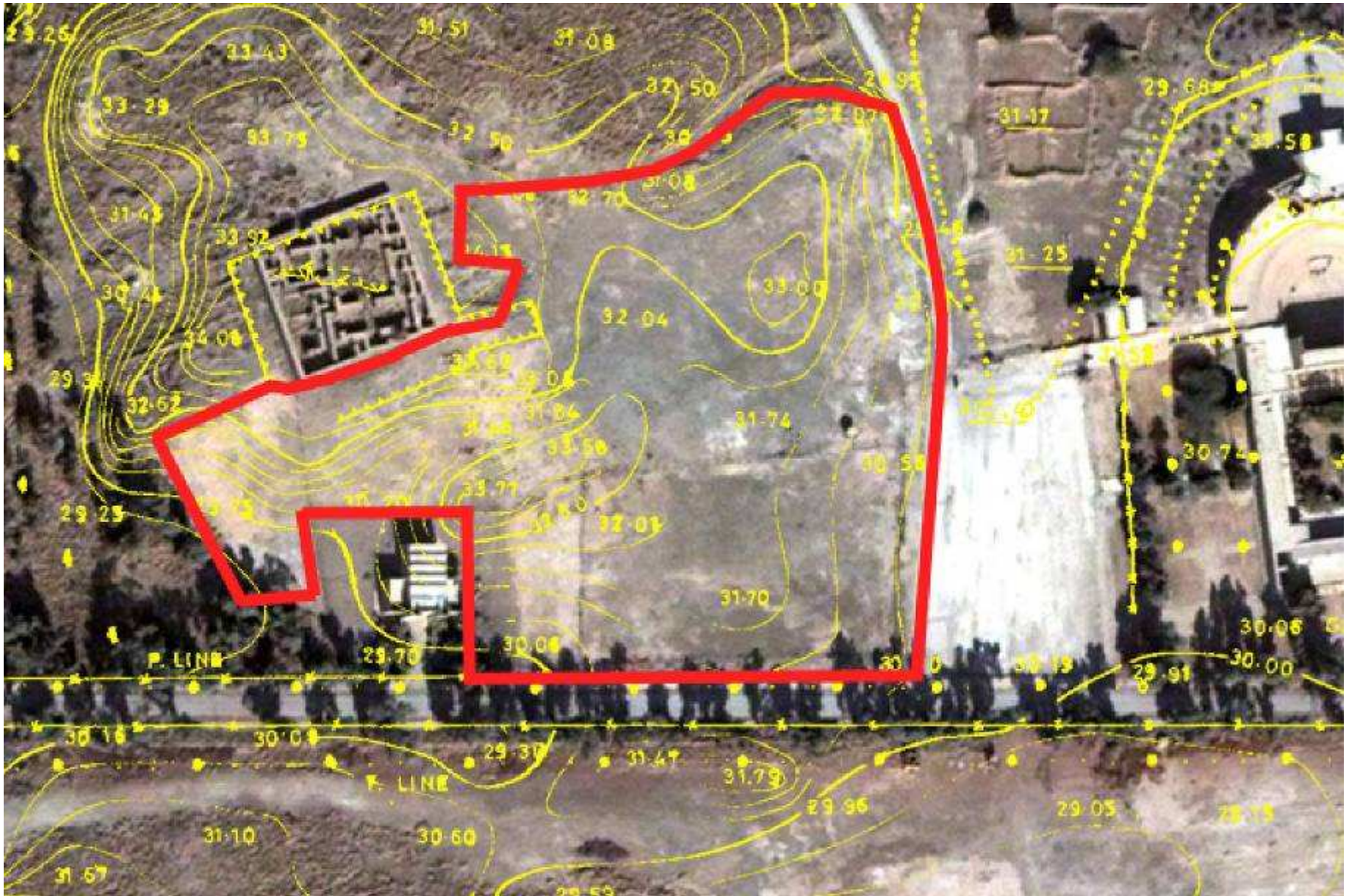
8 October 2004, Russell composite. The bulldozed swath immediately adjacent to the SW corner of the Babylonian House has been extended slightly further to the north.





26 November 2005, Russell composite. View of the area after abandonment of Camp Babylon.

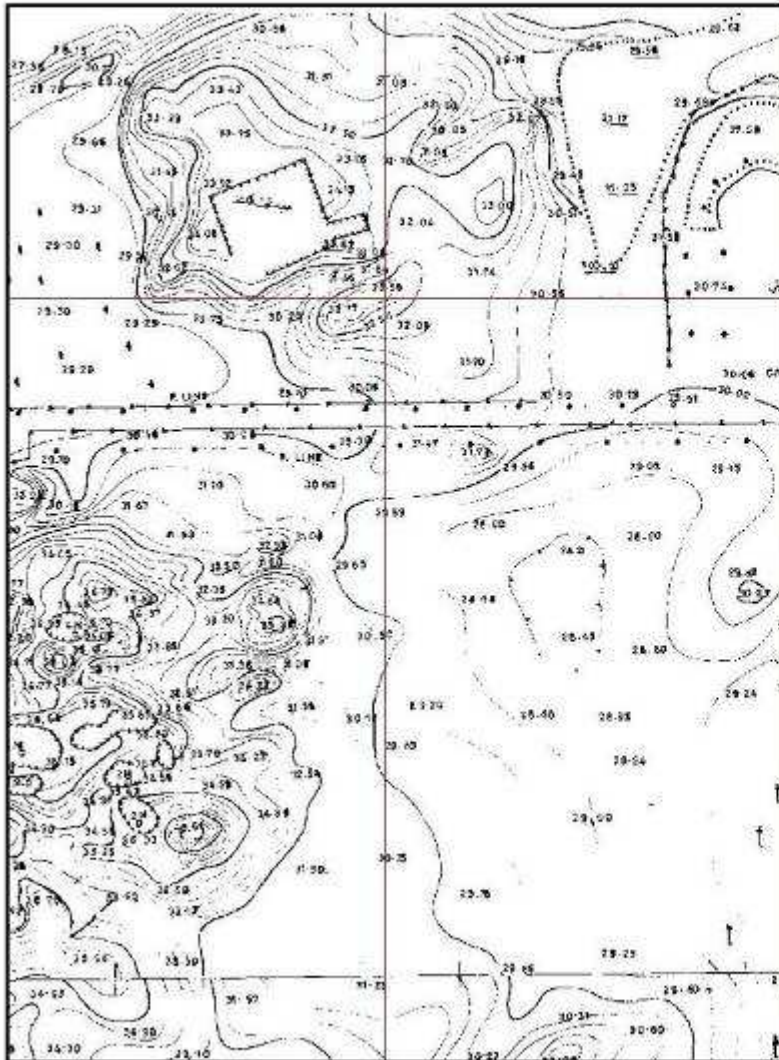




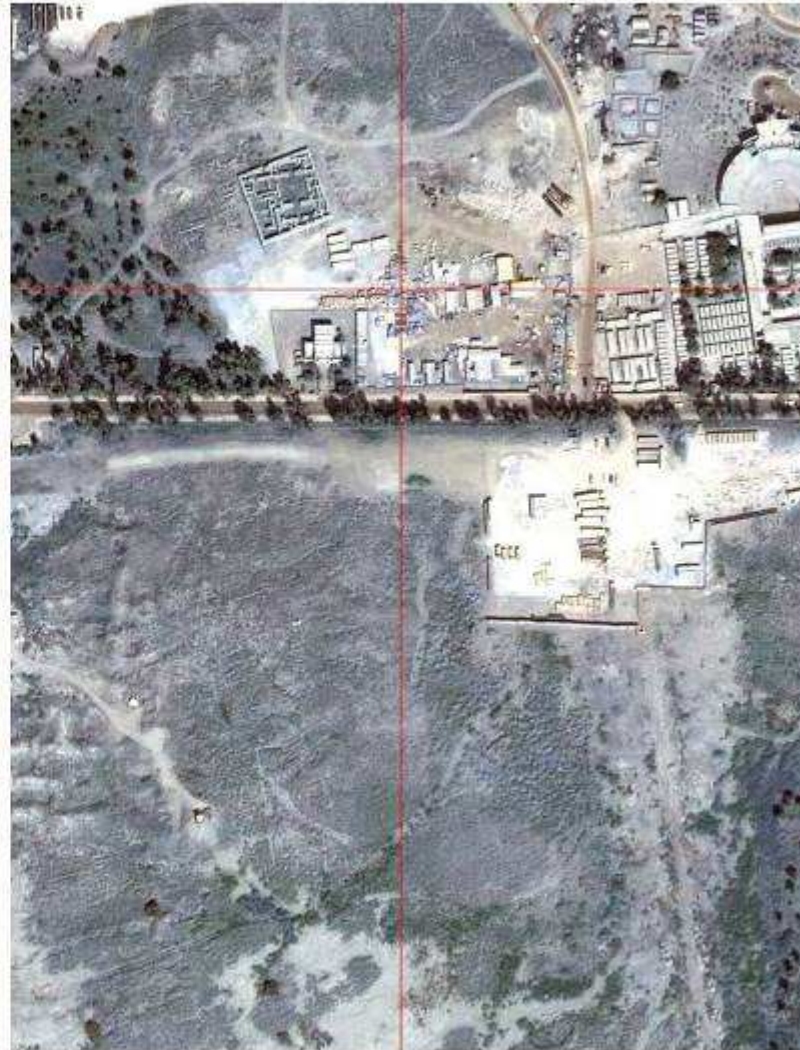
26 November 2005 with Iraqi contour map overlay, Russell composite. This image highlights the loss of archaeological topography by the creation of this huge lot (border in red).



## Contour Map



8 October 2004



**Stone report:** This is one of the areas where we see considerable damage to an archaeologically sensitive zone. The entire area is mounded, as seen both in the contour map (Fig. 15) ...



## Koldewey Map



## 8 October 2004



**Stone report:** ...and in Koldewey's map (Fig. 16).



**1 April 2003**



**31 August 2003**



**Stone report:** Apart from the reconstruction of the excavated Babylonian house, and the Hammurabi Museum, this area was undeveloped prior to the war (Fig. 17). The development of this area began slowly, with disturbance only in the southeastern corner in August 2003 (Fig. 17), ...



**1 April 2003**



**4 June 2004**



**Stone report:** ...but by July 2004 and continuing until our latest image from October 2004, development of this area continued apace (Figs 15, 16, 18). The photographs included in the Polish report make it clear that this area had been bulldozed flat. [image: Stone report fig. 18]



**Extension of lot westward to Hammurabi Museum and to the north**

**McDonald report:** Gravel has been added to an area west of the tarmacked car park that is immediately west of the Greek amphitheatre. Presumably this area was prepped also. A couple of fuel tankers are parked on this area close to the fence with the car park.

An extension of this graveled area was observed in progress on 17th July up to the fence of the Hammurabi museum and was sufficiently alarming with bulldozing, steam rolling to compact the earth etc. that Dr Mariam and I intervened and asked the camp commandant (LTC Lebidine) to stop the work and not to use the area as a truck park as originally intended.

An area north of this was starting to be used to store containers from trucks and these have now been moved to the paved car park at the east entrance to the site.





31 August 2003: the gravelled lot immediately west of the paved lot is visible as a dark surface covered with trucks. The light brown space between that lot and the east fence of the Hammurabi Museum is the extension that was stopped By Dr. Miriam and McDonald in July 2003. The area north of the lot is also empty of containers, as McDonald reported. (Russell composite)





These reprieves were only temporary, as by 4 June 2004 the entire area had been flattened, the east fence by the Hammurabi Museum had been removed, and the entire area was being utilized for parking and storage (Russell composite)





Eastern fence of Hammurabi Museum (formerly at upper left) removed to provide parking space, Polish photo 135 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Extension to west of Hammurabi Museum**

**Russell comment:** The 4 June 2004 image (above) shows this work in progress. The 3 piles of fill dirt and 2 generators next to the southwest corner of the Babylonian house can be seen in photos taken on the site at the time.

Curtis report	Polish report
To the south-west of the Babylonian House, an area about 80m x 60m has been levelled and covered with gravel (see <i>Polish Report</i> , fig. on p.38).	On the area just to the southwest of the Babylonian House there is a square of sand and gravel (marked on the picture at the beginning of this document as letter “A”).



Piles of fill dirt by SW corner of Babylonian House, June 2004, Bahrani photo 2127 (photo © Zainab Bahrani)





November 2004, with fill dirt spread at SW corner of Babylonian House, Polish photo 79 (photo © Ministry of Culture and National Heritage, Republic of Poland)





June 2004, tire ruts in construction area southwest of Babylonian House, Bahrani 2137 (photo © Zainab Bahrani)



**Russell comment:** These photos also show the construction of a wooden platform on this area, perhaps intended as the floor of a building. This work was apparently never completed.



May 2003, flattened area with beginning of wooden platform, Russell photo 123\_2333 (photo © John Russell)





June 2004, wooden platform under construction, Bahrani 2141 (photo © Zainab Bahrani)

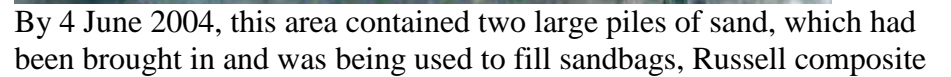
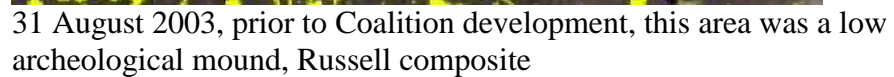


**Cut 14 at east edge of area**

<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>
f. Cutting works east of the Babylonian House: Cutting works occurred in an area of approximately 180 square meters to a depth of 1-2 meters. Fragments of pottery and baked bricks were clearly visible. An area very near the point of the excavations undertaken by the Babel City Restoration Project in 1999 was leveled in preparation for putting it to use. However, the work was stopped upon our request, because this section of the city may represent the continuation of the buildings uncovered in the area of the nearby excavations, where different artifacts and pottery fragments were discovered spread over the surface of this area. In addition, cutting activities occurred in this area, which is 13 x 14 meters and has a depth of 1-2 meters, exposing fragments of pottery and bricks	14. Fourteenth cut: This cut is located east of the Babylonian House and west of the Babylonian Theater. The cutting works resulted in the removal of an area measuring 12 x 13 m with a height of 1-2 m. Fragments of pottery and baked bricks are evident.

**Russell comment:** Serious damage was done in this area very late in the Coalition occupation, with an archaeological deposit being mined for fill long after orders had been issued to bring in fill sand from outside the site. Presumably the proximity of this area to KBR's bulldozers proved too tempting to resist.

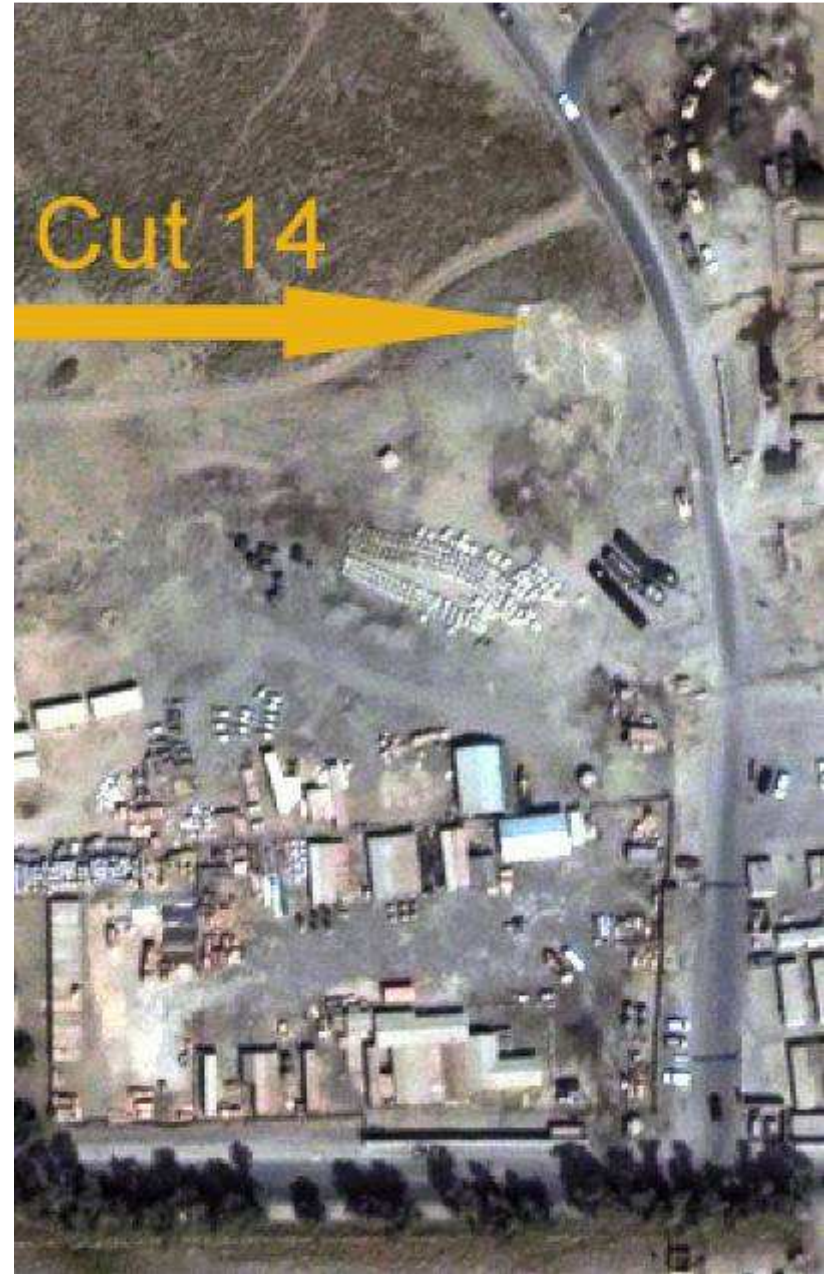








By 25 August 2004, the piles of sand and the sandbags were gone, Russell composite



By 8 October 2004, the archaeological mound was being bulldozed to fill sandbags, resulting in Cut 14, Russell composite





View from north showing sand piles and sandbags, June 2004, Russell photo 124\_2457 (photo © John Russell)





View from south showing sand piles and sandbags, June 2004, Russell photo 124\_2436 (photo © John Russell)





Sandbags, May 2004, Russell photo 123\_2342 (photo © John Russell)





Sandbags, May 2004, Russell photo 123\_2343 (photo © John Russell)





KBR bulldozers, May 2004, Russell photo 123\_2344 (photo © John Russell)





Cut 14, November 2004, Polish photo 134 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Cut 14, Curtis photo 7568 (photo © John Curtis)



**Iraqi final report:** The cut also extends to a wall built of baked bricks that is very clear on the surface (Photo 52). To shed light on the damage, a grid was created on a 5 x 5 m square in the same cut (see photo 53). After the grid was created on the square, we cleaned it and determined that the wall was near the surface, at a depth of no more than 10 cm, hence the extent of the damage caused. This wall is part of a structural unit built with baked bricks, with a wall thickness of 40-60 cm. Part of the wall is eroded (see Sketch 3 and Photo 54).

During the cleaning, we found some shattered pottery dating back to the Parthian period. We also found a tomb built with fragments of baked brick and unbaked bricks with a length of 2 m and a width of 70 cm, coated on the inside with plaster with a thickness of 2 cm. This tomb goes back to a more recent time than the wall, as some of the wall was removed to build the tomb. The southern part of the tomb was completely destroyed, perhaps because of the cut (see Photo 55). In the southwest corner of the square (A5), we found a large jar. Its upper part is totally missing due to the cut made by the MF in the area as mentioned above. The dirt was very hard due to compaction by the heavy machinery that made the cut. The dirt removed from this cut was transported to another location.





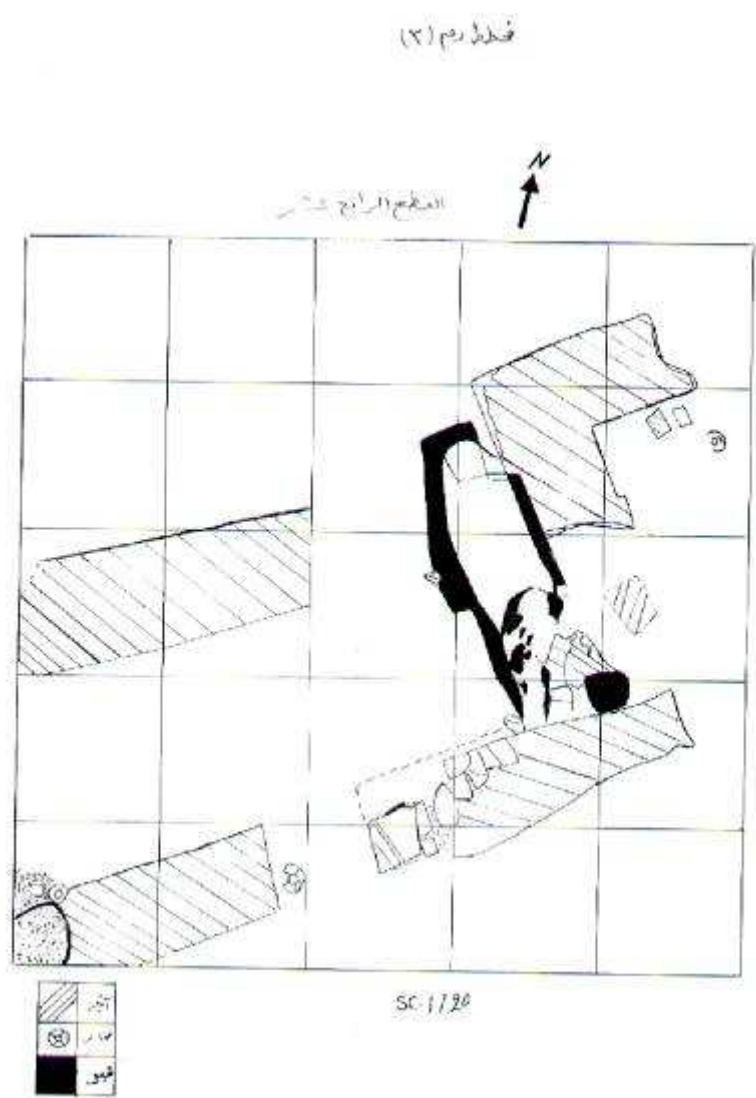
Iraqi final report fig. 52





Iraqi final report fig. 53





Iraqi final report, **Sketch No. 3 - Fourteenth Cut**  
[Legend at bottom of sketch:]  
Baked brick  
Pottery  
Tar





Iraqi final report fig. 54





Iraqi final report fig. 55



**Parking lot south of the Ninmah Temple**

<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Polish report</b>
f. The area between the Ninmah Temple and the [A: former project office] [B: study's headquarters] was covered with sand and used for housing sites and a vehicle parking lot. There are also sand bags and barbed wire. The area occupied is estimated at 3300 sq meters.	<b>The Area South of the Temple of Nanmakh</b>  This area (3300 sq m) is between the Temple of Nanmakh to the north and the Studies Headquarters to the south. It was covered with sand and used as a residential location and vehicle parking lot. Barbed wire surrounds it (Photo 61).	There is an open area West of the road that runs from the main road to the landing zone, and East of the wire fence and walls marking the Eastern border of the Museum. This open area is used as a parking lot and place for living containers. Gravel is on the open area.

**Comment:** This was already an open area before the arrival of Coalition forces. It is difficult to ascertain from the satellite images how much gravel was added to the surface by the Coalition. Visually, the appearance of the southeastern quarter of this lot appears lighter after its occupation by the Coalition, and it may be that gravel was added only in this area, as seen below in fig. 61 of the Iraqi Final Report.





Before Coalition, 5 July 2002, Russell composite

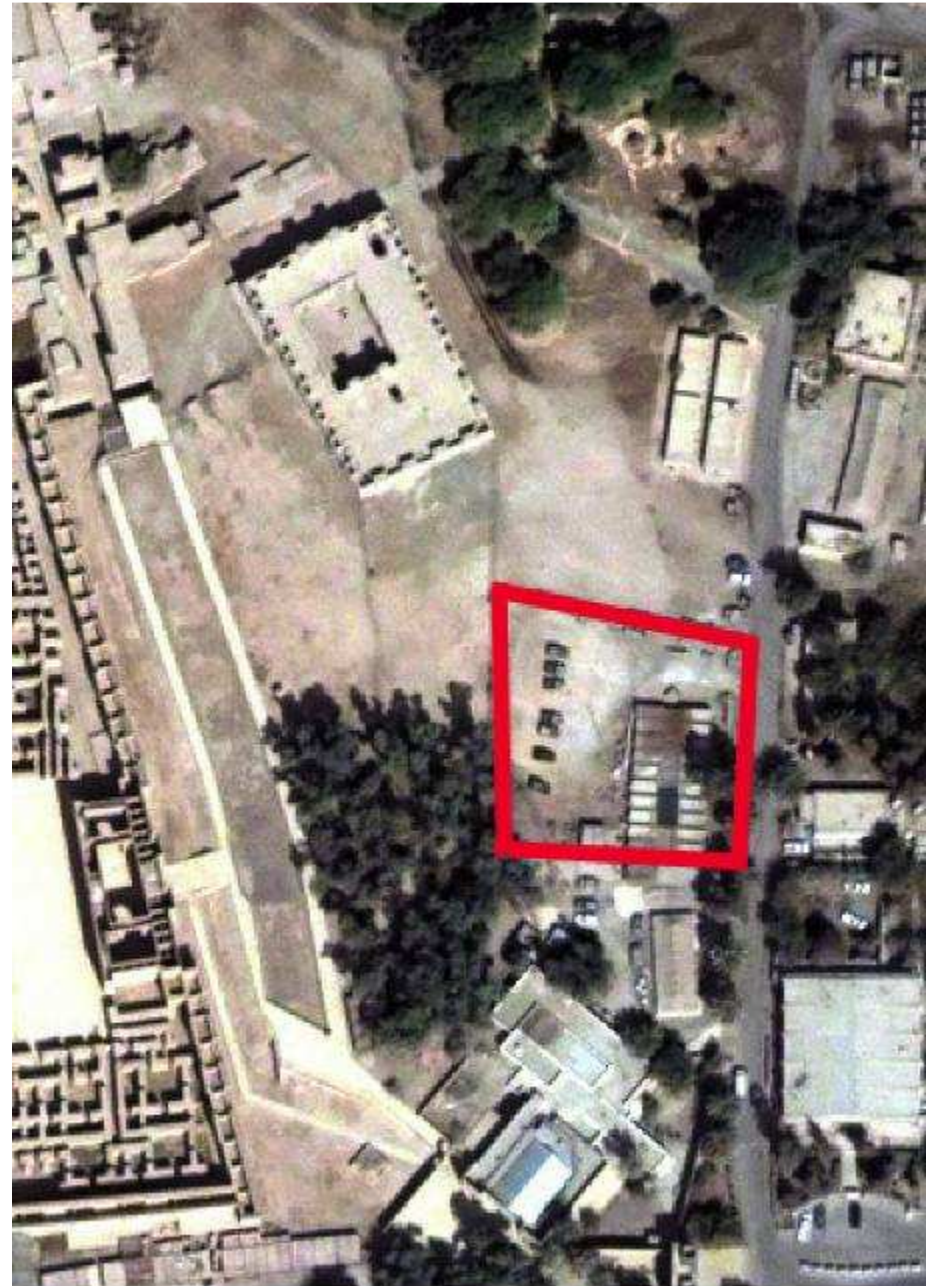


Coalition first phase, 31 August 2003, Russell composite





Coalition final phase, 8 October 2004, Russell composite



Gravelled area, Coalition final phase, 8 October 2004, Russell composite





Parking lot, view from the south, Iraqi final report fig. 61





Polish photo 37 (photo © Ministry of Culture and National Heritage, Republic of Poland)



### **Development of the area around Landing Zone #1**

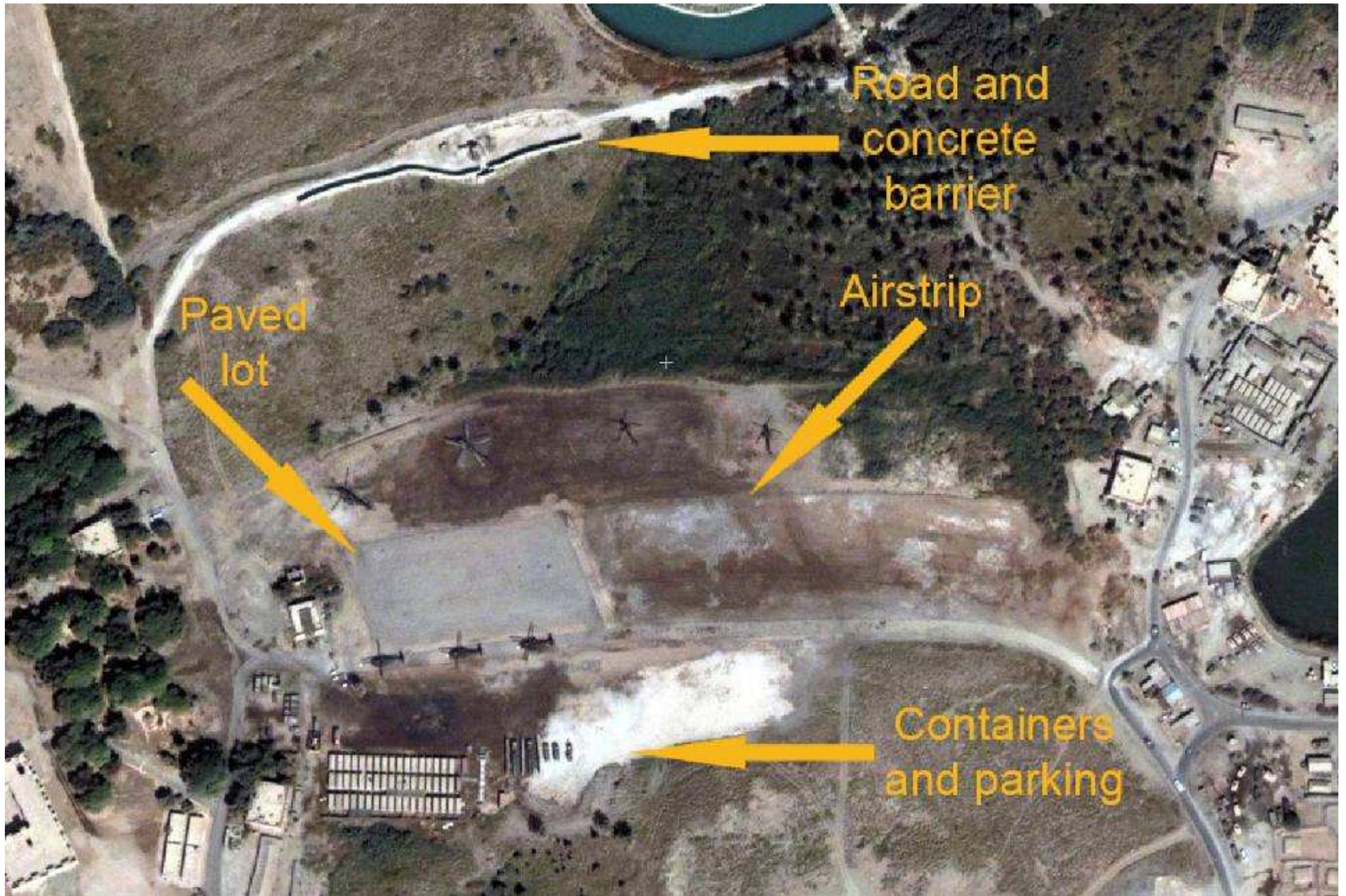
The Koldewey map of 1912 and the Iraqi map of 1980 both show the area of the landing zone to be relatively flat, so that the construction of the airstrip and parking lot probably involved spreading gravel and oil but not substantial bulldozing of the topography.

Contrary to what is usually supposed, the satellite images show that the large airstrip to the north of the road and the parking area to the south of the road were both constructed prior to the founding of Camp Babylon. One wonders why such a large airstrip was being constructed at Babylon prior to the 2003 war.

Piles of gravel for the project are visible in the image of 5 July 2002, and this gravel had been spread and apparently oiled by 1 April 2003. This work was apparently still underway when Coalition forces occupied the area, as the eastern corner of the airstrip was still unfinished and an irregular bulldozer cut is visible in this area.

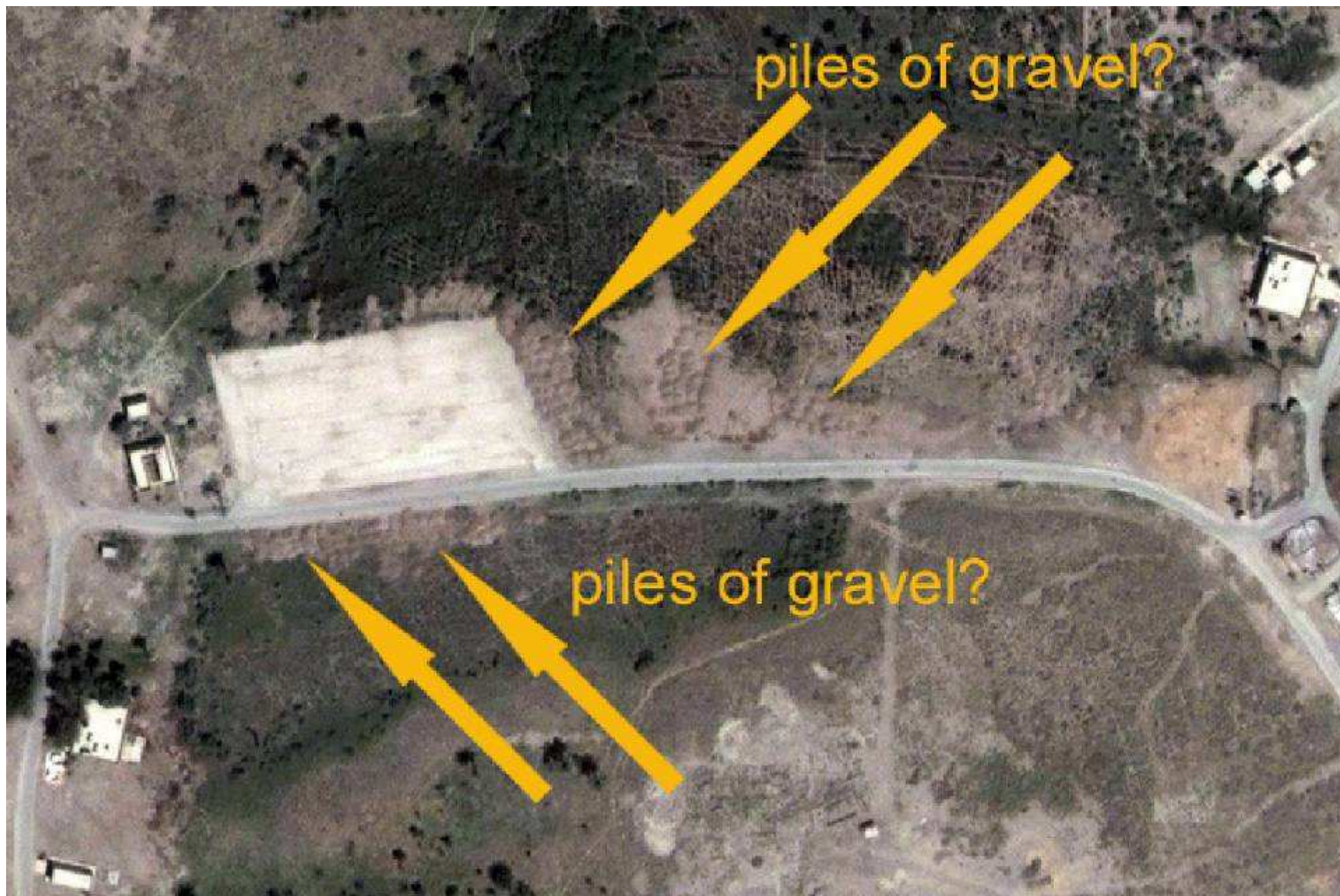
The Coalition had squared off this corner by 31 August 2003. The areas to north and south were both expanded somewhat over the next year, reaching their maximum extent by 25 August 2004.





Reference image with features labeled, 8 October 2004, Russell composite





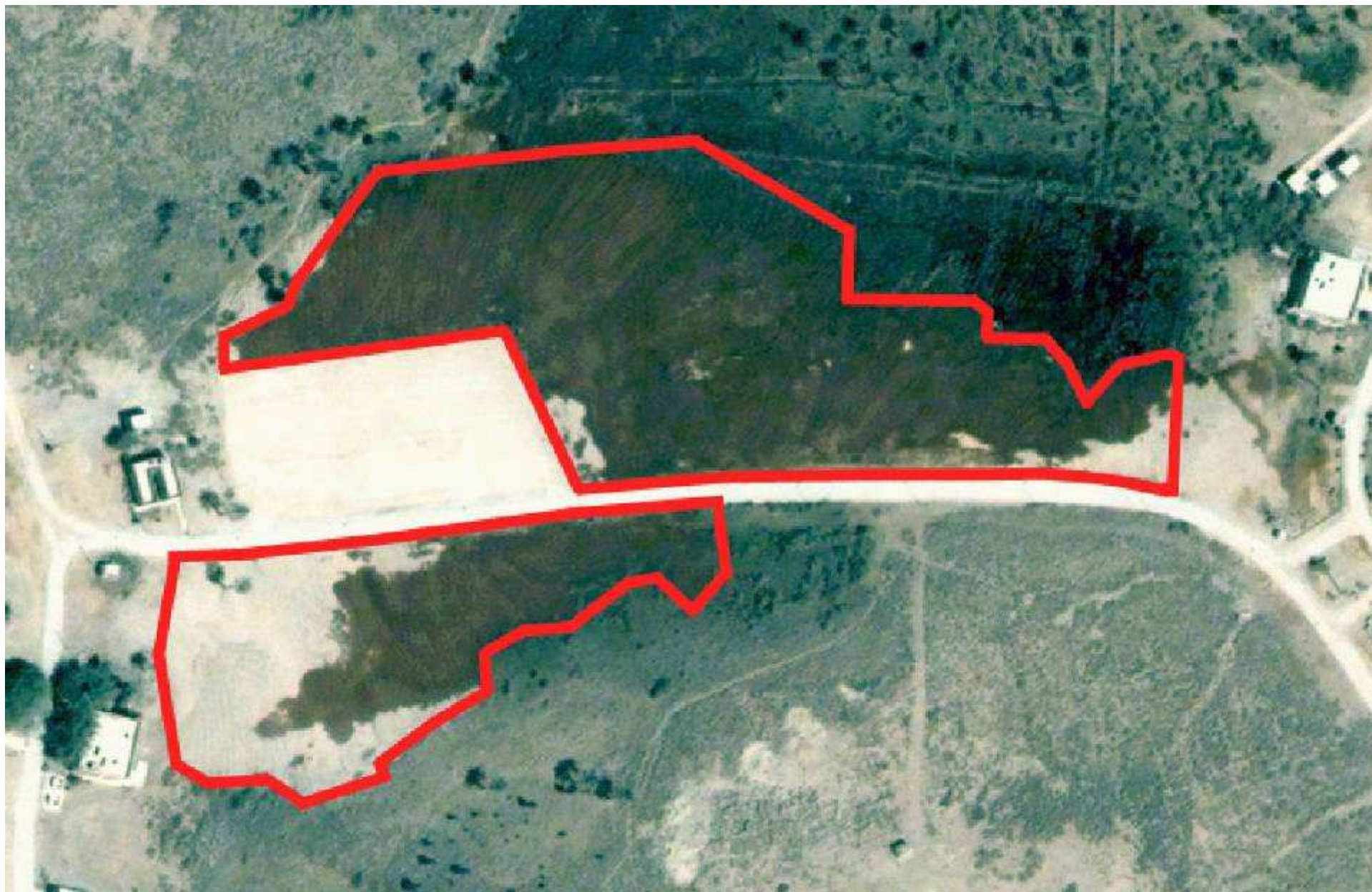
View prior to construction of Landing Zone, 5 July 2002, Russell composite





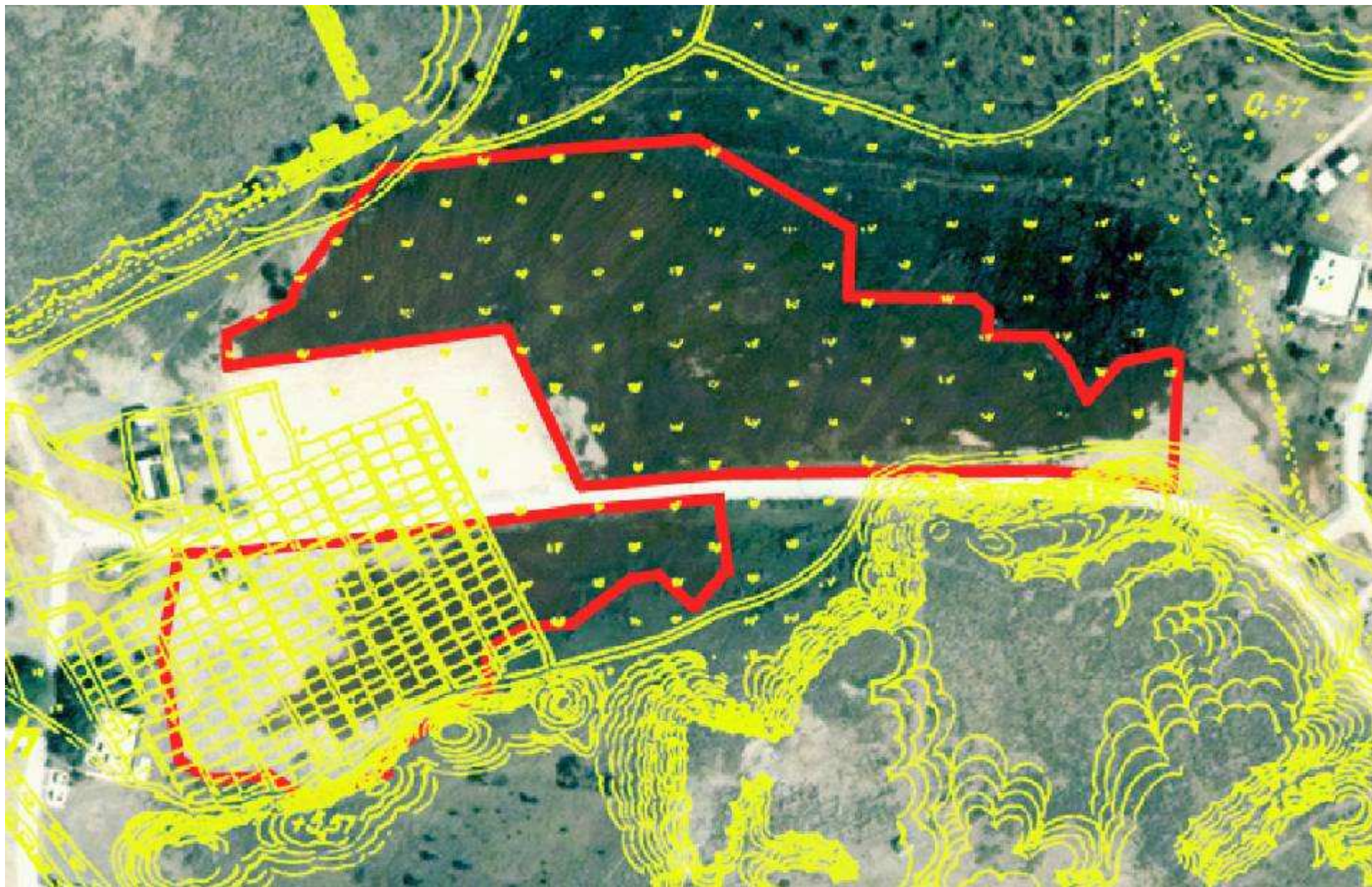
After construction of Landing Zone, prior to founding of Camp Babylon. Surface north and south of road has been bulldozed, graveled and oiled, 1 April 2003, Russell composite





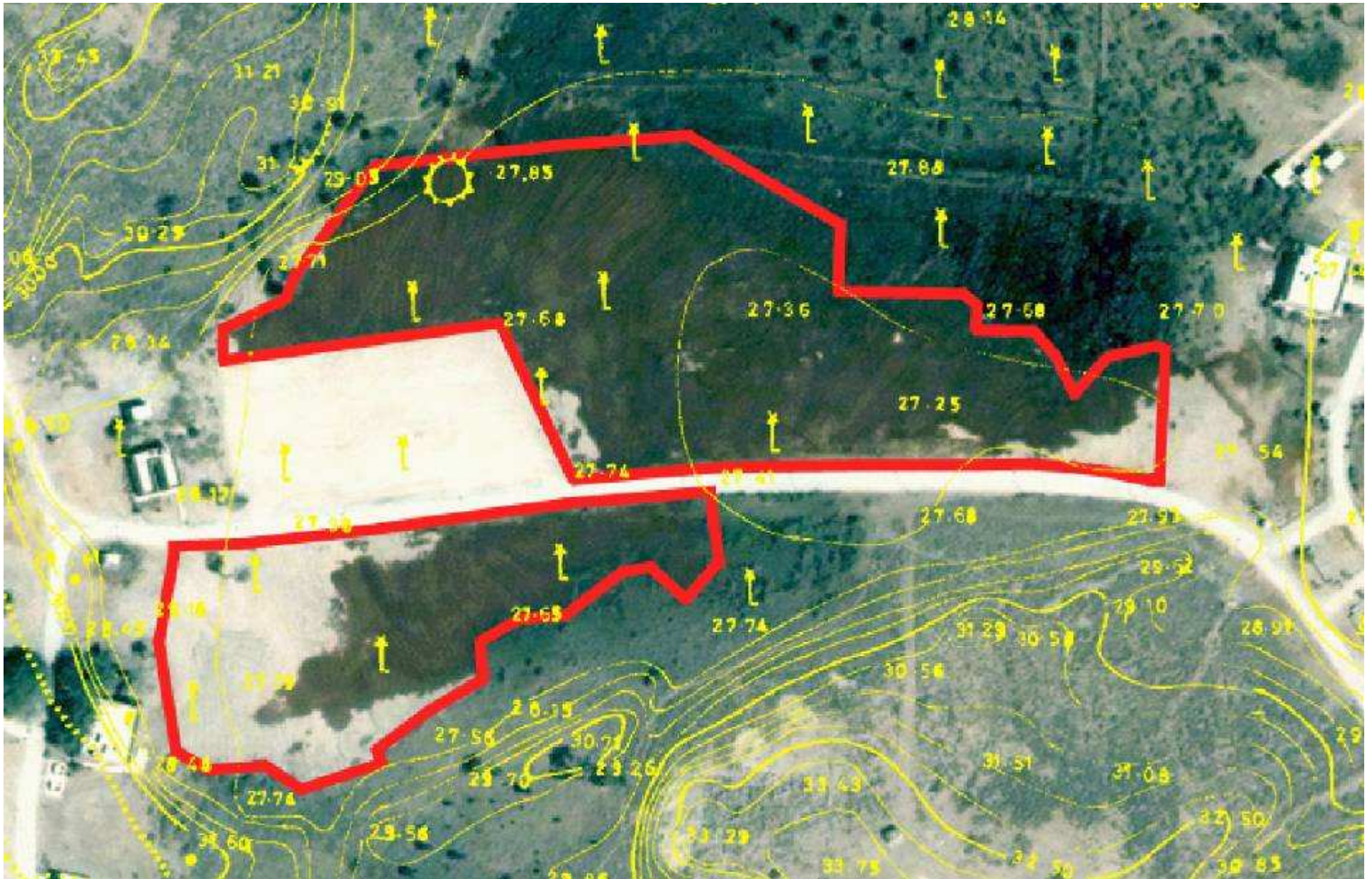
Same as above, with Landing Zone outlined in red, 1 April 2003, Russell composite





Koldewey 1912 map showing the topography of the landing zone area as flat, Russell composite





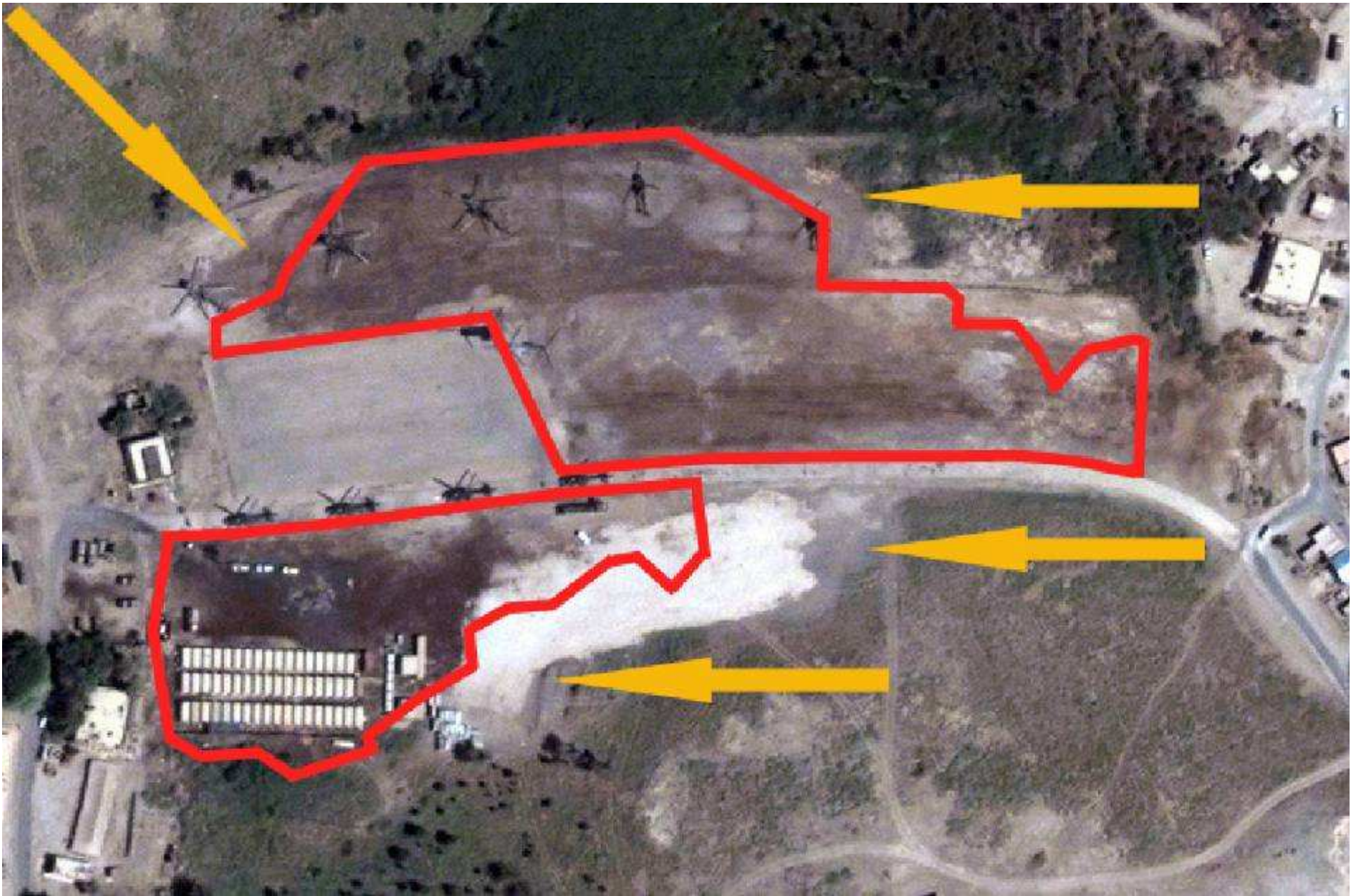
Iraqi 1980 map showing that the area of the landing zone is relatively flat, Russell composite





Camp Babylon, airstrip squared off at east end, but otherwise same area as prior to 2003 war, 31 August 2003, Russell composite.





Camp Babylon, maximum extent of bulldozed areas to north and south of road, 25 August 2004, Russell composite





Camp Babylon, earth berm built to block road to landing zone, 4 June 2004, Russell composite

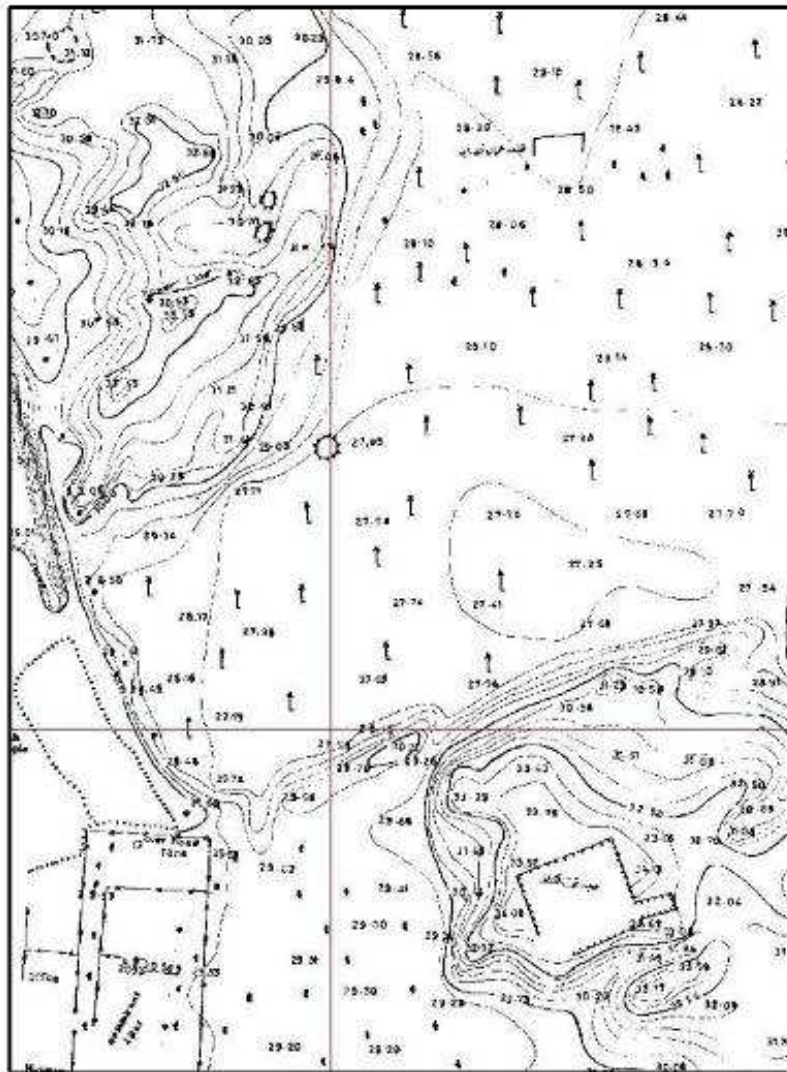




Camp Babylon, extent of bulldozed areas after abandonment of camp, 26 November 2005, Russell composite



## Contour Map



## 31 August 2003



**Stone report:** This area is largely located to the north of the wall of the inner city—now identifiable as a series of mounds following the line of the ancient fortifications (Fig. 19).



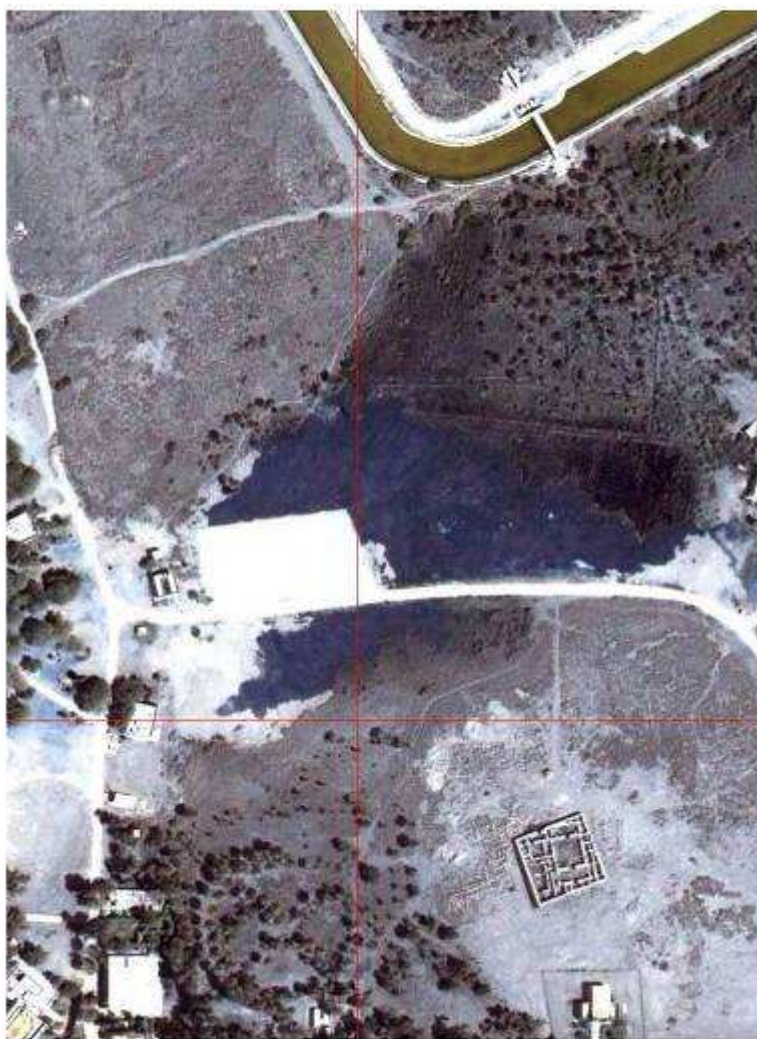
**1 April 2003****31 August 2003**

**Stone report:** It seems to be a flat, unexcavated area, and had already been prepared, presumably as a helicopter pad, before the war (Fig. 20). To the south of the helicopter pad is an area of containers. The latter was already in use in August 2003. At that time, though, only the areas cleared before the war were being used.



**1 April 2003**

**8 October 2004**



**Stone report:** By June 2004 this area had been expanded to the south, and the resulting spoil heaps are visible, though they are clearest in the October 2004 image (Fig. 21).



## Airstrip

**Russell comment:** Already by July 2003 in McDonald's report there is confusion about when this airstrip was created. It is also interesting that the airstrip is attributed to the Coalition in the first Iraqi report but is omitted entirely from the Iraqi final report, except for a mention of a cut at the northern part of the airfield.

McDonald report	Iraqi preliminary report	Iraqi final report	Curtis report	Polish report
<p>It is in these areas that some of the most extensive surface bulldozing took place. The northern landing zone or LZ is NW of the amphitheatre, east of the processional way and west of one of the lakes.</p> <p>One part of this LZ is an already tarmacked area, this was then extended by bulldozing areas of the mounds flat and compacting them etc.</p> <p>One of these areas was described as clumpy or lumpy. I do not know if these were the remains of excavated mud brick walls that were eroding or the irregular surface of unexcavated mounds, either way the surface was bulldozed flat. It seems likely that this will have damaged archaeological deposits as they are generally close to the surface in this part of the site.</p>	<p>The multinational forces used the area north of the Babylonian House for landing aircraft. The old vehicle parking lot was expanded <u>[A: eastward 7000 sq m and northward 7500 sq m.]</u> 30,000 meters, excluding the parking lot. It was leveled, compacted by rollers, and covered with gravel. In addition, some sections contain fragments of ancient baked bricks that were perhaps brought from areas inside Babel to cover these expansions. This area is an extension of the inner wall to the north, where an important gate to the city is located, and to the south, from the asphalt paved road to the archeological hills north of Babylonian House.</p> <p>During the expansion of this area, parts of the hills consisting of the northern part of the airport were cut to varying degrees with a length of 150 meters. The last [first?] cut has an area of 8 x 7 x 6 meters, the second cut has an area of 30 x 19 x 7 meters, and the third cut has an area of 23 x 24 x 5 meters. The fourth cut has an area of 12 x 16 x 5 meters.</p>	<p>Thirteenth cut: This cut is located in the northern part of the airfield. It has a length of 180 m (Photo 51).</p>	<p>This area between the Processional Street and the lake and close to the Ninmah temple was formerly an asphalted area c.50m x 100m that was used as a car park. It has now been greatly enlarged by an extension of c.50m x 200m to the east to make a landing zone for helicopters. The new area has been flattened, covered with compacted gravel and then treated with a petroleum product to prevent dust.</p>	<p>On this area is located an asphalt road and large (about 50 x 100 meters) area overlaid with asphalt. The Northern terrain adjacent to this asphalted area about 50 meters to the North and about 200 m to the East is covered with gravel.</p>





Landing zone viewed from the east, Polish photo 69, detail (photo © Ministry of Culture and National Heritage, Republic of Poland)





Landing zone, west part, Polish photo 63 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Landing zone, east part, Polish photo 64 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Landing zone looking to east, Curtis photo 7548 (photo © John Curtis)





Surface of landing zone, Curtis photo 7707 (photo © John Curtis)





Cut 13 at the NW edge of the airfield, Iraqi final report fig. 51





Berm that blocks the road to the landing zone (lower center), Russell photo 124\_2457 (photo © John Russell)



**Containers and parking area to south of airstrip**

<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Curtis report</b>	<b>Polish report</b>
It [A: includes 7500 sq m <u>that</u> ] was covered with coarse gravel and used as housing areas.	<p>12. Twelfth cut: It is located north of the Babylonian house and has a length of 150 m. Parts of tells were removed (Photo 50).</p> <p>South of the asphalt-paved street, and north of the Babylonian House, several tells were cut, and the area was leveled, covered with coarse gravel, and used as a residential area (Photo 58).</p>	On the other side of the road bordering the landing field on the south side, a large area (c.60m x 100m) has been flattened and covered with gravel to create a parking lot.	The area South of the asphalt road (60 x 100 meters) is used for living containers and airfield support vehicles. The south-eastern border of this zone is a triangular area about 80 meters on each side covered by gravel. Some contamination is present over the entire area except the south-eastern triangular area.





View of parking area south of the airstrip, June 2004, Russell photo 124\_2442 (photo © John Russell)





View of parking area south of the airstrip, June 2004, Russell photo 124\_2443 (photo © John Russell)





Cut 12, in parking area south of the airstrip, Iraqi final report fig. 50





View of parking area south of the airstrip, Iraqi final report fig. 58





“Surface of the Landing Zone (with contamination),” Polish report, p. 29 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Dirt road and concrete barrier to north of airstrip**

**Russell comment:** New roads were constructed to the east and north of the landing zone area between 1 April and 31 August 2003. The north road runs across an archaeological mound. A concrete barrier had been installed along part of this road by 4 June 2004 (contrary to Stone), but the barrier is difficult to see in the image because the sun is directly overhead.

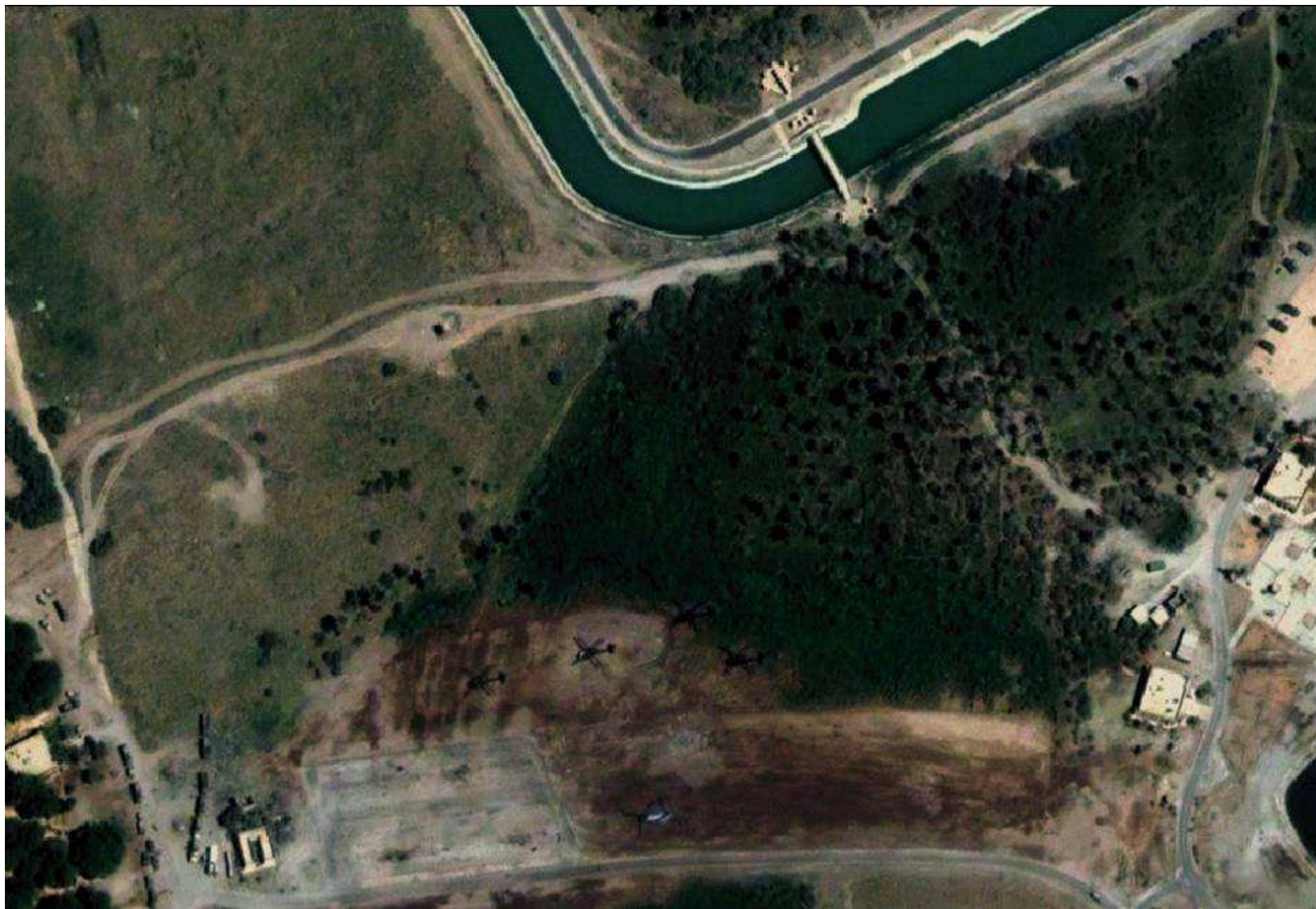
Iraqi preliminary report	Iraqi final report	Curtis report	Polish report
<p>e. The area north of the airport: A road with a length of 100 meters and a width of 8-10 meters was built leading westward from the observation tower north of the airport to a hill located in this area. The roadway was leveled, covered with gravel, and surrounded by 100 concrete blocks. The area covered totals 1300 meters. Another road with a length of about 300 meters was built east of the tower, leading toward the lake. The area surrounding the tower totals 400 meters.</p>	<p>A road with a length of 130 m and a width of 8-10 m was built to the observation tower north of the airfield. The tower was built on a tell in this area. The road was leveled, covered with gravel, and surrounded by concrete blocks. The area covered totals 1300 sq m (Photo 62). In addition, another road with a length of about 300 m and a width of 8-10 m was built east of the tower. It leads to another tower near the lake, north of the theater. The [encroached] area surrounding the tower is 400 [sq] m.</p>	<p>About 100m to the north of the landing field is an east-west dirt track now densely covered with small stones. There are also many large stones at the sides of the road. There are deep ruts in the area from the wheels of heavy vehicles. On the south side of this road there were formerly about 100 tall concrete blocks, to protect the helipad from gunfire (see <i>Polish Report</i>, fig. on p.42). The last of these blocks was removed on 11<sup>th</sup> December 2004.</p>	<p>About 100 meters North of the landing zone there is a road covered with gravel. There are about 100 concrete barriers along the South side of the road near the tower.</p>





Landing zone area prior to construction of new roads, 1 April 2003, Russell composite





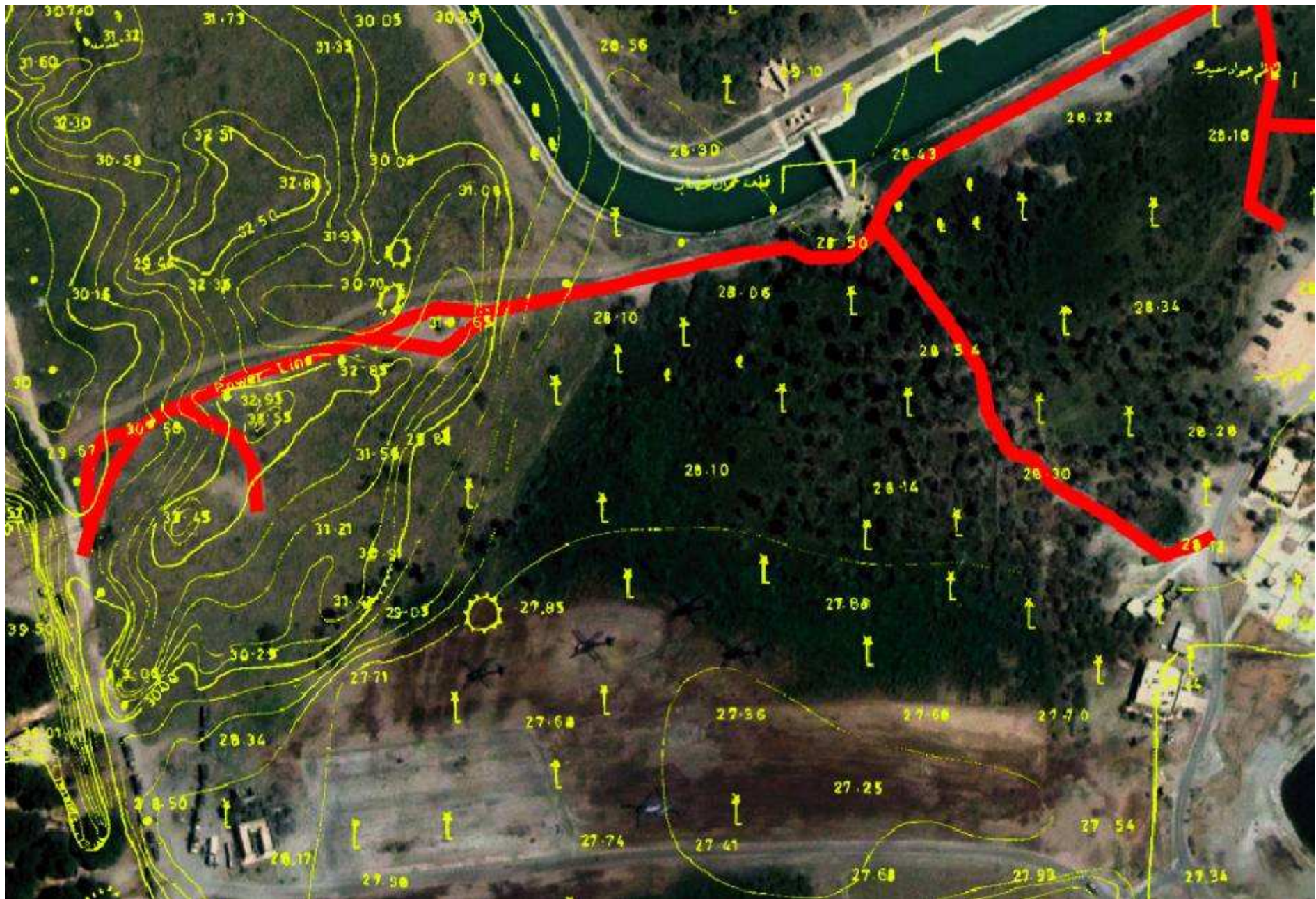
Landing zone area with new roads to east and north, 31 August 2003, Russell composite





Landing zone area with new roads to east and north, 31 August 2003, Russell composite





Landing zone with Iraqi 1980 map showing archaeological mound in location of north road, 31 August 2003, Russell composite





Earliest image with concrete barrier, though difficult to see because sun is directly overhead, 4 June 2004, Russell composite



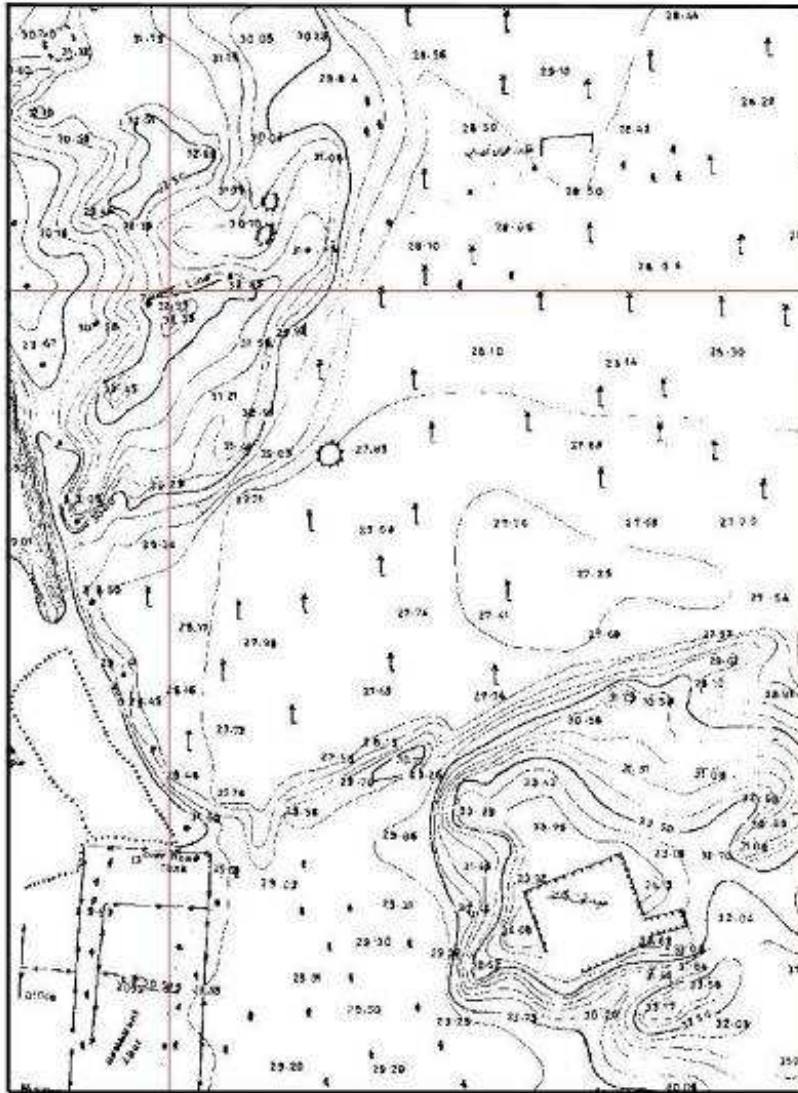


Clearer view of concrete barrier, 8 October 2004, Russell composite



**1 April 2003**

**8 October 2004**



**Stone report:** The barriers north of the helipad are built in an archaeological area. These were constructed between June and August 2004 (Fig 22).





Road, Iraqi final report fig. 62





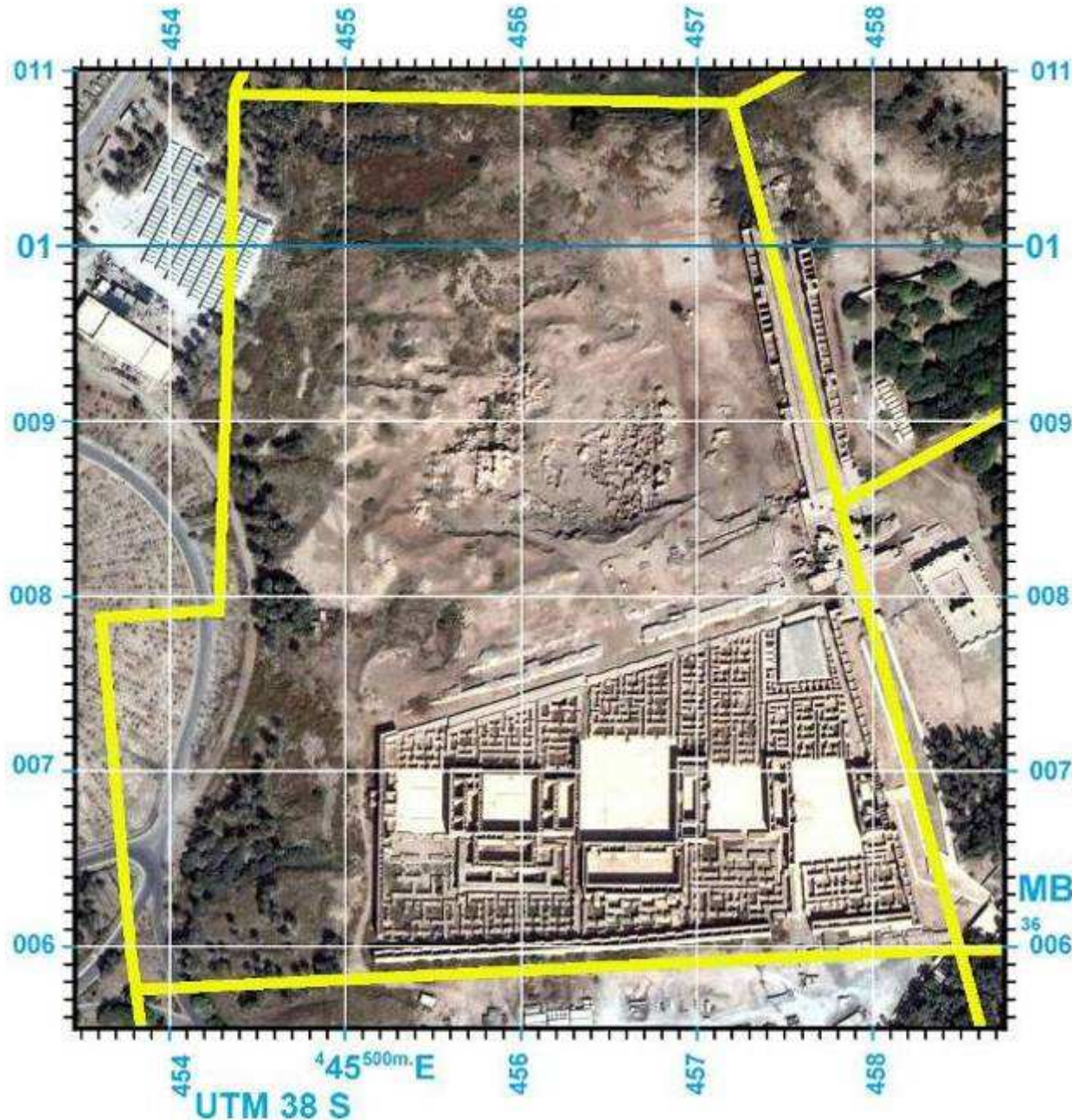
Concrete barriers north of the landing zone, June 2004, Bahrani 2156 (photo © Zainab Bahrani)





“Concrete barriers on the North of the landing zone.” Polish report, p. 30 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Appendix 6. Palace, damage during the period of Camp Babylon**

The Palace area comprises the Northern and Southern Palaces and the west bastion (now covered by Saddam's palace mound), all dating to the Neo-Babylonian period (612-539 BC). It corresponds to the western part of area II in the Polish report.



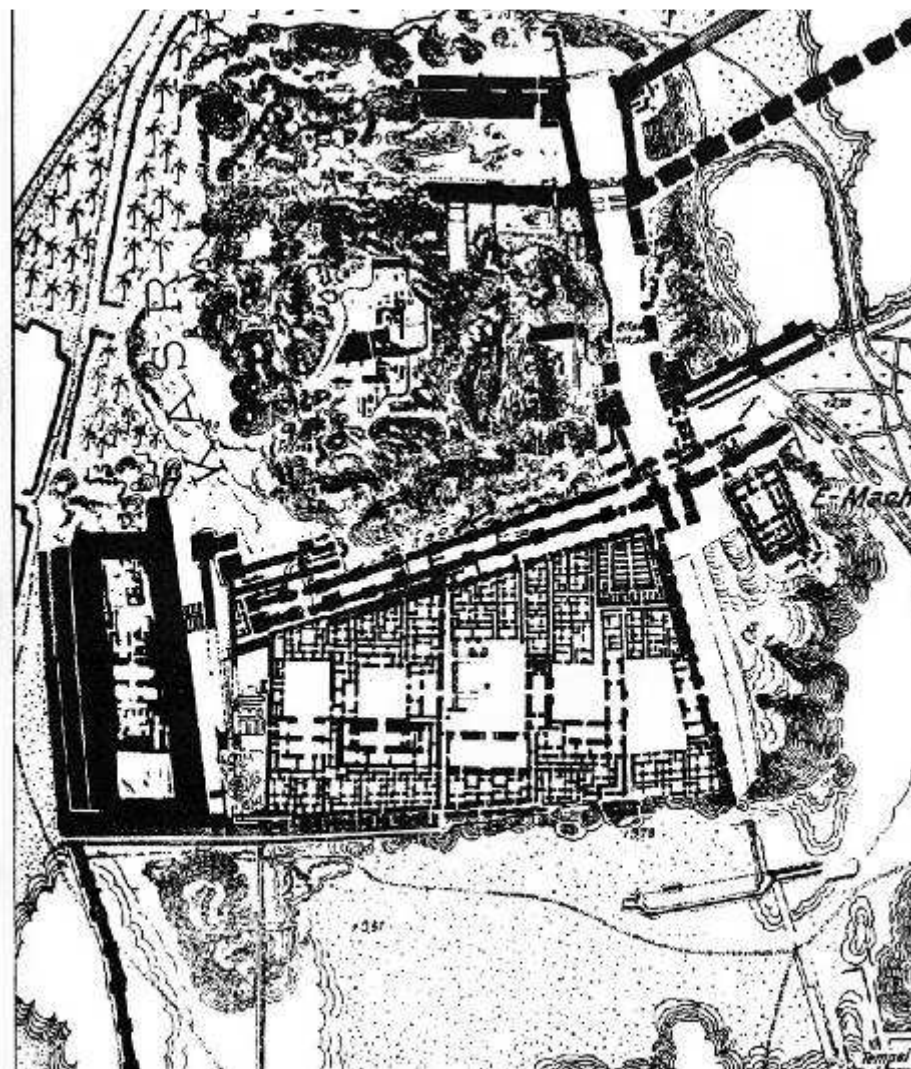


Palace area, 1 April 2003, Russell composite.



Palace area correlated with Polish area II, Russell composite.





Palace area correlated with archaeological features on 1913 Koldewey plan, Russell composite.



**Ishtar Gate**

Iraqi preliminary report	Iraqi final report	Curtis report
<p>The Ishtar Gate is one of the most prominent structures rising up in the city of Babel. Some of the encroachments cited in their prepared report, of which there are photographs, are old, dating to before the entry of the multinational forces. However, new encroachments are very apparent and were photographed upon our request. These encroachments affect nine of the animals that adorn the gate, depicting the legendary dragon that represents the symbol of the god Marduk, the main god of the city of Babel. Some of these encroachments happened very recently. Notice to that effect was sent in an official letter. The damage includes the cutting of small parts of the <i>mu-shakh-shu</i> [dragon] animal on the eastern and western sides.</p> <p>The other photographs in the report show old damage and the effects of natural factors—e.g., rain, ground water, and salt—which had a major effect, particularly on the lower portions of the gate. There is also a crack that starts above the western side of the gate and runs downward.</p>	<p>Gate of Ishtar: The gate of Ishtar is a prominent, towering archeological structure in the city, serving as its northern access. The damage to the gate includes cuts on nine of the bodies of the animals adorning the gate. These animals depict the legendary dragon-snake, the symbol of Marduk, the god of the city of Babylon (see Photos 73, 74, and 75).</p>	<p><u>Ishtar Gate</u></p> <p>The iron gates at either end of the sunken part were stolen in the looting after the war, but were recovered and have now been reinstated. However, parts have been broken off the gates and they can no longer render the area secure.</p> <p>Dr Maryam pointed to the following damage to the moulded brick reliefs:-</p> <ol style="list-style-type: none"> <li>1. There are bad cracks in tier 2 (see <i>Polish Report</i>, fig. on p. 90).</li> <li>2. Extensive damage to body of dragon (<i>mušhuššu</i>) in tier 19 (see <i>Polish Report</i>, fig. on p.103).</li> <li>3. Damage to hindquarters of dragon (<i>mušhuššu</i>) in tier 21 (see <i>Polish Report</i>, fig. on p. 104).</li> <li>4. Damage to central part of body of dragon (<i>mušhuššu</i>) in tier 22 (see <i>Polish Report</i>, fig. on p. 105).</li> <li>5. Damage to head and central part of body of dragon (<i>mušhuššu</i>) in tier 23 (see <i>Polish Report</i>, fig. on p. 106).</li> <li>6. Damage to central part of body of dragon (<i>mušhuššu</i>) in tier 24 (see <i>Polish Report</i>, fig. on p. 106).</li> <li>7. Damage to front middle part of body of dragon (<i>mušhuššu</i>) in tier 27 (see <i>Polish Report</i>, fig. on p. 110).</li> <li>8. Damage to lower part of body of dragon (<i>mušhuššu</i>) in tier 29 (see <i>Polish Report</i>, fig. on p. 113).</li> <li>9. Damage to upper middle part of body of dragon (<i>mušhuššu</i>) in tier 30 (see <i>Polish Report</i>, fig. on p. 113).</li> <li>10. Damage to neck and upper front part of body of dragon (<i>mušhuššu</i>) in tier 31 (see <i>Polish Report</i>, fig. on p. 114).</li> </ol> <p><i>Note:</i> The worst damage is to the <i>mušhuššu</i> in tier 19 (no.2). This was already noted and photographed by the British Museum team in June, 2003. At that time, no damage was noted to the other <i>mušhuššu</i> figures. It has been suggested that most of the damage to the other <i>mušhuššu</i> figures was caused at the same time by a person or persons trying to remove a decorated brick.</p>

**Comment:** The condition of the Ishtar Gate is exhaustively documented in the Polish report, section 9.





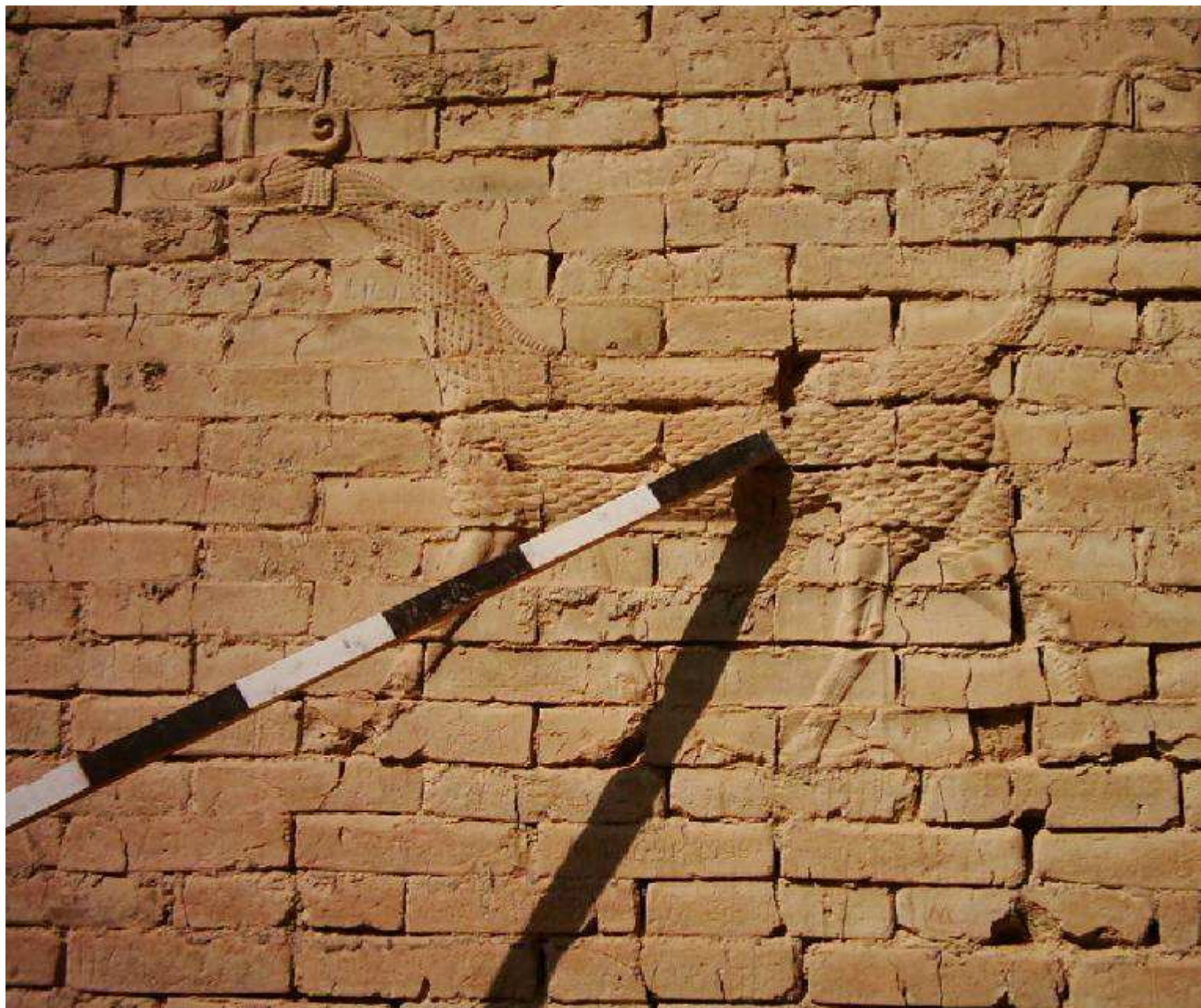
Iraqi final report fig. 73





Iraqi final report fig. 74





Iraqi final report fig.75





Curtis photo 7647 (photo © John Curtis)





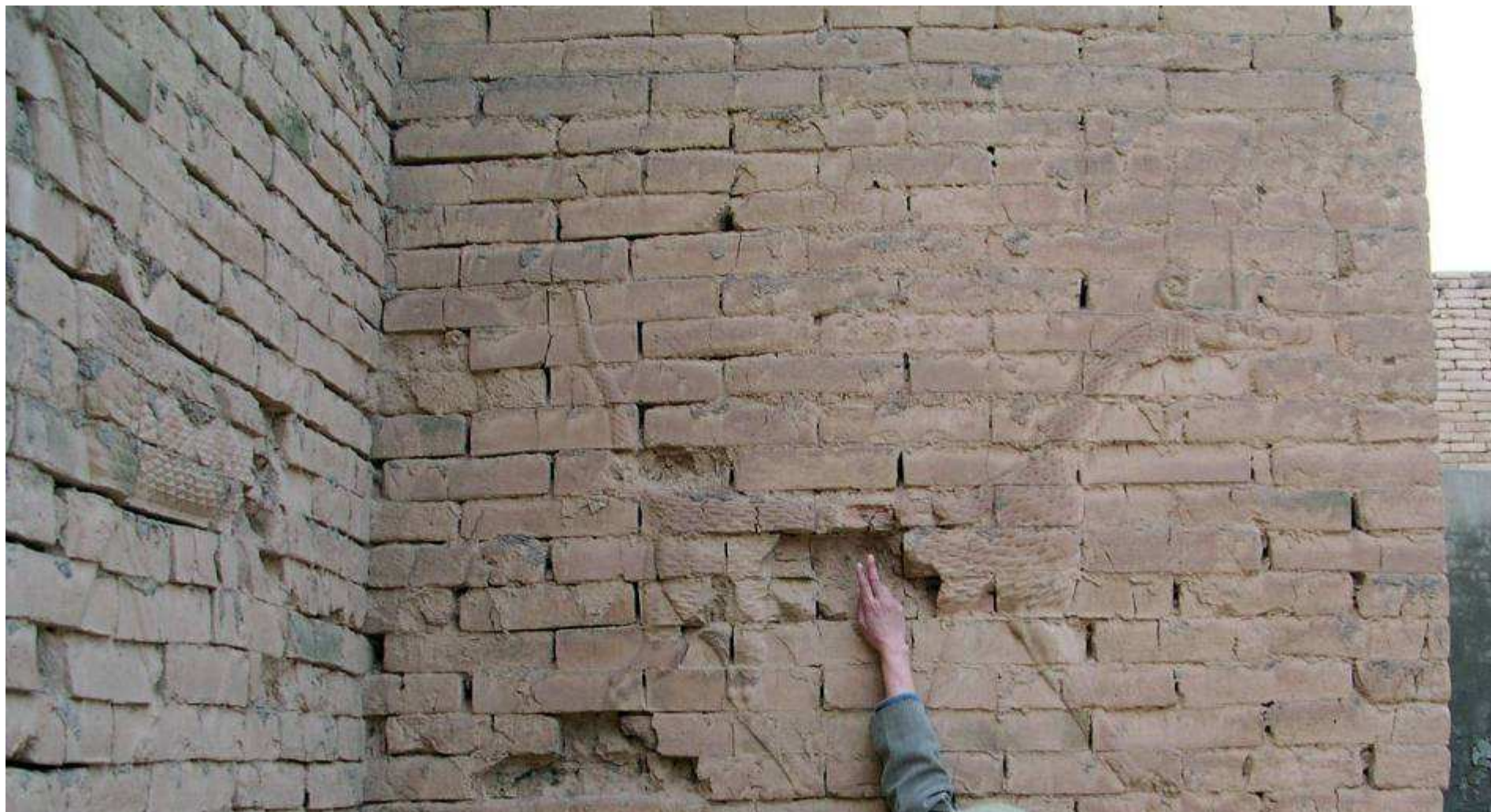
Curtis photo 7648 (photo © John Curtis)





Curtis photo 7649 (photo © John Curtis)





Curtis photo 7650 (photo © John Curtis)





Curtis photo 7652 (photo © John Curtis)





Curtis photo 7653 (photo © John Curtis)





Curtis photo 7654 (photo © John Curtis)





Curtis photo 7655 (photo © John Curtis)





Curtis photo 7656 (photo © John Curtis)



**Vehicle parking**

**31 August 2003**

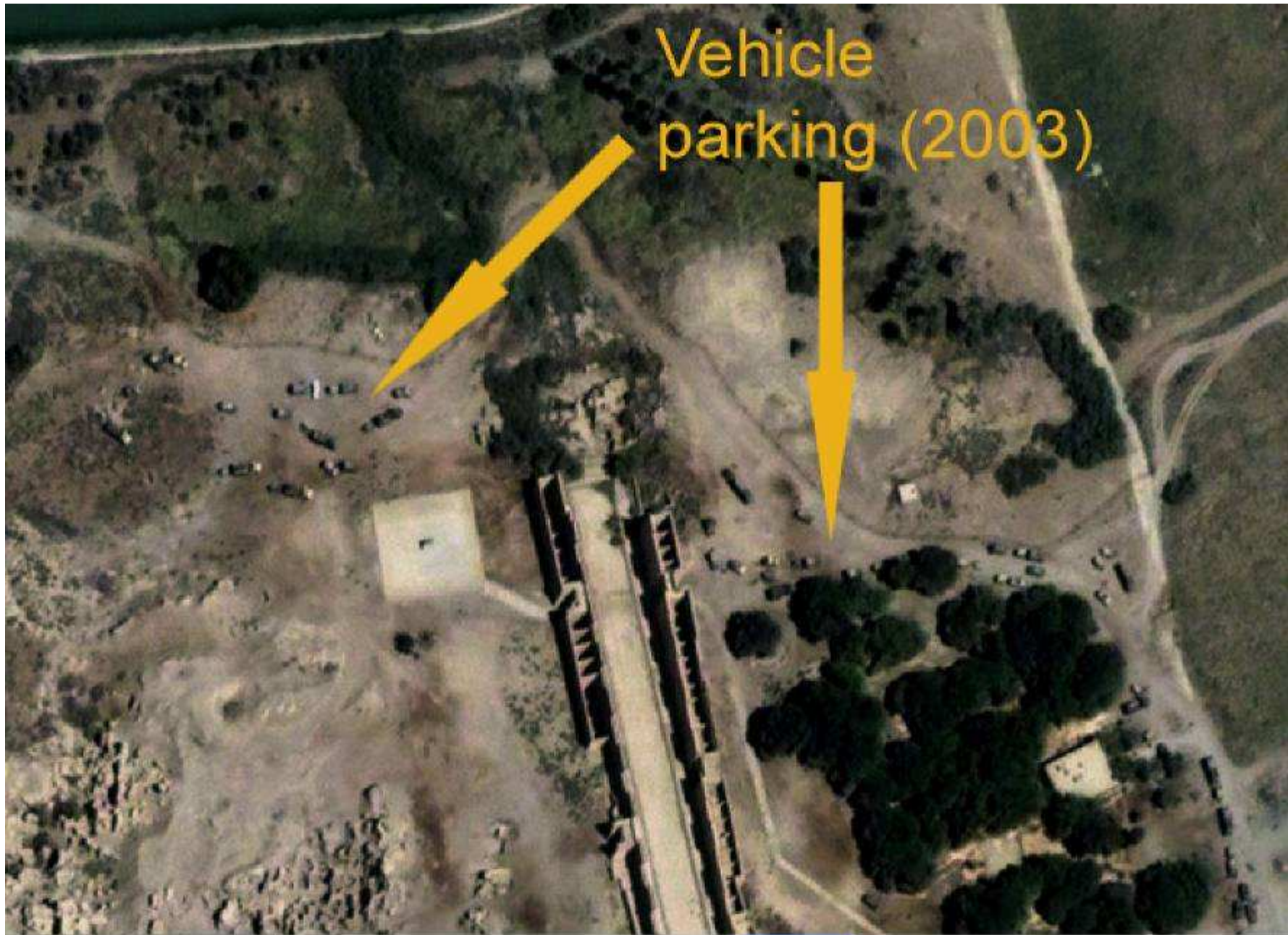


**8 October 2004**



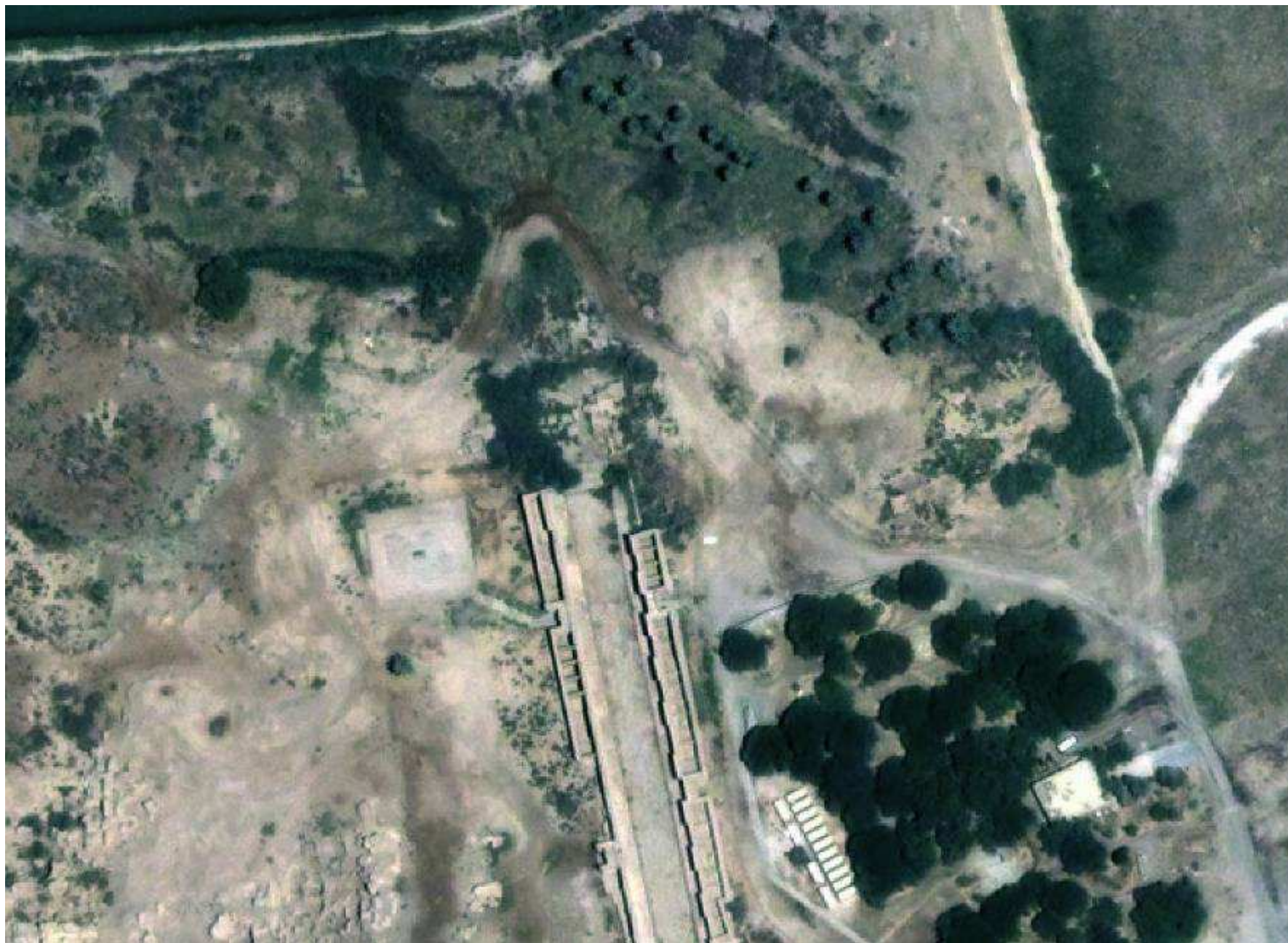
**Stone report:** We do note that several vehicles were parked in the northern portion of the Ruins area in August 2003, but our imagery from subsequent periods shows no traces of damage from this, which does not mean that it is not visible from the ground (Fig. 5).





Vehicle parking, 31 August 2003, Russell composite





Area no longer used for parking, 4 June 2004, Russell composite



**Robber pit**

**Russell comment:** This pit can't be identified on the available imagery.

Polish report	Stone report
North of the Ishtar Gate close to the first entrance to the Northern Palace West of Processional Street there is a pit shown in the picture below.	The Polish report also mentions a robber pit in the Processional Way, but this is not visible in our imagery.



Photo of area of robber pit (pit is not visible), Polish photo 36 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Robber pit, Polish Northern Palace photo 11 (photo © Ministry of Culture and National Heritage, Republic of Poland)





robber pit, Polish report p. 14 (photo © Ministry of Culture and National Heritage, Republic of Poland)

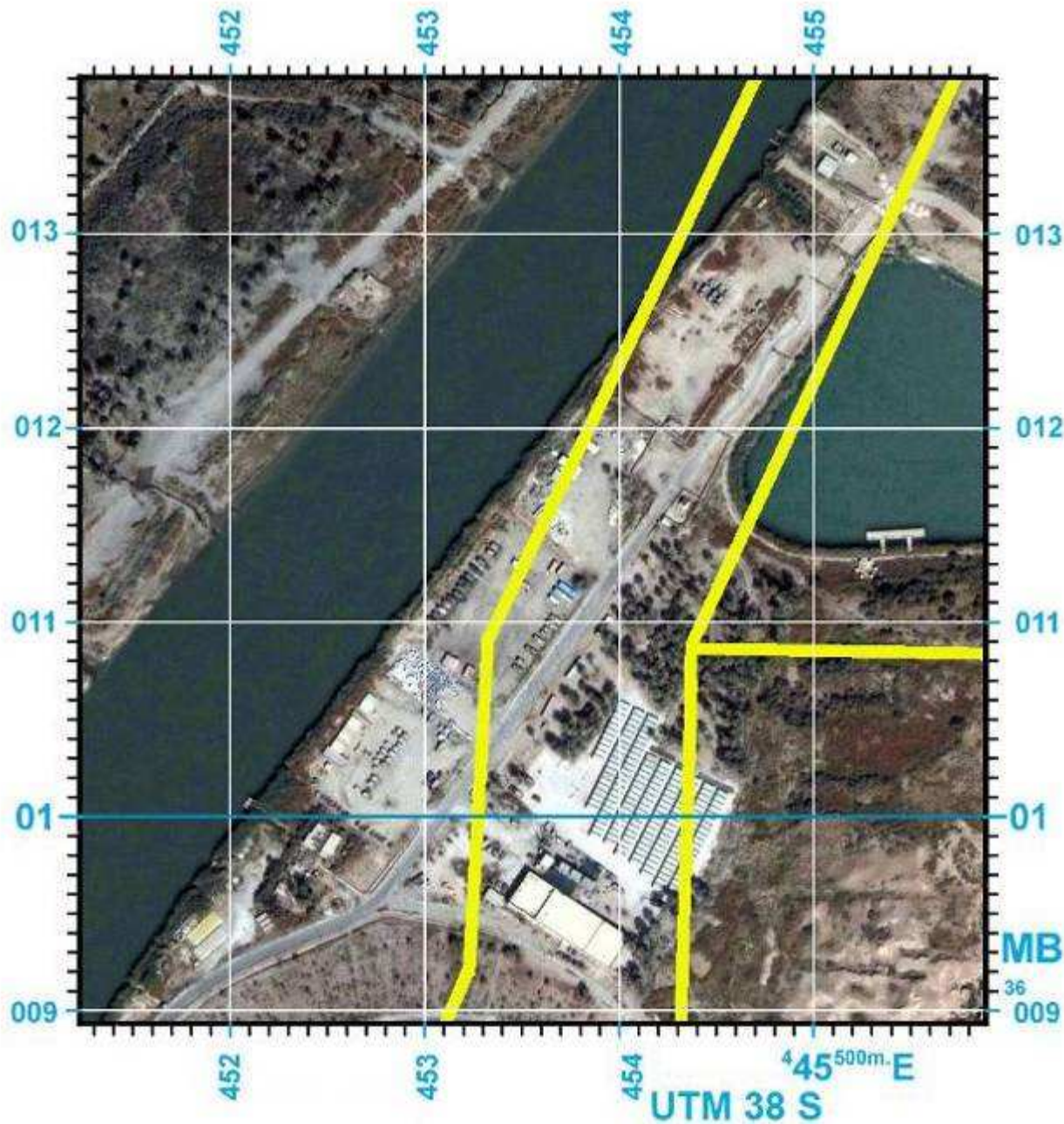


### **Bunker**

**McDonald report:** NE of the Saddam palace mound in groves of palm trees several tents were pitched with some graveling between the trees for vehicles etc. A bunker has been dug in the last week within the camp just west of the fencing that encloses the north palace mounds at this point. This structure is around 20 ft long, 12 ft wide and 3 ft deep. Inspection of the section inside did not reveal any archaeological material; it appears to be river silt. However it was dug at a time when there was supposed to be consultation re: any earth moving activities, it was not there on 21st July when fencing was measured in this area.

**Comment:** This bunker cannot be identified in the satellite images.



**Appendix 7. Euphrates River Bed North, damage during the period of Camp Babylon**

The Euphrates River Bed North is where the river flowed during the Neo-Babylonian period (612-539 BC). It is bounded by the palace at the east, Saddam's palace mound at the south, and the western suburbs at the west. It corresponds roughly with area I in the Polish report.



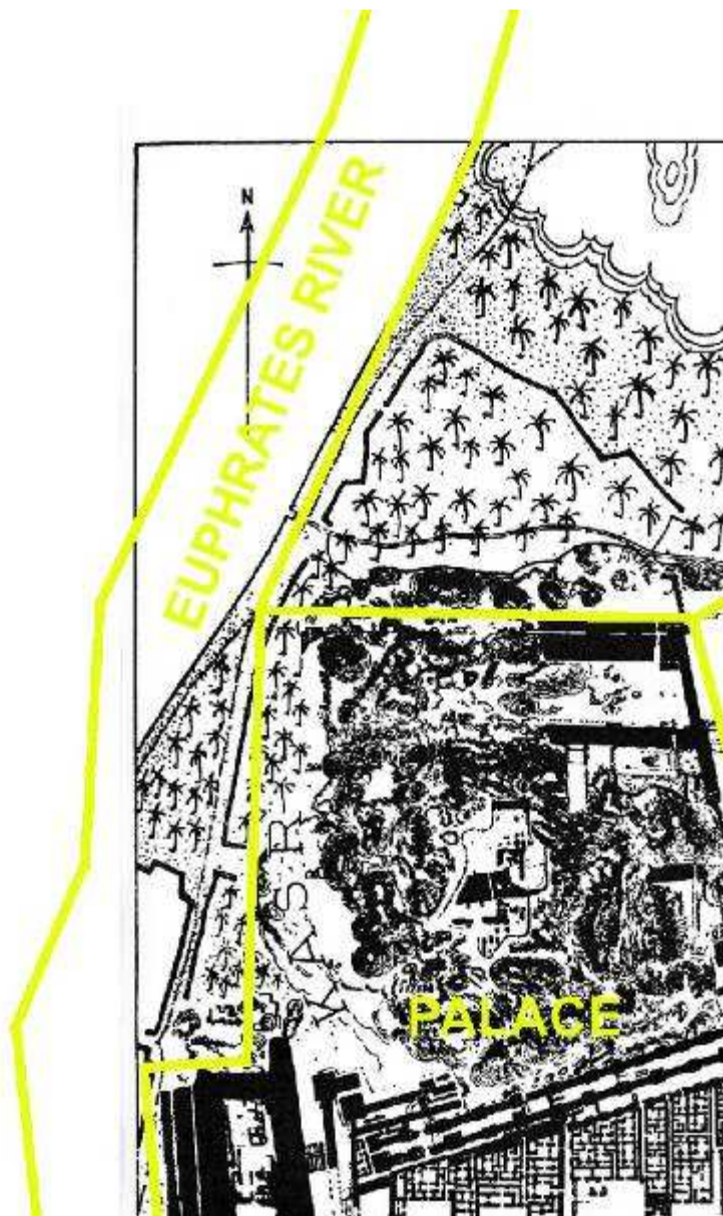


Euphrates River Bed North area, 1 April 2003, Russell composite.



Euphrates River Bed North area correlated with Polish area I.





Euphrates River Bed North area correlated with archaeological features on 1913 Koldewey map, Russell composite.



**Overview**

<b>Russell</b>	<b>McDonald report</b>	<b>Polish report</b>	<b>Stone report</b>
<p>Key to plan below:</p> <p>Red = trench Blue = berm Green = HESCO</p>	<p>The riverside area north of the Saddam palace mound has been used as a truck and car park as well as the site of various portakabins. The areas here were very flat already so they were just graveled, they would not have needed skimming apparently. Further north of this riverside area is the site of building debris that was presumably left over from the building of the Saddam Palace. The track at the base and to the west of the Saddam mound has been 'prepped' (ie. Skimmed, earth dumped, watered, compacted) and graveled. It is regularly watered to keep the dust down.</p>	<p>The terrain is suitable for parking lots at numbers 2, 4, 5, 6 and 7 in the picture above [below]. A water treatment station is located in the vicinity of number 3 on the picture above.</p>	<p>As noted in the Polish report, this area was used primarily for parking areas for vehicles and containers and a water-treatment plant. It is an area which is not included in the detailed map of Babylon prepared by Koldeway. Most of it is not included in the Iraqi contour map either. This is because much of this area is where the ancient river flowed in antiquity.</p> <p>The imagery shows that although there were cleared areas there before the establishment of Camp Alpha, over the time of the camp these experienced increasing development. In terms of chronology, the development of the road from the north in Area 1 was in place by August 31, 2003, as was some occupation of Parking Lots 2, 3, 4, 5, and 6 (Fig. 1).</p>





Reference view, final phase, 8 October 2004, Russell composite

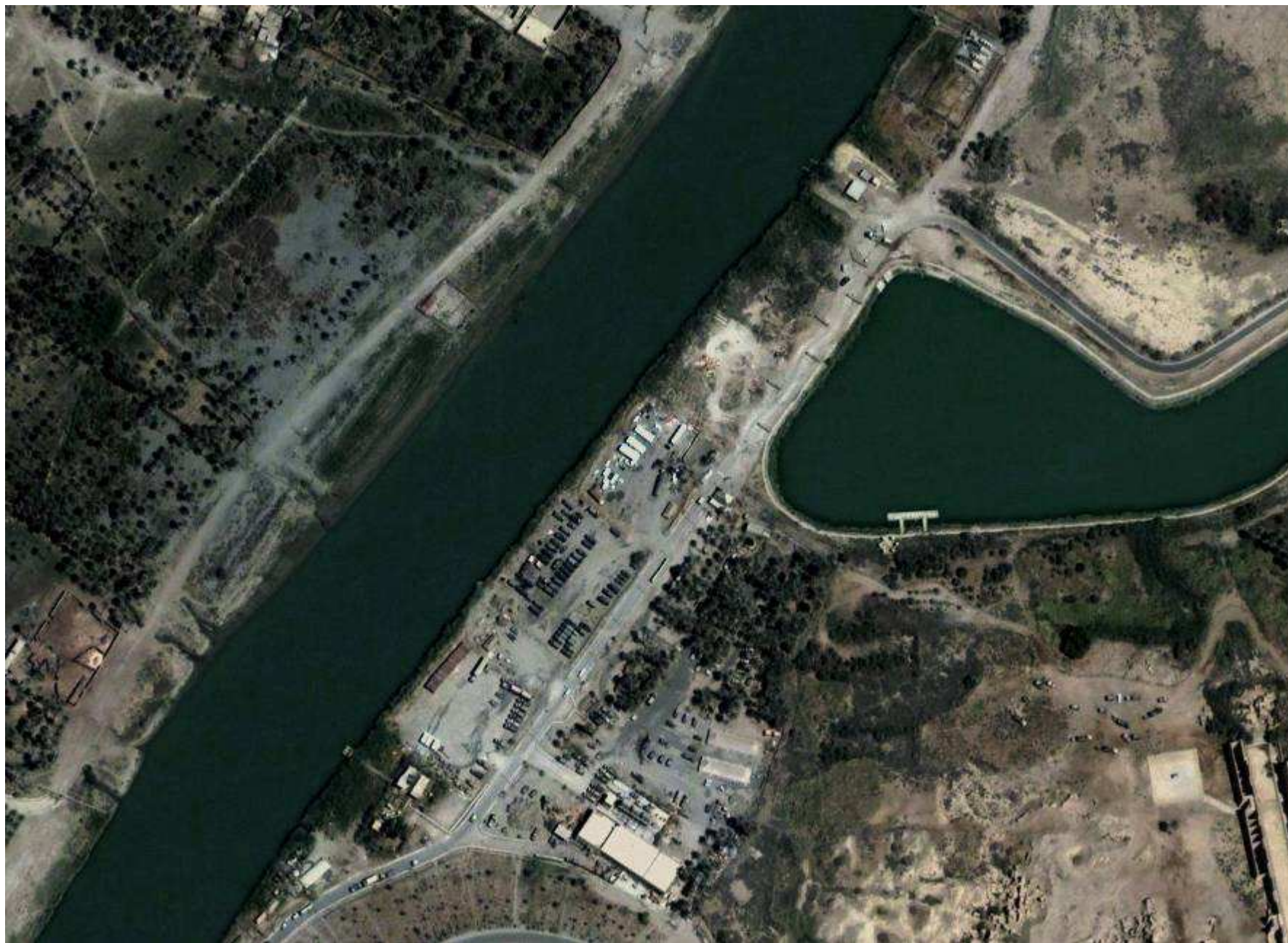


**Sequence of development**



Prior to Coalition development, 5 July 2002, Russell composite





First phase of Coalition development, north gate is open and berms and HESCO containers are not yet present, 31 August 2003, Russell composite





Final phase of Coalition development, north gate is blocked and berms and HESCO containers are now in place, 8 October 2004, Russell composite





Polish report p. 3 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**1 April 2003**

**31 August 2003**



1 April 2003 vs 31 August 2003, Stone report fig. 1





Southern end, Polish report p. 3 (photo © Ministry of Culture and National Heritage, Republic of Poland)





View from south, with Lot 2 at right, Polish photo 59 (photo © Ministry of Culture and National Heritage, Republic of Poland)





View from NE, Polish photo 138 (photo © Ministry of Culture and National Heritage, Republic of Poland)





North end, Polish photo 141 (photo © Ministry of Culture and National Heritage, Republic of Poland)





South end, Polish photo 142 (photo © Ministry of Culture and National Heritage, Republic of Poland)





December 2004, Curtis photo 7532 (photo © John Curtis)



**North "Warsaw" Gate**

**Russell comment:** The north gate on the road to the Coalition military base is referred to as the "Warsaw Gate" in the Polish report. In August 2003, this was an active gate, with no trenches at the entrance. By June 2004, this gate had been blocked by a berm and concrete barrier on the road, a trench and berm to either side of the road, and piles of gravel dumped on the road in front of the gate, which redirected traffic around the north side of the camp to the east gate. After that date, this entire area was a storage area, accessible only from the south.

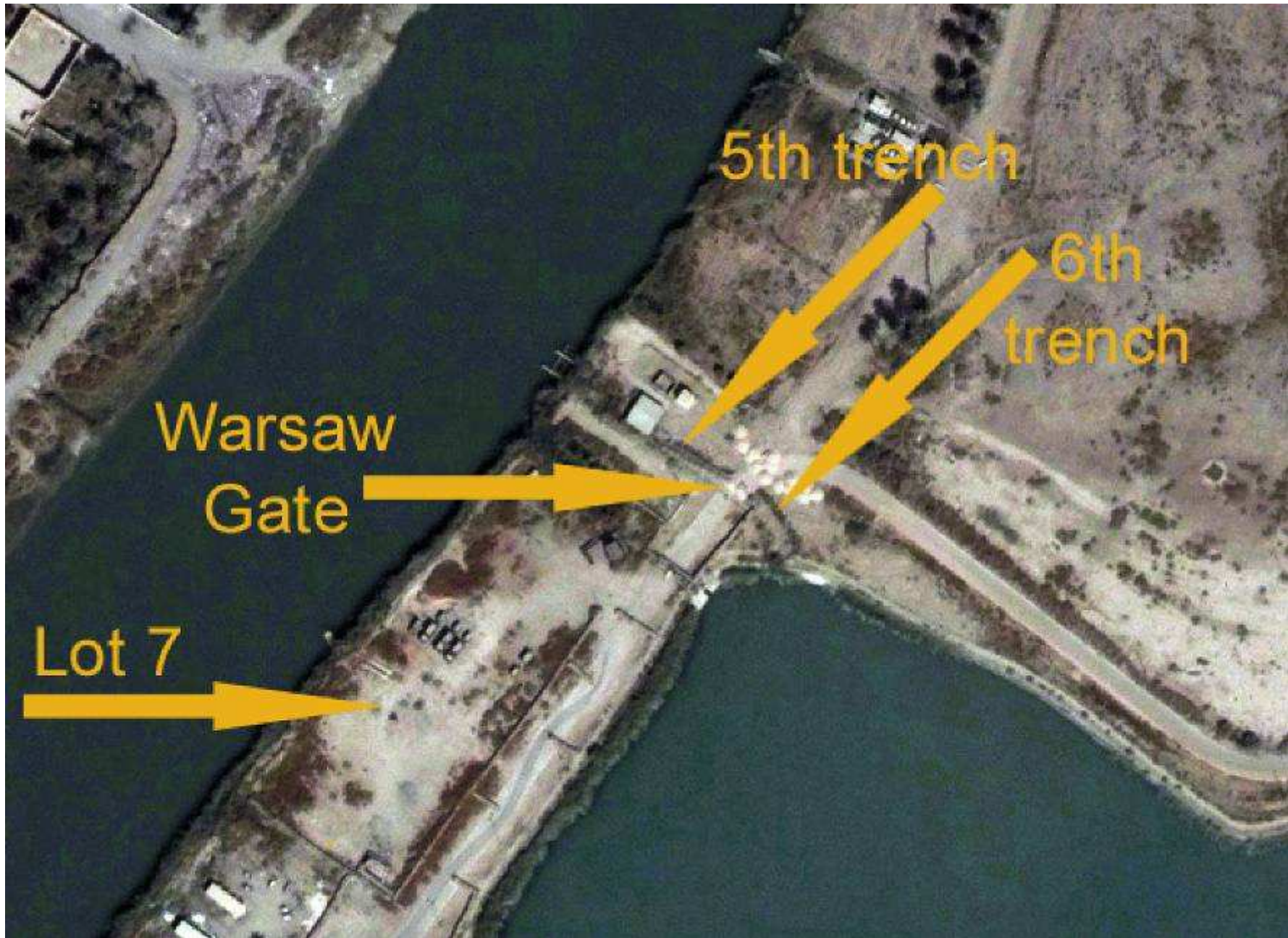
Feature	Iraqi preliminary report	Iraqi final report	Curtis report	Polish report
<b>Intro.</b>	c. In the area located [ <u>A: northwest of the eastern portion of the city.</u> ] north of the palace, to the left of the Shatt al-Hillah Canal, there are, on the two sides at the entrance, two trenches on the left and right sides.		Outside the so-called Warsaw Gate which is in the north-west corner of the camp there are 2 trenches, each c.20m long. See <i>Polish Report</i> , fig. on p.16. In the piles of spoil alongside the trenches there are many fragments of brick, some with inscriptions of Nebuchadnezzar.	1) „Warsaw” Gate At the “Warsaw” gate there is a ditch running from Shatt al-Hilla to the channel lying on the other side of road. In front of this ditch are stacks of gravel.
<b>Western trench</b>	The first trench has a length of 18 meters, a width of 2 meters, and a depth of 1.5 meters.	5. A fifth trench is located north of the presidential palace, to the left of al-Hillah waterway. This area is the northern access to the city. The fifth trench has a length of 18 m, a width of 2 m, and a depth of 1.15 m (see Photo 26).		
<b>Eastern trench</b>	The second trench has a length of 25 meters, a width of 2-3 meters, and a depth of 1.5 meters.	6. A sixth trench is located on the same expanse, on the right side of the entrance. It has a length of 25 m, a width of 2-3 m, and a depth of 1.15 m (Photo 27).		



Feature	Iraqi preliminary report	Iraqi final report	Curtis report	Polish report
<b>Berms</b>	On top of the dirt removed from the two trenches are fragments of an ancient baked brick, a portion of which bears cuneiform writing consisting of an impression of a well-known seal pertaining to King Nebuchadnezzar II, and various pottery fragments.	The dirt removed from both the fifth and sixth trenches contains fragments of ancient baked brick and various pottery fragments.		
<b>HESCO bags</b>	<p>At the Warsaw Gate, HESCO bags were filled with dirt from inside Babel [and were placed in an area] with a length of 47 meters.</p> <p>According to their [the Polish] report on the Warsaw Gate, several bags of dirt from Babel are located along the northern gate. Many of these bags contain ancient baked bricks, some of which bear cuneiform writing.</p>	Along the northern entrance of the city, north of the presidential palace, on the two sides of the entrance, are dirt-filled HESCO bags covering a length of 200 m. Some of the bags contain fragments of pottery and baked bricks. Each HESCO container has a height of 1.5 m and a width of 1.10 m (Photo 70).		

**Russell comment:** The presence of so many brick and pottery fragments in the area of the former river bed seems puzzling. One wonders if this level was deposited in antiquity or in more recent times, perhaps at the time the adjacent lake was constructed.



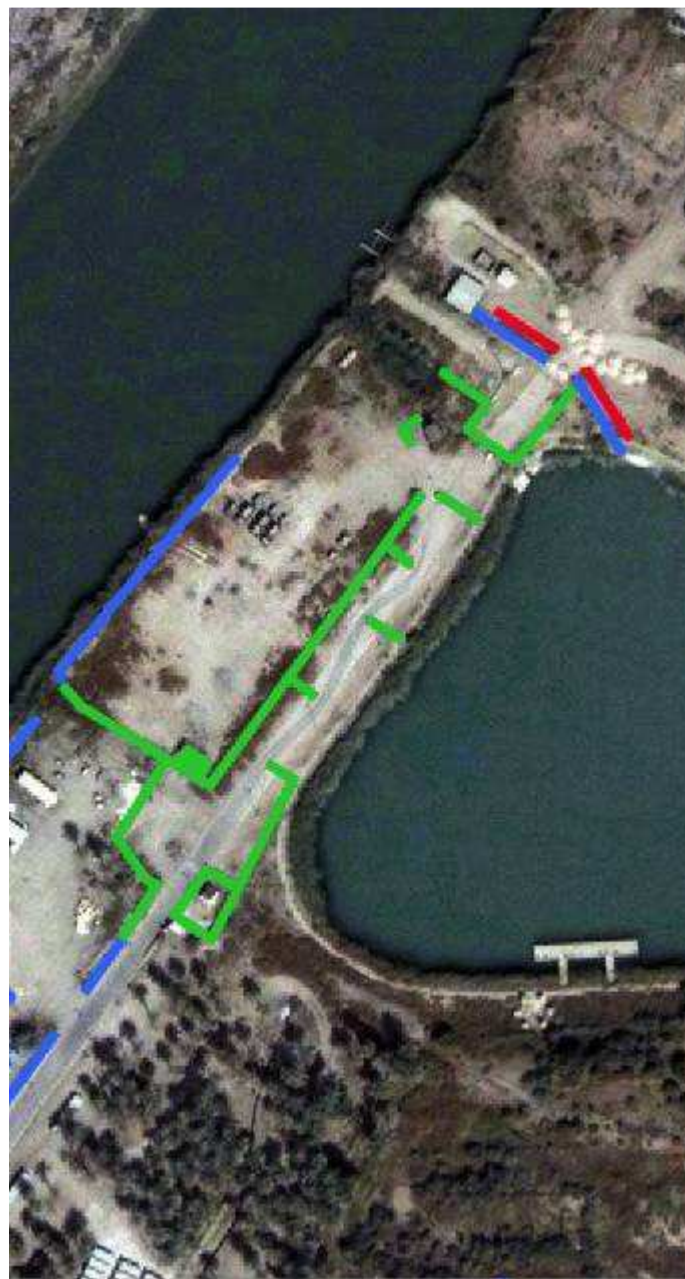


Warsaw Gate defenses, 8 October 2004, Russell composite





HESCO bags at gate, 8 October 2004, Russell composite



HESCO bags (in green) at gate, 8 October 2004





5th trench, Iraqi final report fig. 26





6th trench, Iraqi final report fig. 27





HESCO containers, Iraqi final report fig. 70





Polish report p. 4 = Polish photo 138, detail (photo © Ministry of Culture and National Heritage, Republic of Poland)





Polish photo 140 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Lot 2**

<b>McDonald report</b>	<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Curtis report</b>	<b>Polish report</b>
Other campsites include: NE of the Saddam palace mound in groves of palm trees several tents were pitched with some graveling between the trees for vehicles etc.	c. The area north of the Presidential Palace: This area—which is located in the northwest part of the eastern part of the city and measures an estimated [A: <u>5000 sq m according to their report</u> ] 20 x 80 meters—was leveled and covered with gravel.	This 80 x 70 m area, which is located in the northwestern part of the eastern part of the city, has been modified and covered with coarse gravel (Photo 59).  A trench made by the MF was observed in photographs taken by the MF. It is located in the northern part of the area north of the presidential palace. The MF filled in the pit at the time (Photo 59)	There is a large parking lot to the north-east of Saddam's Palace (seen through the trees) that is now covered with gravel.	2) Parking lot The whole surface of this parking lot (about 5000 square meters) is covered by a layer of gravel.

**Russell comment:** This lot already existed prior to the arrival of Coalition forces. I cannot tell from the satellite images if it was already graveled prior to the arrival of Coalition forces. McDonald is evidently referring to campsites in the palm grove north of Lot 2.





Before Coalition, 1 April 2003, Russell composite



During Coalition, 31 August 2003, Russell composite





Lot 2, Iraqi final report fig. 59





Lot 2, Polish report p. 4 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Lot 3**



**Polish report:** "Station of the water treatment. Area of the station of the water treatment is covered by a layer of gravel," (photo: Polish report p. 5, © Ministry of Culture and National Heritage, Republic of Poland)



**Lot 4**



Lot 4, "Parking lot," Polish report p. 5 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Lot 5**



Lot 5, earth berms were built along the east and west sides of this lot, Polish report p. 5 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Lot 6**

<b>Feature</b>	<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Curtis report</b>	<b>Polish report</b>	<b>Stone report</b>
<b>General</b>			There is a large flat area (no gravel) between the Warsaw Gate and Saddam's Palace on the west side of the road. Now only portable toilets are left on this site. There is a pile of brick fragments in one corner, some of them inscribed.		
<b>Berms</b>	<p>A barrier [berm] was also made. A portion of the barrier is perpendicular to the river. Another barrier is coextensive with the street. A third barrier is coextensive with the river. The length of the third barrier is 138 meters. These barriers contain fragments of brick, many of which have writing on them.</p> <p>b. Northwest of the northern part of the presidential palace there is a large area surrounded by earthen</p>	4. Northwest of the presidential palace are long barriers with a total length of 138 m. Most of these barriers contain ancient baked bricks. Many of these bricks contain Sumerian inscriptions in the form of an impression of Nebuchadnezzar II's stamp (Photo 68).	Across this large area there is an east-west earth bank, c.1.5m high. The deposited earth contains many fragments of inscribed brick. See <i>Polish Report</i> , centre fig. on p.18.	<p>Terrain of parking lot 5 is separated from parking lot 6 by an earth bank. The bank consists of materials from ancient structures. There are fragments of original bricks as well as ceramics. The bank near Shatt al - Hilla turns North while running along channel towards the "Warsaw" gate.</p> <p>A similar bank runs along road to the Warsaw Gate on the parking lot 6.</p>	<p>There is no evidence of the artifact packed ridge between Parking Lots 5 and 6 noted in the Polish report in August 03 image, but it is visible in the June through October 04 imagery (Fig. 2).</p> <p>The earth ridge between Parking Lot 6 and the road mentioned in the Polish report is also visible in the imagery from 2004 but not from 2003.</p>



	barriers with a length of 138 meters. Most of these barriers contain ancient baked bricks. Many of the bricks bear cuneiform writing consisting of an impression of the seal of Nebuchadnezzar II.				
<b>HESCO bags</b>			About 200m south-west of the Warsaw Gate are HESCO bags protecting an open storage area with floodlights that are filled with earth containing many fragments of brick, some inscribed.		

**Russell comment:** As with the trenches at the north gate, it is not clear why there should be so many brick fragments in the berms and HESCO containers in an area that was apparently on the west bank of the Euphrates River in antiquity, and one wonders if the earth containing them was deposited in more recent times.



**31 August 2003**



**8 October 2004**



Berm between Lots 5 and 6, Stone report fig. 2





Lot 6, general view looking east, Polish report p. 6 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Berm between Lots 5 and 6, Polish report p. 6 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Berm between Lots 5 and 6, Curtis photo 7630 (photo © John Curtis)





Berm between Lots 5 and 6, Polish report p. 6 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Berm between Lots 5 and 6, Curtis photo 7631 (photo © John Curtis)





Lot 6, berm running beside river, Iraqi final report fig. 68





Lot 6, Berm and HESCO barrier at east side alongside the road, Polish report p. 7 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Lot 6, HESCO barriers along east and north sides, Curtis photo 7625 (photo © John Curtis)





Lot 6, HESCO barrier along east side, Curtis photo 7624 (photo © John Curtis)



**Lot 7**



Lot 7, "Car parking lot" (photo: Polish report p. 7, © Ministry of Culture and National Heritage, Republic of Poland)



**Berms for trash dumps**

**McDonald report:** There are two of these. Trash dumps are rectangular areas with three bulldozed ridges. This shelters a central area in which rubbish is burnt. When the dump goes out of use the ridges are collapsed on top of the rubbish. ...

The northern dump is still in use. The latter is out of the North ECP (entry check point) north of the Northern lake attached to the canal and to the east of the track running north along the river. It was in this area that on July 29th we discovered a 40ft x 10ft x 9-10 ft deep pit had been dug for the burning of rubbish (and this pit must have been dug after the 25th July when this area was first visited). The upper 5 ft of this pit had cut only river silt/agricultural soil but the lower 4 ft or so had cut archaeological deposits and much pottery was visible once the fire in the pit had abated. A visit was made to the camp commandant [name deleted] on this matter. He had ordered the digging of this pit to try to keep children away from the burning rubbish as they had been scavenging through it.

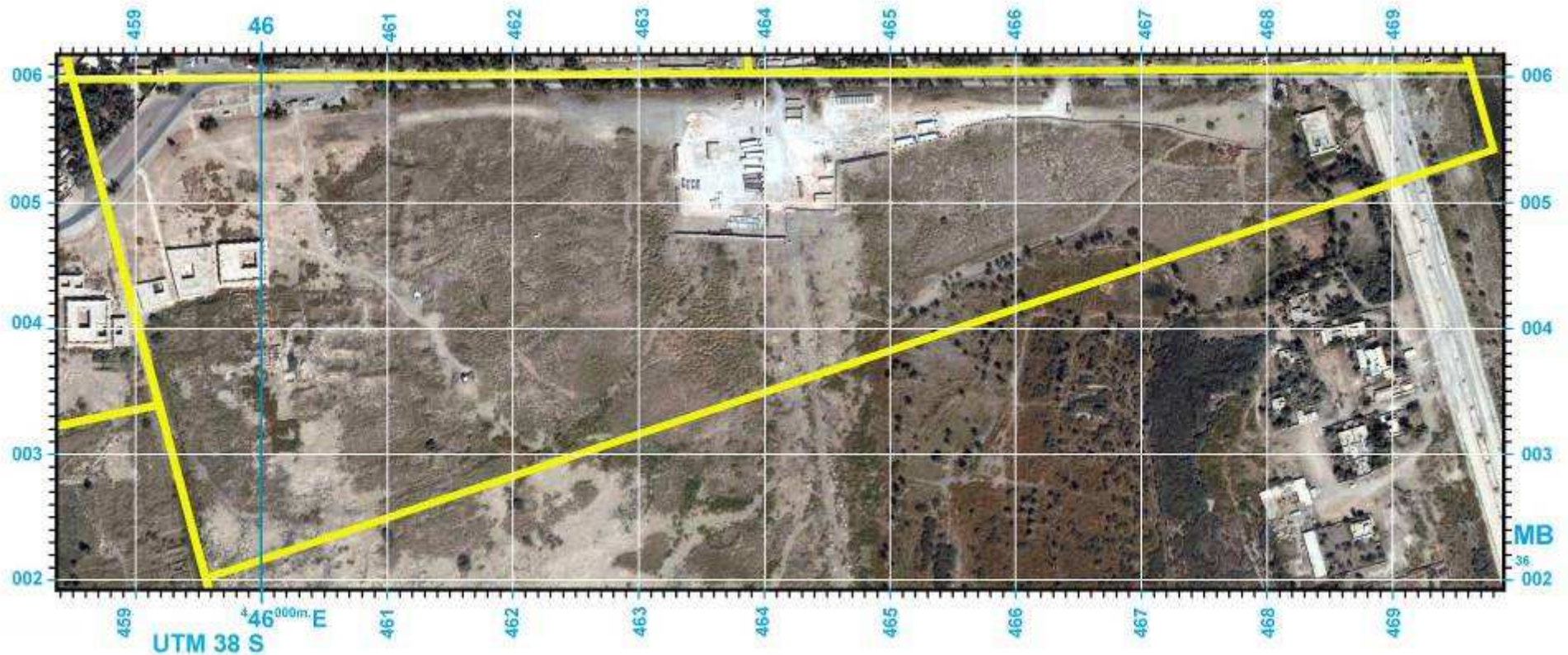
Dr. Mariam was very disturbed by the digging of this pit which was reported to the Babylon museum by a local man who took some of the pieces of archaeological objects from the pit to the museum. Dr Mariam feels that such digging will only encourage local people to dig holes as well. It seems rather disappointing after our efforts at co-ordination with the MEF with regard to minimizing the archaeological impact of activities at camp Babylon. Given that in this particular area archaeological deposits seem to be around 4 or 5 feet deep it seems likely that the bulldozed ridges of the berm will not have disturbed these to any great extent.

**Russell comment:** These dumps cannot be located on the satellite imagery.

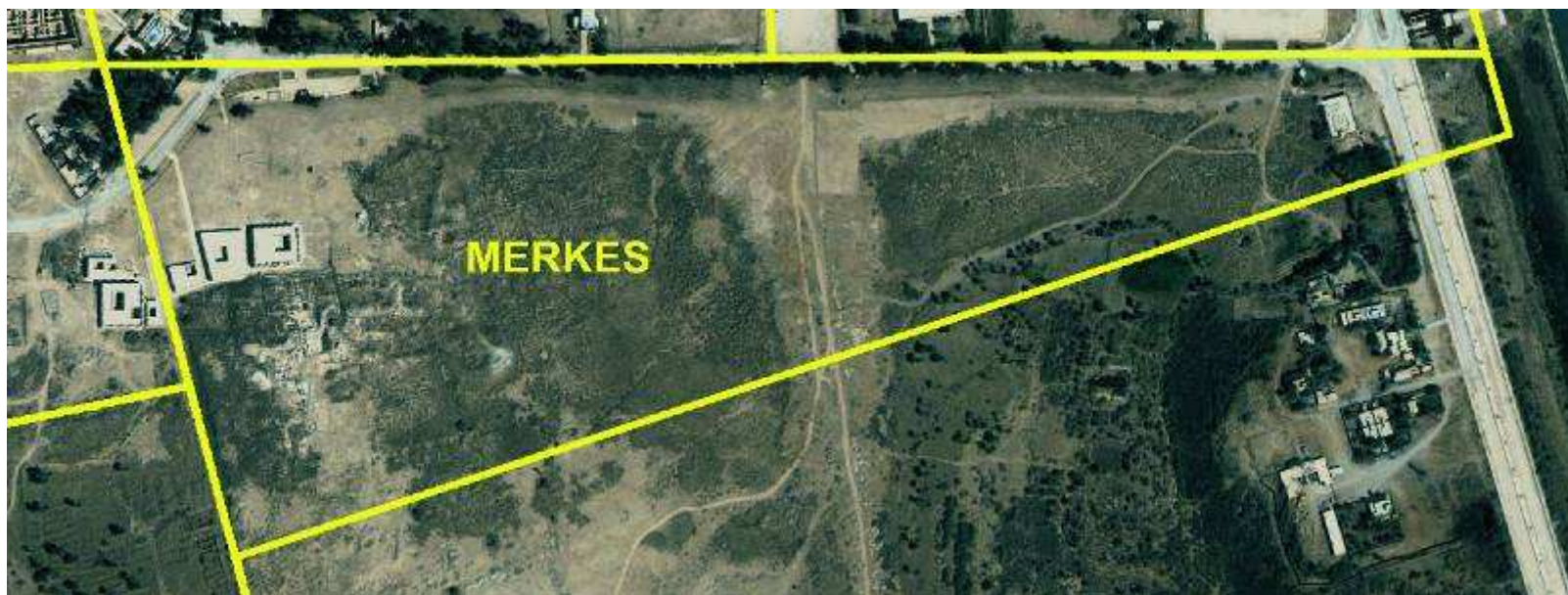


**Appendix 8. Merkes, damage during the period of Camp Babylon**

Merkes is the ancient urban area between the Processional Street and the inner city wall. It is bounded by the modern road at the north, the inner city wall at the east, the Processional Street at the west, and an arbitrary boundary that runs roughly along the south side of the Merkes mounds. It includes all of area X and the eastern parts of areas V and XI in the Polish report.





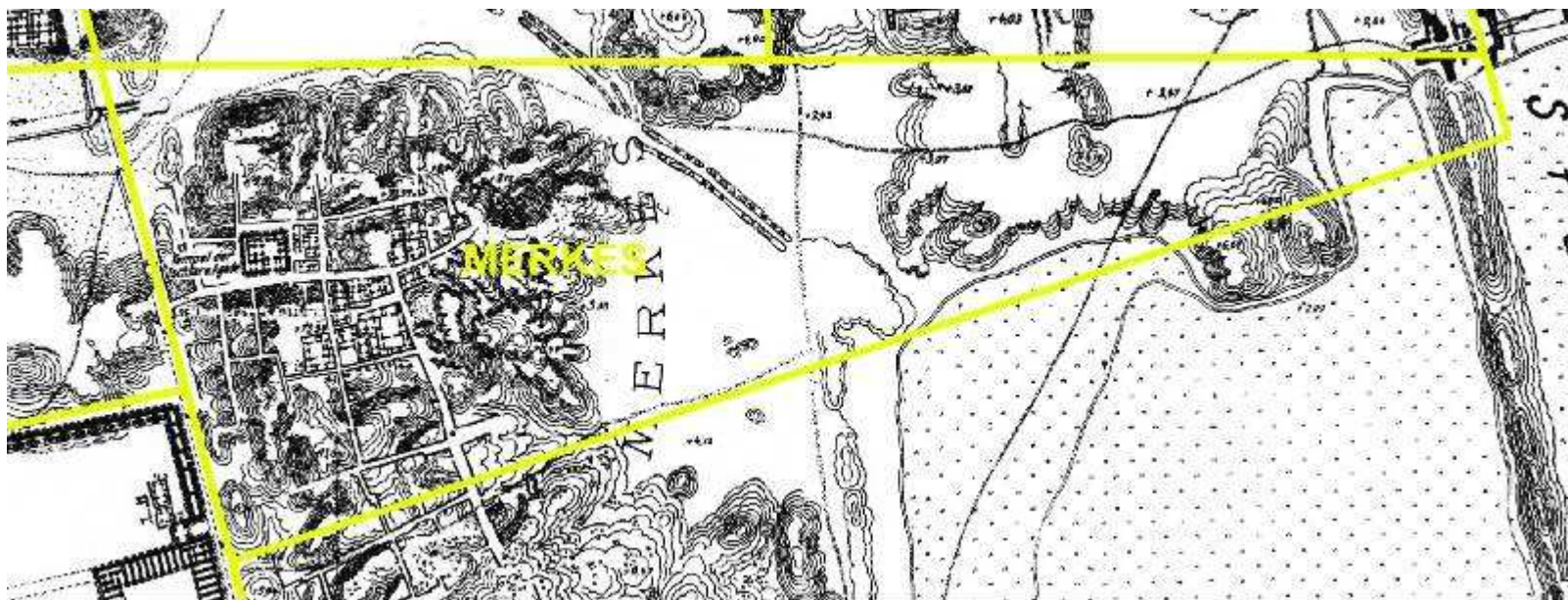


Merkes area, 1 April 2003, Russell composite.



Merkes area correlated with Polish areas V and X.



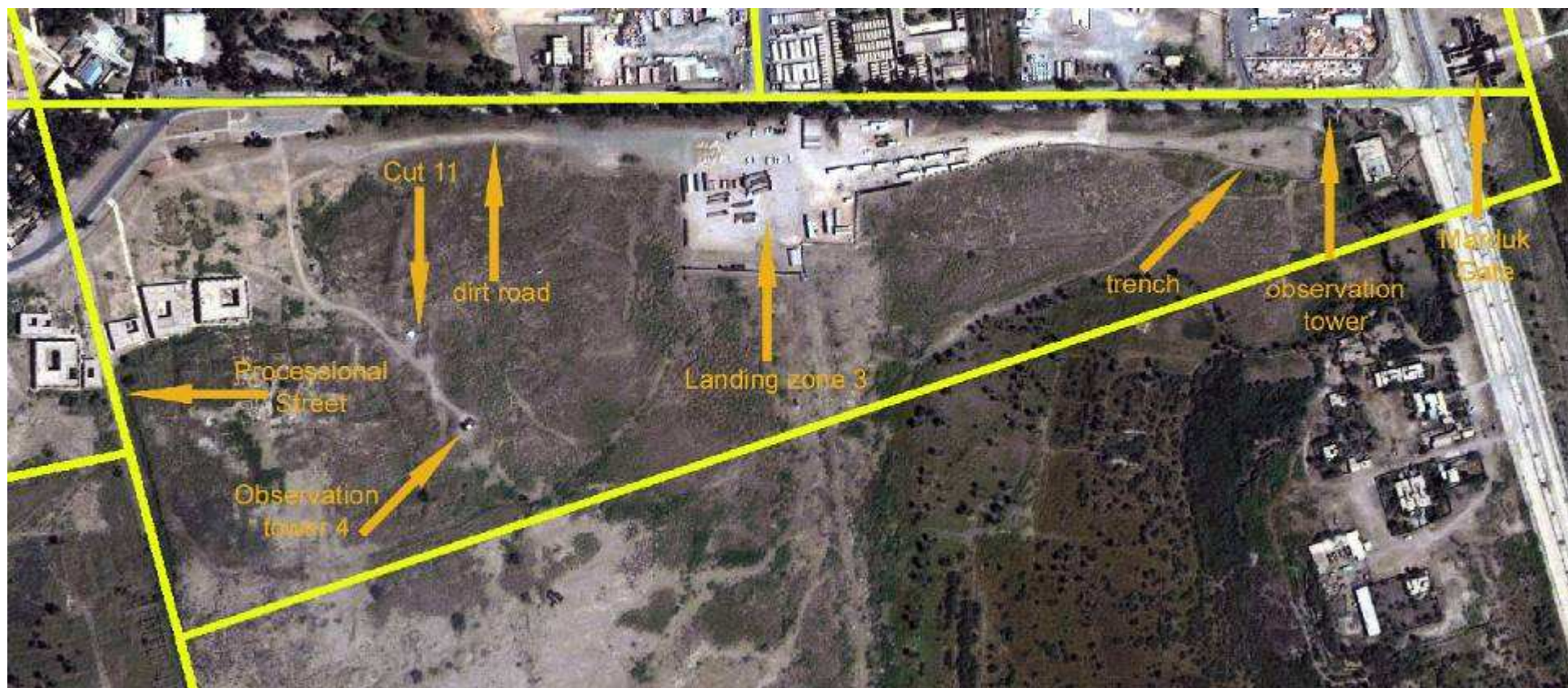


Merkes area correlated with archaeological features on 1913 Koldewey map, Russell composite.



Merkes area correlated with archaeological features on 1913 Koldewey map, Russell composite.





Overview of features in the Merkes area, 25 August 2004, Russell composite



**Parking area/Landing zone 3:** This is the paved area across the road south of the Greek Theater.

Iraqi preliminary report	Iraqi Final Report	Curtis report	Polish report
a. The area south of the theater and the Babylonian House: There was a small parking lot in this area. The multinational forces recently expanded it. An area of [A: 60 x 80 m] 20,750 meters, with the old parking lot was leveled and covered with sand and gravel and enclosed on all sides by heavy concrete castings and sand bags. They used this area, which is unexcavated, as a parking lot for large trucks. It is located within the boundaries of the center of the archeological City of Babel.	The Area South of the Theater and Babylonian House: Previously, there was a small parking lot in this area. The lot, which was not paved, was recently expanded by the MF. A 2075 sq m area, including the old parking lot, was leveled, covered with sand and gravel, and surrounded with HESCO sandbags. The MF used this parking lot to park large trucks and machinery. This area has not been excavated. It is located within the boundaries of the center of the city (Photo 56).	On the south side of the main east-west road running across the site, an extensive area with maximum dimensions of c. 400m x 120m (referred to as KBR #2 in the <i>Polish Report</i> ) has been levelled and covered with gravel (see <i>Polish Report</i> pp. 51-52 and figs.).	The western, wider part of KBR#2 is covered by gravel. Sand is piled on the western and southwestern border of this zone. The entire area shows signs of vehicle and truck traffic.

**Russell comment:** The measurements of this area differ in each of the 3 Iraqi reports. The final figure of 2075 sq m seems most likely. By May 2004, the southwestern corner of this area had been expanded into the mounded archaeological area and covered with gravel in order to build a third landing zone, visible in Photo 56 of the Iraqi final report. By August 2004, the landing zone had reverted to truck parking.





5 July 2002 showing extent of area before Camp Babylon, Russell composite





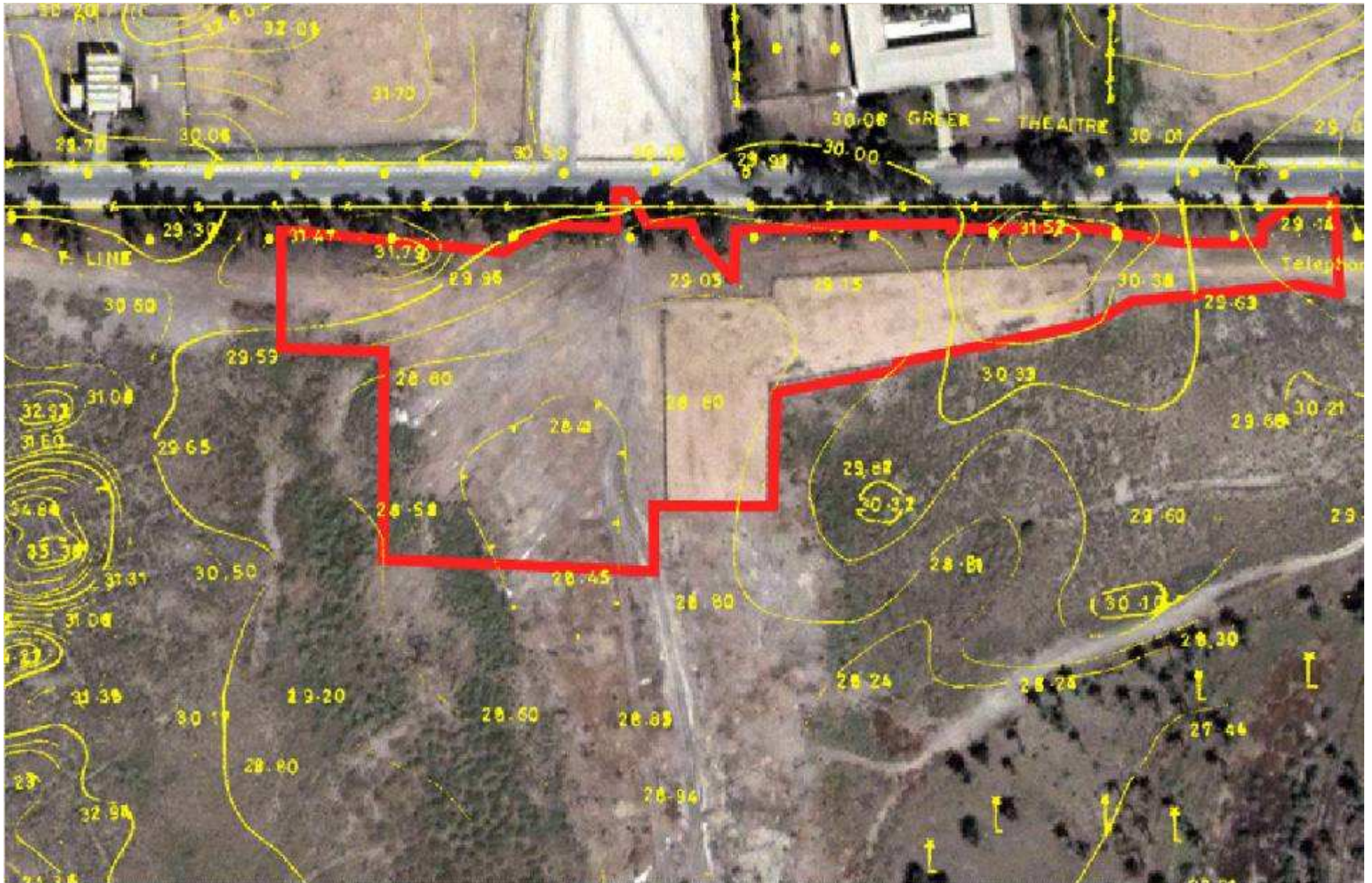
4 June 2004 showing greatest extent of area and new entrance to east, gravel has been spread to the south and piles of gravel are still visible at the north, Russell composite





4 June 2004, landing zone with outline of greatest extent, Russell composite





5 July 2002 with outline of greatest extent in 2004, overlaid with Iraqi contour map showing encroachment of the landing zone into the mound at the southwest corner, Russell composite





25 August 2004, landing zone being used for truck parking, Russell composite



**1 April 2003**

**31 August 2003**



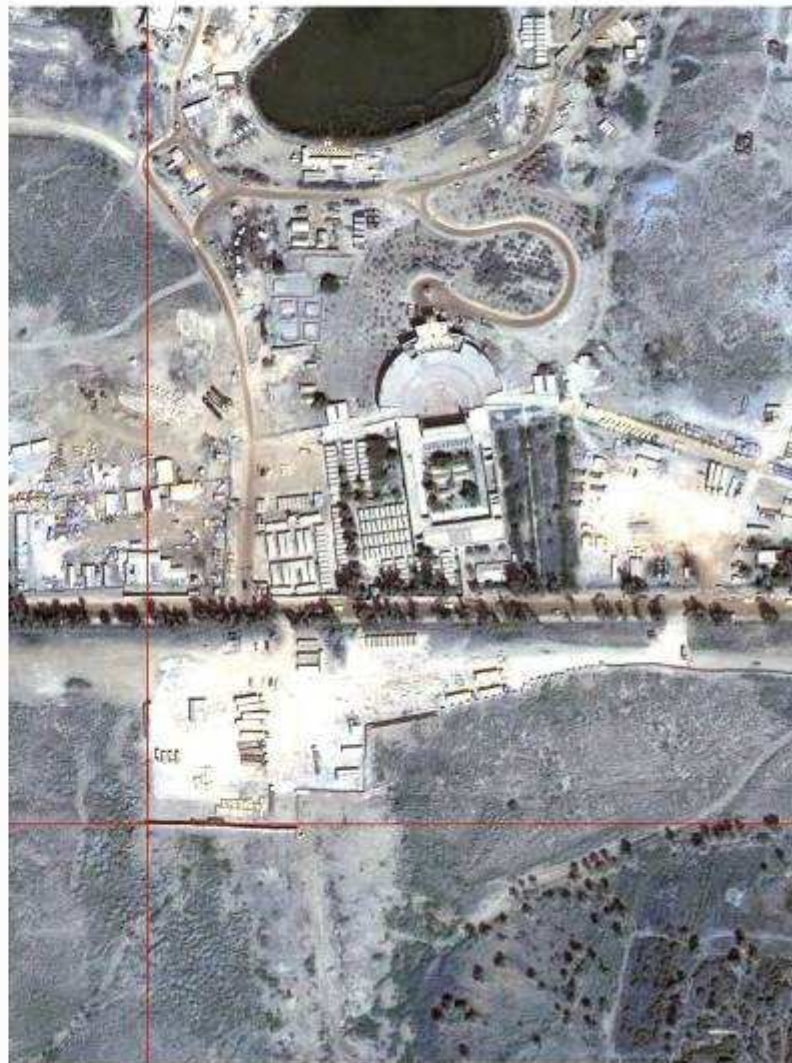
**Stone report:** This area to the south of the road was developed as a parking area after August 2003 (Fig. 29).



**1 April 2003**



**8 October 2004**



**Stone report:** By October 2004 it had expanded beyond the area slightly prepared before the war, chewing into the edge of the mound (Fig. 30).





Parking area, November 2004, Polish photo 137 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Landing zone 3 with freshly-spread gravel, Iraqi final report fig. 56





Landing zone 3, with archaeological mound behind, May 2003, Russell photo 123\_2350 (photo © John Russell)



**Trench to the west of the Marduk Gate, along Marduk Street**

<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Curtis report</b>
<p>b. To the west of the Marduk Gate, along Marduk Street, according to the Babylonian map drawn based on the Babel topographical texts, there is a trench that we could not reach at the time because the area was surrounded by barbed wire. We were able to see it from the observation tower with the expert Dr. John Curtis, Director of Near East Archeology, the British Museum and Dr. René, the Cultural Advisor in the US Embassy. Its length was determined to be approximately 30-35 meters. This trench was dug in January of this year. The archaeological coordinator was notified in this regard. Upon the department's request, work was suspended, and the trench was not expanded. At the time, we also requested to photograph this trench but were prevented from doing so. After the evacuation of the city, the committee measured this trench and found it to be 35 meters long, 2 meters wide, and between 25 cm and 1 meter deep.</p>	<p>Fourth trench: West of the Gate of Marduk, to the left of the main entrance of the city, alongside Marduk Street according to the Babylon map created based on the Babylon topographic texts. This fourth trench is 30 m in length, has a width of 2 m, and its depth is 25 cm to 1 m (Photo 25).</p>	<p>From the observation tower at the gate, a trench could be seen beyond the east-west barrier of barbed wire and conix containers that is about 100m to the south of the road. This trench could be observed through a gap of about 30m in the conix containers. It is unknown how long it is.</p> <p>[Apparently another account of the same trench:] About 70m to the south of the road, there is an east-west trench about 25m long which we could only see from a distance, as the area is thought to be mined.</p>





Trench 4, 8 October 2004, Russell composite





**Russell comment:** This trench was presumably dug to provide earth to fill the adjacent HESCO containers (image Iraqi Final Report 25)





This shallow trench can be seen running along the left side of the HESCO barriers at the upper left center, Polish photo 13 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Dirt road south of the main road**

<b>Iraqi preliminary report</b>	<b>Iraqi Final Report</b>	<b>Stone report</b>
In addition, a road connecting the parking lot and the temples area was built.	In addition, a road was opened to link the lot to the temples area.	The track to the south of the road noted in the Polish report already existed before the war (Figs. 17-18).

**Russell comment:** The Polish report illustrates, but does not describe, the dirt road south of the Hammurabi Museum. It runs south of, and parallel to, the paved road. As Stone notes, this area is already open space in the 2002 image, but received harder use during the Coalition occupation. This road is visible at the top right in the satellite images below.



Un-surfaced road South of the main road. Polish report p. 27 (photo © Ministry of Culture and National Heritage, Republic of Poland)



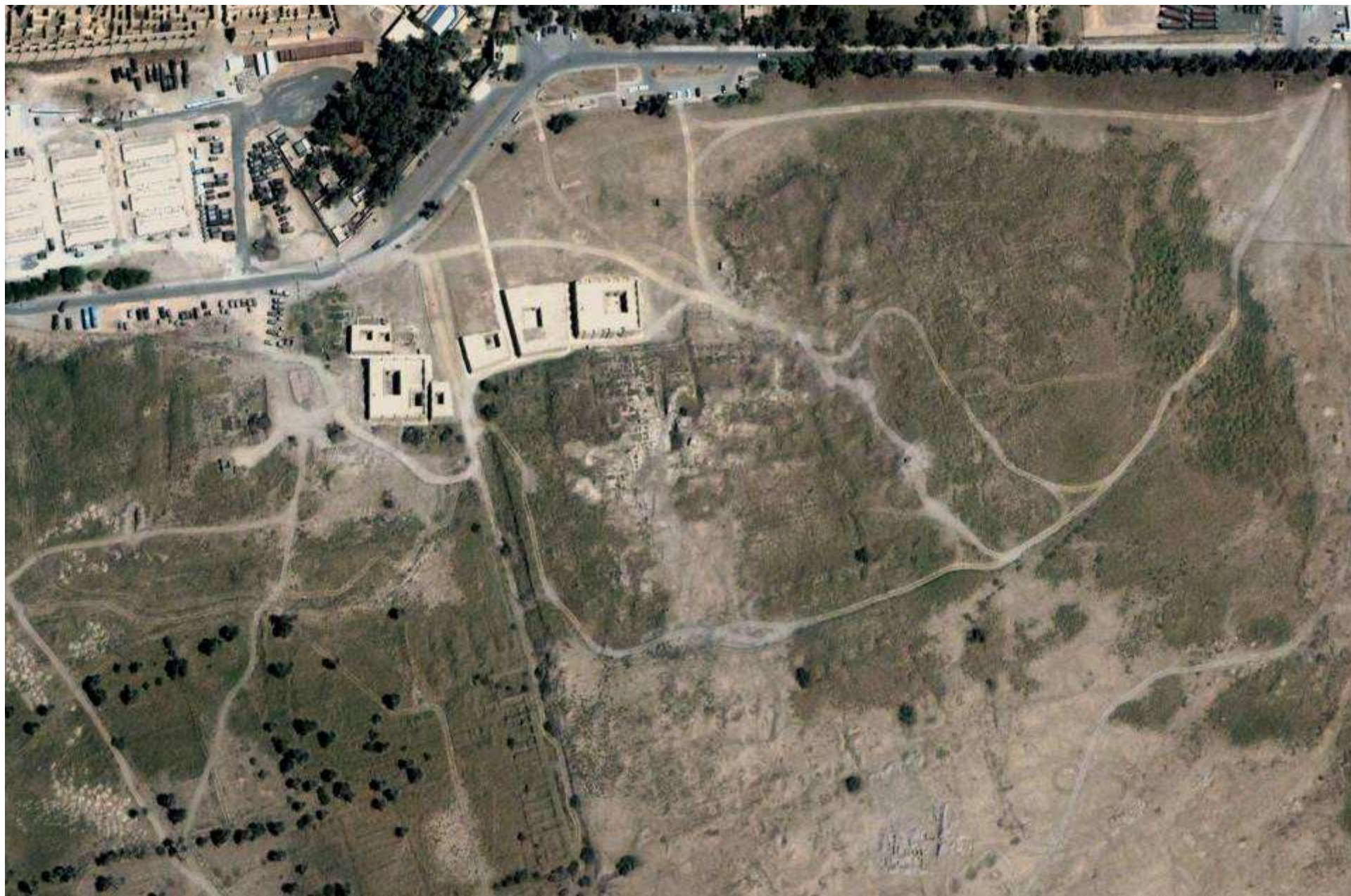
**New roads**

The satellite images show ancient architecture visible on the surface in the Merkes area. In addition to the road mentioned above, a large network of new roads was cut into this important archaeological area during the first 5 months of the site's use by Coalition forces.



Ancient central city mound before construction of new roads, 1 April 2003, Russell composite image





Ancient central city area with network of new roads, 31 August 2003, Russell composite image





Ancient central city area with network of new roads highlighted, 31 August 2003, Russell composite image





Ancient central city area with Koldewey's 1913 plan of architecture and new roads overlaid, 31 August 2003, Russell composite image



### Southern part of Processional Street

**Russell comment:** It appears that more of the pavement bricks are exposed in the May 2004 photos than in the November/December 2004 photos, which suggests that someone put some dirt over the bricks after May 2004. As the Iraqi reports stress, the earthen banks to either side of the Processional Street are the ancient mud brick walls of the ziggurat enclosure and other ancient structures, and therefore are not a good place to drive fence posts.

Iraqi preliminary report	Iraqi final report	Curtis report
<p>b. Processional Street [Shari' al-Mawkib]/southern section: As is well known, the Processional Street is the main street of the city. It is called by this name because religious processions passed on this street between the Esagila Temple and the Akitu House (religious celebrations house). The southern part of the Processional Street was uncovered during excavation activities undertaken by the Babel Restoration Project in 1979, starting from the Nabu-sha-Hare Temple, where we find major damage to this <u>[A: part of the]</u> street. The tracks of heavy vehicle wheels are very clear. The vehicles damaged a portion of the baked bricks paving the street and caused some bricks to crumble.</p> <p>There are also three rows of seven concrete [blocks], placed across the width of the street. The placement of concrete blocks on the street, not to mention using heavy vehicles to transport them, caused damage. We therefore decided to transport the blocks by helicopter to prevent more damage. This occurred on November 29, 2004.</p> <p>On the street, there is also a row of HESCO bags, [with the dirt] taken from the same place, and barbed wire inside this street. The stakes of the barbwire have broken several street bricks. A portion of them are on top of the wall dedicated to Etemenanki [the ziggurat].</p> <p>There is also a cut 10 meters from the northeast corner of the Etemenanki. The cut has a length of 2.15 meters, a depth of 50 cm, and a height of 2 meters.</p>	<p>Southern portion of Processional Way: The city's main street is Processional Way, so named because religious processions passed thereon between the Temple of Esagila and the Akitu House (house of religious celebrations). The southern part of the Processional Way was uncovered during the Babylon Archeological Restoration Project excavations in 1979. Major damage is observable on Processional Way, starting from the Nabu-sha-Hare Temple. The effects of heavy vehicle wheels are clear. The vehicles clearly crushed the paving of the street, causing it to crumble (Photo 76).</p> <p>Three rows of concrete blocks are in the middle of Processional Way, directly atop the paving. These approximately 2-ton concrete blocks were transported in the middle of Processional Way by heavy vehicles, which is itself an encroachment. We therefore decided to move the blocks by helicopter to prevent further damage to Processional Way. This was done on November 29, 2004.</p> <p>In addition, a row of HESCO bags containing dirt taken from the eastern wall of the sacred precinct were placed on the way, and barbed wire was attached by steel stakes to the wall itself and in the middle of Processional Way.</p> <p>There is also a cut in the wall itself with a length of 2.5 m, a depth of 50 cm, and a height of 1.5 m. See Photos 77 and 78.</p>	<p>In the south part of the Processional Street, approximately opposite the magazines of Etemenanki, 7 concrete barriers were placed on the road. They have recently been removed by helicopter (see <i>Polish Report</i>, figs on p. 69). Two areas of the 6<sup>th</sup> century BC brick pavement are exposed in this area, and in both cases the bricks are badly broken (<i>Polish Report</i>, figs. on p.69). This is thought to be the result of a heavy vehicle or vehicles driving over them. If this is so, it is likely that the bricks still covered by earth are similarly damaged.</p>





Processional Street with walls of ziggurat enclosure visible on the surface, 25 August 2004, Russell composite





Processional Street with overlay of Koldewey 1912 map showing walls of ziggurat enclosure, 25 August 2004, Russell composite





Processional Street looking south, Polish photo 117 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Processional Street looking north, Polish photo 8 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Processional Street looking east, with ziggurat enclosure walls in foreground, Polish photo 120 (photo © Ministry of Culture and National Heritage, Republic of Poland)





June 2004, Bahrani 2120



May 2004, Bahrani 1845

Concrete barricade blocks on the Processional Street. (photos © Zainab Bahrani)





View to south on the Processional Street with concrete barricade blocks, May 2004, Russell photo 123\_2355 (photo © John Russell)





View to south on the Processional Street after removal of concrete barricade blocks, Curtis photo 7598 (photo © John Curtis)





Processional Street, view showing steel fence posts driven into pavement, May 2004, Russell photo 123\_2356 (photo © John Russell)





May 2004, Bahrani 1850



May 2004, Bahrani 1848

Processional Street, steel fence posts driven into pavement (left) and view to north, at right (photos © Zainab Bahrani).





Processional Street, pavement crushed by vehicles, Iraqi final report fig. 76





Processional Street, steel fence posts driven into the wall of the ziggurat enclosure, Iraqi final report fig. 77





Processional Street, steel fence posts driven into the wall of the ziggurat enclosure, Iraqi final report fig. 78



**Observation tower 4**

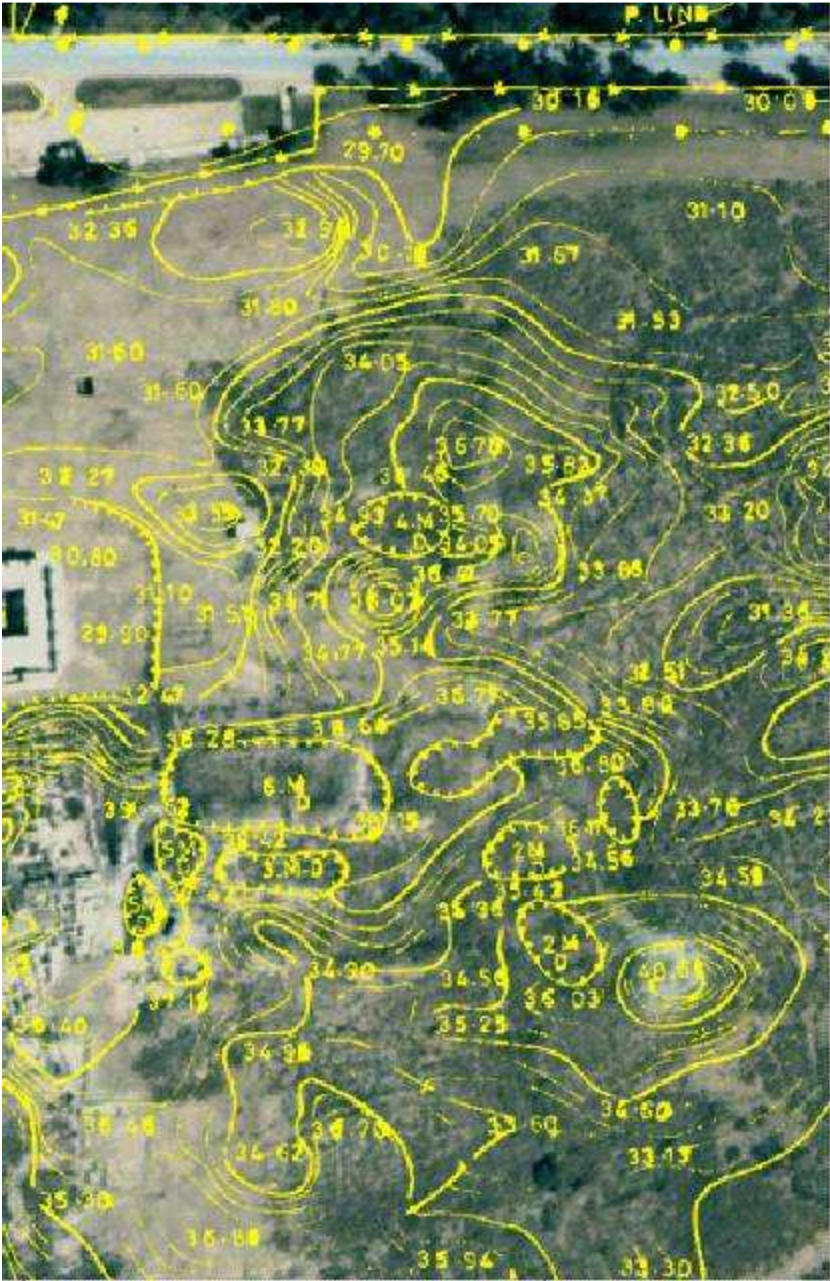
**Russell comment:** The satellite images confirm that the construction and intensive use of this road caused considerable damage to the surface of the site, particularly the southern half of the road, which cuts across mounds with visible ancient architecture. Cut 11 appears to be associated with the water tank located directly behind it, though its purpose is unclear.

<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Polish report</b>
e. The area east of the Temple of Ishtar: Cutting works of various dimensions are present on the two sides of the road which they built leading to the observation tower. This area has not been excavated. It is located within the area of the Merkes [center], which is one of the most important parts of the city. The affected area has a length of 250 meters and a width of 4-5 meters. There is also a small cut with a length of 3 meters, a width of 1.5 meters, and a height of 2 meters.	11. Eleventh cut: It is east of the Temple of Ishtar, near the observation point (observation post). The cut has a length of 3 m, a width of 2 m, and a height of 3 m (Photo 49).	1) Tower 4 (on the above displayed picture its approximate location is marked with “x” and digit 4). The tell supporting the tower is higher than other tells in this area. Dirt was added in this area to increase the elevation. There are numerous fragments of ceramic on the slopes of the hill.





Before construction of tower, 1 April 2003, Russell composite



1980 map showing mound used for Tower 4, 1 April 2003





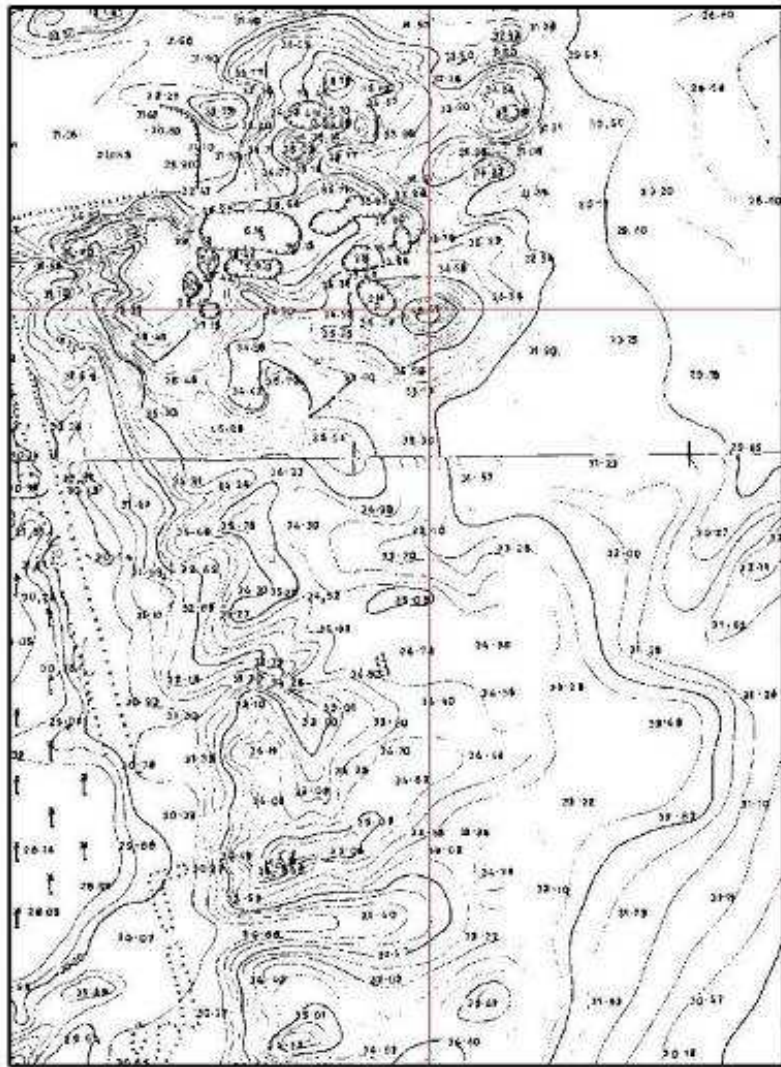
Tower 4, first phase, 31 August 2003, Russell composite



Tower 4, final phase, with Cut 11, 25 August 2004, Russell composite



## Contour Map



## 31 August 2003



**Stone report:** The effect of the construction of two watchtowers can also be seen. That in the east was present in August 2003, along with the dirt road providing access (Fig 34), ...



**1 April 2003**



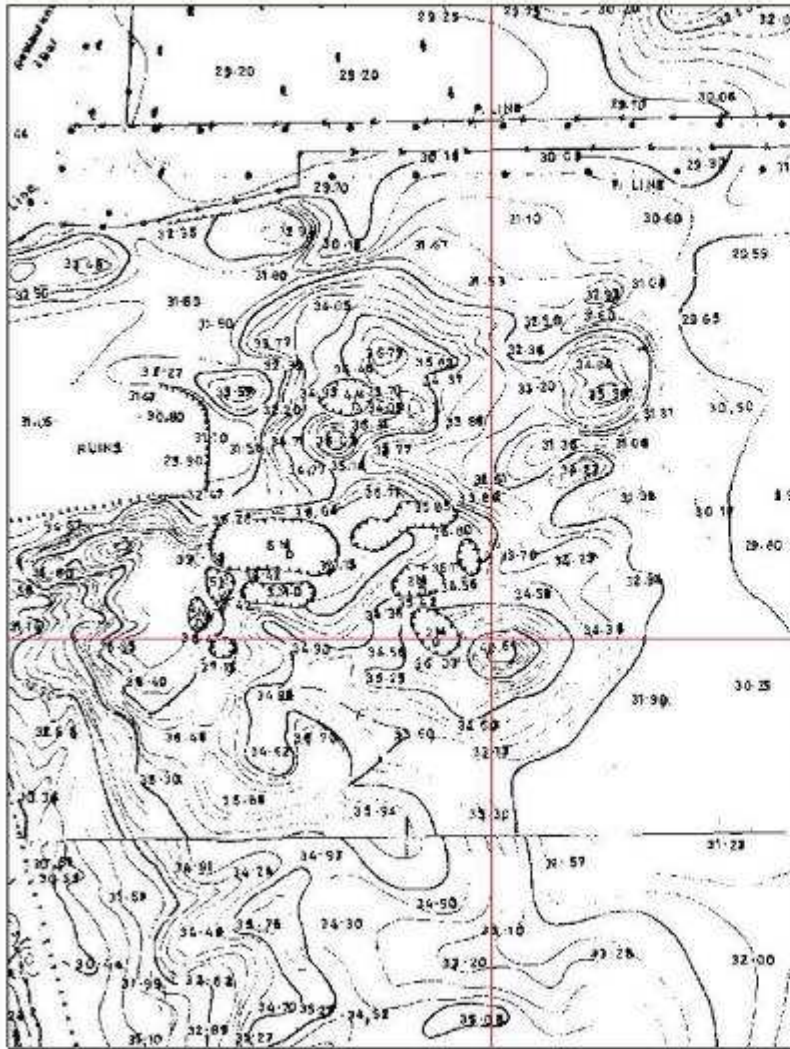
**8 October 2004**



**Stone report:** ...but was developed further by October 2004, and the track was more firmly established by that time (Fig 35).



## Contour Map



31 August 2003



**Stone report:** It was built on an eminence which is seen clearly in the contour map (Fig. 36).





Observation tower 4 with access road, June 2004, Russell photo 124\_2449 (photo © John Russell)





Observation tower 4 with access road, November 2004, Polish photo 119, detail (photo © Ministry of Culture and National Heritage, Republic of Poland)





View of tower and access road, with Cut 11 (beside shed) and a road cut near the base of the tower mound, Polish photo 125, detail (photo © Ministry of Culture and National Heritage, Republic of Poland)





Tower 4, detail of access ramp, Polish report p. 42 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Tower 4, detail of access ramp, Polish report p. 42 (photo © Ministry of Culture and National Heritage, Republic of Poland)



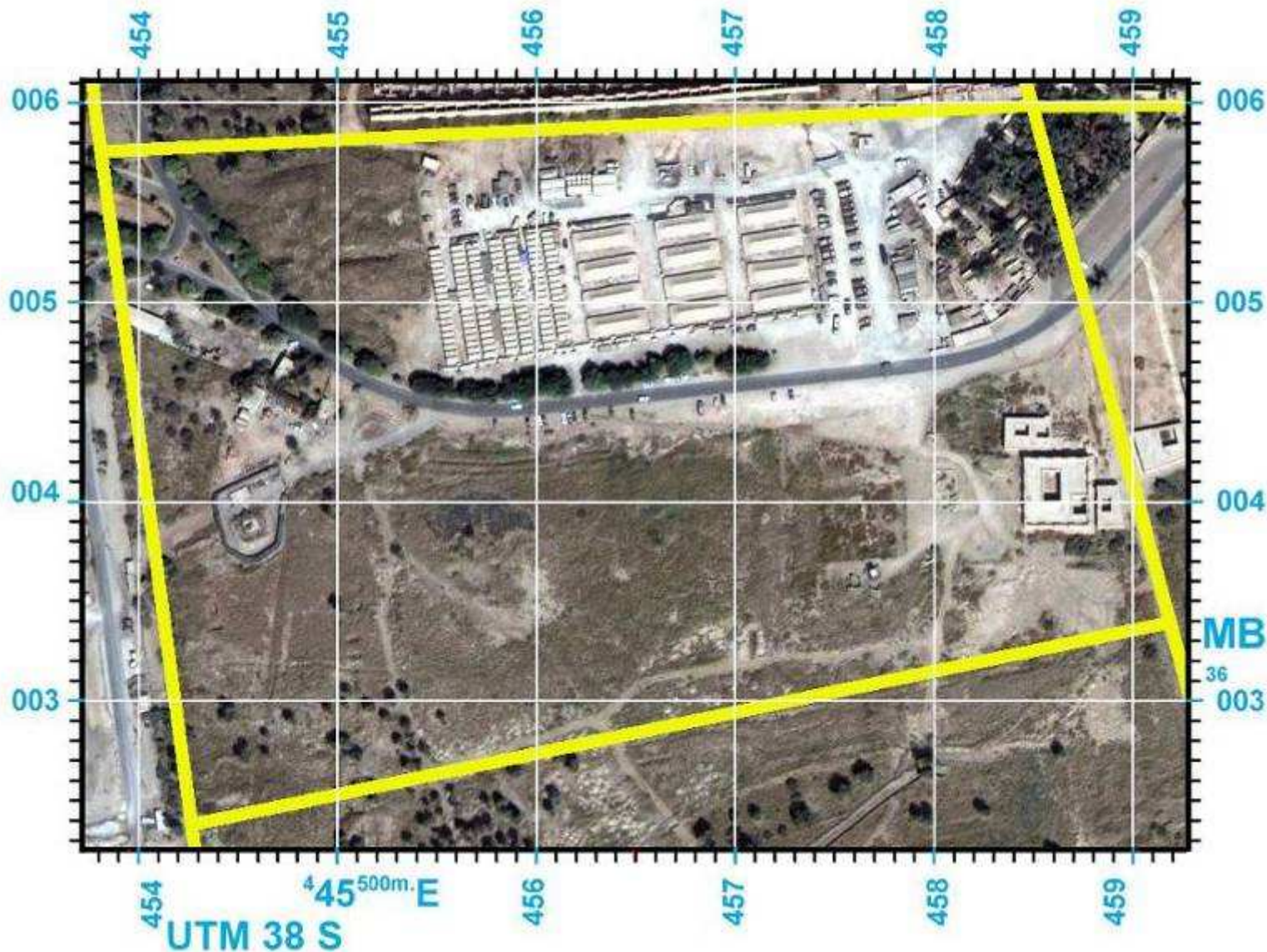


Cut 11 near observation tower 4. This cut appears to be associated with the tank directly above it, Iraqi final report fig. 49



**Appendix 9. Ka-Dingir-Ra, damage during the period of Camp Babylon**

Ka-Dingir-Ra ("Gate of the God") is the ancient urban area between the palace and the temple of Marduk. It is bordered on the north by the palace, on the east by the Processional Street, on south by the ziggurat enclosure, and on the west by the ancient Euphrates river. It includes all of area IV and parts of areas III, V, and XI in the Polish report.







Ka-Dingir-Ra area, 1 April 2003, Russell composite.



Ka-Dingir-Ra area correlated with Polish areas III, IV, V, and XI, Russell composite.





Ka-Dingir-Ra area correlated with archaeological remains on 1913 Koldewey map, Russell composite.



Ka-Dingir-Ra area correlated with archaeological remains on 1913 Koldewey map, Russell composite.





Ka-Dingir-Ra area with features discussed, 8 October 2004, Russell composite.



Tent City #1, overview

McDonald report	Iraqi preliminary report
Immediately S of the reconstructed Southern palace of Nebuchadnezzar. This was already a flat area (possibly as a result of the reconstruction of the Southern Palace). Therefore it will not have required any bulldozing or flattening. The usual red earth was dumped, compacted and graveled and portakabins then placed on it, one area is used for large trucks.	Cutting Works: b. The area south of the southern palace: This area, estimated to be 1200 sq meters, was used, possibly for housing.



Polish report p. 20 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Cutting archaeological mounds**

Iraqi preliminary report	Iraqi final report
It is surrounded by earthen barriers and bags packed with sand as an additional barrier. Consequently, parts of the hills were cut, leading to a change in the features and topography of the area. Traces of the cutting are clear on some fragments of ancient baked bricks and pottery shards of different shapes and types.	10. Tenth cut: The area south of the Southern Palace was subjected to an encroachment consisting of a cut with a length of 30 m. The dirt removed was mixed with sand brought from outside Babylon and used to create an earthen barrier. (Photo 48)



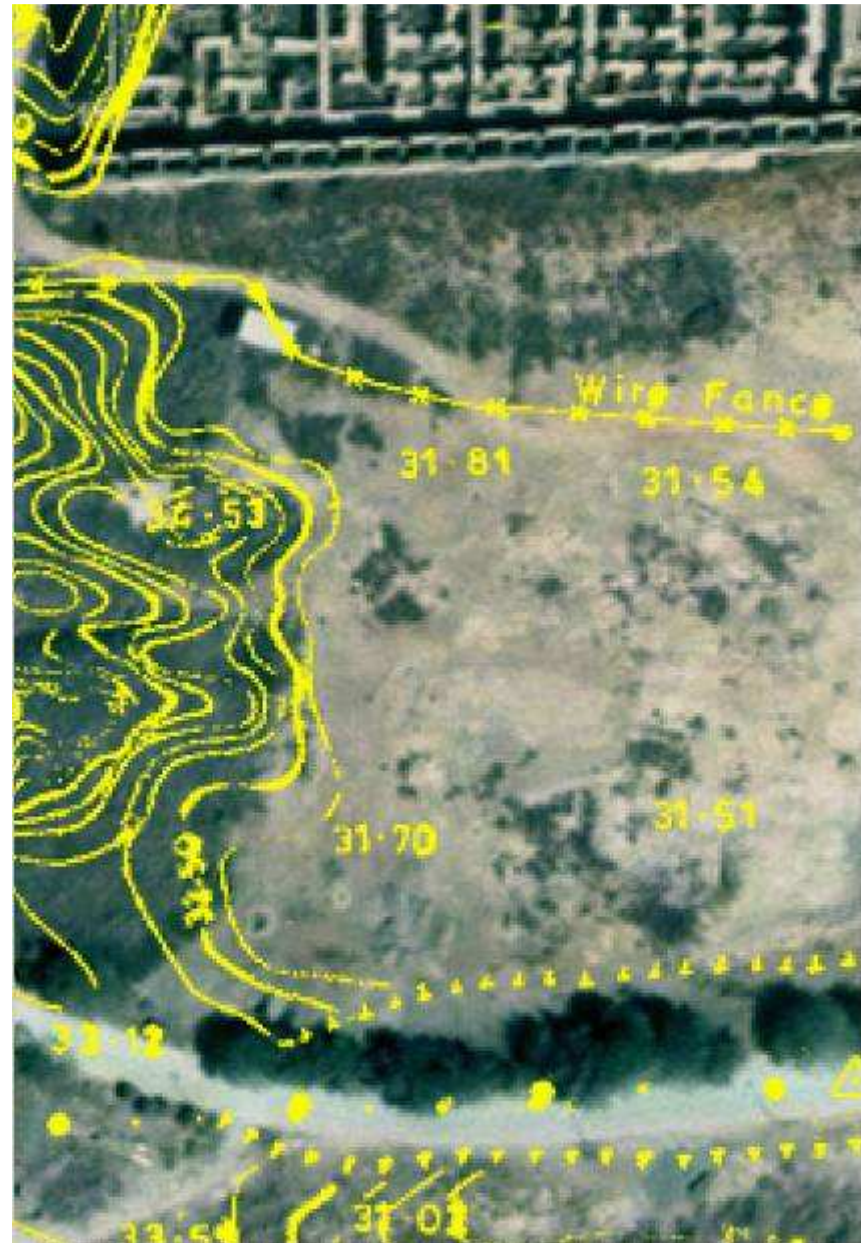
View of earth banks at the west(?) side of the area, Iraqi final report fig. 48



**Russell comment:** The cutting at the west edge is readily visible in before and after images that include the Iraqi topographic map as a reference.



1 April 2003, Russell composite



1 April 2003, with Iraqi 1980 map overlay, Russell composite





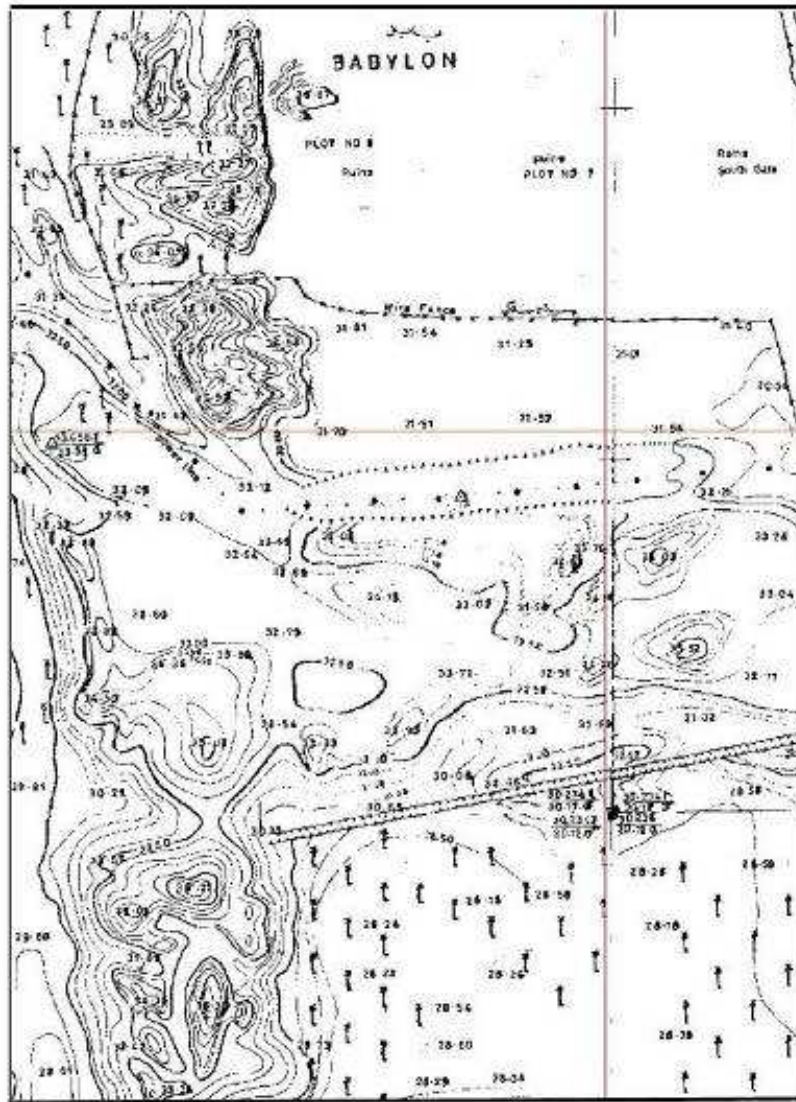
8 October 2004, Russell composite



8 October 2004, with flattened areas outlined, Russell composite



## Contour Map



8 October 2004



**Stone report:** This is a flat area immediately to the south of the reconstructed palace (Fig. 11).



**1 April 2003****31 August 2003**

**Stone report:** An area to its west is heavily mounded, as is the area to the south, on the other side of the road. The eastern edge of the mound to the west appears to have been somewhat chewed away by the encampment. This appears to have been an ongoing process during the occupation of Babylon, with what I interpret as dark tents erected in this area by August 2003 (Fig. 12).



### **Bunkers, sandbags**



The tent area was protected on the south side and southern half of the east side by cast concrete bunkers laid end-to-end, with a gap for entrance every 3 bunkers. These gaps were shielded by piles of sandbags (May 2004, Russell 124\_2463).





The bunkers and possibly also the sandbags were removed when the camp was evacuated (image 26 November 2005, Russell composite).





December 2005, after removal of camp, Curtis photo 7636 (photo © John Curtis)



**Ditch:** This ditch is associated with the eastern end of the tent camp, and may have served for drainage.

Polish report	Stone report
On this area is a ditch running across one-third width of the described zone. The ditch is 35 meters long, 2 meters wide and depth close to 0.5 meters.	Neither the trench nor the pit recorded in the Polish report are visible in our imagery.



View of ditch, Polish report p. 21 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Location of ditch, Russell composite



**Pit:** This is a vehicle underbody service pit. The contamination is presumably spilled vehicle fluid. The photograph in the Polish report confirms that it is in the SE corner of the area, but it is not recognizable in the satellite imagery.

Polish report	Stone report
On the Southeast corner of the area there is a pit. The area around the pit shows some contamination.	Neither the trench nor the pit recorded in the Polish report are visible in our imagery.



Polish report p. 21 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Vehicle damage**



**Polish report:** “On the entire area there are ruts from car and truck traffic” (photo: Polish report p. 22, © Ministry of Culture and National Heritage, Republic of Poland)



**Damage in area of reconstructed buildings, overview**



Polish report p. 23 (photo © Ministry of Culture and National Heritage, Republic of Poland)





General view from south, Polish photo 8 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Vehicle ruts around ancient house**



Polish report: "The entire zone shows signs of car and truck traffic. Just West of Nabu-sha-Hare Temple are the remains of a house from ancient Babylon where ruts are visible" (photo: Polish report p. 24, © Ministry of Culture and National Heritage, Republic of Poland).





Ruts around ancient house, Polish photo 31 (photo © Ministry of Culture and National Heritage, Republic of Poland)





The dirt road that runs south from the paved road and loops around the north and east sides of the ancient house provides access to several light-duty dirt tracks that run through the temple area (image 1 April 2003, Russell composite)



This road received much heavier use after the establishment of Camp Babylon, first being extended to the east into a new road south of the Nabu Sha-Hare temple (image 31 August 2003, Russell composite).





After the construction of the Dragon 5 watch tower, this road was extended to the west to provide access to the tower and to the long diagonal trench south of the camp (image 4 June 2004, Russell composite).



Heavy use of this road caused deep ruts in the archaeological earth by the northeast corner of the ancient house, and apparently also on the hill south of the Nabu Sha-Hare temple (image 26 November 2005, Russell composite).



**Vehicle damage in Seleucid-Parthian building**

**Curtis report:** Dr Maryam pointed out that at one stage a vehicle was standing in the Seleucid-Parthian building to the west of the Nabu-sha-Hare Temple. (This is just to the north of the tower Dragon no.5).

**Russell comment:** The vehicle referred to by Dr. Maryam, director of the Babylon site, was photographed in the Seleucid-Parthian house trench by John Russell and Zainab Bahrani on 27 May 2004 (images below).



Russell photo 123\_2358 (photo © John Russell)





Bahrani photo 1855 (photo © Zainab Bahrani)



**Parking area south of Tent City #1**



Pre-war image shows cleared area south of paved road, 5 July 2002, Russell composite





The parking area to the south of Tent City #1 and north of the Seleucid-Parthian building was used during the Camp Babylon period, but it does not seem to have expanded into the adjacent archaeological mounds to the south, 25 August 2004, Russell composite



1 April 2003



8 October 2004



**Stone report:** The parking area in the northwest of this area may have impinged on the site (Fig 14). This is already clearly visible in the August 2003 imagery.



**Ammunition storage facility**

Curtis report	Polish report
In the northern part of Tent City #2 there is much disturbance in an area used as an ammunition store. What remains is a horseshoe-shaped berm made up of deposits emptied from HESCO bags. These deposits clearly come from archaeological contexts. Much sand, said to have been brought in from the desert, has also been deposited in this area. See the <i>Polish Report</i> , fig. on p.31.	Ammunition Storage Facility marked by letter “E”. After removal of the Ammunition Storage sand was left from the Hesco bastions used to create the ammunition bunkers.



Berm for ammunition storage facility, Polish report p. 19 (photo © Ministry of Culture and National Heritage, Republic of Poland)

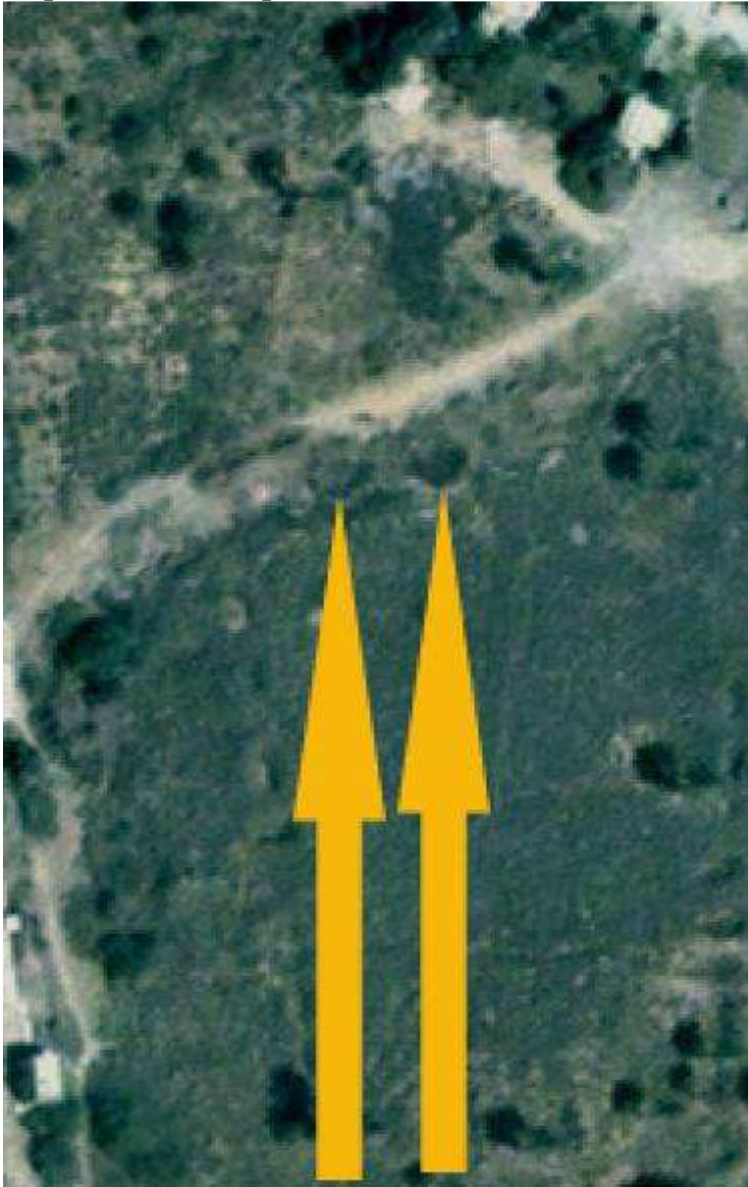




Berm (center left), apparently surrounded by flattened fill from HESCO bags, Curtis photo 7610 (photo © John Curtis)



**Sequence of development**



Pits?, 1 April 2003, Russell composite

The ammunition storage facility is at the southern edge of the camp. At least two pits, perhaps defensive works, were already in this position in July 2002. By August 2003, the berm for the facility had been constructed.



Berm for facility, 31 August 2003, Russell composite





Complete facility, additional berm (arrow), October 2004

Abandoned facility, November 2005

The facility was complete by June 2004, with an additional berm extending towards the west. The facility had been dismantled by December 2004, with only the remains of the berm still visible



1 April 2003



8 October 2004



**Stone report:** Not reported in the Polish report are two other watchtowers located to the east of the main road into the camp from the south, as well as another structure further north. The watchtowers have dirt roads leading to them, and the structure is surrounded by a berm (Fig. 39).



**1 April 2003**

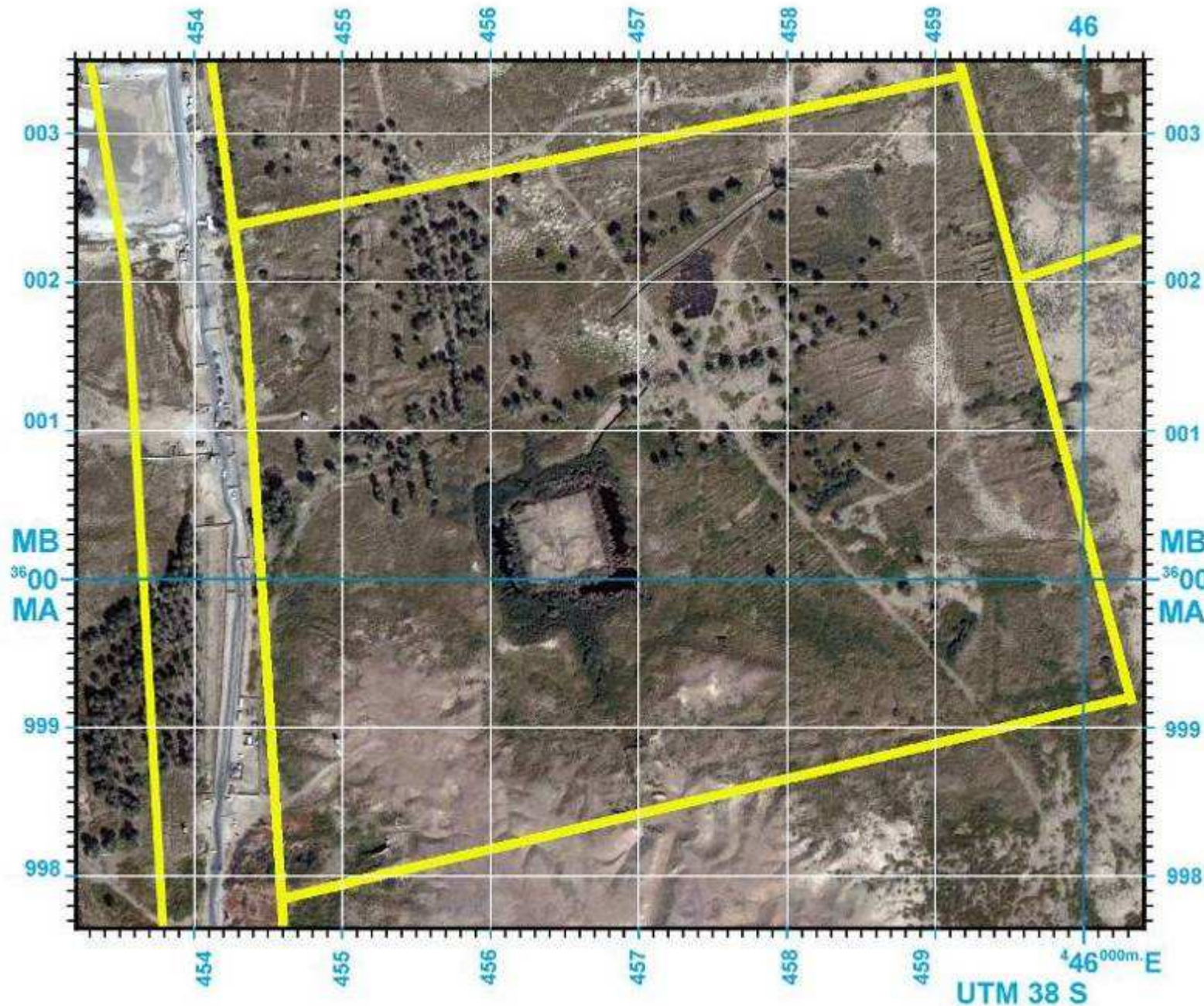


**31 August 2003**



**Stone report:** None of these were present in August 2003 (Fig. 40), but both watchtowers were in place by June 2004, and the structure was under construction.



**Appendix 10. Ziggurat Enclosure and Euphrates River Bed South, damage during the period of Camp Babylon**

The Ziggurat Enclosure (Etemenaki) was the area of the ancient temple of the god Marduk (Esagila). It is bounded by the ancient walls of the ziggurat enclosure on the north, east, and south, and by the ancient bed of the Euphrates river on the west. It includes part of area XI in the Polish report.

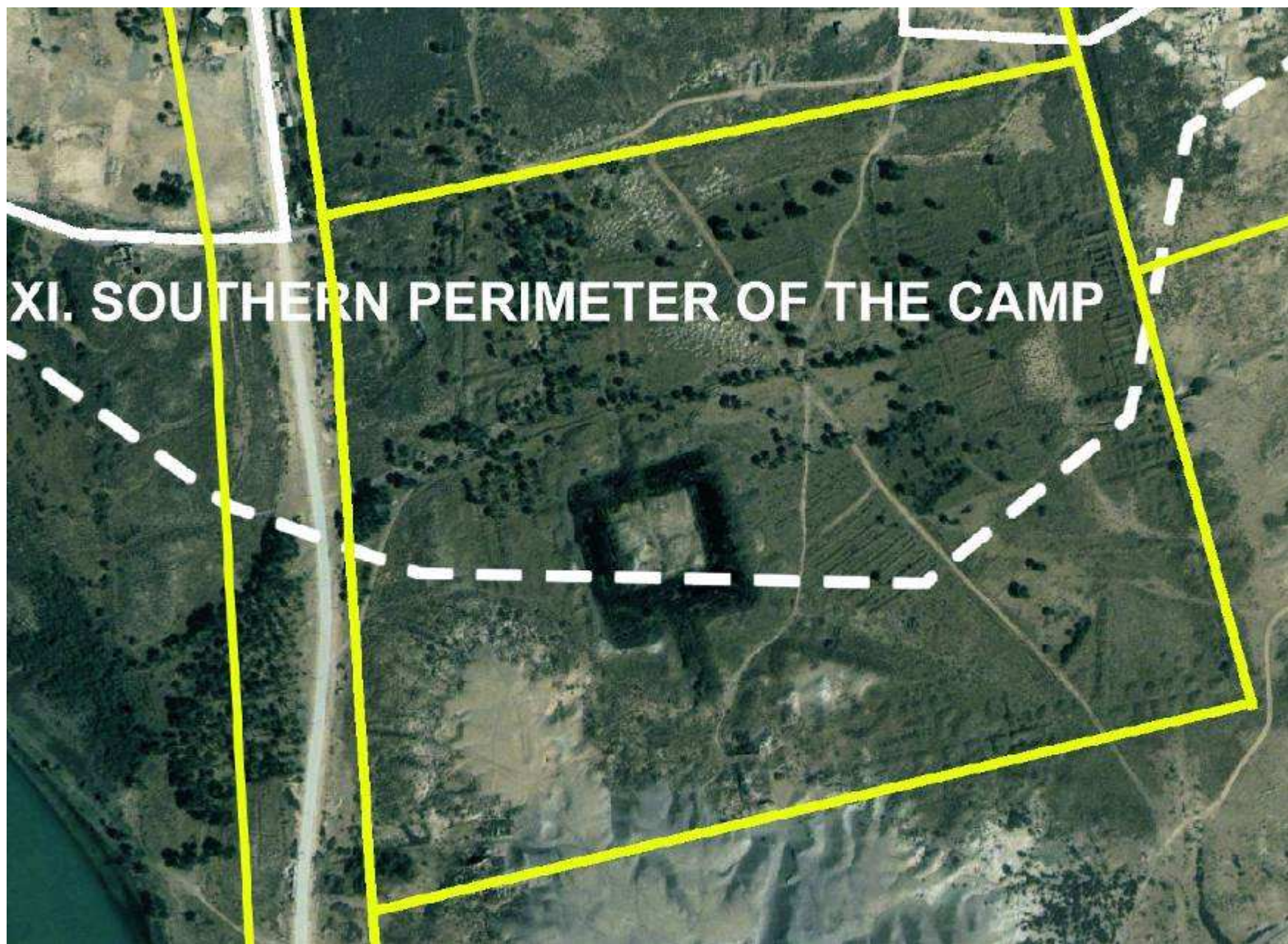
The Euphrates River Bed South is where the river flowed during the Neo-Babylonian period (612-539 BC). It is bounded by Ka-Dingir-Ra and the Ziggurat Enclosure at the east, Saddam's palace mound at the north, and western Babylon at the west. It corresponds with the course of the modern road. It includes parts of areas III and XI in the Polish report.





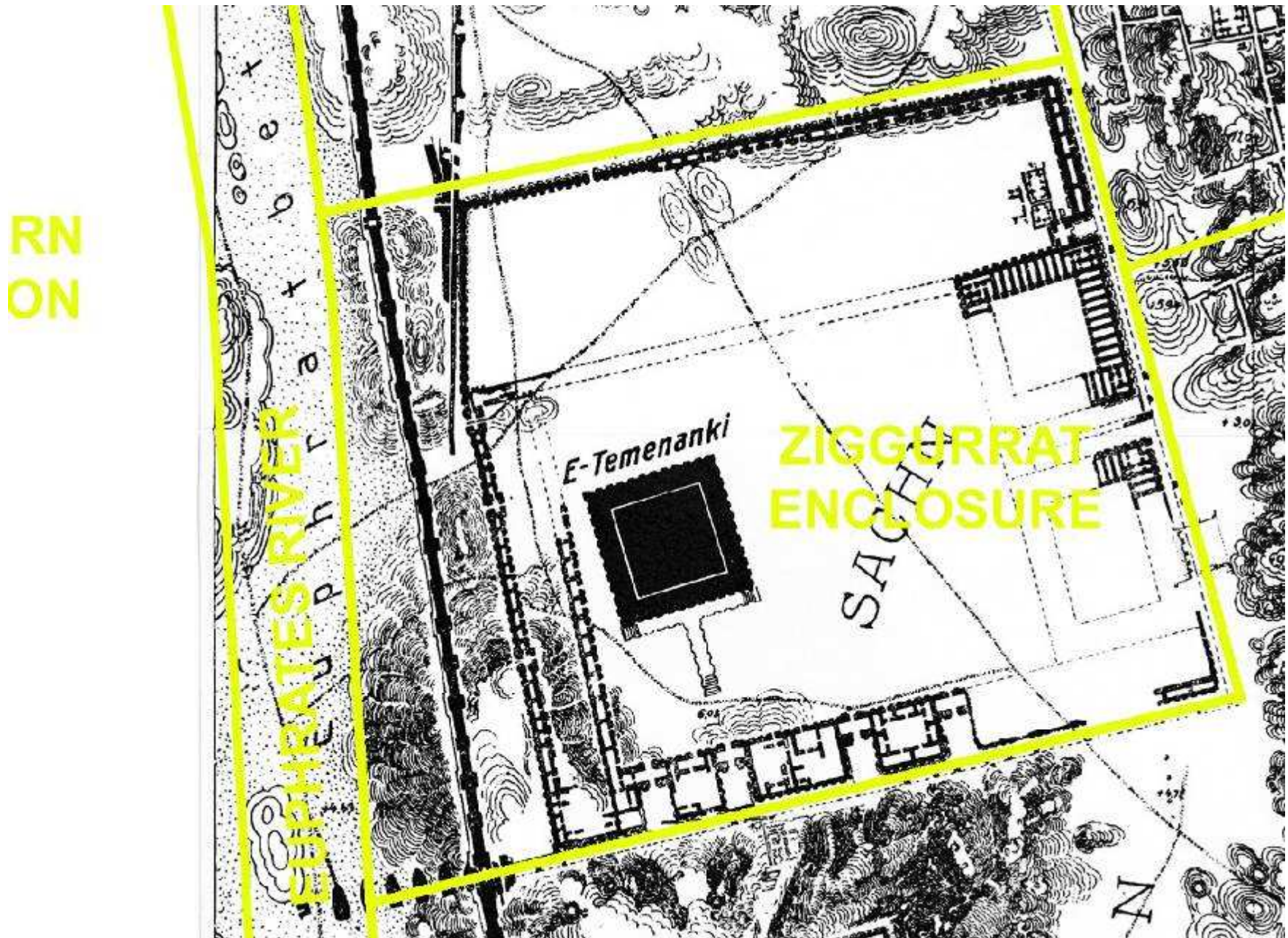
Ziggurat Enclosure area, 1 April 2003, Russell composite.





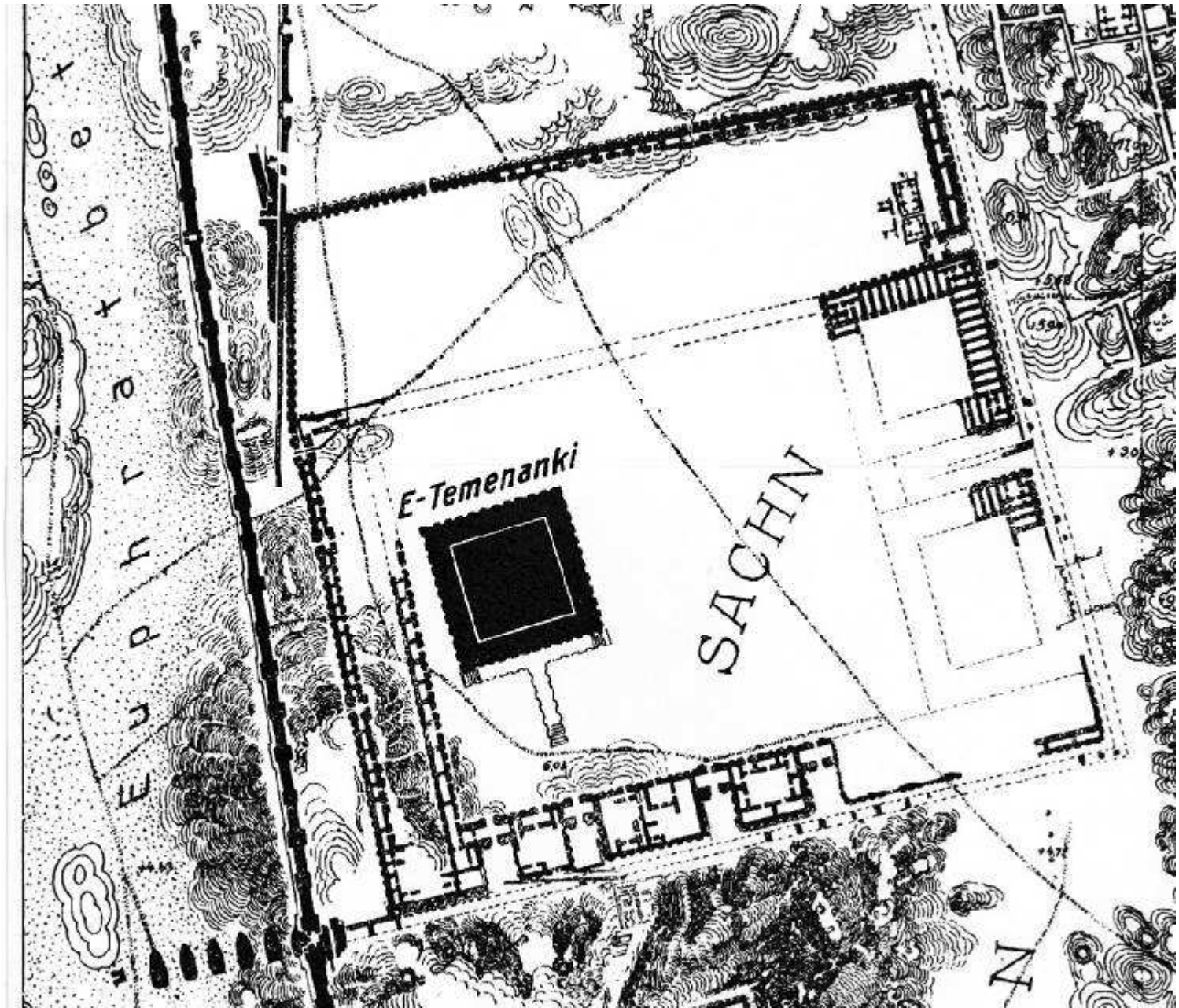
Ziggurat Enclosure area correlated with Polish area XI, Russell composite.





Ziggurat Enclosure area correlated with archaeological features on 1913 Koldewey map, Russell composite.





Ziggurat Enclosure area correlated with archaeological features on 1913 Koldewey map, Russell composite.



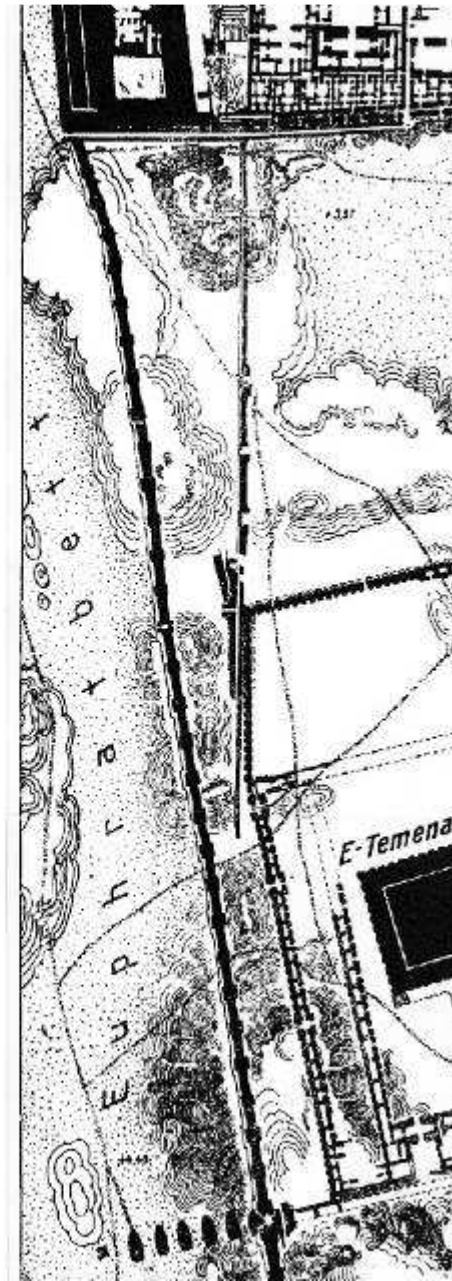
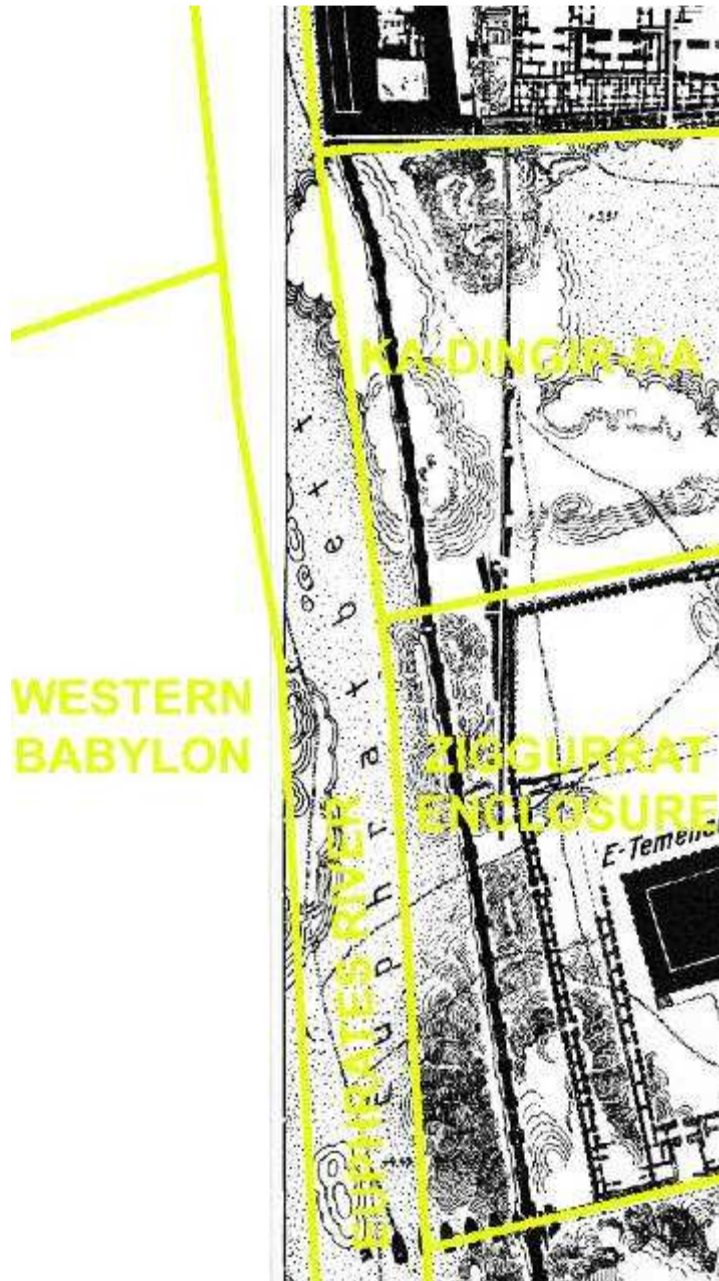


Euphrates River South area, 1 April 2003, Russell composite.



Euphrates River South correlated with Polish areas III and XI.





Euphrates River South area correlated with archaeological features on 1913 Koldewey map, Russell composite.





Reference image, 4 June 2004, Russell composite





Reference image, Polish report p. 41 (photo © Ministry of Culture and National Heritage, Republic of Poland)



Trenches south of the camp, general

**Russell comment:** These two long trenches were evidently dug to block vehicle access to the southern edge of the camp across the relatively flat temple area to the east of the southern "Reno" gate. Trench 2 cuts two existing roads, and Trench 1 keeps vehicles from sneaking between the ziggurat and the debris field. This is, however, an unfortunate location for such trenches, as they cut directly through the ancient main temple courtyard.

Iraqi preliminary report	Iraqi final report
Southern part of the city, north of the ziggurat, within the religious area: d. In the area located in the southern part of the city, north of the ziggurat, within the religious area (an important part of the city because of the presence of the Esagila Temple, [A: the main] a temple to Marduk, the main god of the city; and the stepped tower, i.e., high temple) and to the north of the ziggurat, there are three irregular trenches of varying lengths.	These trenches are distributed approximately on the edges of the area that extends to the camp. The trenches are surrounded by barbed wire from the east, south, and north.





Before trenches were dug, August 2003, Russell composite





View of trenches, June 2004, Russell composite





Trench 7 (below) and Trench 8 (above) in red, with Koldewey 1912 map overlay to show architectural features, June 2004, Russell composite



**1 April 2003**

**31 August 2003**



**Stone report:** This is another area where there is evidence for significant disturbance of the archaeological site. Two bulldozer trenches were excavated into what was once the sacred area of Babylon, one dug near the northwest corner of the ziggurat, and the other further to the northeast. These were not present in August 2003 (Fig. 31), ...



**1 April 2003**



**4 June 2004**



**Stone report:** ...but were present by July 2004 (Fig 32).





Trenches 1 and 2 at upper left, June 2004, Russell photo 124\_2470 (photo © John Russell)



**Trench 7 (Ditch A), near the ziggurat**

<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Curtis report</b>	<b>Polish report</b>
The first trench has a length of 62 meters, a width of 2-3 meters, and a depth of 2 meters. The dirt removed from, and placed on one side of, the trench contains fragments of ancient baked bricks and various pottery fragments.	7. The seventh trench is considered the one that has been damaged the most, because it was dug at the start of the northeast corner of the ziggurat—a blatant encroachment on the city and the tower itself. The Tower of Babel appears in Sumerian writings as E-temen-an-ki. Greek and Roman authors have treated this tower, and artists have reconstructed it in many different drawings and images. The trench has a length of 62 m, a width of 2-3 m, and a depth of 2.5 m. The dirt removed from the trench was placed on the two sides of the trench. It contains various pottery fragments and baked brick fragments (Photo 28).	A trench with length 45m. No pottery, bricks or bones observed in the spoil. (Ditch A in the <i>Polish Report</i> , see figs. on pp. 53, 55-56).	3) Ditch 'A' The ditch is near of the ziggurat Etemenanki. It starts nearby its north-eastern corner and runs about 45 meters in the north-eastern direction. It is about 2.5 meters wide and 2.5 meters deep. There is no archeologically significant material found in the pile of earth on the northern side of the ditch.





Trench 7, view from debris field toward ziggurat, Polish photo 98  
Photos © Ministry of Culture and National Heritage, Republic of Poland.



Trench 7, view from ziggurat toward debris field, Polish photo 101





Trench 7, NE end, Curtis photo 7584 (photo © John Curtis)



Trench 7, view to SW from the NE end, Polish report p. 44 (photo © Ministry of Culture and National Heritage, Republic of Poland)

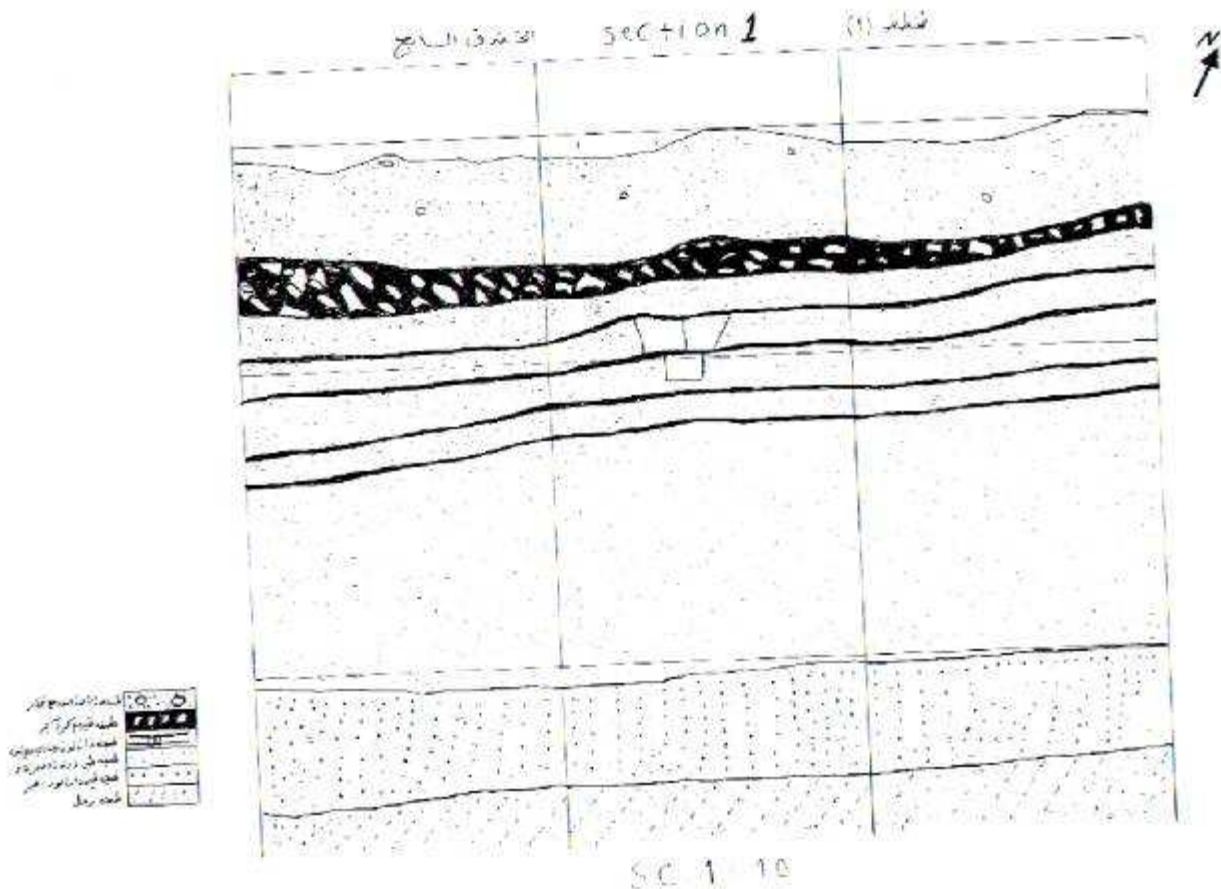




Trench 7, view to SW from the NE end, Iraqi final report fig. 28



**Iraqi final report:** To ascertain the damage, a cross section was made on the western side of the trench, i.e., near the Tower of Babel. After creating a grid of squares, we conducted minor scraping. It became evident that there are a number of layers. The first is black and contains a few pottery fragments. The second contains baked brick fragments of different sizes mixed with tar. The third is clayey and grey in color. The fourth has yellow clay. The fifth has red clay. The last layer is sand. See Sketch No. 1 and Photos 29, 30, and 31.



Iraqi final report, **Sketch No. 1 – Seventh Trench**  
[Legend from top to bottom:]

- Layer of black with a few pottery fragments
- Layer of fragments of baked bricks mixed with tar
- Layer of grey clay
- Layer of yellow clay
- Layer of red clay.
- Layer of sand





Iraqi final report fig. 29





Iraqi final report fig. 30





Iraqi final report fig. 31



**Trench 8 (Ditch B), north of the ziggurat**

Iraqi preliminary report	Iraqi final report	Curtis report	Polish report
<p>To the north of it is another trench [<u>A: described in the report as being 50 m in length. This trench actually has</u>] with a length of 162 meters, a width of 1-1.5 meters, and a depth of 2 meters.</p> <p><u>[A: Its northern part terminates in two branches; the length of the southern branch is 5 m. One of the branches lies in the direction of]</u></p> <p><u>[B: Branching from the south side is a small trench with a length of 10 meters. One of them extends toward]</u></p> <p>the Processional Street [Shari' al-Mawkib]. The dirt removed from the trench contains pottery fragments and fragments of baked bricks of various sizes, some of which have cuneiform writing and bear an impression of the seal of the Babylonian king, Nebuchadnezzar.</p>	<p>8. Eighth trench: This is the longest trench dug in the city. It is located in the religious area of the city, north of the seventh trench. It is 162 m in length, 1-1.5 m in width, and 2 m in depth. A trench with a length of 10 m branches off from its eastern side. The dirt removed from the trench contains pottery fragments and baked brick fragments of various sizes. Some of the fragments have Sumerian inscriptions in the form of an impression of the Babylonian King Nebuchadnezzar's stamp. The most prominent find is a small cup with a piece missing (see Photo 32).</p>	<p>E-W trench, length c.170m (paced out), c.2m deep, and 1.0-1.5m wide. Much pottery and many fragments of brick with cuneiform inscriptions of Nebuchadnezzar were observed in the bank of spoil on the north side of the trench. (Ditch B in the <i>Polish Report</i>, see figs on pp.53, 57-58).</p>	<p>4) Ditch "B"</p> <p>Ditch "B" starts about 50 m from the northern end of ditch "A". The end of the ditch forks into a letter 'Y'. The width of the ditch varies between 1.2 to 1.8 meters. It is about 2 meters deep. The ditch is strongly overgrown. On the pile located on the northern side of the ditch are scattered numerous fragments of ceramic. About 30 m from the north-eastern end of the ditch; fragments of bricks are beginning to emerge.</p>





Trench 8 shortly after it was dug, viewed from the road, looking south, May 2004, Russell photo 123\_2360, detail (photo © John Russell)





Trench 8, view from the NE end toward the SW, November 2004, Polish photo 109 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Trench 8, looking toward SW, Curtis photo 7589 (photo © John Curtis)





Trench 8 looking toward NE, Iraqi final report fig. 32





Trench 8, fill, Curtis photo 7587 (photo © John Curtis)





Trench 8 fill, small cup reported in Iraqi final report, Curtis photo 7592 (photo © John Curtis)



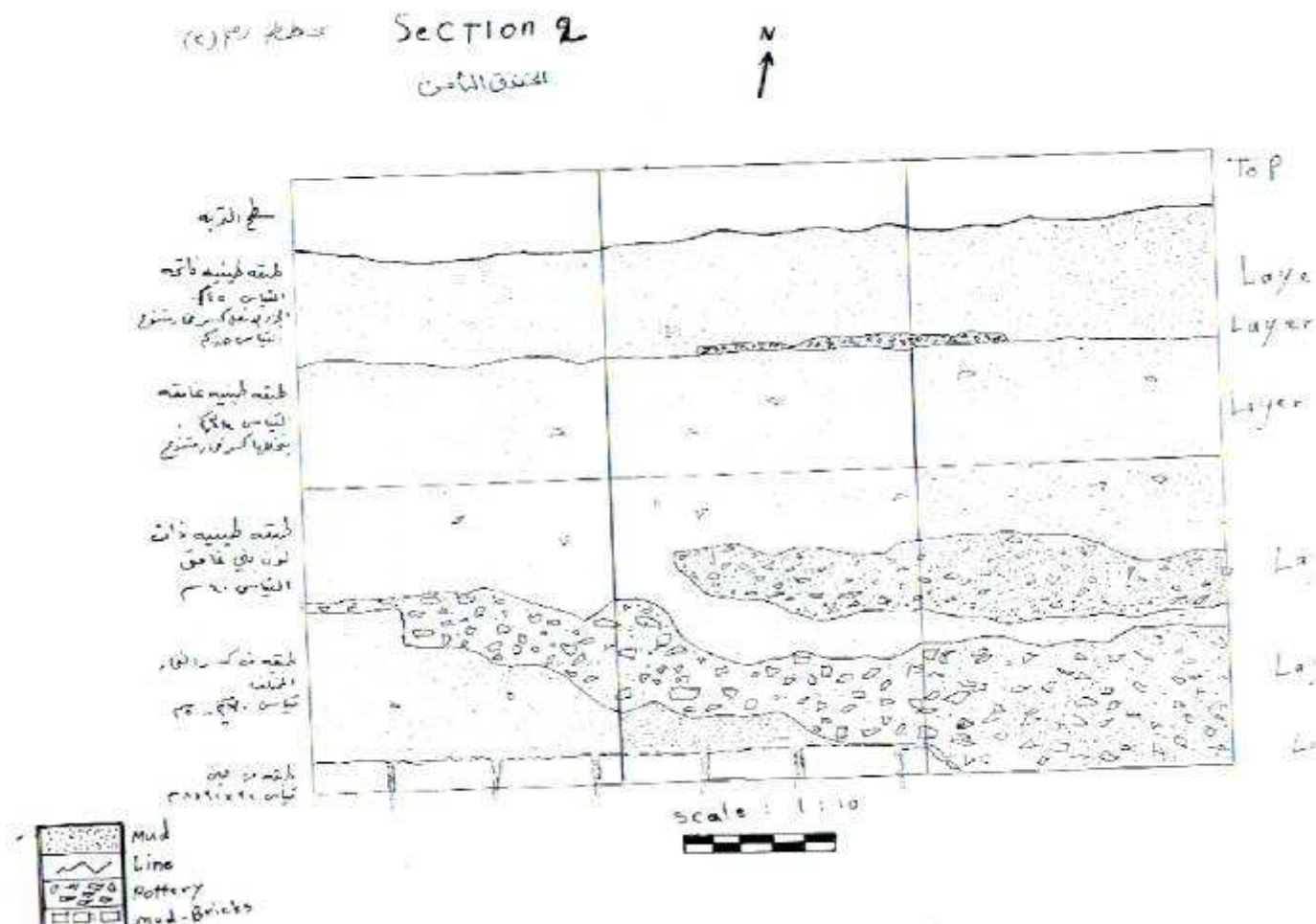
**Iraqi final report:** To ascertain the extent of the damage, we selected the middle-most portion of the trench. We created a grid in an area of 3 x 2 m (see Photo 33). We were able to distinguish a number of layers. The first is light yellow clay with a thickness of 45 cm. Interspersed in it is a layer of pottery fragments with a thickness of 5 cm. The second layer is light in color and has a thickness of 35 cm. The third is dark in color and has a thickness of 40 cm. The fourth layer comprises clay and pottery fragments. It has a thickness of 30-50 cm. In the same cross section, in the lower part of the trench, we found a row of sandy bricks, each measuring 32 x 32 x 10 cm (see Sketch 2 and Photo 34). This row of unbaked bricks points to the existence of an unbaked brick wall that may be part of a structure that extends to a deeper level and a greater distance. This structure may belong to the Neo-Babylonian period based on the dimensions of the unbaked brick, as such dimensions are known in the Neo-Babylonian period (32 x 32 x 10 cm). Pottery fragments were also found here. This trench has begun to collapse and cause additional damage. In two areas of the middle part of the trench, two collapses have occurred. The first has a length of 8 m. The other has a length of 10 m (see Photo 35).





Trench 8, Iraqi final report fig. 33





### Iraqi final report, Sketch No. 2 - Eighth Trench

[Description of Layers from Top to Bottom on sketch:]

- Surface layer
- First layer: light yellow clay with a thickness of 45 cm, with an interspersed layer of pottery fragments with a thickness of 5 cm.
- Second layer: light in color with a thickness of 35 cm.
- Third layer: dark in color with a thickness of 40 cm.
- Fourth layer: clay and pottery fragments with a thickness of 30-50 cm.
- Layer of unbaked bricks, each measuring 32 x 32 x 10 cm.





Trench 8, Iraqi final report fig. 34





Trench 8, Iraqi final report fig. 35



**Berm across road near Trench 8**



Earth and fired bricks were used to block a road leading south near the N end of Trench 8, May 2004, Russell photo 123\_2360 (photo © John Russell)

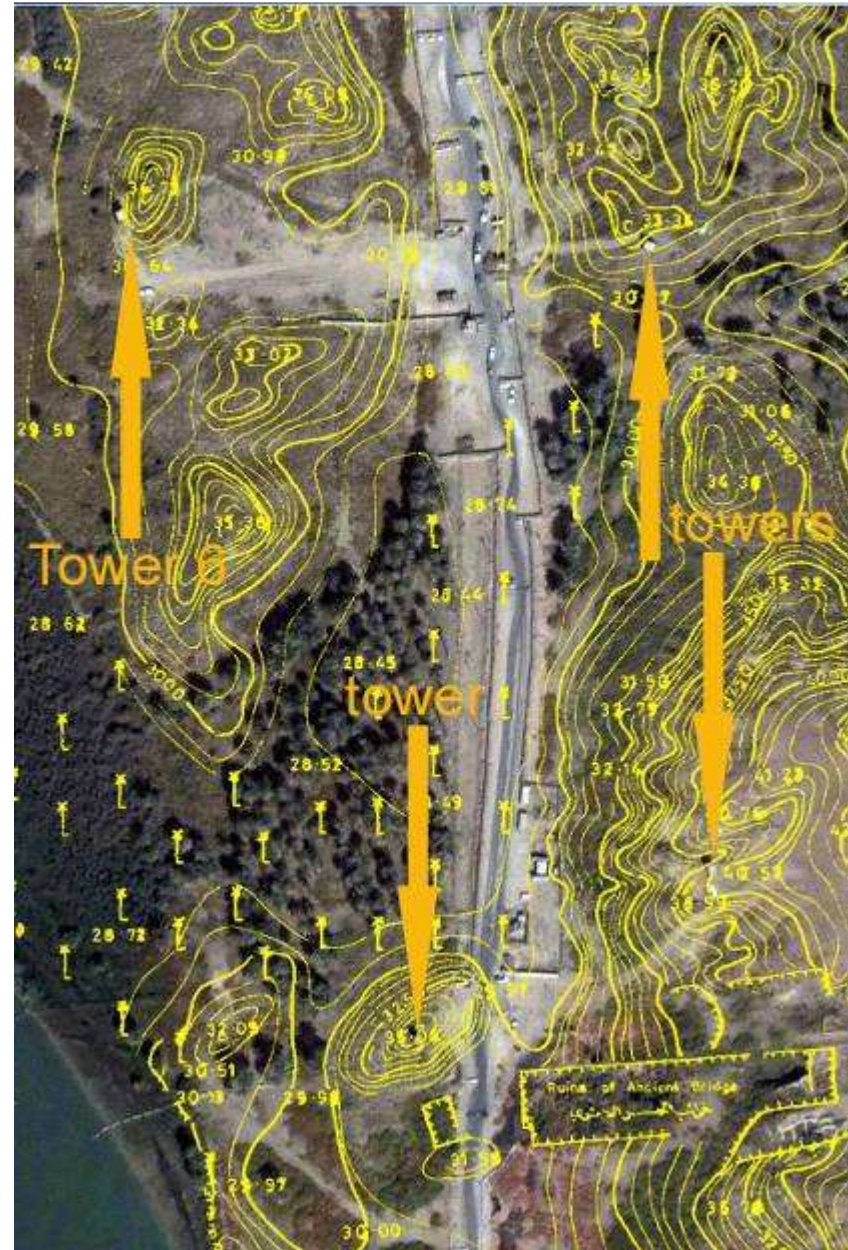




Berm viewed from the south, June 2003, Bahrani 2125 (photo © Zainab Bahrani)



Observation towers by south ("Reno") gate



Observation towers by south gate, 8 October 2004, Russell composite

1980 Iraqi map showing topography of tower sites, 8 October 2004

**Russell comment:** In addition to the two towers identified below by Stone east of the road, there is also a tower west of the road by the outer gate.



1 April 2003



8 October 2004



**Stone report:** Not reported in the Polish report are two other watchtowers located to the east of the main road into the camp from the south, as well as another structure [ammunition storage] further north. The watchtowers have dirt roads leading to them, and the structure is surrounded by a berm (Fig. 39).



**1 April 2003**



**31 August 2003**



**Stone report:** None of these were present in August 2003 (Fig. 40), but both watchtowers were in place by June 2004, and the structure was under construction.



**HESCO containers at the south gate**

Iraqi preliminary report	Iraqi final report	Curtis report
<p>Parts of the hills along both sides of the road were removed. <u>[A: whose length totals 300-400 m, were removed, and the traces of cutting are very apparent. They have been filled in with sand bags.]</u> a. Gate to the village of al-Jumjumah: Along the road, on the left side, HESCO bags were filled [and positioned to cover an area] with a length of 340 meters. The length of the area covered by the bags on the right side of the road is 285 meters. There are many fragments of ancient baked bricks and pottery visible inside the HESCO bags <u>[A: large fabric bags in wire mesh containers that are filled with earth or sand].</u></p>	<p>HESCO bags are present along both sides of al-Jumjumah Road, within the boundaries of the city of Babylon, covering a length of 380 m on the left and 250 m on the right side of the road. The bags are all filled with dirt from the city of Babylon containing pottery fragments and baked brick fragments (Photo 69).</p>	<p>To the south of the Reno Gate for a distance of about 200m the road is lined by HESCO bags that have clearly been filled with deposits from the Babylon site, containing sherds, bones, etc.</p>





Iraqi final report fig. 69





View of south (Reno) gate looking NE with HESCO barriers lining road, Polish photo 26 (photo © Ministry of Culture and National Heritage, Republic of Poland)





View of south (Reno) gate looking NE with HESCO barriers lining road, Polish photo 27, detail (photo © Ministry of Culture and National Heritage, Republic of Poland)

**Cuttings south of the camp gate**

<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Curtis report</b>
<p>There are also cuttings outside the gate and on the left, covering an area of 38 meters x 6 meters and cuttings on the right adjacent to the gate with an area of 30 right [sic] 8 meters.</p>	<p>5. Fifth cut: This cut is in the southern part of the city, west of the street that links the city to the village of al-Jumjumah. The objective of the cutting works in this area was to create earthen barriers. Most of the earthen barriers and obstacles located in this area contain fragments of baked bricks and pottery. The fifth cut has a length of 38 m, a width of 6 m, and a height of 3 m. The cross-section resulting from the cutting works contains various fragments (Photo 43).</p> <p>6. Sixth cut: It is on the eastern side of the street, close to and similar to the fifth cut, it contains ancient pottery fragments, etc. It has a length of 30 m, a width of 1-8 m, and a height of 6 m (Photo 44).</p>	<p>There are further large cuttings to the south of the barbed wire perimeter that we were not allowed to visit.</p>





Area of 5th and 6th cuts, 5 July 2002, Russell composite





5th and 6th cuts, 8 October 2004, Russell composite





Area of 5th and 6th cuts with original topography, 8 October 2004, Russell composite





5th cut, view looking north with watch tower at left, Iraqi final report fig. 43





6th cut, view looking north, Iraqi final report fig. 44

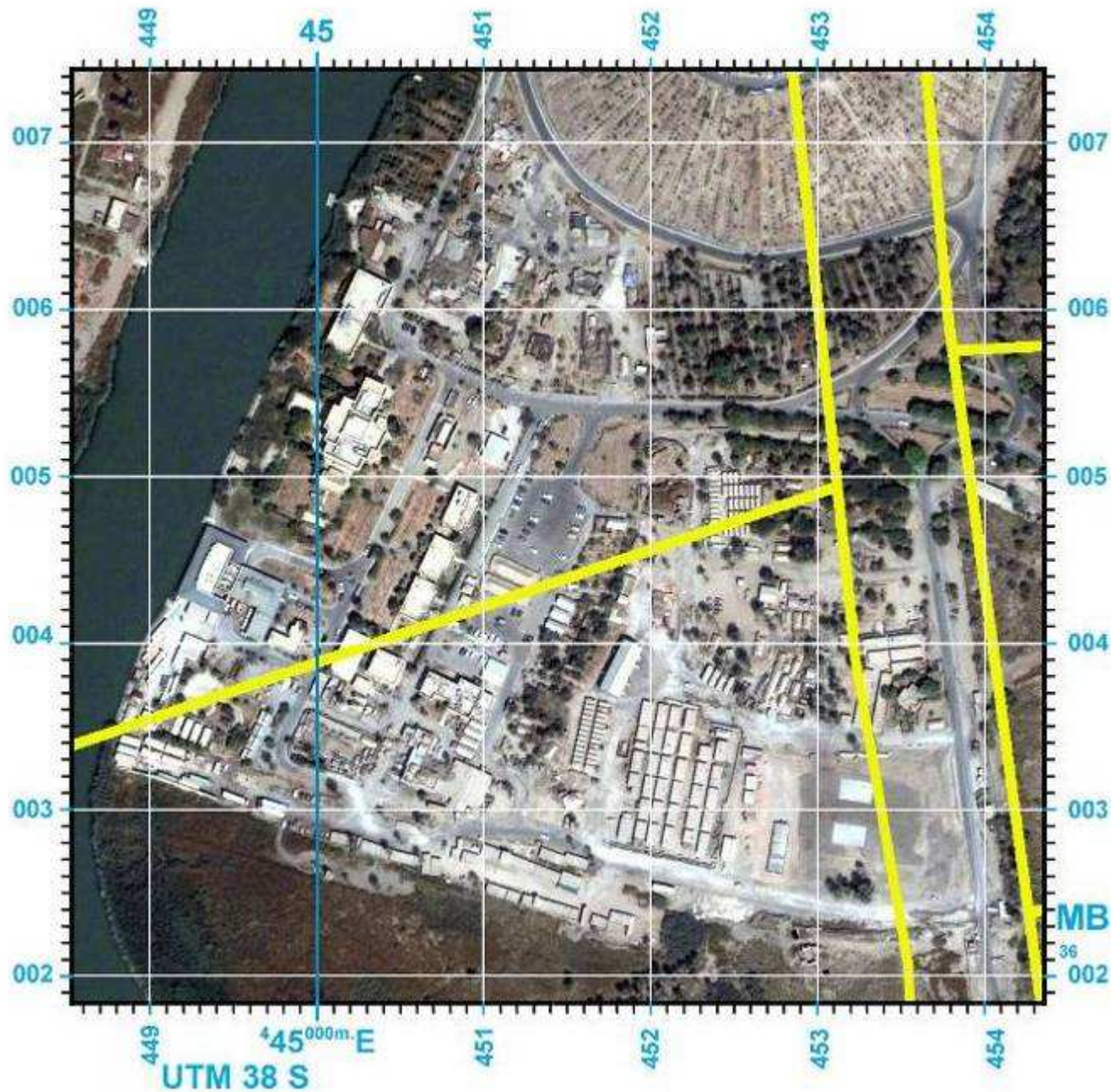


## **Trash dumps**

**Russell comment:** These dumps cannot be identified on the satellite imagery.

**McDonald report:** Trash dumps or birms: There are two of these. Trash dumps are rectangular areas with three bulldozed ridges. This shelters a central area in which rubbish is burnt. When the dump goes out of use the ridges are collapsed on top of the rubbish. The southern one is south of the southern entry point to the west of the road and close to the east bank of the river and has been closed. It is likely that this dump being very close to the river that the upper few feet of soil are probably river silt and so it is unlikely that this dump will have affected any actual archaeological deposits.



**Appendix 11. Western Babylon and Suburbs, damage during the period of Camp Babylon**

Western Babylon is the walled area of the city west of the ancient course of the Euphrates River. It is bounded by the course of the ancient city wall (now mostly lost) on the north, by the ancient course of the Euphrates on the east, and by the modern river on the west and south. The Suburbs is the area directly to the north of this, outside the ancient city wall and west of the ancient Euphrates.





Western Babylon and Suburbs areas, 1 April 2003, Russell composite.



Western Babylon and Suburbs correlated with Polish areas I, III, and XI.





Reference image, 8 October 2004. Russell composite.



Reference image, Polish report, p. 15

KEY:

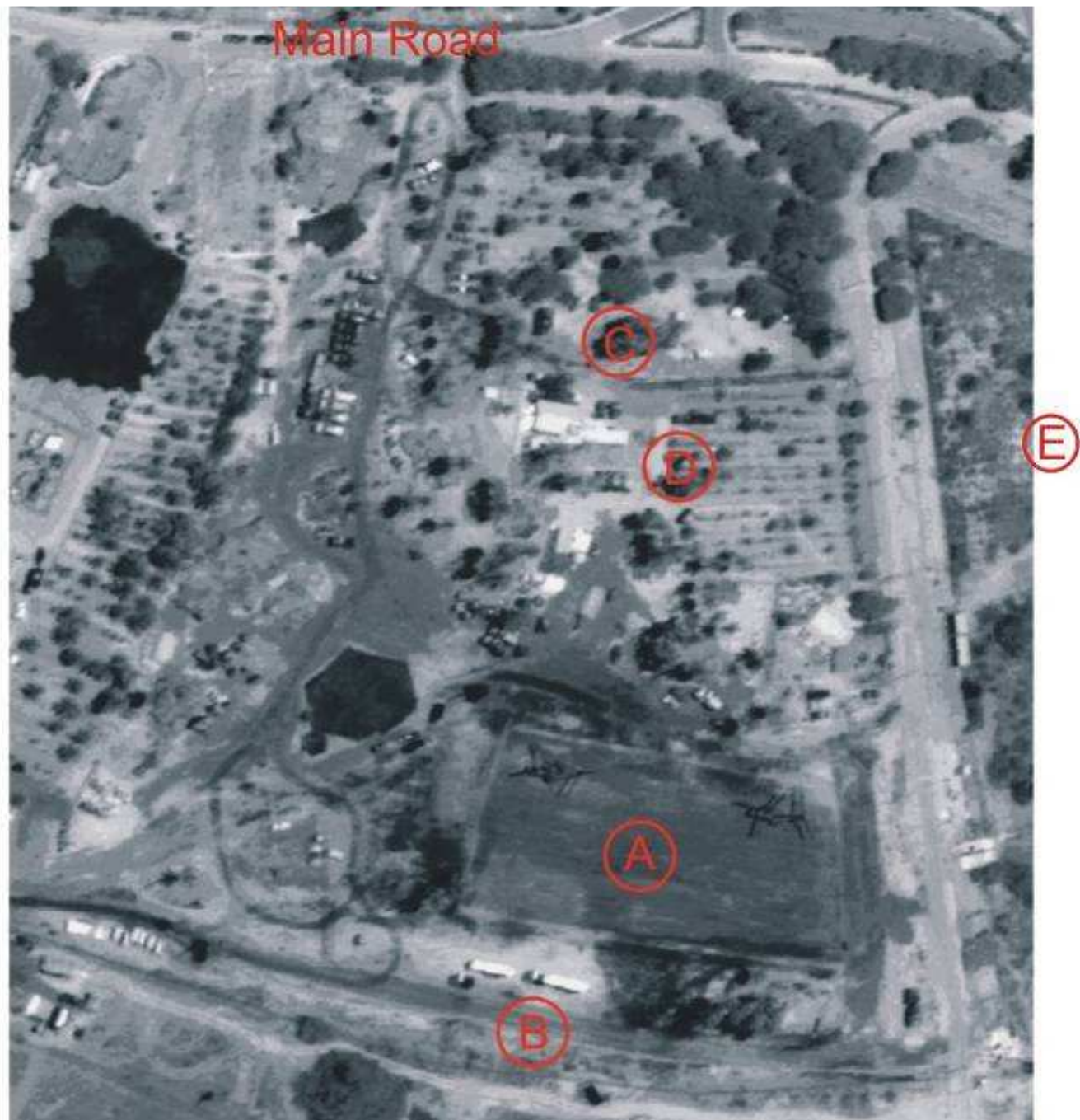
A = Landing zone

B = southern boundary

C = shelter

D = pit

E = ammunition storage facility





**Tent City #2 and southern landing zone, overview**

<b>McDonald report</b>	<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Curtis report</b>	<b>Polish report</b>
The southern landing zone near the southern ECP (entry check point) to the west of the road was apparently mostly gardens with ridges and ditches for irrigation like the remaining area immediately north of it. These ridges were bulldozed flat, red earth dumped and compacted and watered. It is then watered each day.	d. The area south of the archeological city, near the al-Jumjumah Gate: A portion of this area was leveled and covered with gravel for the creation of a landing spot for aircraft and the installation of trailers.	<b>The Area South of the Archeological City Near the Gate of al-Jumjumah</b>  This encroachment involves the leveling of a portion of this area, which was then covered with gravel and made into a landing area for aircraft. In addition, residences consisting of caravans were set up (Photo 60).	To the north of Reno Gate (which is to the west of the north-west corner of the ziggurat) there is a large flat area covered with gravel that is known as Tent City #2 ( <i>Polish Report</i> , figs. on pp.27-28).	A majority of the ground in City Tent #2 is covered with gravel. In the southeast corner of City Tent#2 there is a small landing zone (120x60 meters) covered by gravel. This area is marked on the picture by letter “A”.

**Russell comment:** It appears that the leveling of the landing zone area took place some time before 2002, well before the arrival of Coalition Forces (see analysis below).





Modern infrastructure (foreground) and Tent City #2 (middle ground) viewed from the west, Polish photo 23 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Modern infrastructure (foreground) and Tent City #2 (right middle ground) viewed from the southwest, Polish photo 24 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Modern infrastructure (left) and Tent City #2 (right) viewed from the south, Polish photo 25 (photo © Ministry of Culture and National Heritage, Republic of Poland)

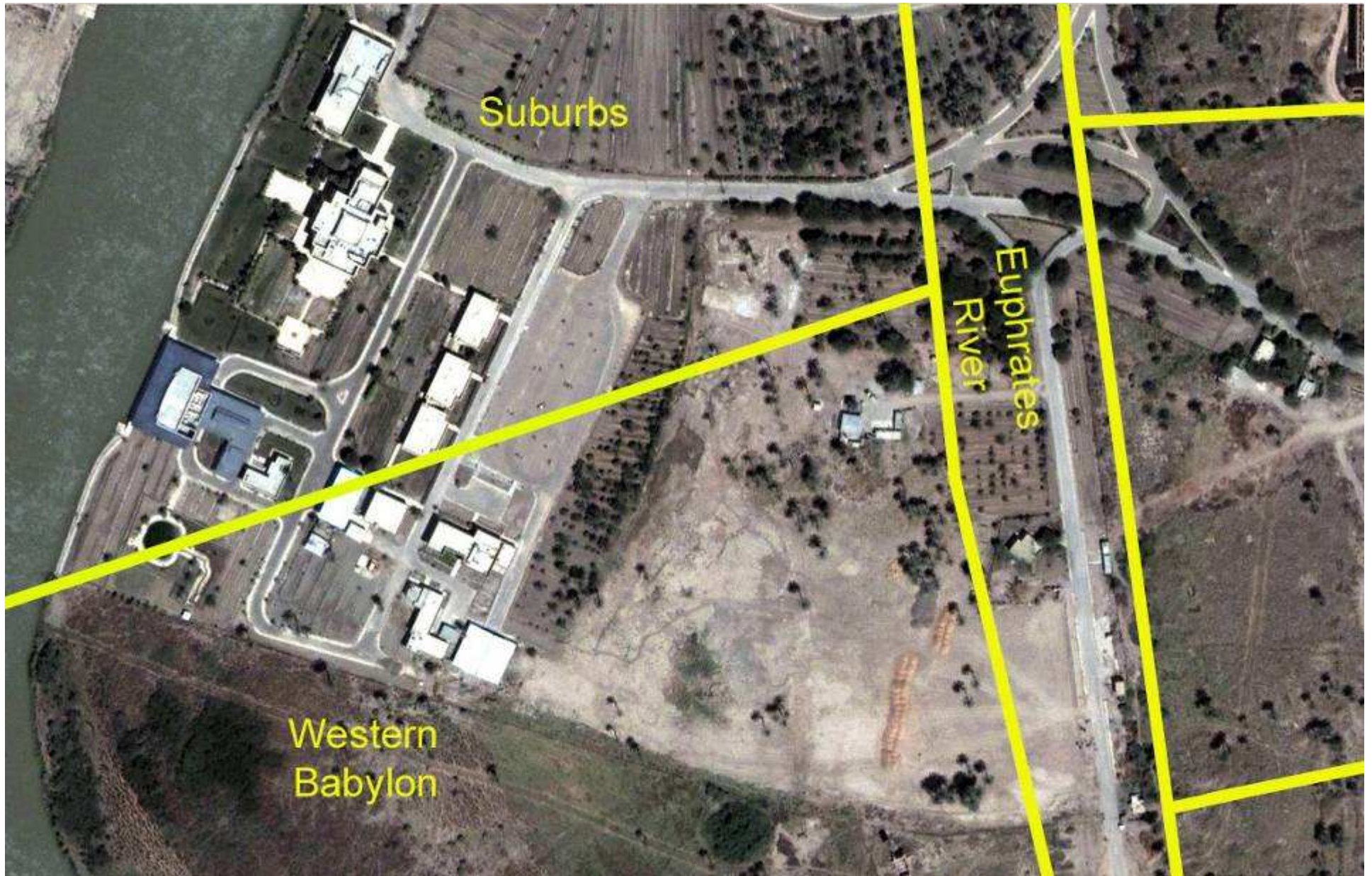


**Analysis of sequence of development**



Under Saddam, the area beside the river south of his palace was developed with modern buildings and parking lots, while the adjacent area to the east was left open. (image 5 July 2002, Russell composite).





In antiquity, the southern part of this area was inside the city wall of Babylon, while its eastern limit was bounded by the ancient course of the river, which is now occupied by a main road (image 5 July 2002, with overlay of ancient boundaries, Russell composite)





According to the Iraqi 1980 survey map, the western part of this area was level while the eastern part, adjacent to the former course of the river, was mounded and was occupied by two brick kilns. Between 1980 and 2002, the southeast corner of this area was leveled, removing the north kiln and creating a 2-meter-high cut just north of the southern kiln (image 5 July 2002, with Iraqi 1980 map overlay, Russell composite).





During the initial phase of Coalition occupation, this area was intensively developed with temporary structures, and a parking area was expanded to the south (red outline). Here, existing buildings are marked with orange dots to distinguish them from new construction (image 31 August 2003, Russell composite).





Final phase of Coalition development showing landing zone. Pre-Coalition buildings are marked with orange dots (image 4 June 2004, Russell composite).





Final phase of Coalition development. Pre-Coalition buildings are marked with orange dots (image 8 October 2004, Russell composite).





Condition of area after departure of Coalition Forces (image 26 November 2005, Russell composite).





Condition of area after departure of Coalition Forces. Pre-Coalition buildings are marked with orange dots (image 26 November 2005, Russell composite).

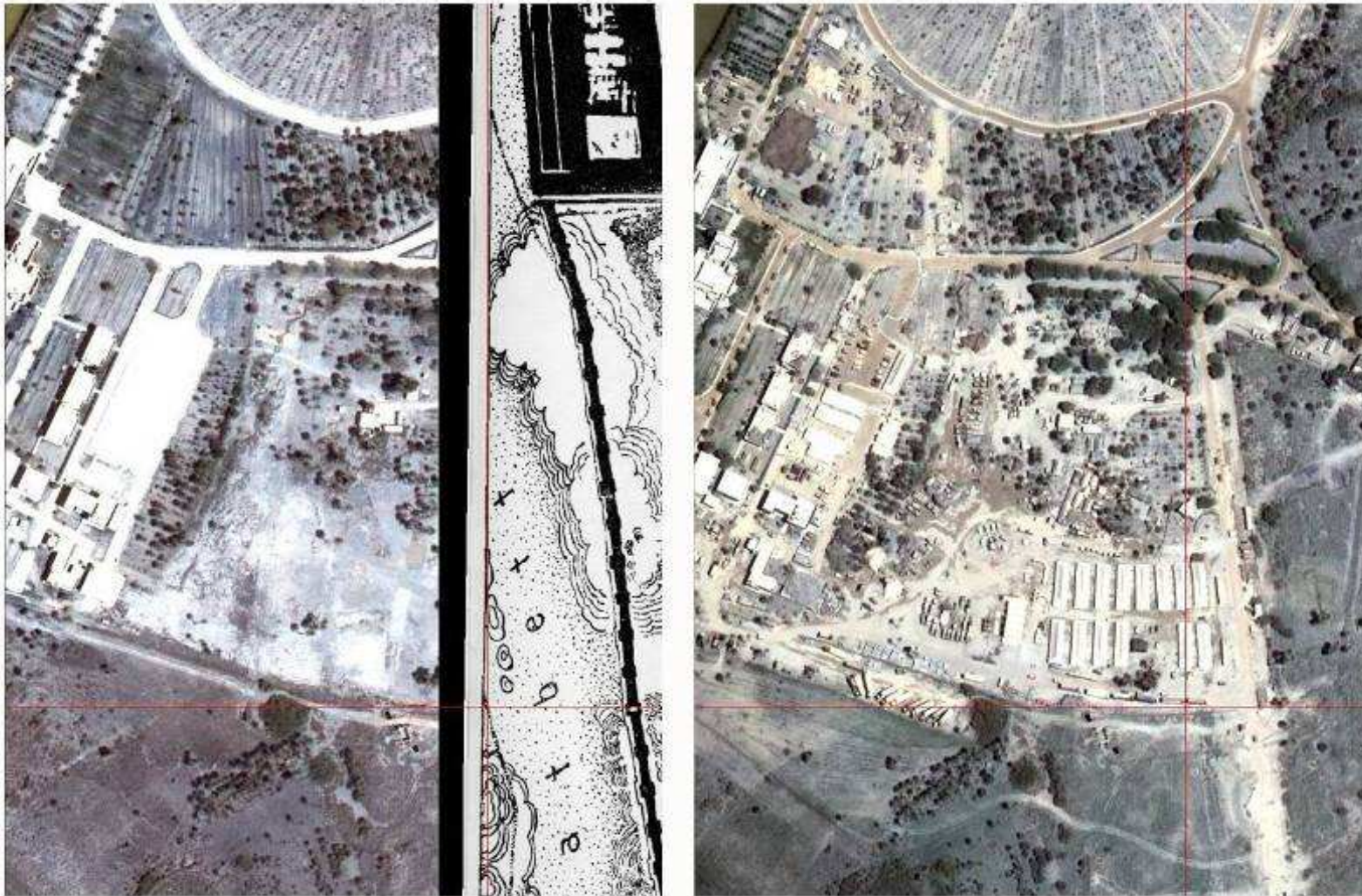


Stone report on the sequence of development

1 April 2003

Koldewey Map

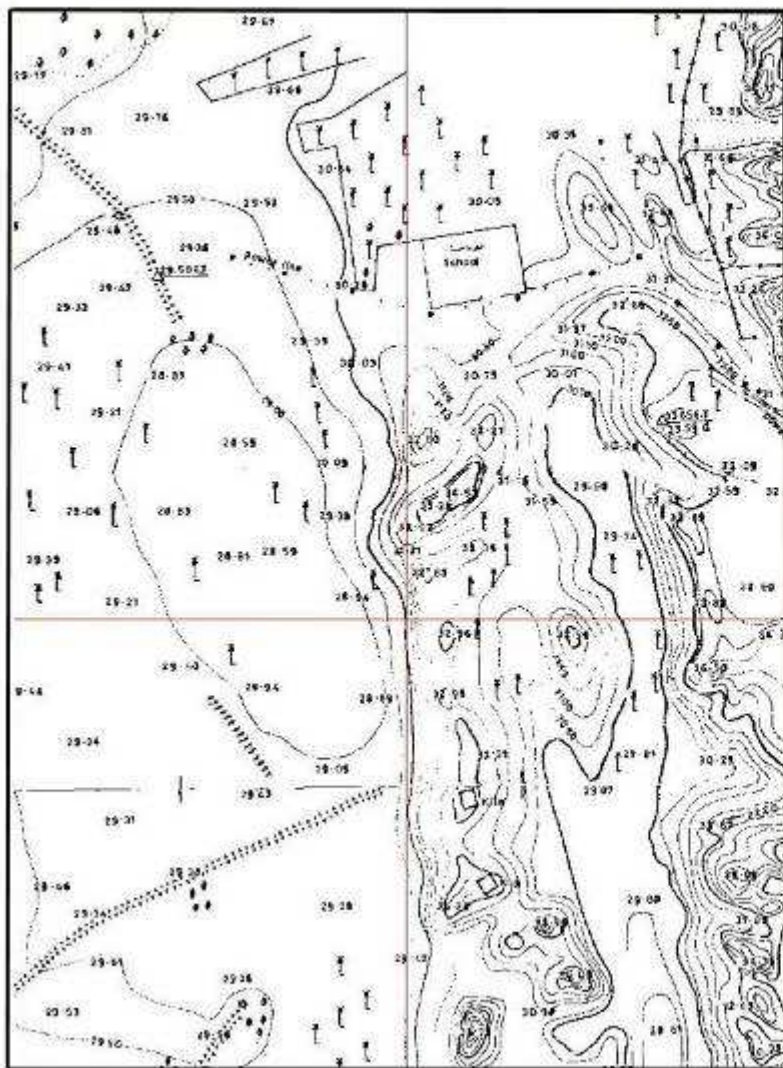
31 August 2003



**Stone report:** This area was largely undeveloped in April 2003, with two small buildings on it. On Koldewey's detailed plan, this area is shown as being on the west side of the ancient Euphrates, outside the walled inner city. [Stone report fig. 6]



**31 August 2003**



**Stone report:** Nevertheless, the contour map shows the eastern portion of this zone to have been a mounded area (Fig. 7), presumably with remains of the outer town.



**1 April 2003**



**8 October 2004**



**Stone report:** The imagery shows this area as being used for tents by August 2003, although much of the original surface seems to have remained intact at this time. Most of the disturbance was located in the southern part, where some palm trees had been removed, and the difference in color of the surface suggests that it may have been flattened. [Stone report fig. 8]



**1 April 2003**



**8 October 2004**



**Stone report:** By October 2004, a helicopter pad had been developed in the SE part of this area, and the evidence for disturbance is much greater throughout this area (Fig 9), something also seen in the photographs contained in the Polish report. Photographs taken by John Russell show the helicopter pad to be level with the road [Russell 124\_2468], which was not the case before the war, as indicated by the contour map.





Landing zone viewed from the west, June 2004, Russell 124\_2468





Trailers and landing zone viewed from the southwest, Iraqi final report fig. 60





Landing zone viewed from the southeast, Polish report p. 17 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Gravel, Polish report p. 16 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Cuttings at the south border of Tent City #2**

<b>McDonald report</b>	<b>Iraqi preliminary report</b>	<b>Iraqi final report</b>	<b>Curtis report</b>	<b>Polish report</b>
<p>The one area of the southern helicopter landing zone where archaeological damage may have been done is at its southeastern end close to the road where a mound was cut leaving a six foot section in some places. Outside the fence line the rest of this particular mound has a late Islamic ruin on top of it which is being used as an observation post. This landing zone is now going out of use and the helicopters are being replaced by tents for the Polish Coalition forces.</p>	<p>There are also two pits  <u>[A: near the control point leading to the village of al-Jumjumah]</u>  <u>[B: in the southern part of the city, on the road leading to the village of al-Jumjumah.]</u></p> <p>The first has dimensions of 10 x 10 meters and a depth of 2 meters.</p> <p>The second is a smaller pit with dimensions of approximately 5 x 8 meters and a depth of 2.5 meters.</p>	<p>7. Seventh cut: It is north of cuts 5 and 6, to the west of the main road, near the area of the brick kiln, south of the southern airfield built by the MNF-I. The cut was made to build a road for vehicles transporting supplies and food to residential locations. The cut is 60 m in length, 3 m in width, and 3 m height (Photo 45).</p> <p>9. Ninth cut: Located to the east of the brick kiln, it has a length of 100 m. The dirt removed from this cut was used to make HESCO<sup>1</sup> barriers and earthen obstacles. Parts of the tells located on the two sides of the road were removed, as evidenced by the pottery fragments in the HESCO containers (Photo 47).</p> <p>10. Pit. In the southern part of the city, on the road that leads to the village of al-Jumjumah to the west and that links the archeological city of Babylon to the village of al-Jumjumah and the city of al-Hillah, there is a pit with an almost circular shape, a diameter of 7 m, and a depth of 5.2 [2.5?] m. The dirt removed from the pit from was packed into bags or used to fill containers (Photo 37).</p> <p>11. Pit. Near the pit mentioned in the previous paragraph is another pit. It is larger in area and is approximately circular in shape, with a diameter of 10 m and a depth of 2 m (Photo 38).</p>	<p>On the south side of the road to the west of the Reno Gate, in front of a brick factory, there is a cutting with maximum height 3m where the road has been widened (<i>Polish Report</i>, centre fig. on p.29).</p>	<p>The Southern boundary of the area is located near the road on the South. The terrain is level. On the picture this place is marked as letter "B"</p>

**Russell comment:** As noted above, it appears that the 7<sup>th</sup> cut predates the arrival of Coalition Forces. It is not clear why the Polish report refers to this area as level, as there is a 2-3 meter high cut in this location.





Area of 7th and 9th cuts and pits 10 and 11 before the Coalition occupation. The 7th cut is already present, 5 July 2002, Russell composite





Areas of 7th and 9th cuts and pits 10 and 11, 8 October 2004, Russell composite





View looking NE with southern brick kiln in center, 7th cut along the right side of the road, and 9th cut and pits 10 and 11 at the top, June 2004, Russell 124\_2469





7<sup>th</sup> cut, Polish report p. 17 (photo © Ministry of Culture and National Heritage, Republic of Poland)





7th cut, Iraqi final report fig. 45





9th cut at upper left, Polish photo 27, detail (photo © Ministry of Culture and National Heritage, Republic of Poland)





9th cut, Iraqi final report fig. 47





Pit 10, Iraqi final report fig. 37





Pit 11, Iraqi final report fig. 38



**Observation tower 6:** The first watch tower was replaced between August 2003 and June 2004. During this same period, a large parking lot was carved out to the east of the tower (8th cut).

Iraqi final report	Curtis report	Polish report
8. Eighth cut: It is south of the brick kiln. This cut covers a large area estimated at 600 m. The dirt removed from the cut contains fragments of baked bricks and diverse pottery fragments (Photo 46).	To the west of the Reno Gate there is a trench c.30m x 10m, up to 2m deep, that is said to have been dug to fill conix containers (HESCO bags).	2) The tower no. 6 (on the below picture its approximate location has been indicated with letter “x” and digit 6). The earth that has been piled up to elevate one of the tells was gained as a result of grading of the area directly adjacent to the tower no 6 (surface of the area is 1200 square meters). There are many fragments of ceramic and brick on the slopes of the hill.



8th cut, Iraqi final report fig. 46





Observation tower 6, first version, 31 August 2003, Russell composite





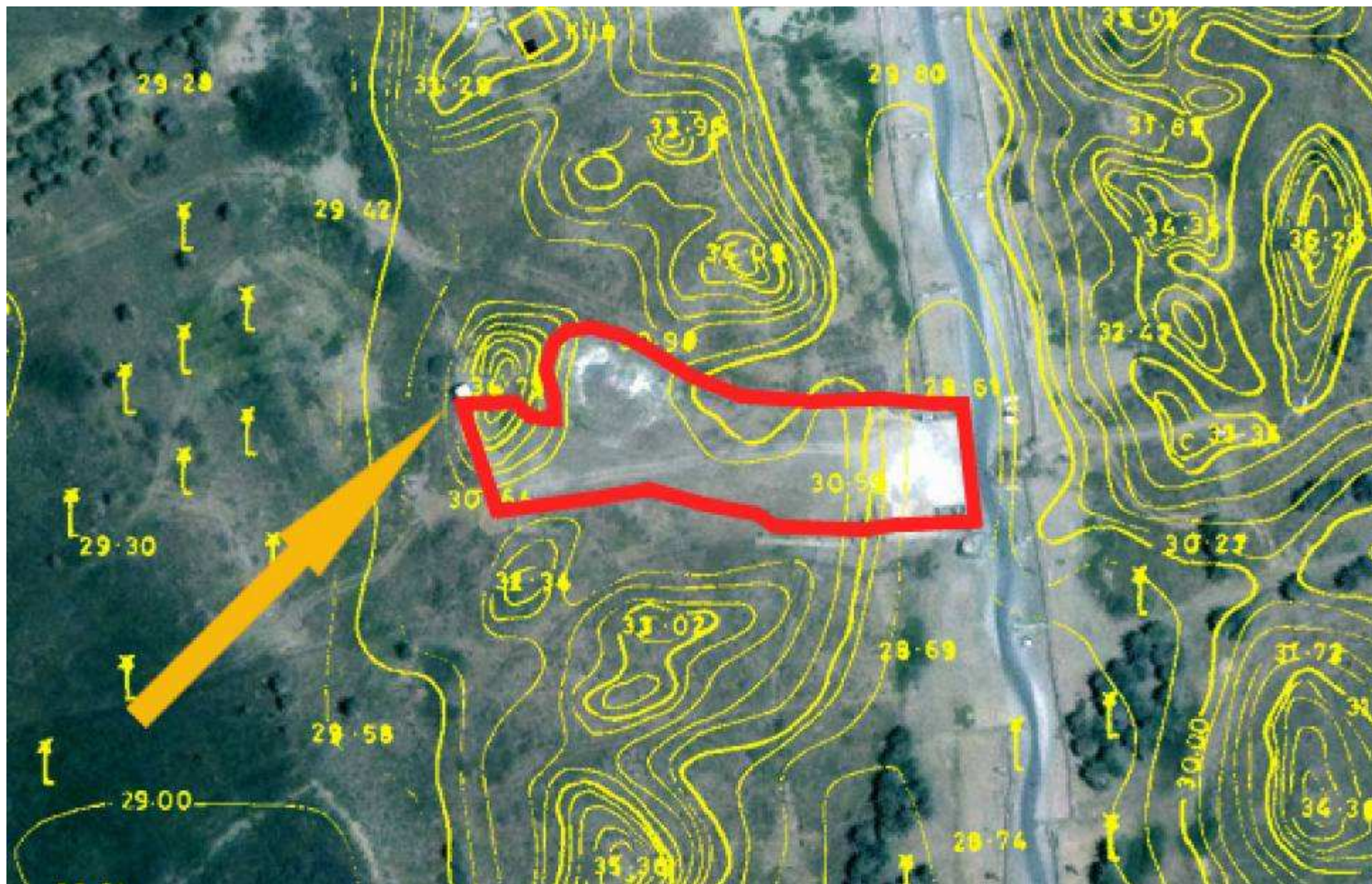
Topography of site of observation tower 6, 31 August 2003, Russell composite





Observation tower 8 (arrow), final version, with 8th cut visible just to the east, 4 June 2004, Russell composite





Area of 8th cut, 4 June 2004, Russell composite





8th cut, clearly visible after abandonment of camp, 26 November 2005, Russell composite



## Contour Map



31 August 2003



**Stone report:** A second eminence was used for the same purpose to the east of the ziggurat (Fig. 37). Like the other, it was a fairly minor structure in August 2003, ...



**1 April 2003**



**8 October 2004**



**Stone report:** ...but gained in size and in its disruption to the mound by October 2004 (Fig 38).





Observation tower 8, with 8th cut just to the right of it, Polish photo 26, detail (photo © Ministry of Culture and National Heritage, Republic of Poland)





Polish report p. 42 (photo © Ministry of Culture and National Heritage, Republic of Poland)





8th cut, view toward east from tower, Polish report p. 43 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Bunkers**

<b>Russell</b>	<b>Polish report</b>	<b>Stone report</b>
This bunker is not visible in the satellite images.	In the place marked on the picture by letter “C” is shelter.	The camouflaged shelter is not visible in any of the imagery. I should note, however, that the photographs of the area around the shelter and indeed the shelter walls show no signs of artifacts or other archaeological debris.



Shelter, Polish report p. 17 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Shelter, Polish report p. 18 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Shelter, Polish report p. 18 (photo © Ministry of Culture and National Heritage, Republic of Poland)



**Open pit (abandoned bunker):** Because of shadows and trees, it is not clear where this pit is, or when it was dug. Tentatively identified in satellite image.

Polish report	Stone report
On the area of the City Tent #2, in the place marked on the picture as letter “D” is a pit.	The open pit noted in the Polish report is not visible in the August 03 imagery. It is probably present in the July 04 imagery, but is more clearly seen in the August and October 04 imagery.

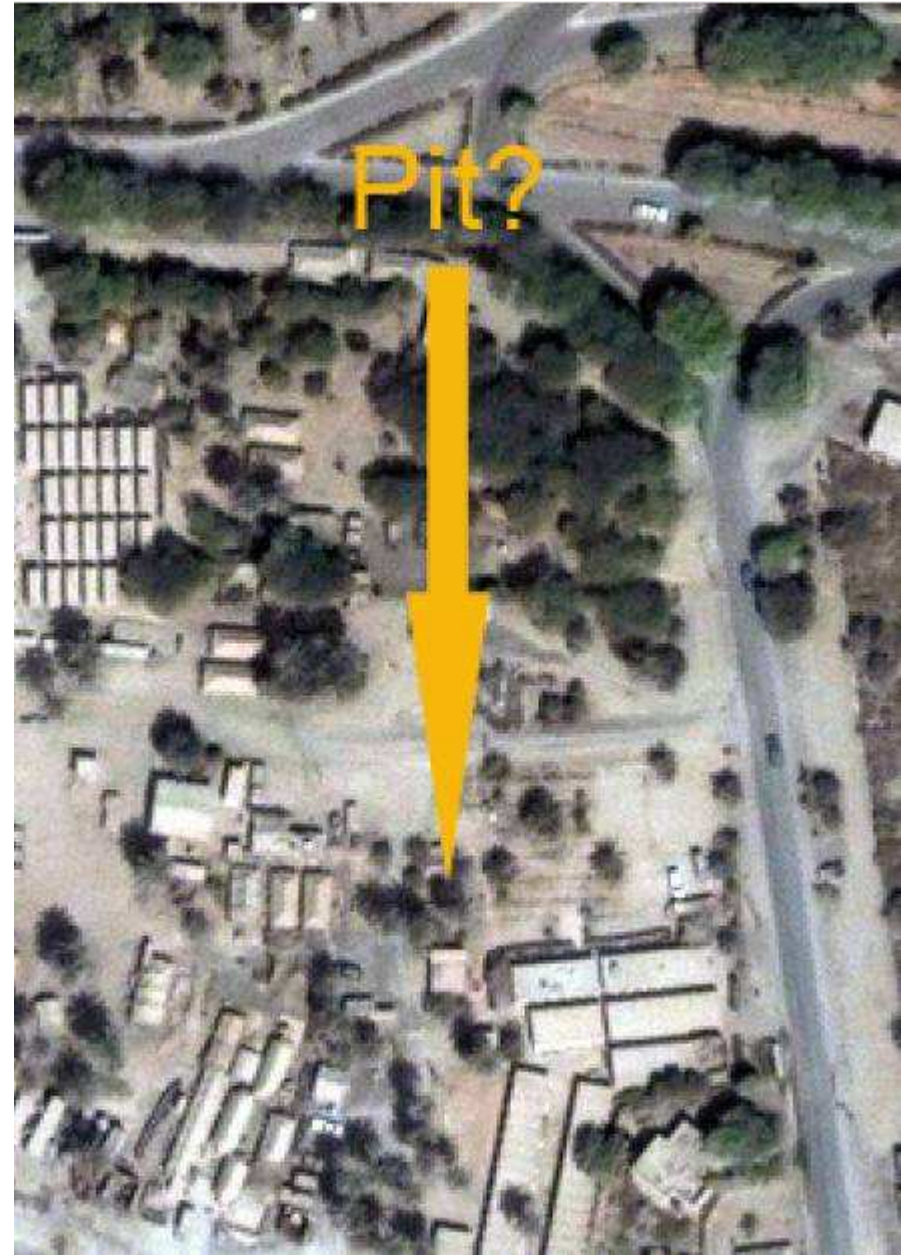


Pit, Polish report p. 18 (photo © Ministry of Culture and National Heritage, Republic of Poland)





Area of pit, 31 August 2003, Russell composite



Pit?, 8 October 2004, Russell composite



### **Bunkers**

**McDonald report:** A number of bunkers were dug into this area especially on its northern and western sides. The sections in all of these were scrutinized and none had any archaeological deposits in them. All seem to be agricultural soil/river silt. Some of the bunkers utilized the concrete bunker sections which reduce greatly the amount of digging that is done. In other areas of the site, concrete above ground bunkers are the norm.

**Russell comment:** These cannot be identified in the satellite image for 31 August 2003. It is possible that these include the two pits/bunkers illustrated above.



**Appendix 12. Report on the condition of the Babylon site in 2008 and 2009**

Following the compilation of the report on damage to the site of Babylon, the author (John Russell) was able to make two follow-up visits to the site, the first on July 17, 2008, and the second from June 20 – 24, 2009. Both trips were arranged by Diane Siebrandt, Cultural Heritage Liaison Officer at US Embassy Baghdad, who also accompanied both missions. Neither trip would have been possible without her unmatched logistical capabilities and dedication to Iraq's heritage, which are greatly appreciated. This update to the Babylon report was based on those two visits.

**First Mission, July 17, 2008**

The first visit focused on areas that had been disturbed by the activities of the Coalition military base at the site. Transportation and security were provided by a personal security detail arranged by the Provincial Reconstruction Team in al-Hilla, whose efforts are also greatly appreciated. Despite the 120° F (49° C ) noonday heat, the professionals in the security detail were very accommodating of our requests of areas to visit, and we spent over three hours on the site. Soon after our arrival, we were joined by Dr. Maryam al-Adee, Director of the Babylon Site, along with members of her staff. They welcomed us and remained with us throughout our tour.

Some areas were inaccessible to us due to security reasons, including the two long trenches north of the ziggurat and the blocked northeastern gate at the northern end of the Homera mound. Despite these minor inconveniences, we were able to document most of the area of the former military base. The nine locations where we were able to walk around and photograph are as follows:

1. Greek Theatre
2. Landing Zone 3 across the road from the Greek Theatre
3. Fuel depot
4. Homera mound
5. Area to north of east end of Landing Zone 1
6. East end of Landing Zone 1
7. North gate and parking lot adjacent to river
8. Reconstructed Southern Palace and Ishtar Gate
9. Landing Zone 2



## **Second Mission, June 20-24, 2009**

The second visit was the assessment mission carried by the World Monuments Fund to initiate on-site activities for the US Department of State-sponsored Future of Babylon site management planning project. On this visit, transportation and security were provided by a US military escort, which made every effort to accommodate our requests and to whom we are very grateful.

At the request of Dr. al-Adee, this mission focused on six structures that had been assigned the highest priority by the SBAH, as follows:

1. Ishtar Gate
2. Nabu sha Hare Temple
3. Ninmah Temple
4. Inner City Wall (NE and NW corners)
5. Ishtar Temple
6. Babylonian Houses

In addition, we were able to visit the two long Coalition trenches north of the ziggurat, as well as the ziggurat itself, the Summer Palace, and the Saddam Palace.

The update report that follows is divided into three sections:

1. Saddam alterations to the Babylon site (pre-2003)
2. Coalition alterations to the Babylon site (2003-2004)
3. Condition of ancient and restored structures at the Babylon site

Each section provides photographs and observations on the current condition of features in that category.



**Saddam alterations to the Babylon site (pre-2003)**



Al-Hawliyah moat or canal: In June 2009, Saddam's canal that surrounds three sides of the ancient Inner City was choked with vegetation and much of it had dried up (Russell photo 37, © John Russell).





Lake Saddam (northern lake): In June 2009, this lake (shown above at left) still contained water (Russell photo 74, © John Russell)





Lake north of the theatre: In July 2008, this lake was completely dry (Russell photo 166, © John Russell)





Mt. Nissan and Lake Nissan (eastern mound and lake): In June 2009, the mound was occupied by a few vehicles and temporary structures, and was perhaps being used as an observation post. The lake appeared to be full of water (Russell photo 5, © John Russell).





17 July 2008 (Russell photo 333, © John Russell)



22 June 2009 (Russell photo 1, © John Russell)

Mt. Tammuz and Lake Tammuz (southern mound and lake): In July 2008 and June 2009, the mound was occupied by a few vehicles and temporary structures, and was perhaps being used as an observation post. The lake appeared full of water.





17 July 08 (Russell photo 120, © John Russell)



17 July 08 (Russell photo 262, © John Russell)



22 June 09 (Russell photo 68, © John Russell)

Mt. Saddam (modern palace mound): By June 2009, the palace interior had been seriously damaged by looters and vandals, and had been stripped of its wiring, plumbing, and physical plant.



22 June 09 (Russell photo 50, © John Russell)





22 June 09 (Russell photo 86, © John Russell)



22 June 09 (Russell photo 106, © John Russell)

Modern structures: In June 2009, the modern buildings south of Saddam's palace were being used by the Babil governorate for meetings and events.



**Coalition alterations to the Babylon site (2003-2004)**



Cut 2, 17 July 2008 (Russell photo 243, © John Russell)



Cut 2, 17 July 2008 (Russell photo 244, © John Russell)



Cut 3, 17 July 2008 (Russell photo 234, © John Russell)



Cut 3, 17 July 2008 (Russell photo 237, © John Russell)

Cuts into the Homera mound: The artifact-rich earth removed from the Homera mounds probably accounts for most of the earth used in berms and HESCO containers prior to September 2003.





outer berm and trench, 23 June 2009 (Russell photo 41, © John Russell)



middle berm, 17 July 2008 (Russell photo 248, © John Russell)

Berms at northeast camp entrance: These berms are still in place and the entrance remains closed.





Fuel depot: The protective berms are still in place, 17 July 2008 (Russell photo 163, © John Russell)





fuel spill, 17 July 2008 (Russell photo 221, © John Russell)



fuel spill, 17 July 2008 (Russell photo 222, © John Russell)

Fuel spills beside fuel depot: Areas contaminated by fuel spills seem to be fading out on the surface. It is not possible without digging to determine the depth of the fuel penetration or its impact on the archaeological remains it contacts.





17 July 2008 (Russell photo 177, © John Russell)

Parking lots west of the Marduk Gate, are largely empty.



17 July 2008 (Russell photo 175, © John Russell)





17 July 2008 (Russell photo 158, © John Russell)



17 July 2008 (Russell photo 159, © John Russell)



17 July 2008 (Russell photo 160, © John Russell)



detail of cut 14, 17 July 2008 (Russell photo 225, © John Russell)

The KBR utility area around the Babylonian House is empty. Cut 14 is still visible.





Landing zone 1, 17 July 2008 (Russell photo 260, © John Russell)



17 July 2008 (Russell photo 261, © John Russell)



parking area, 17 July 2008 (Russell photo 256, © John Russell)



17 July 2008 (Russell photo 255, © John Russell)

Landing zone #1 was empty except for two helicopters. The adjacent parking area still shows apparent staining from surface oiling.





22 June 2009 (Russell photo 120, © John Russell)



17 July 2008 (Russell photo 282, © John Russell)

The North "Warsaw" Gate still has deteriorating HESCO barriers in place.





Lots 3-7, 22 June 2009 (Russell photo 119)



berm between Lots 5 and 6, 17 July 2008 (Russell photo 265)



berm between Lots 5 and 6, 17 July 2008 (Russell photo 269)



inscribed brick in berm, 17 July 2008 (Russell photo 271)

Lots 3-7: Although the berm between Lots 5 and 6 is filled with chunks of baked bricks, which suggests that this fill originates from the Homera mound, the surface of the lot itself had no sherds, consistent with identification of this area as a former river bed (photos © John Russell).





Parking area/Landing zone 3, 17 July 2008: HESCO barriers are deteriorating. Bulldozing at the east end of the area appears superficial and not to have cut into archaeological deposits (Russell photo 139, © John Russell)





17 July 2008 (Russell photo 209)



HESCO, 17 July 2008 (Russell photo 195)

Parking area/Landing zone 3 (photos © John Russell)



gravel, 17 July 2008 (Russell photo 204)



bulldozed HESCO, 17 July 2008 (Russell photo 201)





Trench to the west of the Marduk Gate, along Marduk Street: HESCO containers still mark the course of this trench, 17 July 2008 (Russell photo 180, © John Russell)





Tent City #1, overview, ditch, 17 July 2008 (Russell photo 132, © John Russell)



Parking area south of Tent City #1, damage in area of reconstructed buildings, 17 July 2008 (Russell photo 134, © John Russell)

Tent city #1 and the adjacent parking area still show surface alterations from the military camp.





Trenches south of the camp, now overgrown with vegetation, 22 June 2009 (Russell photo 17, © John Russell)





Tent City #2 and southern landing zone, overview, 22 June 2009 (Russell photo 84, © John Russell)





Southern Landing Zone (LZ 2), 17 July 2008 (Russell photo 322)



Southern Landing Zone (LZ 2), 17 July 2008 (Russell photo 324)



New decorative entrance to site built by the Babil governorate administration, 17 July 2008 (Russell photo 326)



Observation Tower 6, 22 June 2009 (Russell photo 136)  
Photos © John Russell



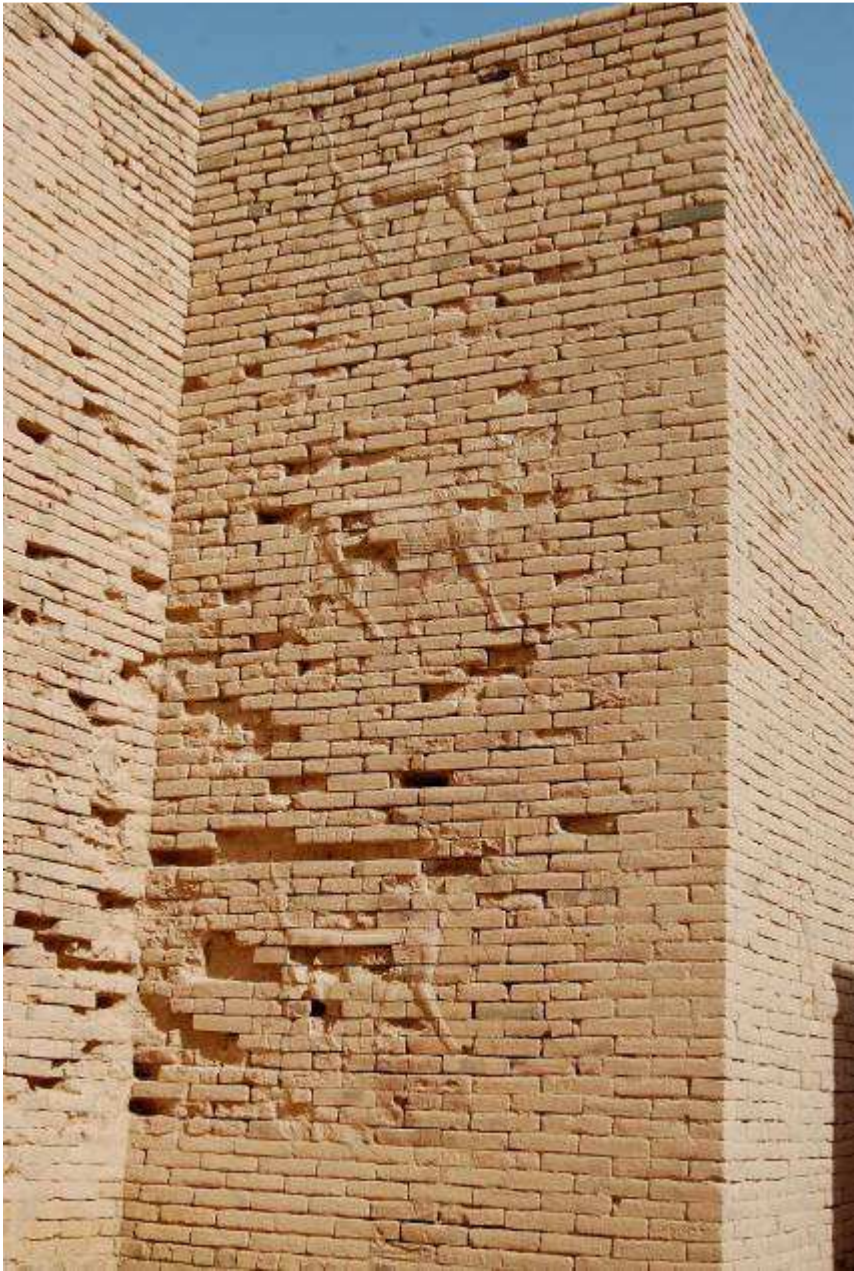
## Condition of ancient and restored structures at the Babylon site

### Ishtar Gate



The Ishtar Gate has suffered serious damage from salt and moisture infiltration, with many crumbling bricks and a number of molded figures damaged, apparently during the period of the Coalition occupation (Russell photo 230, 21 June 09, © John Russell).





Missing bricks and damaged figures, 24 June 09 (Russell photo 94)  
Photos © John Russell



Damage from rising damp, 21 June 09 (Russell photo 229)





21 June 09 (Russell photo 197, © John Russell)



21 June 09 (Russell photo 185, © John Russell)

The lower wall in the SW corner has been seriously undermined by rising damp (left), possibly resulting in the structural crack in the upper part (right).

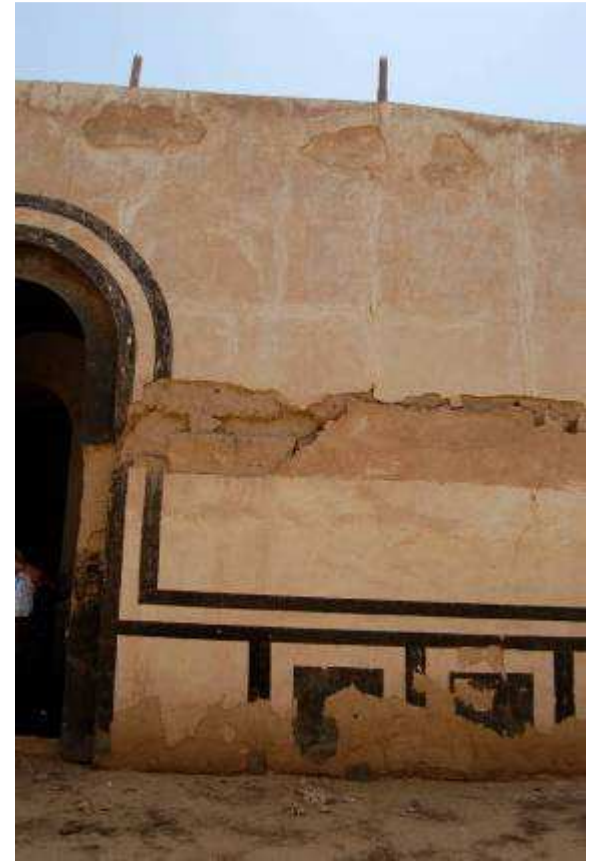


### Nabu sha-Hare Temple



21 June 09 (Russell photo 72)

Photos © John Russell



21 June 09 (Russell photo 94)

The Nabu sha-Hare Temple was originally the best-preserved temple at the site, with original unfired mudbrick walls preserved to a height of roughly 3 meters, and substantial traces of the original black paint decoration. It is now in very poor condition. The modern restoration of the building added another 3 meters of reconstruction in modern baked brick on top of the original walls, and then covered the interior walls with gypsum plaster.





21 June 09 (Russell photo 102, © John Russell)



21 June 09 (Russell photo 103, © John Russell)

The plaster was applied by driving large iron nails into the original mudbrick wall, hanging wire mesh on the nails, and then placing a coat of gypsum plaster as much as 10 cm thick on top of that.





The plaster did not bond with the mud bricks, and is so heavy that in several places it caused large areas of the original brick to shear off and collapse, leaving walls large cavities in their surface (Russell photo 99, 21 June 09, © John Russell)





21 June 09 (Russell photo 80, © John Russell)



21 June 09 (Russell photo 78, © John Russell)

The roof beams are riddled by termites so that some of them have broken and many others are badly compromised.



## Ishtar Temple



20 June 09 (Russell photo 131, © John Russell)



20 June 09 (Russell photo 130, © John Russell)

The Ishtar Temple is mostly reconstructed, although there appear to be original mudbricks in some parts of the lower walls. These have been heavily eroded by rising damp, and at the SW corner, the foundation is so compromised that the wall is in danger of collapsing.





Ishtar Temple, outer wall, 20 June 09 (Russell photo 127)



Ishtar Temple, outer wall, detail, 20 June 09 (Russell photo 129)



Ishtar Temple, courtyard wall, 20 June 09 (Russell photo 119)

Photos © John Russell



Ishtar Temple, courtyard wall, detail, 20 June 09 (Russell photo 120)



## Babylonian Houses



Left to right: Restored Babylonian house, Nabu sha-Hare Temple, three restored Babylonian houses, Ishtar Temple, 17 July 2008 (Russell photo 135)

Photos © John Russell

We looked briefly at the two restored Babylonian houses, adjacent to the Ishtar Temple. Both had been reconstructed from the ground up with a variety of modern fired bricks, and it was not possible to see if there was any original brick in the foundations.



Modern brickwork of restored Babylonian house, 23 June 09 (Russell photo 112)



## Ninmah Temple



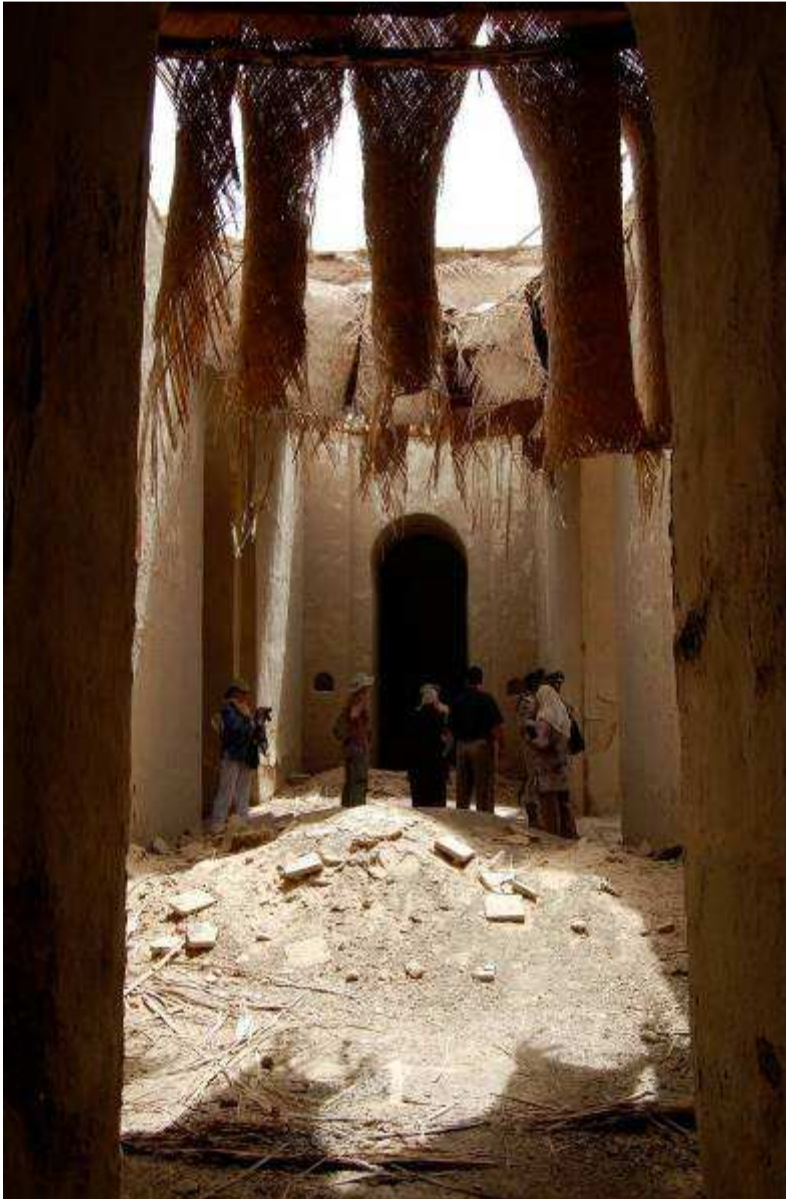
20 June 09 (Russell photo 180, © John Russell)



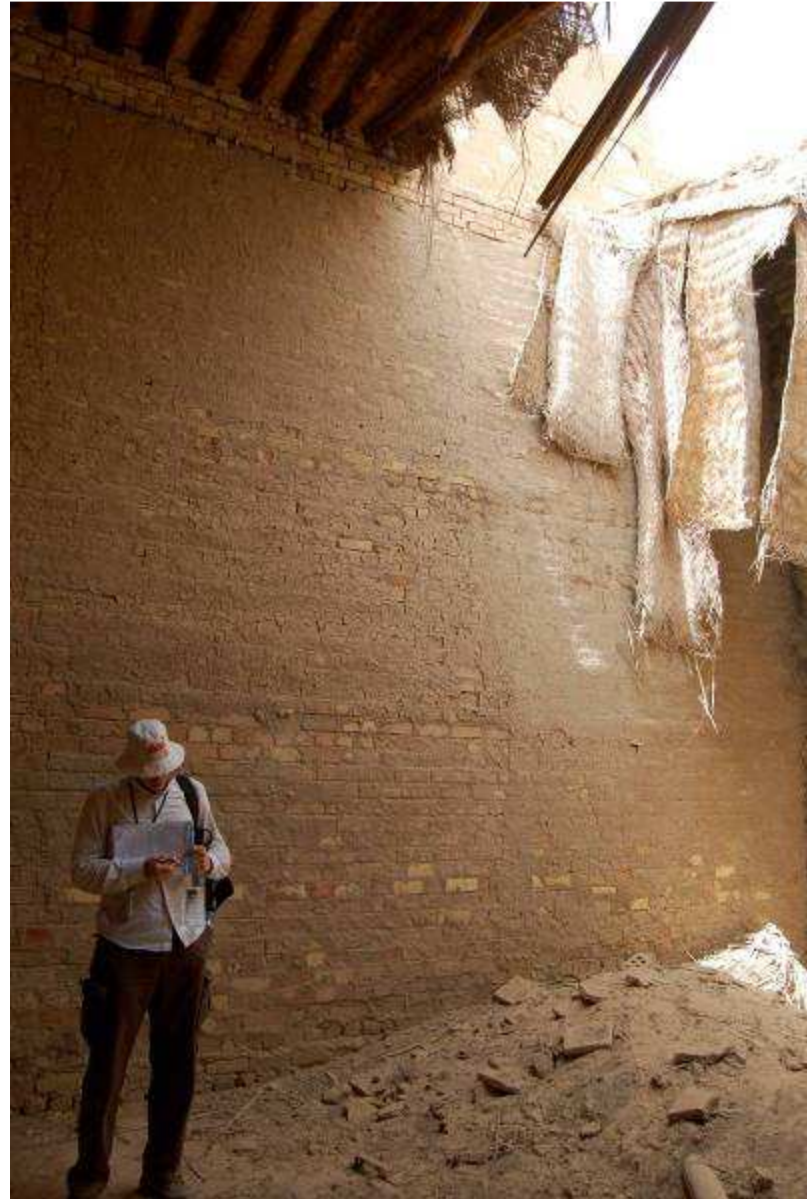
20 June 09 (Russell photo 144, © John Russell)

The Ninmah Temple is largely a modern restoration, apparently originally carried out in the 1960's. It displays a mixture of different restoration techniques with various modern materials, used at different times in the maintenance of the restored building. There appeared to be at least one substantial section of original wall, but it is difficult to distinguish if there is more because of all the restoration.





20 June 09 (Russell photo 166, © John Russell)



20 June 09 (Russell photo 147, © John Russell)

The roof was done in the same technique as the other reconstructions, and again the timbers are riddled with termite holes, so that all the large spans have collapsed, leaving at least 6 large holes in the roof.



**Southern Palace**



21 June 09 (Russell photo 257, © John Russell)



21 June 09 (Russell photo 259, © John Russell)



17 July 08 (Russell photo 293, © John Russell)



17 July 08 (Russell photo 291, © John Russell)

Southern Palace: Some Saddam inscribed bricks have been pried out of the reconstructed palace walls, apparently recently.



**Inner City Wall, between Northern and Southern Palaces**



This is a double wall, with the Iraqi pre-2003 firing pits on top of the outer part. The facade of the inner part where it faces the Southern Palace (above) is well-preserved, but deteriorating, with sections of the original mud brick facade becoming detached and collapsing, as well as areas that are being damaged by vegetation, 21 June 2009 (Russell photo 247, © John Russell)





Inner wall, 21 June 2009 (Russell photo 251, © John Russell)



Inner wall, 21 June 2009 (Russell photo 249, © John Russell)



**Inner City Wall, north end of eastern wall**



View of original remains of the eastern side of the inner city wall, looking south, 21 June 2009 (Russell photo 266, © John Russell).





Russell photo 268, © John Russell



Russell photo 280, © John Russell

The northern end of the eastern stretch of the inner city wall had been capped with a heavy layer of modern mud brick and concrete, and large chunks of the facade had collapsed, 21 June 2009.





Inner city wall, 21 June 2009 (Russell photo 273, © John Russell)



Inner city wall, 21 June 2009 (Russell photo 272, © John Russell)



Inner city wall, 21 June 2009 (Russell photo 276, © John Russell)



Inner city wall, 21 June 2009 (Russell photo 274, © John Russell)



## Greek Theater



Greek Theater: The roof of the reconstructed courtyard of the Greek theater has been missing since 2003, 25 June 09 (Russell photo 7, © John Russell)

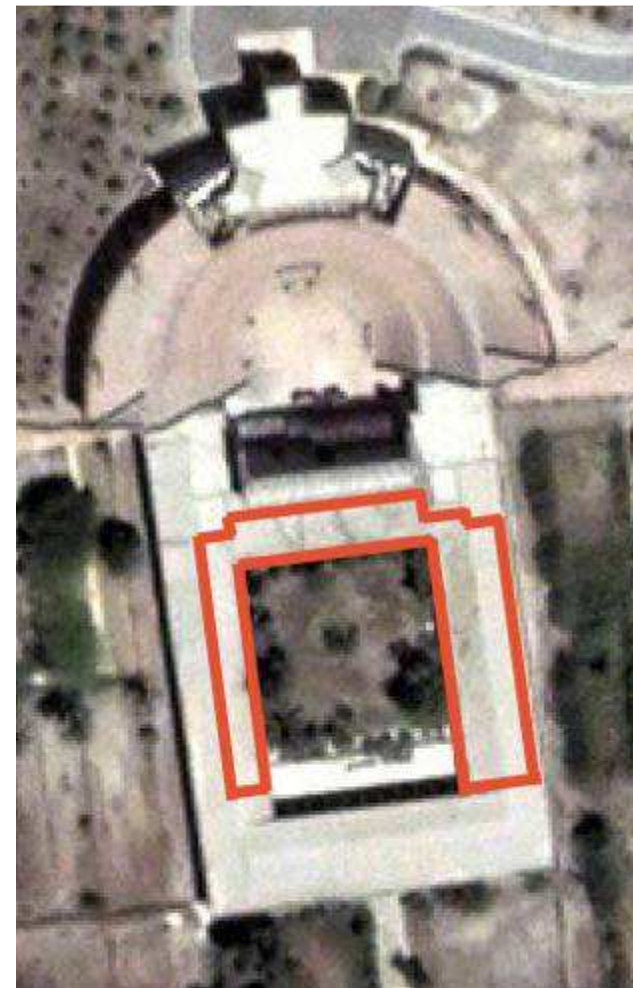




5 July 2002



8 October 2004



5 July 2002 with loss outlined

Comparison showing area of roof of Greek theater that has been missing since 2003, Russell composite.



**Ziggurra**



The earth core of the ziggurra is surrounded by a water-filled ditch, 22 June 2009 (Russell photo 27, © John Russell)





View of water-filled trench surrounding ziggurat core, 22 June 2009 (Russell photo 24, © John Russell)



**Summer Palace**



Aerial view of Babil mound, location of the so-called Summer Palace, 25 June 2009 (Russell photo 9, © John Russell)





Surface of Babil mound, showing eroded Parthian(?) mud brick architecture, 23 June 2009 (Russell photo 27, © John Russell)