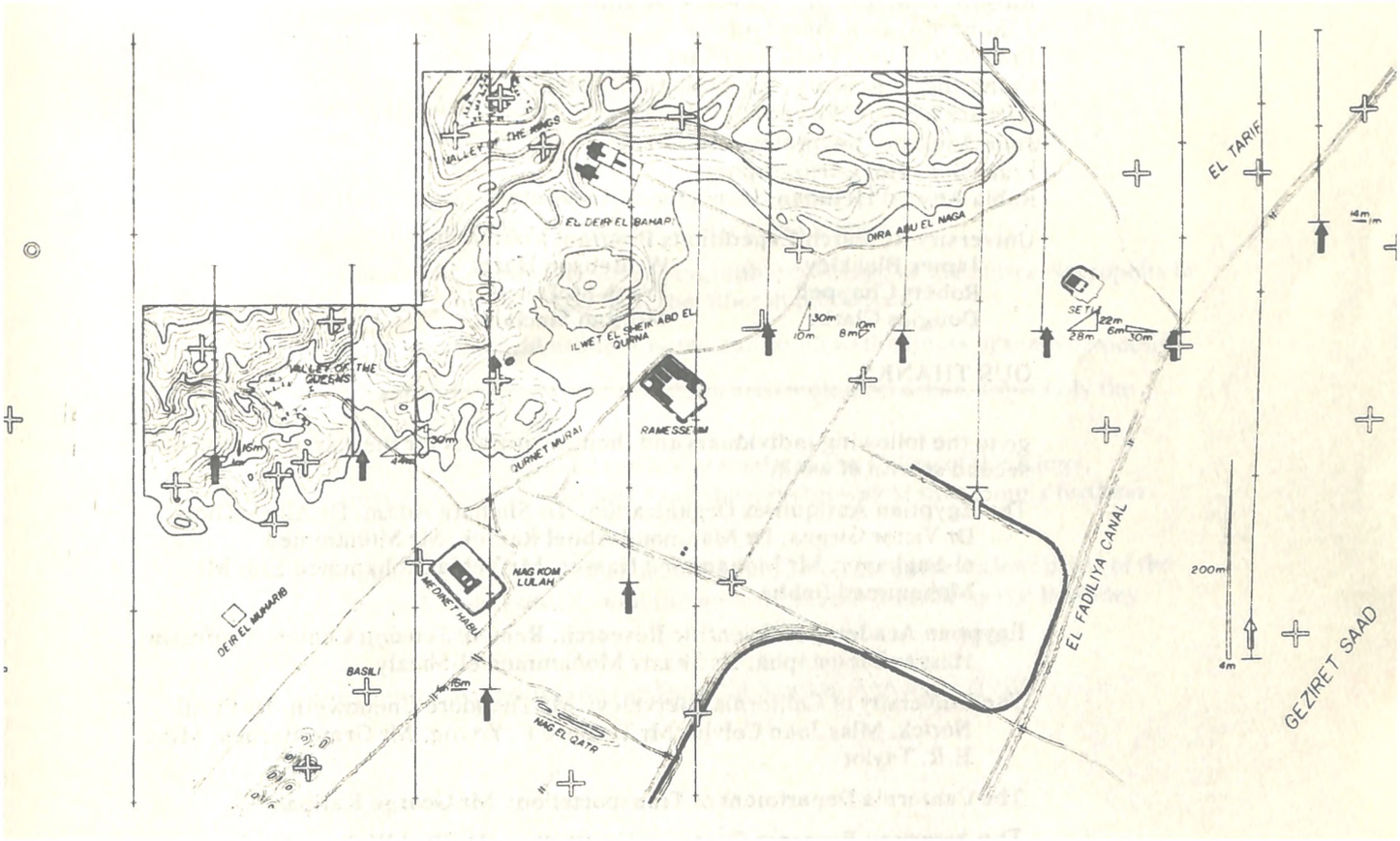
THE BERKELEY MAP

OF THE

THEBAN NECROPOLIS



REPORT OF THE SECOND SEASON, 1979

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THE BERKELEY MAP OF THE THEBAN NECROPOLIS

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SUMMARY

No area of the world contains as many famous and important archaeological monuments as the West Bank at Luxor. Yet, in spite of the centuries-old interest in such features as the Valley of the Kings, the Tombs of the Nobles, and scores of other monuments, there exists no accurate or complete map of the Theban Necropolis. Fewer than ten per cent of its monuments have ever been mapped and planned, and very few of these have been plotted accurately.

This project seeks to establish a survey network over the Theban Necropolis; to prepare a suitably detailed 1:500 archaeological map with 1:250 and 1:100 plans and sections of significant archaeological features; to publish these maps and plans together with more detailed records of measurements, in an accurate and permanent form; and to accompany these graphic aids with a concordance and catalog of West Bank archaeological materials.

Such a project as this will provide a useful tool for Egyptologists; but it also will play a significant role in the preparation of long-range plans for the protection and preservation of the rapidly-deteriorating monuments at Thebes.

During the first season of the project, the grid network was established on the West Bank and several tombs in the Valley of the Kings were planned.

During the second season, in 1979, the project:

- completed the targetting for aerial photography
- obtained complete aerial photographic coverage of the entire Necropolis in two runs, one at 3,000 feet. the other at 5,000 feet
- extended the grid network north and south to the limits of the Necropolis
- established survey monuments in archaeological areas, especially the Valley of the Kings
- planned and sectioned ten major tombs in the Valley of the Kings, including the tomb of Seti I and the passageway at that tomb's farthest end
- began a comparison of all former plans, including the ancient plans of the tomb of Ramesses IV, with the measurements derived by the Berkeley project

Work in the second season ran from 1st April to 30th June, 1979.

TOPOGRAPHICAL SURVEYING

COMPLETION OF SURVEY CONTROL

The primary objective of the 1979 Berkeley Project was the completion of the horizontal and vertical control necessary for surface mapping of the Necropolis. The surface mapping of the hypsographical and planimetric features requires an extensive network of control points for the aerial photography and the ensuing photogrammetric compilation. The same network also is the basis for all tomb mapping by conventional field survey methods.

To complete the horizontal network, eight closed loops were traversed in the 1979 season. These, together with the two closed loops of the 1978 season, completed the required basic horizontal control net. Eighty-one stations were established and controlled during the two seasons. For vertical control, elevations (based on the 1921 Survey of Egypt) were determined for all eighty-one stations. Where feasible, elevations were established by differential levelling. Atop the Theban gebel, elevations were derived trigonometrically.

STANDARDS OF ACCURACY

To assure proper control for all the mapping, second-order (modified) accuracy standards were adopted, and required procedures were followed in all field work. Second-order (modified) accuracy standards are:

- Number of courses between azimuth checks: 25 or less
- Azimuth closure not to exceed: 3'' per station
- Position closure after azimuth adjustment: 1:10,000
- Distance measurements accurate within: 1:15,000
- Minimum distance to be measured with EDM: 200 metres
- Minimum number of direction observations with a one-second theodolite: 4 positions of circle
- Levelling loop closures not to exceed: $0.008\text{m} \sqrt{\text{loop length in kms.}}$

To attain these levels of accuracy, all distances were measured with a Wild DI-10 Distomat (an EDM, or Electronic Distance Measuring unit), and the directions of all traverse courses were measured with a Wild T-2 theodolite. Within its range, the Distomat measures any course to an accuracy of plus or minus one centimetre. Therefore, at a minimum distance of 200 metres, the theoretical accuracy is one part in 20,000 (1:20,000). The Wild T-2 theodolite, a universally accepted second-order instrument, was shaded by a large umbrella at each set-up. In addition, the accuracy of direction measurement was further enhanced by ''forced-centering'' traverse technique.

On all ten traverse loops the azimuth closure amounted to two seconds of arc or less for each direction determined. After adjustment for ''zero'' azimuth closure, the minimal positional closure in any of the loops was 1:35,000. The maximum positional accuracy realized was 1:125,000. Average loop position closure approximated 1:50,000. Thus, all horizontal accuracy requirements were met.

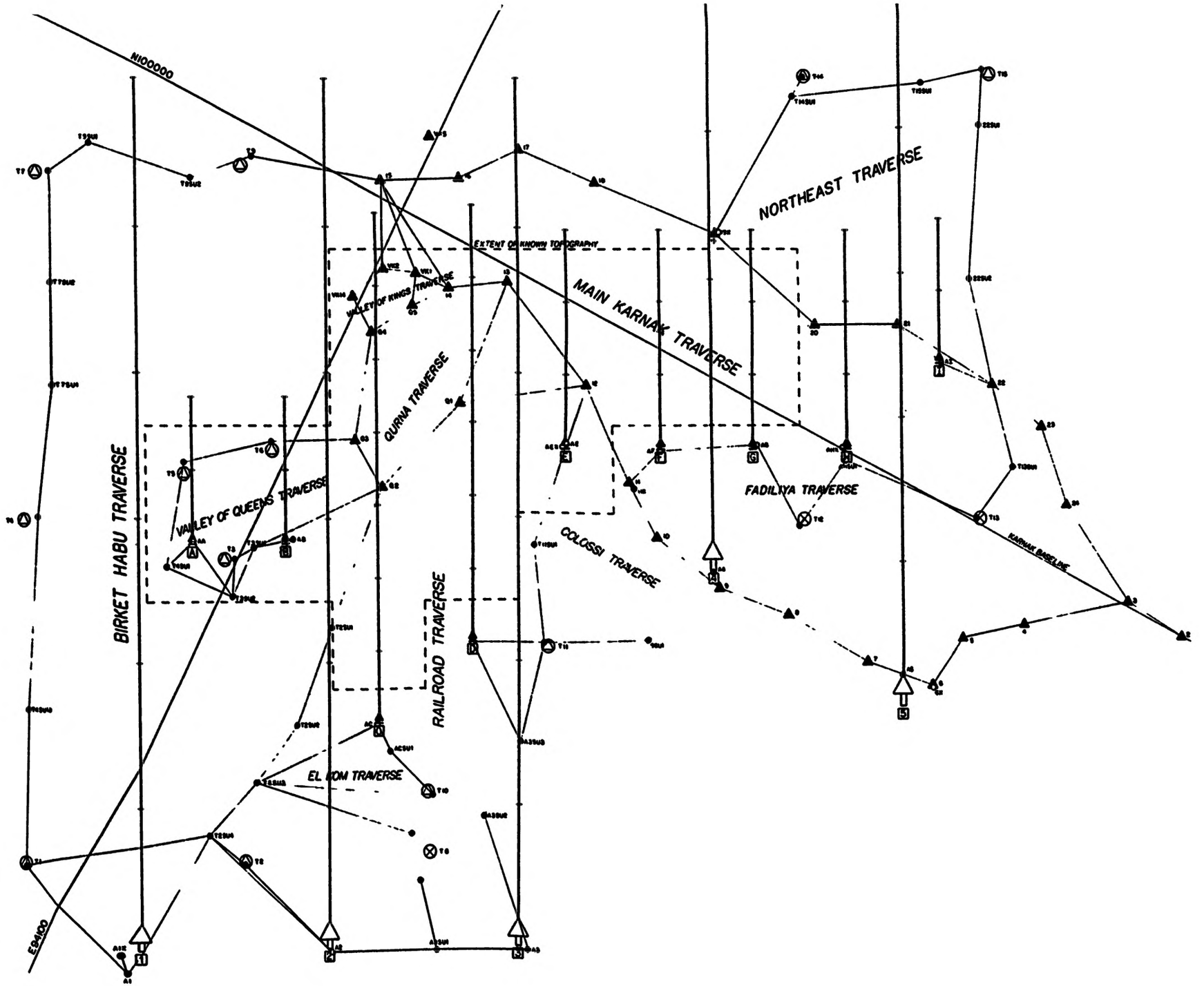
Vertical accuracy standards for differential levelling loops ranged from 0.002 metre to 0.006 metre $\sqrt{\text{kilometres}}$. Loop closures averaged 0.005 metre $\sqrt{\text{kilometres}}$. Elevations that were derived trigonometrically are accurate enough to render a standard mapping accuracy of 1/10th of a contour interval. For a map having one-metre contour intervals, the accuracy required is therefore one decimetre.

AERIAL PHOTOGRAPHY

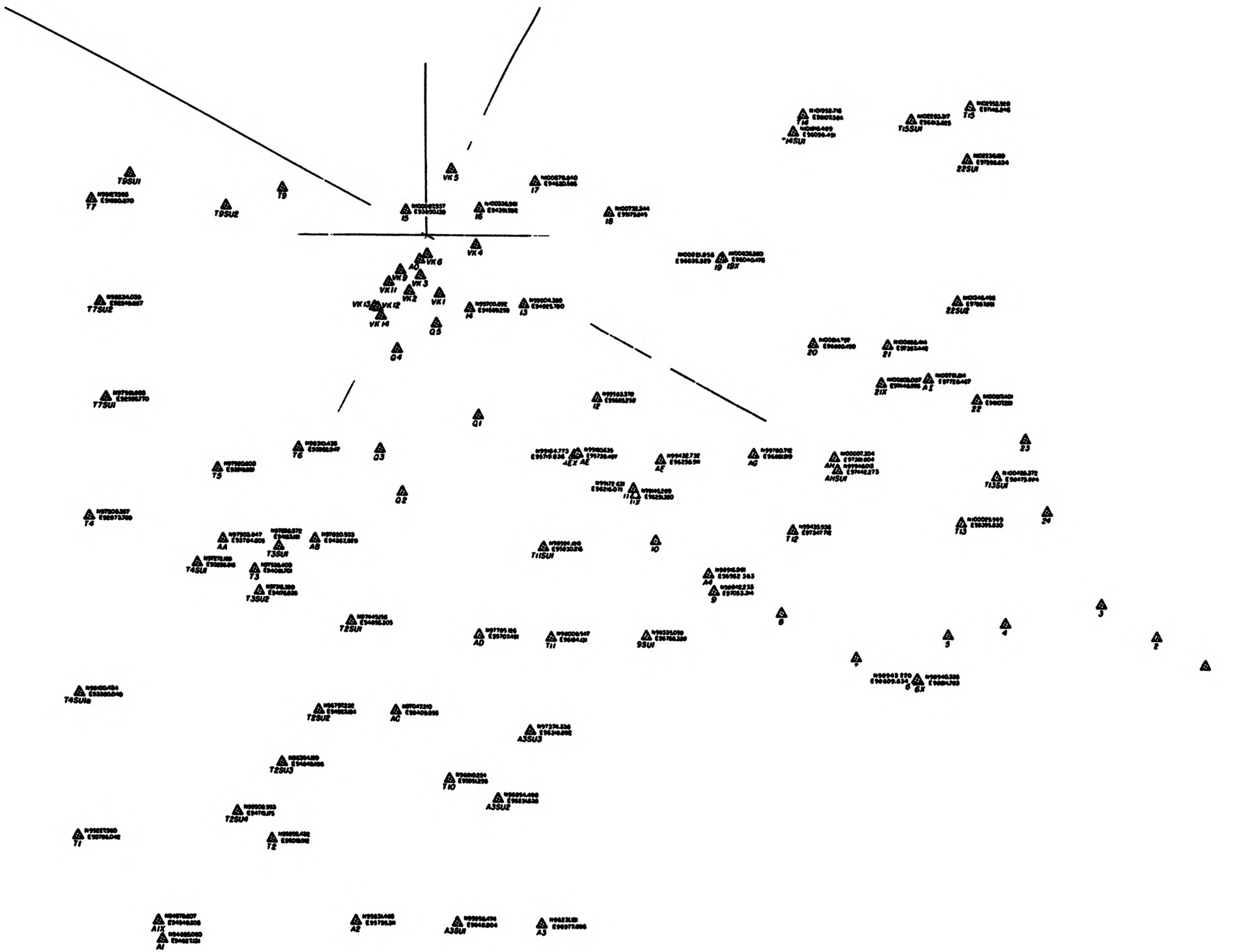
Two scales of aerial photography were required for the desired photogrammetric mapping. For the general mapping of all the Necropolis, five flight lines were photographed at 1,700 metres (+or-) above sea level elevation. For one-metre contour interval mapping, this results in a "C-factor" (a limiting factor) of 1,600 (+or -). This is well within the capabilities of today's photogrammetric equipment and techniques. The larger-scale mapping of areas of intense archaeological interest required nine flight lines at 900 metres (+or-) above sea level elevation. The C-factor for this photography is an optimum value of 850 for one-metre contour-interval mapping.

For the ground control of all fourteen flight lines, 47 of the traverse control points were pre-targeted. The analytical control method that will be used in the photogrammetric mapping does not require this many "picture" points. However, the additional points were targetted to provide the aerial photographic team with orientation marks and check points in areas where there was no existing mapping that could have been used as flight guides. In addition, the beginning of all fourteen flight lines were pre-marked for further guidance of the flight crew.

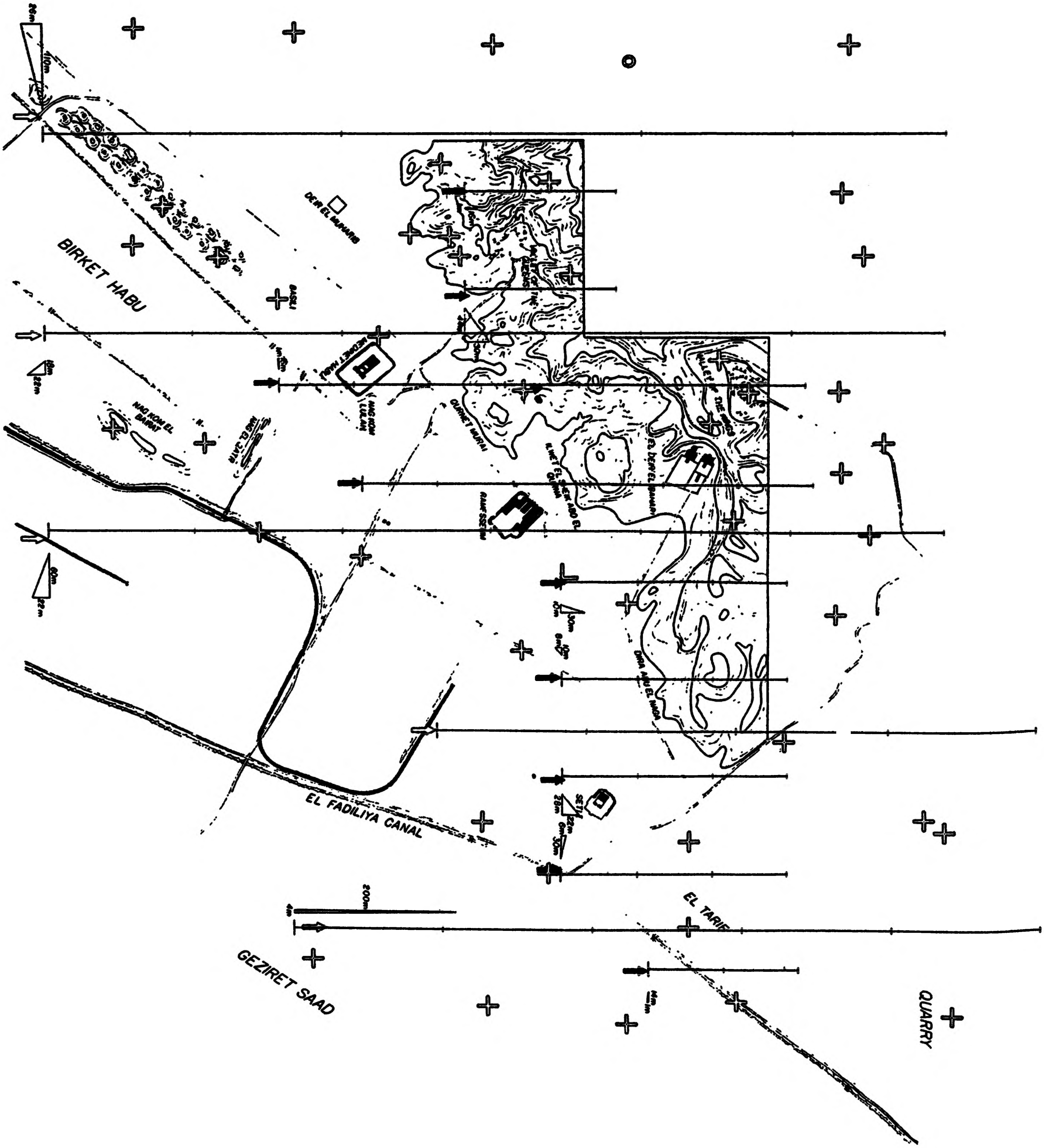
After several months of discussion and negotiation, the Berkeley project signed a contract with the Remote Sensing Center of the Egyptian Academy of Scientific Research under which the Center would provide complete aerial photographic coverage of the Theban Necropolis and areas immediately adjacent. The area covered includes over 60 square kilometres, and two runs were made as noted above: one at 900 metres above sea level elevation, the other at 1,700. Both flights were run twice. All equipment and supplies, as well as the specifications of the flights themselves, were governed by standards for aerial photographic work set forth by the State of California, standards that equal or exceed those of other American and international governmental and research agencies. We anticipate taking delivery of film diapositives of these photographs shortly and beginning work on the preparation of the topographic maps prior to the start of the Project's third (1980) season.



Sub-traverses of the West Bank traverse showing positions of flight lines and control points



Grid square coordinates of West Bank control points


BIRKET HABU
EL FADILIYA CANAL
EL TARIF
GEZIRET SAAD
QUARRY
200m

MAPPING THE ROYAL TOMBS

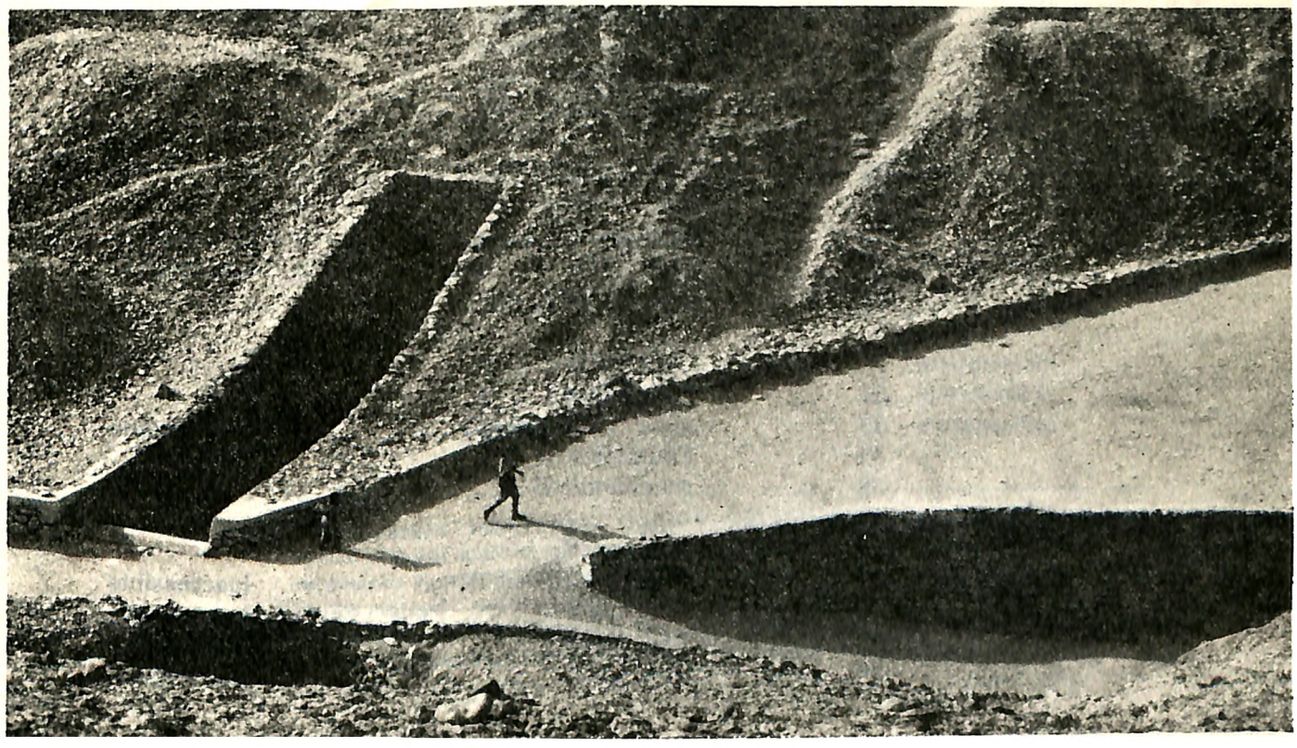
SUMMARY OF PROGRESS

The establishment of a grid network on the West Bank and the setting of target panels for the aerial photography were the two principal objectives of our first two seasons' work. But several weeks of each season also were spent mapping tombs in the Valley of the Kings, the area to be published in the first volume.of the Berkeley Theban Atlas.

The following list of tombs, caches, unfinished entryways, and pits in the Valley of the Kings indicates the current state of the mapping project. As one can see, there actually are only a few tombs of any size left to be mapped during the next (1980) season.

The mapping of tombs during the first two seasons of the Berkeley project followed a set of procedures that have now become standardized, and that insures a high degree of accuracy and completeness. The format to be used for the publication of these tomb plans has changed considerably from that outlined in last season's report. The tomb plans included in that report, as well as those included below, are based on pencil drawings made in the field. The symbols, line weights, and format they illustrate are not necessarily those that will be used in the final publication.

To provide an idea of the types of information, in addition to accurate and detailed plans, sections, and dimension schedules, that the tomb plans in the Berkeley Atlas can offer, we thought it would be worthwhile to briefly discuss our work in the tombs of Seti I, Ramesses IV and Ramesses VI.



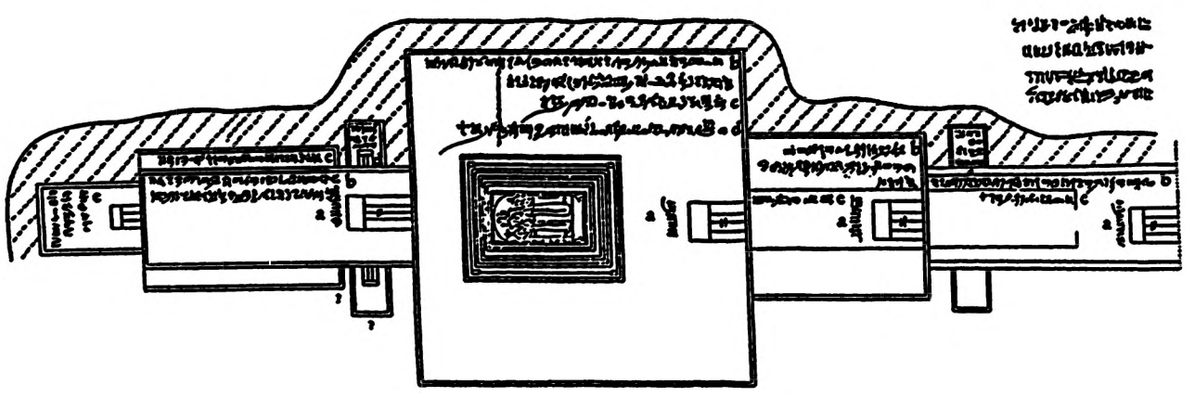
PROGRESS OF KV TOMB MAPPING

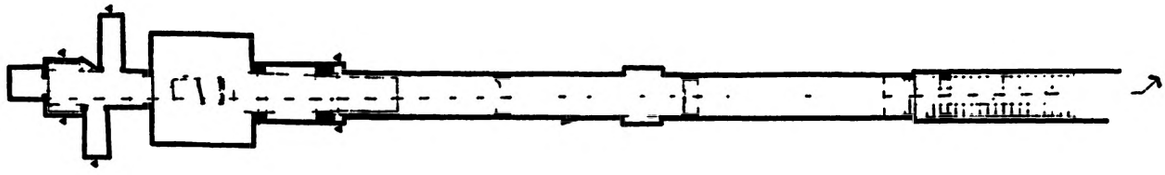
Tomb number	Date and/or Owner	Year mapped	Accessibility Most	Entry
1	Ramesses VII	78	x	
2	Ramesses IV	78	x	
3	temp. Ramesses III	78	x	
4	Ramesses XI	78	x	
5	temp. Ramesses II		Inaccessible	
6	Ramesses IX	78	x	
7	Ramesses II	79	x	
8	Merneptah	79	x	
9	Ramesses VI	79	x	
10	Amenmesse			x
11	Ramesses III		x	
12	Dyn. XVIII			x
13	Bay (?)			x
14	Tausert (?)			x
15	Seti II			x
16	Ramesses I	79	x	
17	Seti I	79	x	
18	Ramesses X	79	x	
19	Montuherkhepishef	79	x	
20	Hatshepsut		x	
21	Two women (?)		Inaccessible	
22	Amenhotep III		x	
23	Ay		x	
24	Dyn. XVIII			x
25	Dyn. XVIII			x
26	Dyn. XVIII		x	
27	Dyn. XVIII		x	
28	Dyn. XVIII		Inaccessible	
29	Dyn. XVIII		Inaccessible	
30	Dyn. XVIII		x	
31	Dyn. XVIII			x
32	Dyn. XVIII		x	
33	temp. Thutmosis III		Inaccessible	
34	Thutmosis III		x	
35	Amenhotep II		x	
36	Maiherperi		x	
37	temp. Thutmosis III		Inaccessible	
38	Thutmosis I		Inaccessible	
39	Dyn. XVIII		Inaccessible	
40	Dyn. XVIII		Inaccessible	

Tomb number	Date and/or Owner	Year mapped	Accessibility Most	Entry
41	Dyn. XVIII		x	
42	Dyn. XVIII		Inaccessible	
43	Thutmosis IV		x	
44	Anen			x
45	Userhet			x
46	Yuya and Thuya	78	x	
47	Siptah		x	
48	Amenemopet			x
49	Maya (?)		x	
50	Dyn. XVIII		Inaccessible	
51	Re		Inaccessible	
52	Dyn. XVIII		Inaccessible	
53	Dyn. XVIII			x
54	temp. Tutankhamun			x
55	Tiy (?)	79	x	
56	Dyn. XIX			x
57	Horemheb	79	x	
58	temp. Ay			x
59	Dyn. XVIII		Inaccessible	
60	In (?)		Inaccessible	
61	Dyn. XVIII		x	
62	Tutankhamun	79	x	
A	temp. Amenhotep III		x	
B	Dyn. XVIII			x
C	Dyn. XVIII			x
D	Dyn. XVIII			x
E	Dyn. XVIII			x
F	temp. Thutmosis III			x
G	?			x
H	Dyn. XVIII			x
I	Dyn. XVIII		Inaccessible	
J	Dyn. XVIII		Inaccessible	
K	Dyn. XVIII		Inaccessible	

•Tombs marked "Inaccessible" cannot be included in the topographic map sheets. Sketch plans of some of these tombs are available from the reports of earlier excavators, however, and these will be included in the accompanying text volume.

•Tombs marked "Accessibility: Entry" are either tombs whose passageways are blocked and whose interiors are therefore inaccessible, or pits, niches, caches, and the like that were never dug more than a metre or two into the gebel.





Plan of the tomb of Ramesses IV, KV 2

THE TOMB OF RAMESSES IV: KV 2

Of all the tombs in the Valley of the Kings, only one has benefitted from careful measurement by earlier archaeologists. That is tomb 2, studied by Howard Carter and Alan Gardiner as a part of their examination of the tomb plan anciently drawn on a papyrus now in the Turin Museum.[1]

The plan, on the recto of P. Turin, was first identified as being of the tomb of Ramesses IV by Richard Lepsius in the mid-19th century. To determine whether the ancient plan and the measurements it gave were accurate, Carter re-measured the tomb using an instrument that he had marked off in ancient cubits, palms and digits.

In a number of cases, the measurements obtained by Carter and those of the Berkeley Project differ. This most frequently may be explained by the fact that Carter often took several measurements in a chamber and recorded only the one that corresponded most closely to the P. Turin figure. Berkeley figures, on the other hand, are generally the arithmetic mean of several measurements. In some cases, however, such as the 1.00-metre discrepency in the height of gate D, one can only assume an error on Carter's part.

The following table shows the various measurements obtained by Berkeley, Carter, and the author of P. Turin. We have converted the Berkeley measurements to cubits, palms and digits using the cubit value Carter himself proposed. Cubic conversions for Carter's figures are his own. The metric values for the P. Turin cubit measurements were calculated by us.

Throughout we have used Carter's suggested values:

1 cubit = 0.5231 metres
1 palm = 0.07472 metres = 1/7 cubit
1 digit = 0.01868 metres = 1/28 cubit = 1/4 palm

Feature	Berkeley		Carter		P. Turin	
	metres	cubits	metres	cubits	metres	cubits
CHAMBER C						
length	13.188	25.1.1	13.264	25.2.2	13.0775	25.0.0
width	3.140	6.0.0	3.157	6.0.1	3.1386	6.0.0
height	5.070*a*	9.4.3	5.007	9.4.0	5.0060	9.4.0
GATE D						
length	1.078	2.0.1½	1.074	2.0.1½		
width	2.745	5.1.3	2.746	5.1.3		
height	4.900	9.2.2	3.961	7.4.0		
Chamber D						
length	4.710	9.0.0	4.708	9.0.0	4.7079	9.0.0
width	4.200	8.0.1	4.203	8.0.1	4.1848	8.0.0
height	4.405	8.3.0	4.185	8.0.0	4.1848	8.0.0

Feature	Berkeley metres	Berkeley cubits	Carter metres	Carter cubits	P. Turin metres	P. Turin cubits
NICHE 1						
length	0.670	1.2.0	0.673	1.2.0	0.6725	1.2.0
depth	0.675	1.2.0	0.673	1.2.0	0.6725	1.2.0
height	1.050	2.0.0	1.046	2.0.0	1.0462	2.0.0
GATE E						
length	0.610	1.1.2	0.598	1.1.0		
width	2.755	5.1.4	2.728	5.1.2		
height	4.870	9.2.1				
Chamber E						
length	7.280	13.6.2	7.398	14.1.0	8.3696	16.0.0
width	8.340	15.6.2	8.398	16.0.1½	8.3696	16.0.0
height	5.207	9.6.3	5.231	10.0.0	5.2310	10.0.0
GATE F						
length	7.650	14.4.2	7.660	14.4.2	7.5476	14.3.0
width	2.570	4.6.2	2.615	5.0.0	2.6155	5.0.0
height	3.405	6.3.2	3.456	6.4.1	3.4001	6.3.2
SHELF LEFT						
length	2.400	4.4.0	2.391	4.4.0	2.3913	4.4.0
width	0.850	1.4.1½	0.785	1.3.2	0.8967	1.5.0
height	0.920	1.5.1½	0.897	1.5.0	0.7846	1.3.2
CHAMBER H						
length	4.110	7.6.0	4.017	7.4.3	5.2310	10.0.0
width	1.495*b*	2.6.0	1.569	3.0.0	1.5693	3.0.0
height	1.792	3.3.0	1.793	3.3.0	1.7935	3.3.0
CHAMBER I						
length	2.750	5.1.3	2.877	5.3.2	5.2310	10.0.0
width	2.250	4.2.1	2.260	4.2.1	1.7935	3.3.0
height	2.074	3.6.3	2.092	4.0.0	2.0924	4.0.0

a. This measurement is the maximum height of the vaulted ceiling.

b. This measurement is the maximum obtained by the Berkeley Project for chamber width, not the mean of several measurements. Still, it is several centimetres less than that given by Carter or by P. Turin.

A comparison of the Berkeley Project's measurements with those of earlier times can offer important clues to the ways in which ancient engineers undertook the carving of tombs in the Theban Necropolis. The fact that most variations between our measurements and those in P. Turin occur in rear chambers, for example, suggests that less care was taken in some instances in the carving of those chambers than in ones nearer the entrance. The likely reason for this is that there was a need to complete carving of the rear chambers ahead of original schedule. This seems to be confirmed by comparing the measurements for the total length of the tomb of Ramesses IV with those given in P. Turin:

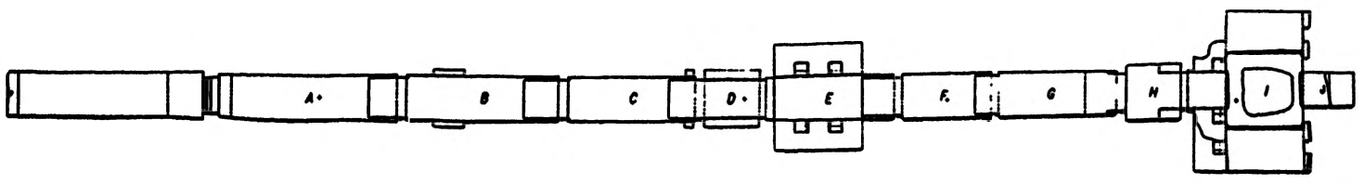
	Berkeley		Carter		P. Turin	
Measured from/to	metres	cubits	metres	cubits	metres	cubits
Stairs to "E"	70.808	134.2.2	71.049	135.5.3	71.291	136.2.0
"E" to end	10.400	19.6.½	10.537	20.1.0	12.779	24.3.0
Total length	81.208	155.1.2-½	81.586	155.6.3	84.069	160.5.0

The difference between the P. Turin total of 160.5.0 cubits and the total obtained by Berkeley and by Carter is about 4.5.1 cubits. On our chart of tomb 2 measurements, note that Chamber "I" measurements given in P. Turin differ from those of Berkeley and Carter by about 4.5.1 cubits.

Berkeley measurement "E" to end	19.6.½
Add to chamber "I"	4.5.1
	24.4.½
Berkeley total tomb length	155.1.2½
Add to chamber "I"	4.5.1
Revised Berkeley tomb length	159.6.3½
P. Turin total tomb length	160.5.0

Chamber "I" was left unfinished. One can assume that, had it been completed, it would have been 4.5.1 cubits longer and, therefore, that the total tomb length would gave been almost exactly the value given in P. Turin.

We tried substituting other values for the cubit in our calculations, but found that, in the tomb of Ramesses IV, none fit as well as the 0.5231 metres proposed by Carter. That is not the case, however, in the tomb of Ramses VI.



Plan of the tomb of Ramesses VI, KV 9

THE TOMB OF RAMESSES VI: KV 9

Alan Gardiner once suggested that measurements preserved on the verso of P. Turin might be those of the tomb of Ramesses VI. This view was based in part on the assumption that the verso was written later than the recto and that it must represent measurements of a tomb built after that of Ramesses IV. The logical candidate seemed to be that of Ramesses V, a tomb usurped by Ramesses VI.

When comparing the measurements of the tomb given on P. Turin, verso, with those obtained by the Berkeley Project, it seems at least possible that this is the case. Of the 31 measurements given, 3 correspond exactly to the Berkeley figures; 15 are within 0.02 metres; another 7 are within 0.05 metres.

Feature	Berkeley		P. Turin	
	metres	cubits	metres	cubits
GATE A				
length	1.380	2.4.2		
width	2.757	5.1.3-½		
height	2.782	7.1.2-½		
CHAMBER A				
length	14.300	27.2.1-½		
width	3.208	6.0.3-½		
height	3.946	7.1.3-½		
GATE B				
length	0.760	1.3.½	0.747	1.3.0
width	2.808	5.2.2	2.728	5.1.2
height	3.753	7.1.1	3.736	7.1.0
lintel	0.456	0.6.½	1.495	2.6.0*a*
CHAMBER B				
length	12.370	23.4.2		
width	3.156	6.0.1		
height	3.646	6.6.3	3.662	7.0.0
GATE C				
length	0.760	1.3.½	0.747	1.3.0
width	2.716	5.1.1-½	2.784	5.2.1
	0.219*b*	0.3.0	0.224	0.3.0
height	3.486	6.4.2-½	3.849	7.2.2
lintel	0.380	0.5.½	0.448	o.6.0
CHAMBER C				
length	10.370	19.5.3	17.285	15.0.0
width	3.171	6.0.2	4.708	9.0.0
height	3.668	7.0.½	3.662	7.0.0

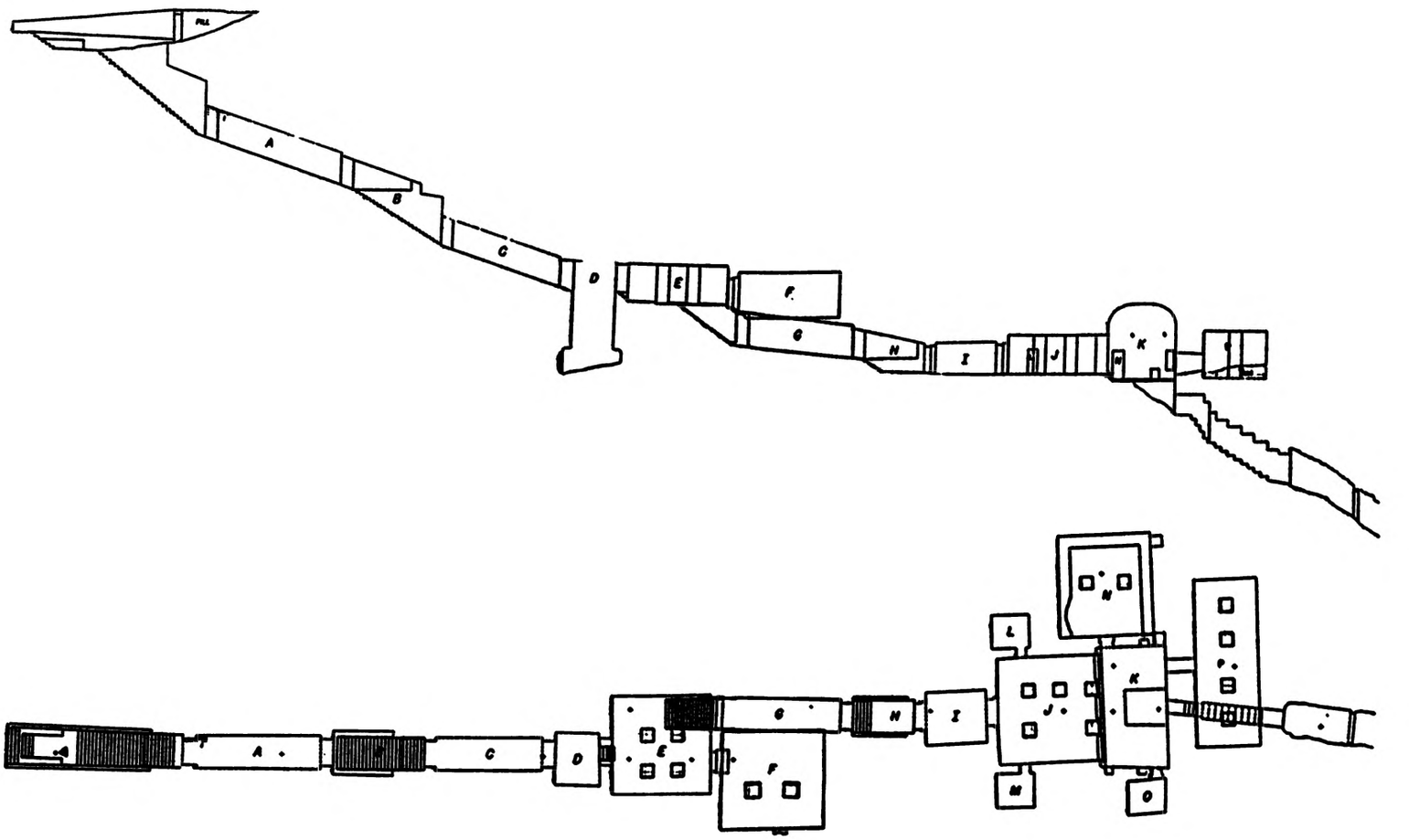
Feature	Berkeley metres	Berkeley cubits	P. Turin metres	P. Turin cubits
GATE D				
length	0.750	1.3.0	0.7659	1.3.1
width	2.740	5.1.2-½	2.6902	5.1.0
	0.720*b*	1.2.3-½	0.1868	0.2.2
height	3.523	6.5.1½		
lintel	0.364	0.4.3-½	0.3736	0.5.0
CHAMBER D				
length	4.510	8.4:1-½	4.4837	8.4.0
width	4.166	7.6.3	4.1848	8.0.0
height	3.638	6.6.3	3.6617	7.0.0
GATE E				
length	0.520	1.0.0	0.7473	1.3.0
width	2.699	5.1.½	2.7276	5.1.2
	0.737*b*	1.2.3-½	0.2242	0.3.0
height	3.269	6.1.3	3.2133	6.1.0
lintel	0.377	0.5.0	0.3736	0.5.0
CHAMBER E				
length	7.220	13.5.2-½	7.2486	13.6.0
width	8.424	16.0.3	8.3696	16.0.0
height	3.674	7.0.0	3.6617	7.0.0
GATE F				
length	0.610	1.1.½	1.9564	2.2.0
width	2.704	5.1.1	2.6902	5.1.0
height	3.426	6.3.3-½		
lintel	0.250	0.3.1-½	0.3736	0.5.0

a. One might assume an error in the papyrus at this point: reading 0.6.0 instead of 2.6.0 would be very close to the actual measurement.

b. The second width measurement for gates C, D, and E is a measurement of the thickness of the jamb.

In spite of the many similarities between P. Turin and Berkeley measurements, there are some glaring differences, especially in chamber "C". There also are frequent differences in the measurements of gates. Some of these may represent alterations in tomb dimensions that occurred at the time of its usurpation, changes that reflect idiosyncratic or theological differences. It also is possible that the differences are due to a disregard for the dimension given on P Turin, verso. And finally, it is possible that these dimensions do not refer to the tomb of Ramesses VI at all, but to another tomb.

This last possibility seems unlikely, however, because of the generally close fit of the measurements.



Plan and section of the tomb of Seti I, KV 17

THE TOMB OF SETI I: KV 17

The tomb of Seti I was discovered by Giovanni Belzoni on October 16, 1817. Since then, except for the tomb of Tutankhamun, tomb 17 (the number given it by Gardner Wilkinson in 1827) has been the most frequently visited tomb in the Valley of the Kings.

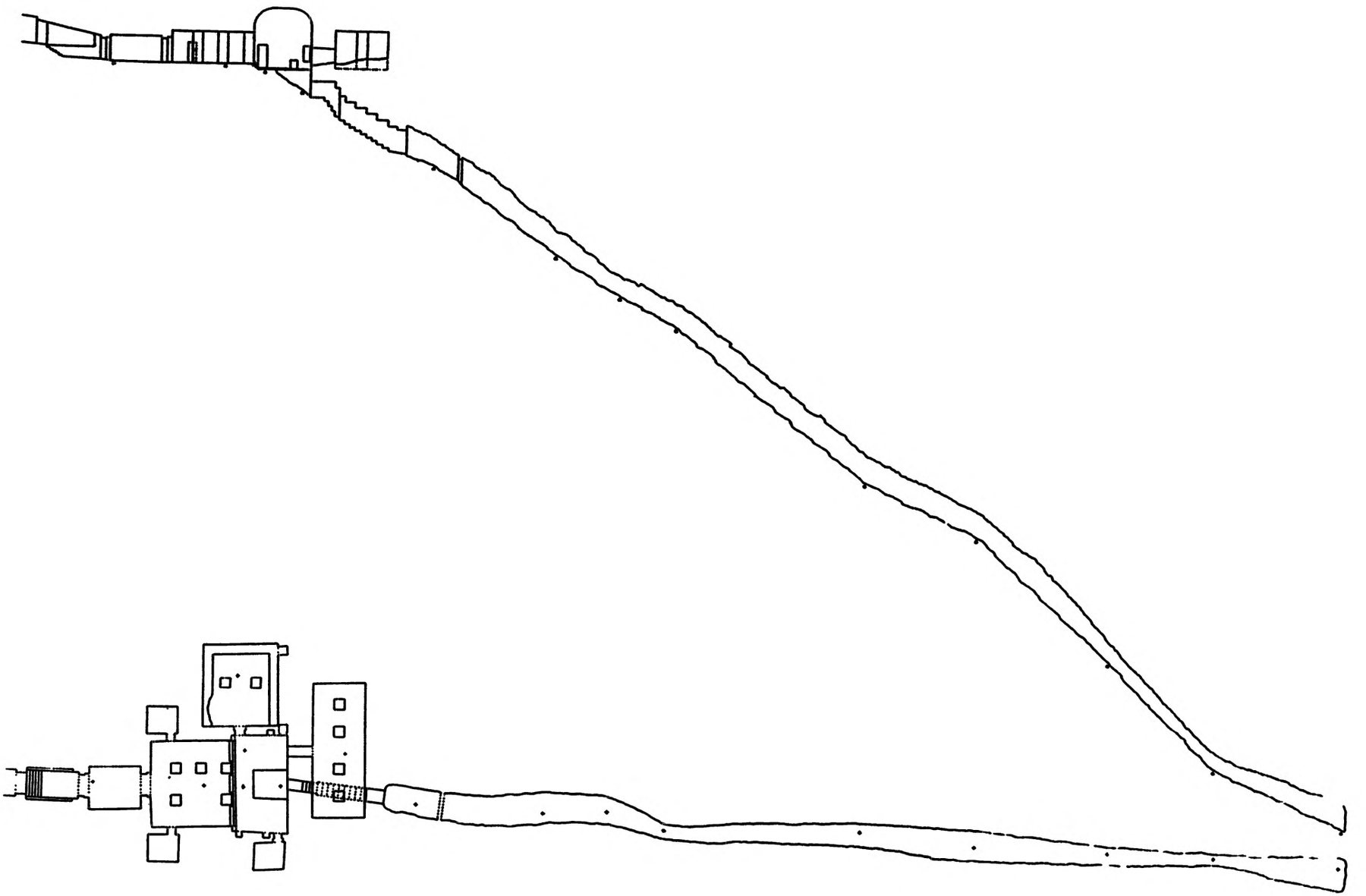
Tomb 17 is one of the largest tombs in the Valley, and one of the best decorated. Its plan, however, would be nothing out of the ordinary were it not for the presence of a passageway or tunnel or corridor or shaft (it has been labelled many things by archaeologists) that extends beyond the burial chamber far into the gebel. This passageway was discovered by Belzoni himself in 1817 and has been remarked upon often since then, although it never has been completely explored or even cursorily mapped. Belzoni described its discovery, made after he had moved the great alabaster sarcophagus of the king from the center of what now is labelled tomb chamber K:[2]

> The sarcophagus was over a staircase in the centre of the saloon, which communicated with a subterraneous passage, leading downwards, three hundred feet in length. At the end of this passage we found a great quantity of bats' dung, which choked it up, so that we could go no farther without digging. It was nearly filled up too by the falling in of the upper part. One hundred feet from the entrance is a staircase in good preservation; but the rock below changes its substance, from a beautiful solid calcareous stone, becoming a kind of black rotten slate, which crumbles into dust only by touching. This subterranean passage proceeds in a south-western direction through the mountain. I measured the distance from the entrance, and also the rocks above, and found, that the passage reaches nearly half way through the mountain to the upper part of the valley. I have reason to suppose, that this passage was used to come into the tomb by another entrance; but this could not be after the death of the person who was buried there, for at the bottom of the stairs just under the sareophagus [sic] a wall was built, which entirely closed the communication between the tomb and the subterranean passage. Some large blocks of stone were placed under the sarcophagus horizontally, level with the pavement of the saloon, that no one might perceive any stairs or subterranean passage was there.

Later explorers were unable to make their way more than one hundred fifty feet down this passage because of the debris, a mixture of bat dung, fallen stone, and silt. Gardner Wilkinson,[3] for example, described it in 1843 as "an inclined plane, which, with a staircase on either side, descends into the heart of the agrillaceous rock for a distance of 150 feet." He was certain that it extended farther but, as it has for nearly all other explorers since 1817, silt and fallen rock prevented further exploration.

Why was this passageway carved and where does it lead? For many years people living in Qurna have maintained that there exists it Thebes a passageway that joined the Valley of the Kings with some area to its east, and that somewhere along that passageway lies a great, unplundered, treasure. The blocked passageway beyond the burial chamber of Seti I has been thought by many to be such a corridor.

Early in the last decade, Sheikh Ali Abdel Rassoul, whose family has been intimately connected with the Theban antiquities trade for many generations, obtained permission to clear the Seti passageway (which Howard Carter, in



Plan and section of passageway "Q" in the tomb of Seti I, KV 17

1903, had labelled chamber "Q"). A large-scale project was undertaken to clear "Q", and substantial progress was made until bad air, dust, extremely dangerous stone, and lack of funds forced a halt to the project. Sheikh Ali did succeed, however, in digging a tunnel through the debris-filled passageway some 136 metres beyond chamber "P".

One view of the purpose of "Q" was expressed by Elizabeth Thomas in *The Royal Necropolies of Thebes.* She noted that several royal tombs have chambers that lead off the burial chamber.[4] "These elements," she observed, "appear to pertain to the hall, with no attempt to extend the tomb per se." Seti's passageway does extend the tomb, of course, "several hundred meters, at least," but she believed that this was merely an elaboration of the form of subsidiary chambers found around the burial hall in such tombs as those of Horemhab or Ramesses II.

Prior to our second season of work no plan had ever been made of "Q". It is perhaps this plan that offers the best clue yet as to the passageway's purpose.

The clearing of the passageway undertaken by Sheikh Ali was not complete: he did not reach its end, and no one yet knows exactly where that end might be. He also left great quantities of debris hanging from walls and ceiling, and even more remains piled on the floor. The result is more a tunnel cut through passageway fill than exposure of the tunnel itself. In two places, however, probes through this remaining debris indicated that the original walls of "Q" were vertical and well carved. The ceilings were smooth and regularly sloped. The floor consisted of a double staircase with a ramp down its midline. There appear to have been gates placed at intervals along the passageway; one of them, noted on our plan, is visible today.

All these features are clear signs that "Q" was a carefully-planned feature of Seti's tomb, a passageway cut and sealed before the alabaster sarcophagus was dragged into place. This planning is further emphasized by the care taken to insure that the axis line of "Q" was close to that of the preceding passageways (chambers "G" through "J"), a fact that would be even more apparent had we been able to map the original passage walls rather than the sides of the modern excavation. Thomas, remember, argued that the passageway was a deliberate extension of the tomb along its principal axis.

The dimensions of passageway "Q" are especially interesting. Chambers "A" through "J" in tomb 17 slope downward at an average angle of 16° "Q", however, slopes at an average angle of 32° and in some places reaches 47°. This is an angle steep enough to require that a rope be used in places to move in or out.

The length of the excavated part of "Q" is 136.210 metres. The distance from the entrance of tomb 17 to "Q" is 93.998 metres. Thus, the total known length of the tomb of Seti I is 230.208 metres.

The entrance of tomb 17 lies 178.00 metres above mean sea level. The burial chamber, and the entrance to "Q", lie about 26 metres lower, at 152.523 metres. The farthest accessible point in "Q" lies at 79.099 metres, almost 100 metres below the tomb entrance. This point is only 2 metres above the average level of the Nile flood plain at Thebes and only 4 metres above the mean level of the river itself. It would have below the level of the Nile's flood waters in ancient times.

Why would so steeply sloping a passageway have been carved? It cannot have been intended to join some area east of KV, for it is dug far below the level of any such feature. For the same reason, it cannot have been intended to lead to any known structure elsewhere in the Valley. Dr. Gerhard Haeny, Director of the Schweizerisches Institut in Cairo, has suggested to us that perhaps "Q" was simply heading for water. He observes that physically joining the burial chamber to the waters of the Nile may be an objective similar to that achieved in the cenotaph of Seti I at Abydos. There, as Henri Frankfort has described in some detail, [5] Egyptian religious beliefs led the designers to construct a double flight of steps with an inclined ramp between them from a symbolic "island" down to groundwater. Frankfort thought this to be a deliberate "attempt to imitate the actual burial of the god." This also may have been the reason for passageway "Q". The passage makes as nearly direct a plunge to water as geology and engineering would have permitted. And because of this, there is a good chance that "Q" leads to a chamber into which groundwater was intended to seep, not to a chamber filled with gold and jewels. Its purpose was not to hide treasure, but to physically tie the burial place of the king to the primeval waters of Nun, symbolic of creation and rebirth.

One further comment should be made. The passgeway in the tomb of Seti I is an extremely dangerous one to penetrate. Any archaeologist seeking to explore "Q" should be forewarned; the stone is fragile, the air is poor, the braces are weak. Care and study are necessary and, most important, proper equipment should be available before further exploration is undertaken.

The primary objective of the Berkeley Map is to provide a precise and complete record of the Necropolis today. But that same data can also tell us more of how the Necropolis grew and why its parts took the forms they did. Information of this kind is valuable: it tells us something about ancient engineering (as with the tomb of Ramesses IV); it helps identify tomb data (as with the tomb of Ramesses VI); and it helps explain the purpose of various chambers (as with the tomb of Seti I).

NOTES

1. Howard Carter and A.H. Gardiner, "The Tomb of Ramesses IV and the Turin Plan of a Royal Tomb," *Journal of Egyptian Archaeology* IV (1917): pp. 112-29.

2. G. Belzoni, *Narrative of the Operations and Recent Discoveries within the Pyramids, Temples, Tombs, and Excavations, in Egypt and Nubia* ... London: John Murray, 1820: pp. 236-37.

3. Gardner Wilkinson, *Modern Egypt and Thebes: Being a Description of Egypt*... London: John Murray, 1843: vol. II, p. 203.

4. Elizabeth Thomas, *The Royal Necropolies of Thebes.* Princeton, 1966: pp. 104-7 and 273ff.

5. H. Frankfort, *The Cenotaph of Seti I at Abydos.* London: Egypt Exploration Society, Memoir 39, 1933: pp. 27-28.

FUTURE PLANS

The Berkeley Theban Mapping Project is fortunate to have signed a contract with the University of California Press, which will undertake the publication of the 5-volume Theban Atlas. During the next year, we shall begin work designing the format for the Atlas, in consultation with several cartographic design firms and governmental agencies. At present, plans for the first volume of the Atlas call for a series of five-color topographic maps, published at a scale of 1:500, covering the Valley of the Kings and adjacent areas, and a series of two-color sheets with plans, sections, and details of each of the tombs in both the East and West Valleys. Accompanying these map sheets will be a handbook outlining the cartographic history of the Valley, discussing peculiarities and regularities evident in the plans, summarizing bibliographically the major works available on each tomb, and including in detail the measurements (expressed in metres and in cubits) that were taken for each feature in the tombs. The maps will be unbound, boxed flat, and offered in folio cases. They will be printed on archival stock to insure long life and minimal distortion. Should there be sufficient interest, a small number of sets also will be available on specially-treated stable-based plastic-coated sheets, similarly boxed in folio.

The aerial photographs acquired during this past season will be dealt with during the coming year, and it is hoped that all topographic sheets can be laid out, based on those photographs.

Work in the field will begin in April 1980 in the Valley of the Kings, which will be completed during the third season of work, and will continue in the Valley of the Queens, which we also anticipate completing that season.

It is hoped that the publication of the first Atlas volume will be available before the end of 1981, the second volume, to cover the Valley of the Queens, before the end of 1982.

We are grateful for the numerous suggestions and comments generated by our preliminary report last year, and we would again like to encourage comments, criticisms, and suggestions on the project and its format. Correspondence may be addressed to:

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