

“THE CITADEL OF ANKARA”: ASPECTS OF VISUAL DOCUMENTATION  
AND ANALYSIS REGARDING MATERIAL USE

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Approval of the Graduate School of Natural and Applied Sciences



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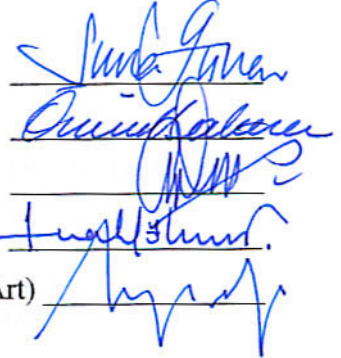
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## **ABSTRACT**

### **“THE CITADEL OF ANKARA”: ASPECTS OF VISUAL DOCUMENTATION AND ANALYSIS REGARDING MATERIAL USE**

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This thesis examines the history, written sources and physical aspects of the citadel at Ankara with respect to building materials, masonry styles, design and topography. The distribution of different types of building materials in selected areas are analyzed and documented by using modern methods.

Keywords: Tower, Spolia, Ankara, Fortress

## ÖZ

### “ANKARA KALESİ”: GÖRSEL BELGELEME YÖNTEMLERİ VE MALZEME KULLANIMI İLE İLGİLİ ANALİZLER

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Bu çalışma Ankara Kalesi’nin tarihini, yazılı kaynaklarını ve fiziksel özelliklerini yapı malzemesi, taş örgüsü, tasarım ve topografya çerçevesi içinde incelemiştir. Farklı tiplerdeki kaplama taşlarının seçilmiş alanlardaki dağılımları modern metotlar kullanılarak analiz edilmiş ve belgelenmiştir.

Anahtar Kelimeler: Kule, Devşirme Malzeme, Ankara, Kale

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## CHAPTER 1

### INTRODUCTION AND METHODOLOGY

#### 1.1. Introduction

This thesis studied the building techniques and materials used in the curtains and towers of the citadel at Ankara. As the main issue, differences in style, building techniques and materials were examined to establish distinctions between curtains and towers. For this purpose the sections of the walls which were not obstructed by houses or trees were chosen as examples. In this way differences with respect to building materials were detected and used to differentiate the sections of the walls.

The citadel of Ankara was chosen as the subject of this thesis because the walls were the focal point of the ancient settlements and modern Ankara. The fortifications were used in different periods including the Galatian, Roman, Byzantine and Turkish. Therefore Ankara is identified with its citadel which has been the target of interest because of its unusual appearance, long surviving curtains and towers, building materials and its historical importance. Also the citadel of Ankara is one of the few fortresses which remained comparatively unspoiled and offers possibilities for the inspection of its inscriptions, building materials and construction techniques which emphasize the importance of the city as a trade centre and strategical headquarter from the ancient times to its recent history.

The target of this thesis was to analyse and compare the building materials in selected areas of the fortress and bring an explanation to their distribution on the towers and curtains. Consequently this thesis examined different aspects of the walls in detail by incorporating recent techniques and methods to complement previous work.

## 1.2. Methodology

The first stage of the project started with the research of literature which helped in the selection of a particular area. The material by Jerphanion and Mamboury<sup>1</sup> was instrumental in understanding the fortress because few scholars were interested in the physical aspects of the fortress and the available literature is limited and usually mention the citadel in a few paragraphs. Only Jerphanion's and Mamboury's studies on Ankara are comprehensive. Apart from these two sources Foss who mainly focuses on the historical aspect of the walls also gives important information on the building materials and construction techniques.

In this research historical events and inscriptions were also studied to understand the reason behind the shape of the towers design of the fortress, style and distribution of masonry and reconstructions of certain sections. Although the scarcity of written material was an obstacle it was one of the reasons for the choice of this topic. Also inscriptions were instrumental in dating the section that was studied in this thesis. Although only two inscriptions mention the emperors involved in the construction of the section included in this thesis, all the visible inscriptions were documented for further studies of the fortress.

In the preliminary stage, the site was visited to take photographs of the complete circuit showing details of the walls and towers. These photos were filed to construct the whole expanse of the walls which were used as a guide in future references to facilitate further work at the site; finding the location of certain curtains and towers, recognizing specific sections at first site, spotting details such as inscriptions and most of all to compile a document on the curtains and towers for future references. This also helped to get accustomed to the site during subsequent visits and to locate different sections easily without having to refer to a map or

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<sup>1</sup> See Jerphanion, 1928, Mamboury, 1933.



picture. The photos were numbered and the towers and curtains were given codes to avoid confusion.

The municipality of Ankara was visited to obtain further information and material concerning the fortress; maps, photos. The plan of the Ankara Kalesi which was made from a digitized topographic map was obtained by the permission of the municipality. These maps were used to label each curtain and tower in abbreviated versions (See maps 1, 2, Table 1). In this process the numbering of the towers was borrowed from Jerphanion's map<sup>2</sup>. The reason was to number the towers on each side separately and study the walls in compartments. This system was adopted to facilitate the identification of the towers. Therefore the walls and curtains were numbered and abbreviated as "WT6, F2" = "West Tower 6, Face 2", "SC5" South Curtain 5, or G1= Gate 1 (See Table 1). The numbering of the towers for the west and south sides started with the tower on the south-west corner which was abbreviated as SWT1= "South-West Tower 1" and which continues on the west side as, WT2, WT3.....WT19, and on the south side as ST2, ST3.....ST7 (See map 1,2) . The numbering of the tower faces was done anticlockwise because the survey started from the north-west corner of the citadel and continued to the south-east corner. The gates were abbreviated as G1 (Genç Kapı), G2 (Parmak Kapı), and G3 (Zindan Kapı). The bastion on the north-east of the citadel was abbreviated as B. The faces of the bastion as BF1, BF2...BF7 (Bastion Face 1, Bastion Face 2,...Bastion Face 7, (See Table 1, Maps 1, 2).

The maps and plans which were obtained from the municipality of Ankara also helped in the selection of the areas most suited for the survey. The reason for such a selection was the scale of the walls and the problem of access to the curtains and towers. Consequently visits to the site and the material obtained from the municipality helped in choosing the areas available for research. These areas included all the exterior of the west side of the citadel and some sections of the south and south-east sides.

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<sup>2</sup> See Jerphanion, 1928, Plate LXXXIII.

The facades of the curtains and towers on the west are usually unobstructed except some trees blocking the surfaces especially in the summer. The other reason for the choice of the west and south sides was the accumulation of spolia in these section of the circuit as the main objective of this thesis was to give an explanation to the distribution of building blocks in the selected areas.

Consequently the inner sections of the walls were not included for two reasons; 1. most of the interior of the citadel is obstructed by modern houses. This is shown very clearly in the aerial map which was provided from the municipality (See Map 5). It is impossible to reach the majority of the walls from the interior of the castle as most of the houses abut the walls and even some of the houses perch on the upper sections of the walls and included certain sections of the curtains into their houses<sup>3</sup>. 2. The masonry in the visible sections of the interior of the fortress consists of small blocks or rubble stone and the aim of this research was to document reused spolia and architectural elements which are generally accumulated on the exterior of the walls. Consequently the interior of the circuit remained outside the scope of this thesis and these areas were only mentioned to document the masonry.

Also this research did not include the north section of the walls as its scope was limited mainly to the west, south and east sides of the citadel. The choice of these sections of the fortress was related with the building materials used in these sections as one of the aims of this research was to document the spolia of the Roman period and the inscriptions built into the walls of the citadel. The uniformity of the masonry style along the west, south and east sides of the citadel simplified the classification of the building materials; the lower sections of the curtains and towers are faced with large blocks of spolia and the superstructure consists of alternating bands of brick and rubble stone. This pattern is consistent along the west, south and east sides of the citadel and the distribution of the building materials can be studied in sections. Also the variation of the building materials offers the possibility to compare the distribution of different types of materials in selected areas. In this

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<sup>3</sup> See Chapter IV, Maps 1, 2, 5.

process the upper structures of the curtains and towers were also included to obtain accurate results. Consequently different types of building materials were analysed and their distribution in the selected areas were recorded in percentages by using statistical methods. In this way comparison of the selected areas in terms of the distribution of the building materials was possible. Also the spolia and inscriptions were photographed and recorded for further reference and the building materials were classified and recorded in tables.

The masonry of the north side is different. The towers in that section are faced with small rubble stones laid in regular courses. Also close inspection of this side was impossible and the walls offered very little for comparative research with respect to the type of the building materials as large blocks of the Roman period would have been concealed in the substructures. Also the short expanse of the circuit on the north side offers limited scope for comparative research as compared with the rest of the citadel walls. Therefore in this thesis the east side was mentioned in relation with topography and the design of the castle. Consequently there are few references for that section. Nevertheless this side was also documented to understand the importance of topography with respect to defence techniques and the design of the citadel. However the documentation of this area was confined to the inspection of the exterior of Akkale and the adjacent walls which were observed from the path in front of Akkale and from the Bend Deresi Street. Therefore the photographs of the north side were taken from these points to show the surrounding area which also helped in the production of the conjectural map showing the course of the Ottoman and Roman walls (See map 4). These photographs were also used to compare the present state of this side of the circuit with the old photographs.

Therefore this research only included the visible sections of the fortress walls on the west, south and south-east and the walls were studied in “**sections**” to make an assessment of the “**whole**”. This method was also believed to tackle the problems which could have been caused by the size of the project.

The survey of the site was conducted with the collaboration of the team members of the AFP 2001-02-01-02 Kerkenes Project at the Architectural Faculty of the Middle East Technical University. GIS and Photorectification methods were used and Nurdan Atalan who was the member of the Kerkenes project conducted the field survey with Sinan Sülüner (Figures 1,2). The elevations of the curtains and towers were accurately drawn by employing the techniques used in the Kerkenes project. The first stage of the survey included the south and south-east sections of the walls between the bastion and ET1. These drawings included the windows and loopholes (Figures 246-256). The building materials were put in tables to show their distribution along the walls. The distribution of the building materials in randomly chosen sections of the curtains and towers (tower faces and curtains) is statistically evaluated. Consequently the curtains and tower faces were identified in terms of the distribution and amount of the building materials.

The survey continued with subsequent trips to the site and a preliminary study focused on a selected area; "Zindan Kapi". The survey of this side was accomplished by using GPS (Global Positioning System) to obtain a three dimensional model of the existing walls and towers.

After the photographs were rectified and placed into AutoCad DWG files, the facades of the curtains and towers of the selected areas were drawn in AutoCad showing the distribution of the building materials in areas and as a whole. This survey included; ET1 F2, ET1 F1 , EC1, BF7, BF6, ST5 F2, ST5 F1, SC4, ST4 F4, ST4 F3, ST4 F2 on the west, south and south-east sides of the citadel (Figures 234-256) (See Map 1,2). Also all the visible inscriptions which were built into the walls of the outer and inner circuits were photographed and classified. An aerial map obtained from the municipality was included in the thesis to show the topographical aspect and extension of the walls. The other maps were used to show the distribution of the inscriptions along the circuit, the curtains and towers and the gates. All the maps were obtained from the municipality of Ankara. Consequently these selected sections were accurately documented showing inscriptions and building materials.

The building materials were classified in different colours as reused marble, reused stones basalt/andesite , bricks and rubble stone (Figures 234-256). Basalt was studied in conjunction with andesite because of its similarity in appearance and its limited use on the fortress walls as compared with andesite and other materials.

In the second stage of the survey the same process was applied on the west side of the citadel in selected sections of the towers and curtains (Figures 226-234). This survey included tower faces; WT16 F1, WT13 F1, WT12 F2, WT11 F4, WT10 F3, WT9 F3 and curtains; WC2, WC7, WC17, (See map 1,2). This stage of the survey was also conducted by Kemal Gülçen with Sinan Sülüner. The photographs were taken by Sinan Sülüner by using a compact digital camera (Canon, PowerShot A310). The photographs were rectified by Nurdan Atalan at a scale of 1/100m. Some towers which were initially selected were excluded due to the difficulties encountered in the site (Figure 3) because the slope of the terrain prevented the whole image of the towers to fit into the window of the camera without tilting it.

In both surveys A theodolite was used to record the control points on the walls and Kemal Gülçen from the METU Photogrammetry Laboratory Department carried out the first stage of the survey with the members of the Kerkenes team and the second with Sinan Sülüner. The stages of the survey were explained in detail below.

Finally the circuit at İznik was studied to make comparisons with respect to building materials and techniques. The map for İznik was taken from “Schneider and Karnapp”<sup>4</sup>. The numbering of the towers for İznik was taken from the map in “Schneider and Karnapp” (See map 6).

#### 1.2.1. GPS (GLOBAL POSITIONING SYSTEM) SURVEY

The GPS (Global Positioning System) survey was carried out at the towers of the Zindan Kapı region which was restored by the Ministry of Culture. The permission for survey was taken from DÖSİMM. The survey was done by using a

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<sup>4</sup> Schneider and Karnapp, 1938

base and roving receiver (Figures 1,2). Initially the aim of the survey was to obtain a three dimensional model of this part of the citadel. However the height of the walls caused problems of transmission between the satellites and the receivers. The bad weather conditions also caused the survey to slowdown. In the first stage, static survey was carried out for two days to determine the coordinates in the UTM WGS 84 coordinate system. The GPS work started using the fixed points marked on the walls. These points had been fixed during the restoration of this region by DÖSİMM.

In the second phase, the coordinates of the edges of the walls at the upper sections of the towers were read. The continuous kinematical survey was carried out and specific distances of the other sections of the towers were read. This work was completed in seven days using GPS equipment (Trimble 4600 LS) which was rented from the BIAA (British Institute of Archaeology at Ankara). Approximately 10500 readings were logged and the data was processed by using the GPS survey program. The three dimensional models were done by using Arcview 3.2 and Arcview 8.2 programs<sup>5</sup>.

### 1.2.2. RECTIFICATION

Rectification of the photographs was done in two stages. The first stage included 11 walls which were selected to obtain scaled drawings. The team of the Kerkenes project (METU) took the photographs and rectified them using Aerial software. The rectification was done in black and white. The digital photographs were taken by Nurdan Atalan and Françoise Summers using JVC digital camera. These photographs were taken by holding the camera parallel to the walls as tilting the camera effects the results in rectification. Control points were printed and pasted on the walls by using water containing “ammonium chloride”. Rather than other adhesives this material was preferred for not to destroy the surface of the walls as these sections were faced with spolia coming from the antique monuments of the Roman period. Most of the difficulty was stemmed from the height of the walls.

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<sup>5</sup> See the report in the addenda.

Control points were measured by Kemal Gülcen from the photogrammetry department at METU. Mr. Gülcen read the x, y, z coordinates using theodolite. Then the coordinates were put on the AutoCAD program and photographs were archived at the same time. The photographs were then rectified by using Aerial Software by the Kerkenes project team members. 11 walls were put into the Autocad programme at a scale of 1/100m and the stones were digitized by Sinan Sülüner and Nurdan Atalan.

In the second stage the walls were chosen from the west side of the inner citadel. Kemal Gülcen conducted the survey with Sinan Sülüner. Kemal Gülcen read the control points using total station equipment. In this stage of the survey total station read the points without the control point papers stuck on the walls. The photographs were taken by Sinan Sülüner. The rectifications of the photographs were done in Arcview Desktop 9.0 software. Polynominal transformation method was used for the rectification with an error margin of approximately 10cm. The error was caused by the difficulties encountered in the site due to the steepness of the slope which started from the foot of the towers and curtains (Figures 3-5) as it was very difficult to take photographs by standing parallel to the walls. Consequently some of the walls which were included in the random selection for statistical evaluation were not drawn as they were not suitable for rectification<sup>6</sup>. The difficulty was not only the slope of the terrain but some of the towers and curtains were obstructed by trees. In this stage the photographs were rectified in colour. The rectified photographs were put in Autocad program by Nurdan Atalan and the distribution of the building materials in areas was digitized by Sinan Sülüner (Figures 226-234).

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<sup>6</sup> WT16 F2, WT14 F2, WT14 F4, WT13 F3, WT7 F1, WT7 F4 WT3 F2, WT2 F3 were not drawn.

### 1.2.3. STATISTICAL EVALUATION OF THE DISTRIBUTION OF THE BUILDING MATERIALS

The statistical evaluation included the west and south sections of the citadel and the bastion on the south-west. It was done by random sampling of the surfaces in the selected areas. This stage of the study was conducted to show the distribution of the building materials; reused marble, reused andesite/basalt, brick and rubble stone in percentages on the west, south and south-east of the citadel. The surfaces included in the evaluation are : WC17, WT16 F1, WT13 F1, WT12 F2, WT11 F4, WT10 F3, WT9 F3, WC7, WC2 on the west and ST4 F2, ST4 F3, ST4 F4, SC4, ST5 F1, ST5 F2, and BF6 and BF7 on the south and south-east (See Charts 1-9). The digitized areas of EC1, ET1 F1 and ET1 F2 were excluded in this evaluation as it was decided to include only the west and south sides for comparison because a large portion of the east side is obstructed by houses. Therefore the digitized photographs of EC 1, ET1 F1 and ET1 F2 (Figures 243-245, 254-256) which were drawn during the initial stage of the research were only used to show the building materials in detail. The statistical measurements of the included areas were taken in m<sup>2</sup> by entering data into the SPSS 11.0 program.

The results show that andesite/basalt cover %46.11 of the surfaces on the west side with marble covering %17.05. The percentage of andesite/basalt is higher on the towers as compared with the curtains and the percentage of rubble stone is higher on the curtains. The sampling on the south shows that %57 of the surfaces are covered with marble and %10.81 with andesite/basalt. Marble is used more extensively on the towers than the curtains on this side. The percentages of the building materials in the bastion show that andesite/basalt is used more extensively than the rest of the building materials. The general distribution of the building materials on the towers, curtains and the bastion indicates that andesite/basalt covered more spaces than marble (Charts 8-9). The percentages of andesite/basalt are greater on the west side and in the bastion whereas marble is extensively used on the south side as compared with the rest of the citadel walls (Charts 8-9).



The data showing the ratio of the distribution of the building materials in percentages on the selected areas were given in the charts below.

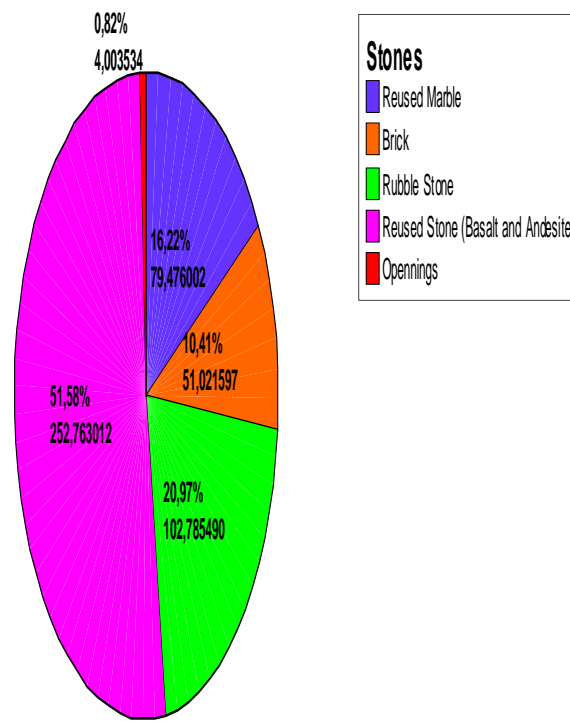


Chart 1

The results obtained from the sampling of %10 of the tower faces on the west side:

Stones.....	Surface m²
Reused marble.....	79, 476002
Reused andesite/basalt.....	252, 763012
Rubble Stone.....	102, 785490
Brick.....	51, 021597
Openings.....	4, 003534

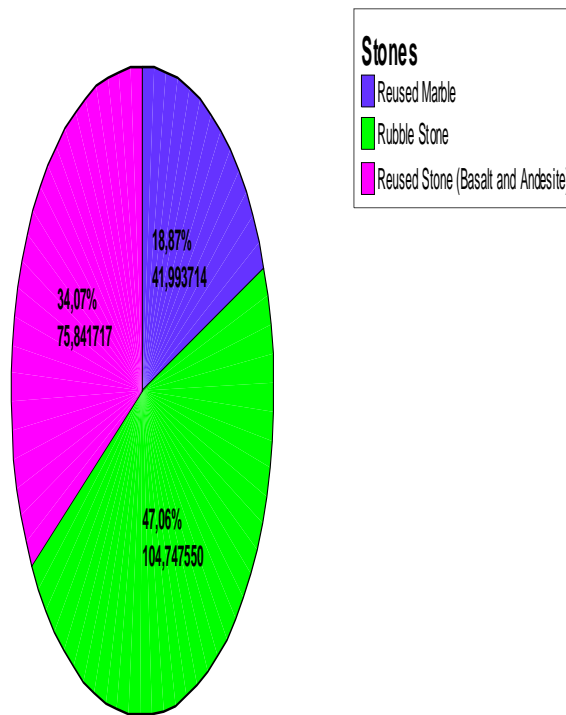


Chart 2

The results obtained from the sampling of %20 of the curtains on the west side:

Stones.....	Surface m²
Reused marble.....	41, 993714
Reused andesite/basalt.....	75, 841717
Rubble stone.....	104, 747550

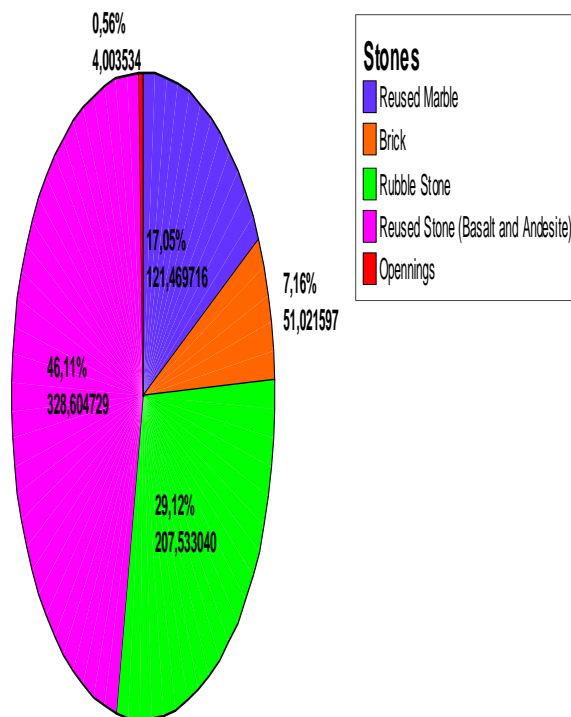


Chart 3

The results obtained for the west side:

Stones.....	Surface m²
Reused marble.....	121, 469716
Reused andesite/basalt.....	328, 604729
Rubble stone.....	207,533040
Brick.....	51, 021597
Openings.....	4, 003534

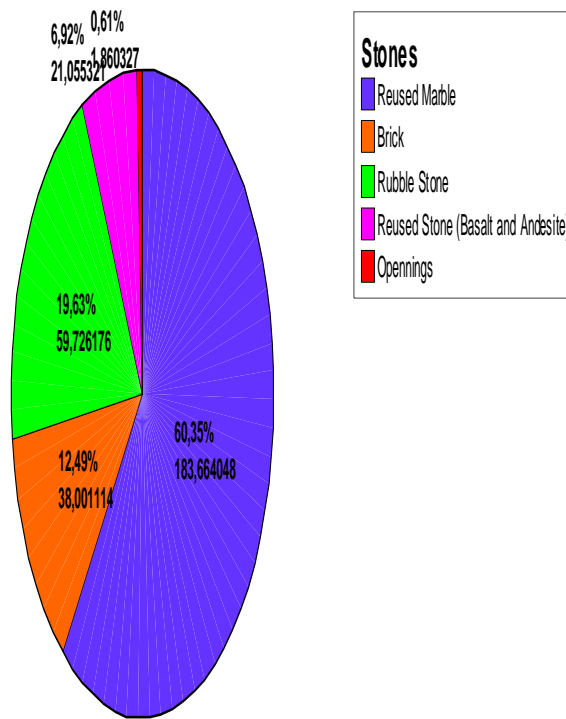


Chart 4

The results obtained from the sampling of % 38 of the south tower faces

Stones.....	Surface m²
Reused marble.....	183, 664048
Reused andesite/basalt.....	21,055321
Rubble stone.....	59,726176
Brick.....	38,001114
Openings.....	1, 860327

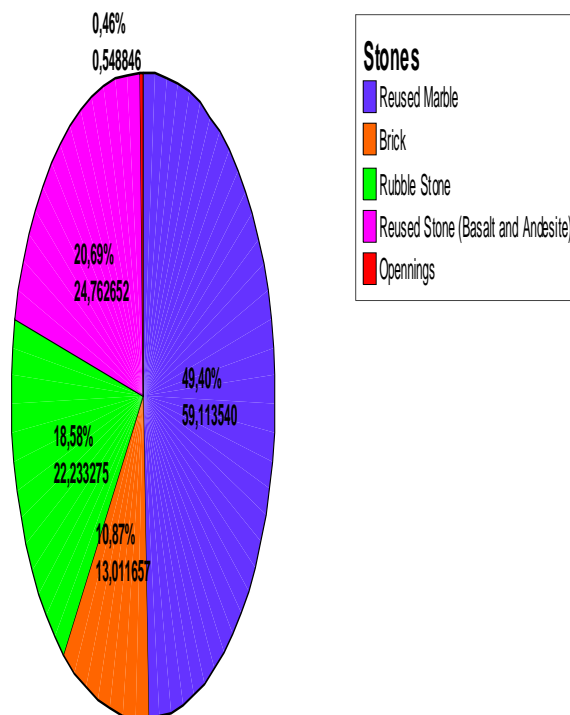


Chart 5

The results obtained from the sampling of % 29 of the south curtain faces

Stones.....	Surface m²
Reused marble.....	59,113540
Reused andesite/basalt.....	24,762652
Rubble stone.....	22,233275
Brick.....	13,011657
Openings.....	0,548846

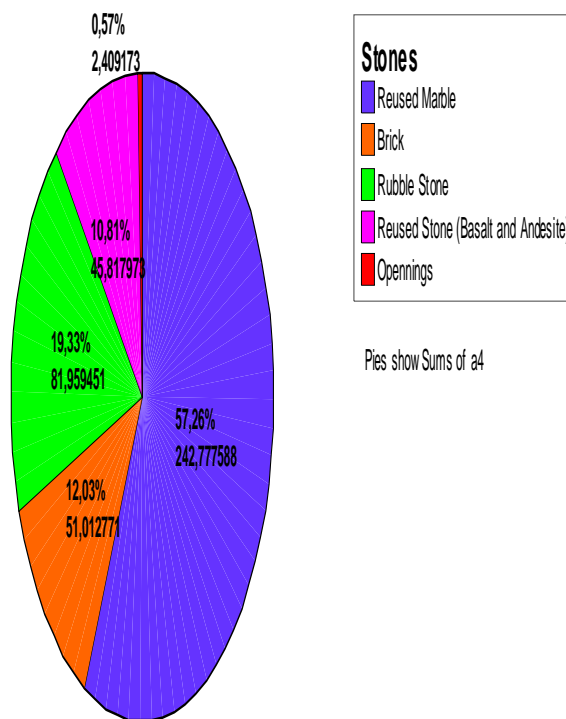


Chart 6

The results obtained for the south side:

Stones	Surface m²
Reused marble.....	242, 777588
Reused andesite/basalt.....	45, 817973
Rubble stone.....	81, 959451
Brick.....	51, 012771
Openings.....	2,409173

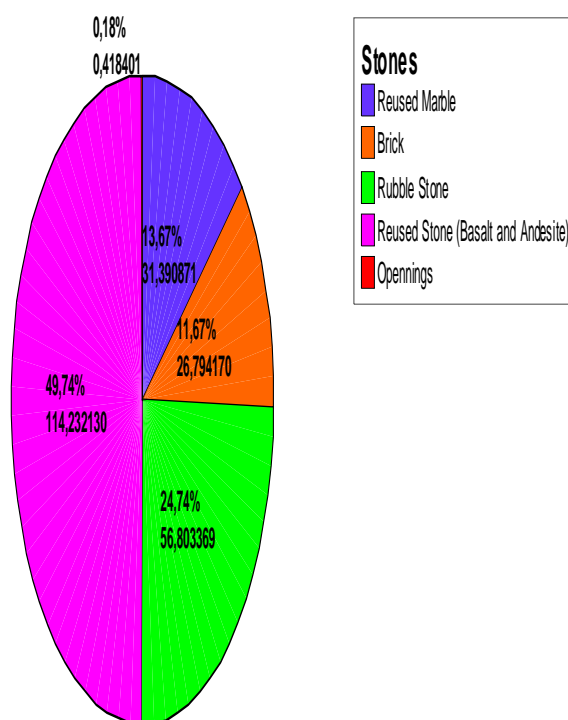


Chart 7

The results obtained from the sampling of % 29 of the Bastion:

Stones.....	Surface m²
Reused marble.....	31, 390871
Reused andesite/basalt.....	114,232130
Rubble stone.....	56,803369
Brick.....	26,794170
Openings.....	0,418401



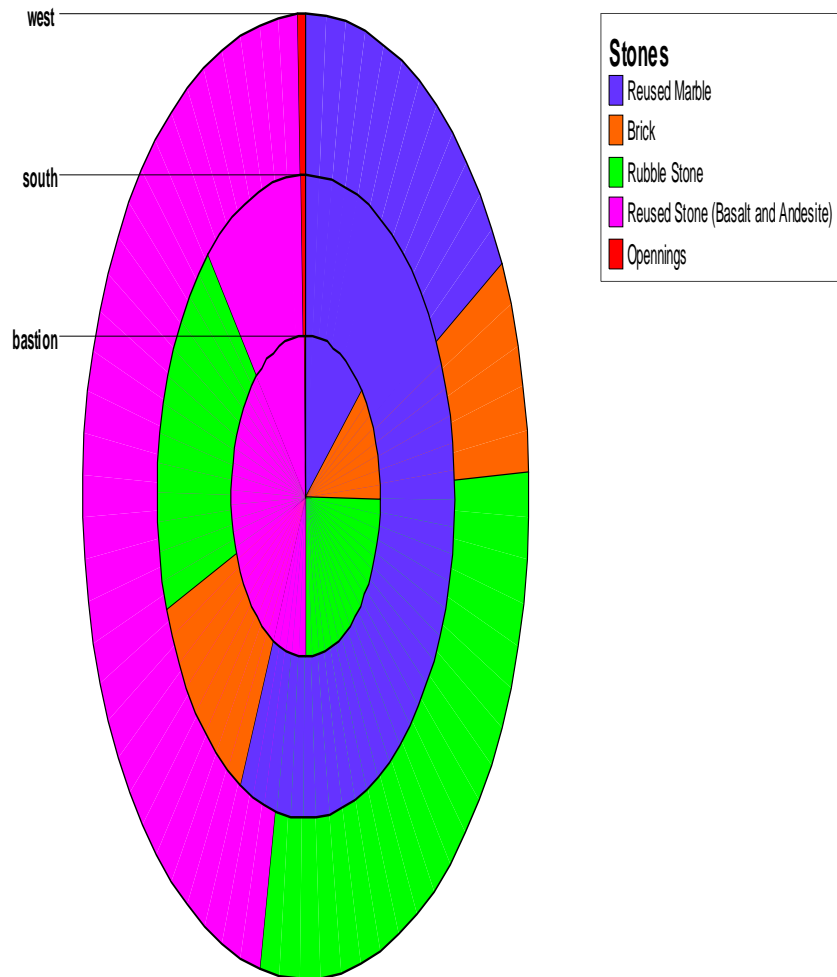


Chart 8

The comparison of the west side , south side and the bastion with respect to the distribution of the building materials.

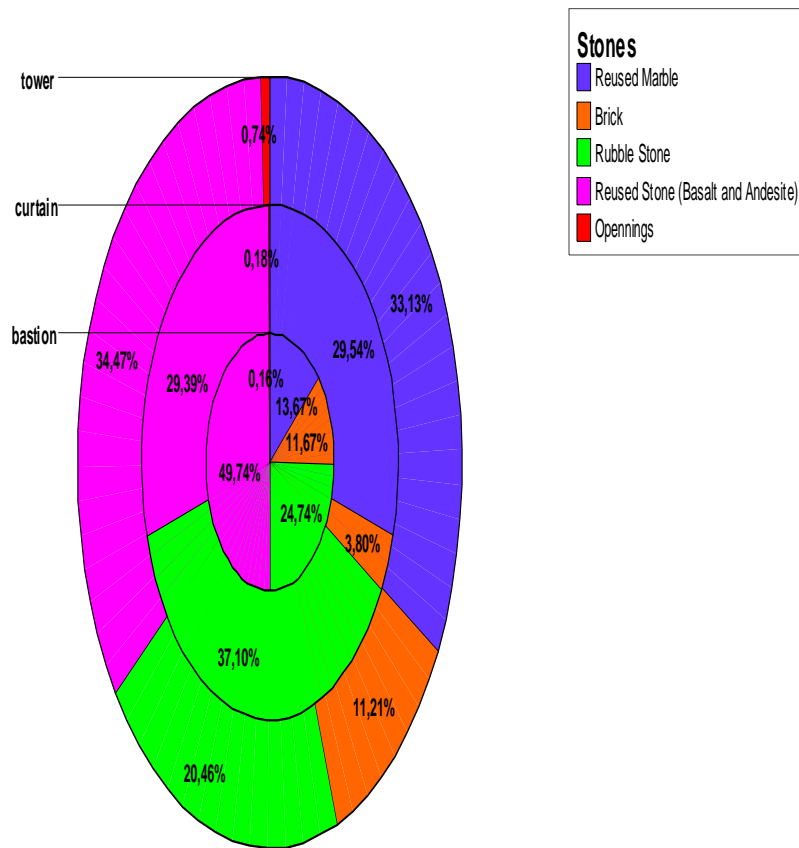


Chart 9

The comparison of the towers, curtains and the bastion with respect to the distribution of the building materials.

## CHAPTER 2

### HISTORY

The strategical location of Ankara must have played a very important role in the occupation of this place from the very early periods. The castle is perched on a steep hill like the nest of an eagle and commands a view of 360 degrees. Therefore it would always have been a fortified city surrounded by walls and an important military base<sup>7</sup>. The walls of the citadel extended down the valley during the Roman and Ottoman periods mainly to keep the bandits away (Mamboury, 1933:78).

The earliest founders of Ankara were Hittites who must have profited from its strategical topography. During that period Ankara was called Ankulla or Ankuwa and the latter is used for the winter residence of the Hittite Kings<sup>8</sup> (Mamboury, 1933:70). The site would have been a fortress and occupied the summit of the hill (Mamboury, 1933:70). The walls which Hittites constructed would have been large undressed blocks with superstructures of brick. Texier thinks the city was founded by the Phrygians in 650 B.C. and received the name Ancyra because the workers found an anchor made of stone in the foundations of the walls<sup>9</sup> (Texier, 1839:171). Therefore Ankara could have been founded by the Phrygians. They must have occupied the site after the Hittites and did not change the appearance of the citadel. Although most of their cities were open in the plain the Phrygians also had fortifications located on hill tops controlling the main routes (Mamboury, 1933:70, Magie, 1950:1311, Bennett, 2003:1).

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<sup>7</sup> See, Akok, 1955.

<sup>8</sup> For the history of Ankara see Magie, 1950, Bosch, 1967, Erzen, 1946, Bury, 1912, Akurgal, 1969, 1992, Cross and Leiser, 2000, Bennett, 2003, Buluç, 1991. For a short history of the city and its monuments see, Wessel, 1966:170-177. For the history of the city and the Ankara Castle see, Belke, 1984:126-130.

<sup>9</sup> Erzen says the meaning of Ancyra in Latin and Greek is anchor and mentions the anchor taken by the Galatians during war which Ankara was named after (Erzen, 1946: 16).

According to Magie when Ankara was visited by Alexander in 333 B.C. it was a place of some size and its name was mentioned for the first time by the Roman historians with reference to the campaigns of Marius (Texier, 1865:45, Mamboury, 1933:60). (Magie, 1950:1311, [Pausanias, 14, 5]).

Ankara is also mentioned by the Egyptian priest Apolloniyos in his history of Caria (Erzen, 1946:11). He claimed it was founded by the Galatians after they had arrived Anatolia in 278 B.C. (Erzen, 1946:11)

Strabo of Amasia who lived between 69 B.C and 19 A.D. mentions Ankara in his “Geographica” as a fortress belonging to the Galatian tribe of Tectosages. He also described it as a polis. He says there was no trace of substantial pre-Roman occupation at Ankara in either the literary or archaeological records as there was no known autonomous coinage belonging to these periods. (Pekman, 2000:63).

Ankara is also mentioned by Pliny in his “Naturalis Historia”, “The Geography of Galatia” (Erzen, 1946:11, 13-16). Pliny also speaks of Ankara as a fortress in Galatia saying their cities were mainly composed of some huts and castles built at the top of hills<sup>10</sup> (Texier, 1839:176-177, 1865:45, Mitchell, 1974:179, Magie, 1950:1311).

The Galatians must have surrounded Ankara with a sort of circuit which would have been more or less circular or elliptic and the walls consisted of large undressed stones (Mamboury, 1933:71). The Galatian defenses were equally destroyed but Ankara which was the capital of the Tectosages should have extended towards the plain and occupied all the territory situated on the west of the citadel (Mitchell, 1974:193). Mamboury thinks it is difficult to say much about 2000 years ago as no scientific or archaeological excavations have been conducted near the citadel or along its western slope (Mamboury, 1933:71).

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<sup>10</sup> See Macpherson, 1958, Ballance, 1971: 608-615.

During the Galatian period Ankara was a city of the Tectosages in 189 B.C. (Magie, 1950:1311, Erzen, 1946:13-16, Pococke, 1743-45:86, Bakırer, 2001:175). Consequently this territory was called “Gallo-Graecia” and afterwards Galatia<sup>11</sup> (Pococke, 1743-45:86).

Mitchell mentions Livy, who referred to Ankara as “*urbs nobilis*” in connection with the campaign of Marius. When Marius had defeated the Gauls, he advanced into their country and laid siege to Ankara which afterwards assumed the name “Sebaste” in honour of Augustus, who raised the city to the rank of metropolis of the province and adorned it with major stately edifices (Mitchell, 1974:179, Kinneir, 1818:63, Bakırer, 2001:175). After Galatia became a province of Rome the walls were extended down the plain and the hill was fortified to form a large citadel<sup>12</sup>. According to inscriptions Ankara had a hipodrome, baths, aquaducts and many temples<sup>13</sup> (Texier, 1839:172, Foss, 1977:60-61).

The fragments of architecture which are now built into the walls of the citadel came from public monuments of the Roman period. Texier thinks the Greek artists employed by the Romans created monuments which were more elegant than the buildings in Rome; “The gates of the classical temples are very rarely conserved and in Italy there are only two gates and for the beauty of the details they can not match that of Ankara” (Texier, 1839:172). The most beautiful buildings of the Roman period were located on the west of the fortress (Texier, 1839:172).

After Augustus, the Galatians would have constructed temples for other Roman emperors such as Nerva, Trajan and Caracalla (Texier, 1839:184). Texier says an inscription found in an Armenian cemetery might have come from the statue of a temple of Antonine<sup>14</sup>. Texier also mentions the ruins of a Roman bath (Texier,

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<sup>11</sup> See Mitchell 1974.

<sup>12</sup> Mitchell says it is not known whether or not the city was fortified in the early Empire. The pre-Roman settlement was presumably walled. A series of inscriptions belonging to the third century refers to the building of fortifications (Mitchell, 1974:193).

<sup>13</sup> See Erzen for the detailed description of the monuments of the Roman period and the fortress (Erzen, 1946: 93-99), see also Bennet, 2003.

<sup>14</sup> See, Texier, 1865.

1839:184). He claims that the construction of the public monuments were incited by the theatre, racing and games which was brought to Galatia by the Romans (Texier, 1839:177). Ankara was made metropolis of Galatia under the reign of Nero and Emperor Caracalla was a great benefactor of the city which was then called Antoniniana (Pococke, 1743-45:87).

Consequently the ancient history of Ankara belongs almost entirely to the period of the Roman domination and Mitchell says there is nothing to suggest wider importance during the Galatian period (Mitchell, 1974:179).

The physical aspect of the city would have changed very rapidly in the Roman period and from a small market town Ankara must have transformed into an administrative centre of a province and a self governing city, to fulfill these functions a number of large and important public buildings were necessary (Mitchell, 1974:189).

The ruins of ancient structures and architectural fragments which were built into the walls of the fortress prove that Ankara was embellished by public and private monuments during the Roman Empire<sup>15</sup>. Perrot thinks the majority of these monuments were of a pompous style with heavy ornamentation (Perrot, 1872:270).

Ankara continued to flourish after the death of Augustus and many other public buildings would have been constructed during the Roman rule. The main buildings were; a hippodrome, baths, gymnasium, and theatre (Foss, 1977:60-61, Perrot, 1872:266, Texier, 1865:45, Mamboury, 1933:60, Erzen, 1946:93-99, Kinneir, 1818:63). Ankara was also mentioned with the title of metropolis in the official acts (Texier, 1839:185).

Mitchell says there is little evidence to indicate how far the city as a whole extended (Mitchell, 1974:191,192). The focal point would probably have been the temple of Augustus and the baths (Mitchell, 1974:192). Erzen and Mitchell say the modern railway station on the west laid outside the city limits as Roman tombs were

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<sup>15</sup> See Perrot, 1872.

found in that area (Erzen, 1946:60, Mitchell, 1974:192,). The tombs of the non Muslims occupied the area on the west and south of the citadel and the Turkish tombs remained on the east (Mamboury, 1933:142). Nevertheless the Roman wall which extended into the valley would have been constructed to protect the citizens from pillage or theft and not supposed to be a major defense line especially in a period of peace and expansion<sup>16</sup>

The curtains and towers on the east of the citadel are faced with spolia which is now concealed by houses. Also marble spolia covering the walls of the bastion on the south- east are as much as on the west side of the walls (Figures 149-151, 203-204). Therefore public monuments of the Roman period might also have occupied the valley on the east. Nevertheless the most interesting fragments were built into the walls of the west and south sides. The buildings, which might have been constructed during the period of Caracalla (211-217) would have been in use throughout late antiquity (Mitchell, 1974:189,190). After the invasions of Goths and Zenobia in the late third century, the monuments were included within the circuit of a new city wall which ran immediately to the north (Foss, 1977:62, Dolunay, 1941:261-6, Akok, 1968:5-37, Mamboury, 1934:71).

Ankara reached its most extended limits in the second century A.D and was very prosperous during that time (Erzen, 1946:60). This could be attested by the amount of inscriptions belonging to that century (Erzen, 1946:60); Foss says “as long as the frontiers were securely guarded, the frontiers brought prosperity to the city” (Foss, 1977:31, French and Mitchell, 1973:86). He says the same routes also provided easy access for the enemy during the mid-third century and Ankara was attacked several times. Asia Minor was invaded by the Persians in 260 which was

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<sup>16</sup> Mamboury says the Ottoman walls could have been constructed over the foundations of the Roman walls (Mamboury, 1933: 78). Consequently as in the Ottoman period the Roman wall would have protected the citizens from the bandits as well because there was no outside threat during the Roman period. For the expansion of the city and public monuments see Erzen, 1946, Mitchell, 1974, Foss, 1977. For the course of the Roman city walls and Otoman walls see Mamboury, 1934:71, 78-82. For the history of the walls see Eyice, 1970:61-124, especially 73-87. For the course of the Otoman walls see the map of Major von Vincke (Mamboury, 1933: 69,78) also Eyice, 1970, figs 60,61. The walls appear in the engravings of Tournefort (1701) and Lucas (1705), also see the Dutch painting reproduced by Eyice, 1970, *ibid*.

followed by the Goths who penetrated Galatia and Cappadocia. Foss says the Goths probably attacked Ankara during this campaign (Foss, 1977:32). Ankara was also captured by Zenobia who moved into Asia Minor and seized the lands as far west as Ankara. However in 271 Aurelian (270-75) recaptured Ankara and finally restored the eastern provinces to the Empire (Foss, 1977:32).

After the attacks of the third century an anonymous benefactor built the city wall and the gymnasium of Polyeidus (Foss, 1977: 62,63, Mitchell, 1974:193, Erzen, 1946:61, Perrot, 1872:267, Bakırer, 2001:176, Eyice, 1996:245-46). This event was mentioned among others by an inscription<sup>17</sup> which commemorated the person who constructed the whole wall during famine and barbarian invasions (Perrot, 1872:267, Bosch, 1967:351, Bakırer, 2001:176, Foss, 1975:735 Akok, 1955:316, Bennet, 2003:10). The inscription described how the benefactor rebuilt the walls and the gymnasium of Polyeidus; “He rebuilt the gymnasium of Polyeidus which was in a ruinous state. He reconstructed all the city walls from their foundations during the economic crises and the barbarian invasions,” (Erzen, 1946:61).

The course of the Roman walls is not known. There are important clues given by scholars. Perrot mentions the walls as;

Nothing rests from the walls which existed during the era of Alexander and Manlius. The ancient walls might have been hidden under later reconstructions. It was in the third century that the circuit was reconstructed during the time of barbarian incursions which was mentioned among others in one inscription of Ankara “this inscription is damaged, it was engraved for the honour of a person who during the times of famine and barbarian invasions constructed the whole wall.” This wall from that period has been attacked for many times and demolished by war machines and reconstructed by the victors who fortified it. The first reconstruction is attributed to Sultan Alaaddin (1219-1236) by local tradition. But during the period when the Egyptians occupied Asia Minor, İbrahim Paşa reconstructed the walls (Perrot, 1872:267).

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<sup>17</sup> For the inscription see Bosch, 1967:351, no. 289. See also Bennet for the identity of the person who might have constructed the wall, Bennet, 2003:10.



The other clue for the third century walls was given by Mahmut Akok (Akok, 1955:316). A section of a wall was unearthed near Çankırı street extending from north-west to south-east (Akok, 1955:316-17). Mitchell says Roman Ankara would have extended as far as Yenışehir (Mitchell, 1974:192). The city map prepared by Major Von Vincke<sup>18</sup> in 1839, shows the course of the Ottoman walls. Mamboury says the Roman walls should have partly followed the same path as the Ottoman walls<sup>19</sup> (Mamboury, 1933:78). This map is the other important clue to determine the extension of the Roman city. The Roman walls would at least have followed the same course as the Ottoman walls on the north, north-west, west, south-west and south of the Ankara Kalesi and the temple of Augustus would have remained in the middle of the north-west and north-east sides of the Roman circuit (Figure 62), (See map 4 )<sup>20</sup>

The boundaries of the city during the Roman period are not known but it could also have extended towards the east as marble architectural elements are abundant on the south-east and east sides of the citadel. Marble spolia are less visible on the east as lower structures of the majority of the towers and curtains are obstructed by houses. Therefore there was no reason for the city not to extend towards the east during the peaceful late antique period. The city would have started to shrink towards the citadel after the invasions of the third century and the valley on the east could have been evacuated for the inhabitants to settle near the citadel. In case the Ottoman walls followed the same path as the Roman walls, then the Atatürk avenue would have been the limit on the south-west. The area around the train station was the burial ground during the Roman period (Erzen, 1946:60, Mitchell, 1974:192,). Therefore the Roman city would have remained within the borders of the “İncesu river” excluding the station outside the city limits (See Map 4).

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<sup>18</sup> For the map see Mamboury, 1933.

<sup>19</sup> For the course of the Roman walls see Mamboury, 1933: 70-72, See Bosch for the inscriptions referring to the third century wall, Bosch:1967, nos. 289-93. See also Mitchell, 1974:192,193, Jerphanion, 1928:147, 148, Perrot, 1872:267. See Eyice for the Byzantine wall near Hacı Bayram and the Temple of Augustus and the related bibliography, Eyice, 1996.

<sup>20</sup> The conjectural course of the Roman walls is marked on the map after the above mentioned scholars (See Map 4). The city map is obtained from the municipality of Ankara. See the engraving by Tournefort and the painting in the Rijk museum (Figures 60, 62), See also Mamboury, 1933:79 for the same engraving by Tournefort.

Consequently both İncesu and Hatip Çayı would have constituted the boundaries of the city on the west and south-west and the walls enclosed a substantial area including the Hacıbayram mosque, the temple of Augustus and the Roman baths (Çankırı Avenue), on the north-west and extended as far as the Atatürk Avenue on the west and south-west.

Consequently the walls would have started from the north-west corner of the outer circuit (Dış Kale), (See Map 4), (Figures 55, 136) and descended down the valley to the Bend Deresi street enclosing the area previously occupied by the tanneries “Tabakhane”. Then continued towards north-west encircling the Temple of Augustus and Hacı Bayram mosque and extended to the north following the curves of the Bend Deresi street. Then made a sharp bend to the west and passed over the Çankırı street including the site called the Roman baths and continued towards the south by intersecting the Atatürk Bulvarı near the State Opera House and from that point turned east and extended as far as the bastion of the inner citadel (See Map 4). Consequently the temple of Augustus remained in the middle of the ancient city. Also the column of Julian (361-363) which stands at the square near the Hacı Bayram mosque indicates that this section<sup>21</sup> was the center of the ancient city.

The Ottoman wall in Major Vincke’s<sup>22</sup> map encloses a considerable area extending as far as the Kurtuluş park. The wall would have followed the same path as the Roman wall as far as Yenişehir, then turned east near Celal Bayar avenue and continued up to the Kurtuluş train station and making a sharp bend to the north enclosed the region in front of the east side of the citadel and then connected with the south-east section of the citadel. If the Roman wall followed the same path as the Ottoman wall<sup>23</sup>, it could also have extended as far as the Ottoman wall on the east. Consequently the public monuments could also have spread to the east of the citadel far beyond the eastern side of the walls which would also explain the existence of many marble architectural pieces in that section of the curtains and towers.

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<sup>21</sup> For the column see Cross and Leiser 2000:82, Mamboury, 1933:189. For the history of Julian’s reign, see Foss, 1977:38-42.

<sup>22</sup> See Mamboury 1933.

<sup>23</sup> See Mamboury,

A section of the Roman wall was excavated in Çankırı street including ancient material which would have come from the buildings of the Roman period<sup>24</sup> (Foss, 1977:58, Akok, 1955:316). Some scholars say the course of this wall should follow the same course as the Ottoman walls<sup>25</sup> (Foss, 1977: 58,62, Mamboury, 1933:68-69,78-79,80-82, 99).

Mitchell says the only clue to the extension of the city to the north is a large, apparently Roman building which was occupied by the Turkish ministry of defence in 1927 (Mitchell, 1974:192) and a large ancient cemetery laid under the meteorological section of the Turkish army in the north-west (Mitchell, 1974:192). Mitchell says ancient material has been excavated in the region of Yenişehir (Neapolis), and it would be reasonable to suppose that the city reached this far during the Roman period at the height of its prosperity<sup>26</sup> (Mitchell, 1974:192, Erzen, 1946:60). Perrot mentioned the foundations of a villa further to the south at Çankaya which presumably were left beyond the boundaries of the ancient city (Perrot, 1872:269, Mitchell, 1974:192).

Ankara was mentioned many times in history which attests to its importance. Jovian (363-364) took the imperial purple and Julian (363-364) was received with great honours when the priests of Ankara came to meet him with their idols. It is believed that the triumphal column could have been erected to honour this emperor (Texier, 1839:195). When Valerian set out for the east to meet the invasion of the Persians, he stopped at Ankara and repaired the military highway and as Christianity spread in the Roman world Ankara became an apostolic see (Kinneir, 1818:63, Foss, 1977:31,32, Erzen, 1946:94)

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<sup>24</sup> Mitchell says until comparatively modern times substantial remains of a wall were still to be seen in the lower city of Ankara, very possibly following the lines of the third century fortifications which included the central areas of the city as well as the citadel hill (Mitchell, 1974:193).

<sup>25</sup> The Ottoman walls are known from illustrations and especially from the map of Major von Vincke (Mamboury, 1933:79).

<sup>26</sup> Erzen says Ankara reached the height of its prosperity during the second century A.D. when the city expanded to its final limits. As most of the inscriptions belonged to that era the second century was the most prosperous period for Ankara (Erzen, 1946:60).

Ankara was the target of attacks during the centuries following the late antique period because of its location at the intersection of the highways connecting the capital with the eastern provinces (Bakırer, 2001:177, Texier, 1839:196). It was first attacked by the Persians (Texier, 1839:196). During the reign of Heraclius (610-641) it was taken by Chosroes in 625 (Texier, 1839:196). Foss says the last operating mint in Asia Minor in Nicomedia was closed in 619<sup>27</sup>, and probably in the following year Ankara was captured or at least partially destroyed (Foss, 1975:744). The Persian forces of Chosroes attacked Asia Minor and occupied all the provinces from Mesopotamia to Egypt. Then the Arabs who invaded Persia and dethroned Chosroes captured and ravaged Ankara in 664. However Ankara preserved its importance because the highway which passed through Ankara became the main route between the capital and the east after the capital was moved to Constantinople<sup>28</sup> (Foss, 1977:30). The importance of Ankara as a road-junction is well illustrated by a large number of milestones dating to the first and second centuries<sup>29</sup> (Macpherson, 1954:111). Therefore its rapid development during that period is attributed partly to its strategic importance (Bakırer, 2001:175, Macpherson, 1954:112, Magie, 1950:800, 1308, 1309, 1310, French and Mitchell, 1973:86, Foss, 1975: 735).

There is little information in the literary sources about Asia Minor during the Persian attacks (Foss, 1975:725, 1977:68-71). Since Ankara was an important

<sup>27</sup> See Bosch for the bibliography of coins of the antique period in Turkey, 1949.

<sup>28</sup> The importance of Galatia as a throughfare between east and west by Rostovtzeff, 1941.

<sup>29</sup> A Roman road led directly to the east from Ankara to Tavium. The Pilgrim's road also went from Nicomedia to Ankara (French, 1981, Bakırer, 2001:175, Macpherson, 1954:112 113, Magie, 1950:800, 1308, 1309, 1310, French and Mitchell, 1973:86, Foss, 1975:735. The road from Nicaea in Bithynia was connected by a route with the port of Cius on the Propontis to Dorylaeum in Phrygia. From Dorylaeum a road led toward the east along the lower Tembris by way of Mideaum to Ankyra in Galatia (Ramsey, 1962:237). Also for the Pilgrims road (Ramsey, 1962: 197,240). For the course of Dorylaeum to Ankara (Ramsey, 1962: 237). For the evidence of the military importance of the highway through Ankara in the classical period is provided by the representations of military standards on the coins of cities located on it (Bosch, 1935: 95-99). For a detailed discussion of the Byzantine military road, Anderson, 1899: 111,113,114). For the stations on the Pilgrim's road between Juliopolis and Ankyra (Miller, 1916: 658, Ramsey, 1962:240, Anderson, 64 and 53). The courses of the roads leading from Ankyra to Pontus are somewhat uncertain (Magie, 1950:11309). For the road from Ankyra to Tavium (Miller, 1916, 672, 203). The Pilgrim's road continued from Ankyra toward the south-east some distance west of the Halys to Parnassus in the northwestern corner of the Cappadocia (for the map see Ramsey, *ibid.*). From Parnassus a branch-route led to Nyssa and Mazaca-Caesarea but the main road continued onward through Colnia to Tyana and then to the Cilician gates (Magie, 1950:1310). On the north-east Ankyra was connected by road with Gangra and on the north-west with Crateia on the Paphlagonian highway (Magie, 1950:1310). Macpherson thinks that a Roman road led directly east from Ankyra to Tavium and this was now confirmed by the milestones (Macpherson, 1954:112). For the recent study of the roads see French, 2003. See also Bennett, 2003:3, Fig.1.2.

military base<sup>30</sup>, its conquest would have given the Persians control over the most important highway between Constantinople and the east<sup>31</sup> (Foss, 1975:725).

According to Theophanes, Ankara was taken in 620<sup>32</sup> while the oriental sources give the 622/23 (Foss, 1975:725). Greek and Syrian chroniclers record that the inhabitants of Ankara were killed or enslaved (Foss, 1977:70, note 167:70). Nevertheless the date of the capture of Ankara is not known. Foss says it happened in the tenth year of Heraclius (610-641), (Foss, 1977:68-71, 1975:725). The Persian troops left Chalcedon in 626 or 627 and returned most of Asia Minor to Byzantine rule and left Asia Minor in 630 (Foss, 1975:744). After the Persian raids Ankara eventually transformed into a fortress and it became an important military base<sup>33</sup> (Foss, 1975:745, 1977:68-71).

During the two centuries after the reign of Heraclius (610-641), Asia Minor was invaded by the Arabs and it was captured by general Muawiya in 654. The capture of Ankara during this period indicates that its fortifications were not yet completed or strengthened. After the Arab attacks, Amasia, Amorium and Ankara became headquarters during the reign of Constantine II (641-68). Therefore Foss thinks the fortifications at the citadel may have been the military reorganization of the seventh century and the period 656-61 would have been the date for the construction of the walls (Foss, 1977:74, 75, Bakırer, 2001:177, Eyice, 1996:254). On the other hand Mamboury believes the walls of the citadel were constructed in 720 or 740 by Leo III (717-741) after the Arab raids of 708<sup>34</sup>, (Mamboury, 1933:61, 74, Bakırer, 2001:178). He thinks the outer circuit was constructed by Constantine II (641-68) (Mamboury, 1933:61, 74).

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<sup>30</sup> See Foss, 1977: 73.

<sup>31</sup> See Anderson on the Byzantine military road from Angora by Yozgat and Sivas to Bagdat which crosses the river Halys by the bridge called Tcheshnir Köprü (Çeşnir Köprü) (Anderson, 1899:113). See also Wittek for the history of Ankara during the middle ages, Wittek, 1932:329, Darkot, 1950: 441-444, Gibb, 1960, French and Mitchell, 1973:86-92. For a detailed description of the late antique and Byzantine periods of Ankara, see Foss, 1977.

<sup>32</sup> For the history of Ankara when it was attacked and captured by the Persians see Foss, 1975:725, 728, 735, 1977: 68-72. See also Lawrence, 1983:204.

<sup>33</sup> For the history of Ankara during the Byzantine period, see Foss, 1975, , 1977, 1990a, Eyice, 1996, Vasiliev, 1952.

<sup>34</sup> For the history of Asia Minor in the seventh and eight centuries see Brooks, 1898:182-207.

Ankara was attacked again by the Arabs in 776 and 797 but it was not captured. However the walls must have been severely damaged. Also Nicephorus I (802-811) would have repaired the walls following the Arab raids in 805 (Foss, 1977:77, Eyice, 1996:255, Bakırer, 2001:178).

Harun Reşit may have captured Ankara in 806 (Eyice, 1996:255) but it was actually captured and destroyed by the Caliph Al Mu'tasım (833-42) in 838<sup>35</sup> (Gregoire, 1929-30:327,328). After this destruction it was reconstructed and built as a fortress in 859 by Michael III (842-867) who was preparing his campaign against the Arabs (Gregoire, 1929-30:327,328, Eyice, 1996:255). The inscriptions mentioning the name of Michael III also reveal that the future Emperor Basil I (867-886) who was the founder of the Macedonian dynasty and the favourite of the Emperor Michael III personally assisted the reconstruction of the citadel in 859. The works of these Emperors included the restorations of the south-east corner and the construction of the second circle (Gregoire, 1927-28:440-41, 447, 1929-30:340-342, Foss: 1977:79, 1986:144, Mamboury, 1933:164, Bakırer, 2001:179, Eyice, 1996:255-56). The resemblance of masonry between G2 on the south side of the circuit and the reconstruction work of the south-east corner reveal that the repair work in both sections should date from the same period. Therefore starting from G2 the whole length of the south-east corner was reconstructed up to ET2 on the east side.

Jerphanion thinks the second rampart did not exist during this time. It may have been added following the restoration work (Jerphanion, 1928:190, 212, Foss; 1977:79, Gregoire, 1929:340, 341, Bakırer, 2001:179). However Gregoire thinks the construction of the whole citadel should be attributed to Michael III (842-867) (Gregoire, 1929-30:342). Mamboury on the other hand believes the outer circuit is earlier than the inner (Mamboury, 1933:149). He thinks Constantine II (641-668) constructed this circuit between 659 and 668 and Leo III (717-741) restored or reconstructed the walls in 720 or 740 followed by Nicephorus I (802-811) in 805

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<sup>35</sup> See Foss, 1986:186.

(Mamboury, 1933:74,75). Foss says the outer circuit was added by Nicephorus I (802-811) after the Arab attacks (Foss, 1986:143). Therefore it is not precisely known when the second circuit was constructed but today general opinion suggests the lower circuit is later than the upper and this view is shared by Jerphanion and Foss (Jerphanion, 1928:147, 190, Foss, 1977:74).

Oddly enough no Byzantine chronicler mentions the capture of the city except the one in 806 when it was attacked by the armies of Haroun-al-Raschid during the reign of Nicephorus I (802-811)<sup>36</sup>. The events were usually recounted by the Arab historians while their Byzantine counterparts were interested in the emperor, the court, the Church and the wars on the frontier. The only Byzantine source mentioning the capture of Ankara is the epics of Digenis Akritas. The events mentioned in these epics could have been confused with the actions of Paulicians<sup>37</sup> (Gregoire, 1929-30:329-331, Foss, 1977:80-81, Eyice, 1996:256). Consequently the last period of Byzantine Ankara is left in obscurity (Gregoire, 1927-28:442, Foss, 1977:80-82, Bakırer, 2001:179, Eyice, 1996:256).

After the battle of Mankizert in 1071, the Turks dominated Anatolia and the last mention of Ankara is the account of Emperor Alexius Comnenus (1081-1118) and his brother before its capture by the Seljuk Turks (Foss, 1977:82, 83, Bakırer, 2001:179-180).

Anna Comnena also mentioned Ankara in her famous work, "The Alexiad". Her accounts mention the army of Normans which arrived under the command of the count Biandrate and his brother<sup>38</sup>. They crossed the straits to Kibotus, hurried on the Armeniac theme and took Ankara by surprise on 23 June 1101 (Eyice, 1996:257). However the Turks recaptured Ankara before 1127.

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<sup>36</sup> See Chp III, notes 29, 30.

<sup>37</sup> See Chp. III, p.25,26.

<sup>38</sup> See Sewter, 1969.

Ankara also suffered from the wars of the Selçuk princes (Mamboury, 1933:76). It was sacked for many times and its walls dismantled. Nevertheless the city continued to grow to the south of the citadel where new quarters were established (Mamboury, 1933:76). The monuments of this period are the mosque of Alaaddin and the bridge of Akköprü (Mamboury, 1933:76). The fortifications at the ravine<sup>39</sup> were reconstructed between 1249 and 1250 (Mamboury, 1933:76).

At present the site is occupied by modern Ankara and the buildings of the late antique period and the extent of the Roman city are poorly known<sup>40</sup>.

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<sup>39</sup> For the fortifications of the ravine, see Jerphanion, 1928:201-207.

<sup>40</sup> See Akok, 1955: 316-317.



## CHAPTER 3

### SOURCES

#### 3.1. Inscriptions

Most of the inscriptions belong to the Roman period and are written in Greek (Erzen, 1946:60), (See Table 2, Map 3). Some of these were copied and studied by scholars who visited Ankara. Kinneir, Bosch, Hamilton, Perrot, Jerphanion, Gregoire and Mamboury gave translations or passages of the inscriptions in their studies<sup>41</sup> (Kinneir, 1818: 543, Hamilton, 1842:427, Gregoire, 1927-28:437-447, Mamboury, 1933:172-173, Jerphanion, 1928:209-212, Bosch, 1967, nos. 289-93, Perrot, 1872:267,268, Mitchell, 1977:67-103). Inscriptions of the late antique period were recently studied by Stephen Mitchell and Macpherson (Mitchell, 1977:64-103). The inscriptions included in this thesis are all built into the walls of the citadel and usually incomplete with half the block broken or the letters unreadable as the surfaces are damaged at certain sections. Most of the inscriptions studied by the above scholars are either stored in the Roman baths or at the archaeological museum of Ankara. The inscriptions in the citadel are in Greek and very few are in Latin<sup>42</sup> (Figures 6-43). One inscription is in Persian (Figure 42) which belongs to the İlhanlı period<sup>43</sup> (See Table 2, Map 3). The inscriptions are engraved on marble blocks or architraves.

The inscriptions which are important for this research are those mentioning the name of the emperor Michael (Figures 29-31). This inscription is now incomplete with several lines missing. It is engraved on two elongated marble blocks which are

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<sup>41</sup> Tournefort and Texier also mentioned the inscriptions at the citadel, see Tournefort, 1717:452, Texier, 1839: 172, 184.

<sup>42</sup> I would like to thank Dr. David French for his translation of the inscription in Chapter III.1, Figure 16; The inscription would have honoured a high official in the second century AD.

<sup>43</sup> The inscription belonging to the İlhanlı period is built into the Hisar Gate of the outer circuit near Saman Pazarı. For this inscription see Heinz, 1949: 772-775, Wittek, 1931: 161-163, Mamboury, 1933:160, Jerphanion, 1928: Pl. CVII, Fig. 2.

built into the top of SC5. It was copied by Busbecq<sup>44</sup>, Kinneir, Hamilton, Mordtmann<sup>45</sup>, Perrot, Jerphanion and Gregoire (Gregoire, 1927-28:437, Jerphanion, 1928:210, Foss, 1977:79, French, 196:2003, Perrot, 1872:240, 267,268). The recent translation of the inscription mentioning Michael was done by French (French, 197:2003). The inscription mentions the name of Michael<sup>46</sup> as the founder of the city and the restorer of the walls which included south and south east sections of the citadel;

“Having gazed upon the greatest glory of God, and holding your eye and hands raised up , praise the doer of all godd deeds, who gives strength and great might to the pious master, founder of the city , the faithful lord Michael our benefactor. Ye who enter the city cry out all the approved holy words: “Hail, city of the Lord, the new Sion, engraved on the tablets which God has written”<sup>47</sup> (French, 2003, 197, Foss, 1977:79)<sup>48</sup>.

The first storeys of the towers on the south of the citadel are pierced by narrow loopholes which are surmounted by blocks with crosses engraved on their surfaces. Consequently the tablets which God has written would have meant the blocks with crosses<sup>49</sup> (Figures 81-84).

The inscription also mentions the name of the spatarocandidate Basil (French, 2003:197). Basil would have been Basil I (867-886) who was the founder of the Macedonian Dynasty (867-1056)<sup>50</sup>. When Michael started his campaign against the

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<sup>44</sup> The translation of the inscription mentioning the name Michael by Busbecq is referred by Jerphanion, 1928:209. In Busbecq’s translation an Emperor Michael was mentioned for his kind deeds with respect to the city. Cuinet and Van Der Vin say Busbecq also discovered the *Monumentum Ancyranum* and the text of the political testament of Augustus on the walls of the temple of Rome and Augustus in about 1555 (Van Der Vin, 1980:464, Cuinet, 1890:281). For the Temple of Augustus see Koşay, 1956:1-12.

<sup>45</sup> Mordtmann is mentioned by Gregoire (Gregoire, 1927-28:437-38).

<sup>46</sup> Perrot thinks the inscriptions mentioning Michael refer to Michael II, “the Stammerer”, Perrot, 1872:267. Therefore he believes the south and south-east section were reconstructed during the reign of Michael II (820-829).

<sup>47</sup> The translation above is taken from French, 2003:197. The date of the inscription is given as AD 859 Michael III. French says the precise date; year 6367=AD 859 is given in another text copied by Mordtmann and Perrot; “For the glory of Christ loving king, Michael (our lord?), aided by the spatharocandidatus, Basilios. On June 10th , in the 7th indiction , in the year 6367. For this inscription see also Eyice, 1996:259.

<sup>48</sup> See also Foss for the inscriptions dedicated to the fortress, Foss, 1977: 79-83.

<sup>49</sup> Foss says, “this would indicate that miracoulous stones or relics were built into the walls to give them magical protection, just as the icons of Christ guarded the weakest point, the gate” (Foss, 1977: 79).

<sup>50</sup> See, Foss, 1977: 79, Mamboury, 1933: 147, 151, 173.

Arabs in 859 Basil who was the favourite of the emperor followed him and would have been at his side when the walls were being reconstructed or would have played a role in their reconstruction<sup>51</sup>. This explains his commemoration in the inscriptions (Gregoire, 1927:446-448, Foss, 1977:79).

Jerphanion thinks the work done by Basil I (867-886) only included the reconstruction of the south-east corner of the citadel and the construction of the lower enceinte (Jerphanion, 1928:209, Gregoire, 1929-30:340-41.). He thinks the inscriptions belong either to Michael I (811-813) or Michael II (820-829), and built into the walls following the destruction caused by Haroun-al-Rachid in 797 and 806 (Jerphanion, 1928:210-212, Gregoire, 1929-30:341). Consequently he thinks the walls were repaired by either Michaels following the destruction inflicted by Haroun al-Rachid or before that event during the reigns of the empress Irene (797-802) and Nicephorus I (802-811) in 806 (Jerphanion, 1928:210-12). Jerphanion also maintains that the reconstructions of the citadel could also be dated to the reign of Nicephorus I (802-811) following the attack of Haroun al-Rachid (Jerphanion, 1928: 214). The second attack in 806 would have necessitated the reconstruction of the whole south-east corner and the construction of a second new circuit. All this work would have been carried out from the first half of the ninth century by Michael I (811-813) or Michael II (820-829), (Jerphanion, 1928:214).

Nevertheless recent studies of the text mentioning the name Michael and Basil (French, 197:2003) reveal that the two inscriptions in SC5 date the south side of the citadel to the period of Michael III (842-867) and Basil I (867-886). These inscriptions mention the destruction of the city and its reconstruction by Michael. Therefore the south and south-eastern sides of the citadel would have been reconstructed during the first half of the ninth century following the attacks of the Arabs. Gregoire also thinks the Michael mentioned in the inscriptions was Michael

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<sup>51</sup> See Gregoire, 1929-30: 340.

III (842-867) and bases his argument on numismatic evidence<sup>52</sup> (Gregoire, 1927-28:441,442,447).

The Byzantine chroniclers do not mention any Michael in their texts and Ankara is only mentioned when it was captured by the armies of Haroun al Raschid in 806 during the reign of Nicephorus I (802-811)<sup>53</sup>. On the other hand Arab historians gave information on the capture and destruction of Ankara in 833 during the reign of the emperor Theophilus (829-842), (Gregoire, 1927-28:447). However the terrible destruction inflicted on the citadel walls in 838 by Al Motasem is not mentioned by any Byzantine chroniclers (Gregoire, 1929-30:328) except the epics of Digenis Akritas<sup>54</sup> which mention the capture of Ankara as well as the capture of Amorium. In these epics these actions were attributed to the Saracens. However the capture of Ankara mentioned by Digenis is the sack of the city by the Paulicians in 871 and their actions are confused by the invasions of the Arabs. The Paulicians ravaged all over Asia Minor as far as Nicomedia, Nicaea, Ephesus, and captured Ankyra in 871. They were finally defeated by Basil I (867-886) in 872 (Foss, 1977:80-81 Gregoire, 1929-30:329, 330). Therefore the material in Digenis was taken from the Byzantine chroniclers and historians especially from Genesius (Gregoire, 1929-30:328-330, Foss, 1977:80).

In the light of these evidences Gregoire maintains that the walls of Ankara would have been reconstructed after the destruction of Amorium and Ankara in 838 by the Caliph Mutasim (833-42) (Gregoire, 1927-28:444, 1929:341). After that event the successors of Mutasim could not have used the advantages of their predecessor when the Byzantines took the offensive against the Arabs. In 859 Michael III (842-867) led an expedition to the east to regain the lands which were captured by the

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<sup>52</sup> Gregoire mentions the campaign against Caliph Mutawakkil (847-861), by Michael III (Gregoire, 1927-28: 447). He says the Emperor Michael reconstructed the fortifications at Ankara which were demolished by the Caliph Mu'tasim (833-42) in 838 during the reign of Theophilus (829-842). The inscriptions at İznik and Ankara referred to the campaign conducted by Michael against the Arabs (Gregoire, 1927-28: 447). Michael was referred as "proud" in the inscriptions both at Ankara and İznik and on a coin belonging to that period (Gregoire, 1927-28: 447). For the capture of Ankara by Mu'tasim, see Gregoire, 1929-30: 327-28).

<sup>53</sup> See Foss, 1977: 79, note.192.

<sup>54</sup> See Gregoire, 1929-30: 329-339.

Arabs and it was during this period of campaign against the Arabs that the fortifications of major centers in central Anatolia were carried out (Foss, 1977:78-79). Consequently the reconstructions of the walls of Ankara could have started in 859 (Foss, 1977:78-79).

Therefore the Michael mentioned by the above inscriptions should have been Michael III (842-867) and the south and south-east sides of the citadel would have been reconstructed in the beginning of the second half of the ninth century as proposed by Gregoire and Foss (Gregoire, 1927,28:442), (Foss, 1977:78-79).

Gregoire discovered a third inscription on two stones which rest over the mentioned inscriptions. This inscription dates the construction of the south-eastern section of the walls to 10 June 859 which also proves the identity of Michael as Michael III (842-867), (Gregoire, 1927:444-446). Therefore the citadel would have been captured and destroyed by Al Motasem in 838 and reconstructed in 859 by Michael III when he prepared for his campaign against the Arabs<sup>55</sup> (Gregoire, 1929-30:328, 341).

Consequently the general opinion suggests the reconstruction of the south and south-east sections of the citadel belongs to the mid ninth century while the dates of the rest of the circuit would have belonged to the second half of the seventh century.

As for the rest of the citadel Jerphanion proposes two possibilities. He thinks the actual rebuilding of the walls would have been carried out after the attack of Chosroes in 620 and after Heraclius (610-641) launched an offensive against the Persians (Jerphanion, 1928:213). The city was ravaged by the Persians and the debris of the many antique monuments was used abundantly as building materials. Also following the Persian threat, the walls could also have been destroyed by the Arabs who ravaged Anatolia around 695 and 708. He says reconstruction of the rest of the

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<sup>55</sup> Eyice agrees with Gregoire on the date of the reconstructions of the south and south-east sections of the citadel and says the inscription Gregoire mentioned has the Byzantine date 10. June 6367 which corresponds to 859 when Michael III reigned (Eyice, 1996:259). Consequently the Michael Jerphanion claimed as Michael I or II (Jerphanion, 1928: 211) was actually Michael III (842-867).

citadel should not date after Leo III (717-741) and believes the first proposal is more likely than the second one. He bases his assumption on the style of the masonry and dates the rest of the citadel walls to around 630.

Foss dates the construction of the citadel to the period of Constans II (641-668) and bases his assumptions on historical evaluations (Foss, 1986:133). Consequently the rest of the citadel would have belonged to the seventh century.

Jerphanion also disagrees with Mamboury with respect to the dates of the upper and lower circles. He maintains that the lower circle is later than the upper and the projection of the Bastion in the form of a narrow square tower was actually connecting the lower circuit to the south-east corner of the upper circuit. He thinks the outer wall was added by Michael I or Michael II during the reconstructions of the south-east side of the upper circuit (Jerphanion, 1928:212). The scholars agree with Jerphanion with respect to the precedence of the two circuits. However Foss thinks the emperor responsible for the construction of the second enceint was Nicephorus I (802-811), (Foss, 1986:143).

### 3. 1.1. Distribution of inscriptions

WT 15 F3 (West Tower 15, Face 3): 1 inscription in Latin in a marble frame, incomplete (, Figure 6).

WC 12 (West Curtain 12): A marble block with mason's mark in Greek (Figure 7).

WT11 F2 (West Tower 11 Face 2): 1 inscription in Greek on a marble block (Figure 8).

WT10 F3 (West Tower 10 Face 3): 1 inscription in Greek on a marble block (Figure 9).

WT10 F4 (West Tower 10 Face 4): 2 inscriptions in Greek on 2 marble blocks (Figures 10, 11).

WC9: (West Curtain 9): 2 frames in marble. The sections remaining within the frames bear inscriptions in Greek. 1 block in marble with an inscription in Greek (Figures 12, 13).

WT 5 F 3 (West Tower 5, Face 3): 1 inscription in Tabula Ansata (in Greek) on a marble block, 1 mason's mark (in Greek) on a block of andesite (Figures 14, 15).

WT4 F2 (West Tower 4 Face 2): A marble block bearing an inscription in Greek (Figure 16).

WT3 F2 (West Tower 3 Face 2): A grave stele bearing an inscription in Greek (Figure 17).

WT 2 F2 (West Tower 2, Face 2): 1 inscription in Greek engraved on a marble architrave, the block is broken at the ends and the inscription incomplete, upsidedown (Figures 18,19).

SWT1 F2 (South West Tower 1, Face 2): 1 inscription in Latin on a marble block, upsidedown, incomplete, the surface of the half of the block is broken<sup>56</sup> (Figures 20,21).

SC4 (South Curtain 4): mason's mark in Greek on a marble block, upsidedown., (Figure 22).

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<sup>56</sup> I would like to thank Dr. David French and Dr. Stephen Mitchell for their translation of the text mentioning Macedonian soldiers belonging to the Hispanic unit of the Roman army. The inscription belongs to the first century A.D. and originally the block was part of a monument which had three other large blocks of the same size?

ST 5, F3 (South Tower 5, Face 3): 5 inscriptions on marble blocks. 4 inscriptions in Greek on 4 blocks which 2 of them are positioned side by side and the others below them. Incomplete? 1 inscription in Latin, incomplete (Figures 23-27)<sup>57</sup>.

Zindan Kapı (interior): 1 inscription on the lintel of the gate, in Greek? (Figure 28).

SC 5 (South Curtain 5): 3 inscriptions; 2 inscriptions on marble blocks, in Greek<sup>58</sup>, 1 inscription on a marble block , Greek? The surface is rubbed. (Figures 29-31).

B (Bastion), Interior: 1 inscription in Greek, marble architrave, marble broken, incomplete, (Figure 33).

BF2 (Bastion Face 3): 1 inscription on a broken marble architrave , incomplete, in Greek (Figures 34, 35).

ET2 F2 (East Tower 2 Face 2): 1 inscription in Greek engraved on a marble stele<sup>59</sup>.

ET9 F2 (East Tower 9 Face 2): A marble block bearing an inscription in Greek? (Figures 36,37)

ET13 F2 (East Tower 13 Face 2): 1 inscription in Greek on a marble block. 1 marble block carrying mason's mark (Figures 38,39).

Ankara Evi Parkı: 1 inscription in tabula ansata, fragmentary marble block (Figure 40).

The wall across the Museum of Anatolian Civilizations: 1 inscription in Greek engraved on a marble block (Figure 41).

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<sup>57</sup> Figure 23 published by French, 2003:86, Figure 24 is published by Mitchell, 1977:79, plate V (b).

<sup>58</sup> See French, 2003:196-197.

<sup>59</sup> See Mitchell, 1977:91,92.



Hisar Gate, Exterior: 1 inscription in Persian on a marble block (Figure 42).

Hisar Gate, Interior: 1 inscription in Latin on a marble block<sup>60</sup> (Figure 43).

### 3.2. Travellers and Travelogues

Towns like Kayseri and Ankara were first described in the sixteenth century. In about 1555, Busbecq discovered the Monumentum Ancyranum; the text of the political testament of Augustus on the walls of the temple of Rome and Augustus at Ankara. (Van Der Vin, 1980: 464). In the following centuries the citadel of Ankara attracted the attention of many scholars and travellers especially from the eighteenth to the twentieth century. They approached the subject from different points of view. Some mentioned it in terms of its appearance and its contemporary state by describing the citadel, surrounding area and history of the city with accounts of its daily life, different ethnic groups and its trade. The others mentioned the building materials used in the construction of the citadel and the ancient ruins lying around the walls and in the vicinity of the citadel many of which do not exist anymore. Therefore the information provided by their accounts is valuable for any scholar or student who plans to investigate the site for they provide an important base for research. The information supplied by these writers varies according to their contents. In their accounts of Ankara some of the above mentioned features or subjects were cited briefly and more attention was given to others for example; the history of the city, the daily life of the population, wool trade, ethnic groups, countryside and topography or descriptions of the citadel and its building materials.

To the first group belong the European travellers who visited Anatolia in the eighteenth and nineteenth centuries. The topographical depictions of these writers help to evaluate the present state of the citadel.

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<sup>60</sup> See French, 2003: 96, 97.

One of the earliest travellers who visited Ankara was Paul Lucas. He mentioned the temple of Augustus, the ruinous state of the walls and antique fragments,

In Ankara there are two great walls in front of an ancient temple and next to Hacıbayram camii. It is a heap of stones of many forms and different sorts like column pieces, capitals and heavily decorated pieces of marble. The walls are made from the ruins of a certain great city which seemed not far away” (Lucas, 1714:109,110,111,114).

The author thought that the walls of the fortress were not older than 60 years and constructed to protect the city from the thieves. He talked about the building materials used in the construction of the walls; “pieces of marble with reliefs, Apollon, Priapus” and inscriptions. He also mentioned the double circuit; “At the side overlooking the city the fortress has double walls” (Lucas, 1714:114). He also drew an engraving of the citadel.

M. Pitton de Tournefort was sent to Turkey by the order of the King in 1717. He described Ankara as;

Angora as pronounced by some and by the Turks as Engour delighted us more than any other city of the Levant. Presently Angora is one of the best cities of Anatolia and shows its ancient magnificence; on the roads you can see columns and old marbles (Tournefort, 1717: 442, 452).

He recounted the history of the city and mentioned the temple of Augustus with drawings;

The emperor Augustus without doubt embellished Ancyre the city since Tzetzes calls him the founder. Therefore its inhabitants dedicated to him the greatest monument to show their gratefulness to the emperor. It is constructed from white marble with large blocks. Corners of the vestibule still remain (Tournefort; 1717:446).

The author described the state of the walls and mentioned the spolia and inscriptions which were used as building materials in the construction of the walls;

The castle of Angora is a triple enceinte and its walls were made of large white marble blocks and from a stone similar to porphyre (Tournefort, 1717:455). The walls of the city are low and terminated by poor battlements. They employed indifferently columns, architraves, capitals, bases and other antique pieces and mixed them with the masonry especially at the towers and the gates (Tournefort, 1717:452). There are many pieces of marble with inscriptions in the walls however they did not let us read many of them which most of them were Greek, some of it in Latin, Arabic or Turkish (Tournefort, 1717:452), (Figure 60).

The author says most of the inscriptions were in the first circuit and on the walls of the fortress. He mentioned the inscriptions he had seen in a building and many other inscriptions outside the city and around the Armenian convent of St. Mary of the Armenians (Tournefort, 1717:458,459). “These inscriptions were engraved on beautiful antique marbles, columns, architraves, bases and capitals which lied near the river of Çubuk” (Tournefort, 1717:460,461).

One of the earliest accounts of Ankara was given by Pococke and the city was mentioned in his chronicles called “A description of the east and some other countries.” Although he gave some information about the historical background of the city, described the topography and the site of the Ankara castle, the information about the date and construction techniques of the walls is wrong;

The present walls of the city are very ill built, and consist chiefly of the stones of ancient buildings put together only with mud, so that a great part of them are fallen down; they were built about 60 years ago against the rebel Gadick, who ravaged the country and afterwards made a Paşa. (Pococke, 1743-45:86, 87).

Nevertheless he described the houses and the city planning of the period which reflected the state of the city during the eighteenth century and mentioned some ancient structures and well known buildings (Hacı Bayram, temple of Augustus, Bedesten), (Pococke, 1743-45: 87,88), (Figure 61).

John Macdonald Kinneir visited Turkey in 1813-1814. The bulk of his account included the historical background and topographical descriptions of the city (Kinneir, 1818:61-67). He resembled the site of the castle to that in Edinburgh in Scotland,

Ankara is situated on several small hills encircled by a range of mountains on the north and east. The castle occupies the summit of a high rock, and like that of Edinburgh; perpendicular on three sides and gradually sloping towards the south (Kinneir, 1818:64).

His account of the fortress was brief and he mentioned its ruinous state, its shape and the building materials and dimensions; "As a fortress it is now incapable of defence being not only in the most dilapidated and ruinous condition. Many of the ancient edifices must have been despoiled to procure materials for its construction" (Kinneir, 1818:64).

The author also mentioned the names of the gates and the masonry (Kinneir, 1818:64, 67,68,69,71).

Van Lennep visited Ankara in the nineteenth century and described the topography and landscape,

As seen from the east, it presents the appearance of a long and narrow hill, whose falt summit is covered with walls and towers. This hill slopes down on all sides except the north, where it is precipitous, with the river passing at the foot of the cliffs, embowered in leafy verdure. The town spreads to the greatest distance on the western side, which was not in sight. What we saw extended to the foot of the hill, and ended in a well-defined outline as though there had once been a wall there (Van Lennep, 1870:174).

The author observed the markets and the Moslem population who resided on the lower part of the region on the west next to the fortifications and within the first wall. He described the south-east gate of the first wall and mentioned its construction as having been made up of fragments of old buildings, mainly marble with a broken marble lion standing on each side (Van Lennep, 1870:174). He mentioned the ancient material in his descriptions, "Remains of ancient art and splendour are met with at every step, more so than in any town I have visited in this land. But they are

only fragments, while no building has resisted the destructive effects of time” (Van Lennep, 1870:175).

The author saw many ancient marbles and pieces of columns lying about in the yards near the Armenian church outside Ankara; “The slabs of the graves of the European residents were taken from the ruins of the Temple of Jupiter” (Van Lennep, 1870:181). “They were pieces of sarcophagus, cornices, capitals or altars” (Van Lennep, 1870:181,182). He also gave a detailed description of the fortress,

Visited the castle which occupies the top of the hill. There are three walls on all sides except on the north, where the place is protected by an inaccessible precipice. The many towers which support the walls are generally square, but those of the second or middle wall are of an unusual shape, projecting, in form like the bows of a ship. The third or outer enclosure is the most dilapidated of all, and appears the oldest; the ancient work is built of large blocks beneath, and brickwork above; some parts have evidently been patched up. The central towers by the west gate are sound. On the top of the hill is a small castle where powder is now kept, it is said there is also old armour preserved there. The highest part of the hill appears to be occupied only by Turks, and was silent and solitary. We saw several mosques made of fragments taken from ancient buildings. There are many old stones, several altars, some sculptures and inscriptions, in the walls of the fortifications and the houses; I copied a lion resting his paw upon the head of a sheep, which the reader may compare with the Euyuk Lion (Van Lennep, 1870:189,190).

It stands near the brow of the precipice on the north. The view from this spot, the highest on the hill, is extensive and fine (Van Lennep, 1870:190).

A great plain spreads out to the horizon on the south and west. On the north and east the ground is hilly and covered with vineyards and country houses, to which a large portion of the population of the city has now removed. Right under our feet passes the stream by the side of which we travelled the other day. Its narrow valley is fertile in the extreme, and we can distinguish the people walking or riding at the foot of the precipitous ledge (Van Lennep, 1870:190).

William Francis Ainsworth visited Ankara in 1842 while he was in charge of the expedition sent by the Royal Geographical Society. The author described the ancient material, inscriptions and the fortress,

Several massive but irregular ruins of temples, guardhouses, or other public buildings, beside numerous inscriptions in the castle, and some rather crudely

sculptured lions belong probably to the Roman era if they do not also illustrate partly the state of arts among the Galatian; but of that period few, if any, well authenticated remains appear to have been found (Ainsworth, 1842:132,133).

Remains of Byzantine architecture are by far the most frequent: a column of little pretensions to beauty, and which tradition has dedicated to Licinius, the conqueror of Maximin, numerous sculptures in the walls of the castle and of the town, some inscriptions, and various tombs and monuments, illustrate this period (Ainsworth, 1842:133)

Amid ruins of a more modern date, are the castle as it now exists, a church of doubtful antiquity, and a subterranean viaduct or aqueduct of some extent ; and in a small castle which occupies the highest part of the castle rock, are some old coats of mail (Ainsworth, 1842:133).

William J Hamilton described Ankara during his voyage through Asia Minor (Hamilton, 1842:417-421). Among other aspects of the city he mentioned the temple of Augustus and the inscriptions (Hamilton, 1842:417-423), “The collection of inscriptions at Angora was very numerous. They were met with in all parts of the town, in the gateways and court-yards of private houses but chiefly in the walls of the citadel” (Hamilton, 1842:423). However like most of the travellers his account of the fortress was unsatisfactory (Hamilton, 1842:423);

The citadel is defended by a triple line of fortifications, all the gates of which are locked at night. The outer wall encircles a very large space, in which are upwards of 4000 or 5000 inhabitants, many of whom are Armenians, and is full of inscriptions; but it is the wall of the second or middle line called the İç Kale which contains most. This is strengthened by numerous square towers, which as well as the intermediate curtains are in some cases built from top to bottom with fragments of white marble, once portions of bas-reliefs, inscriptions, funeral cippi with garlands and the caput bovis, caryatides, columns and fragments of architraves with parts of the dedicatory inscriptions resembling indeed very much the walls of a rich museum. The upper castle on the pinnacle of the rock is called the Ak Kale (White Castle); it contains but few blocks of marble, being built almost entirely of dark porphyritic trap of which the hill consists, but some enormous blocks of this stone have the appearance of having belonged to ancient buildings (Hamilton, 1842:423).

Perrot visited Ankara during his archaeological exploration in 1861. He mentioned important monuments of the Roman period like the temple of Augustus, baths, hippodrome, gymnasium and the theatre and many ancient architectural fragments in the walls of the city. He remarked that a circuit of walls crowned the

summit of the hill which dated from the period when Ankara was founded. He gave a detailed history of the walls and mentioned the inscription which testified their reconstruction by a benefactor of the city. He described the exterior and the interior of the walls and the inscription mentioning Michael as the builder of the walls (Perrot, 1872:266-268). Unlike Texier he thought the monuments in Ankara were ostentatious and heavily ornamented as compared with the other centres in Galatia,

The ruins in ancient Ankara, and the great number of fragments of all kinds prove that Ankara was embellished by public and private monuments during the period of the Roman Empire, but the majority of these monuments is of a pompous style with heavy ornamentation, much less superior than the buildings seen in Pessinus and Tavium (Perrot, 1872:270)

Texier gave a short account of the history of Ankara. He talked about the temple of Augustus in great detail and mentioned briefly the walls of the citadel and the architecture of the Roman period. He supplied his accounts with drawings of the architectural features (Texier, 1865:45-46).

The city occupies the summit of a hill which extends from east to west. This is a volcanic rock. After Galatia became a province of Rome the walls were extended down to the plain and the parts situated over the mountain fortified again to form a large citadel. The ruins of the Roman bath can still be recognised. These ruins remained outside the modern city. The double circuit of walls still remain but the traces of the many attacks the city has suffered can be seen and many parts of the walls were repaired by the debris of antique monuments. A vast souterrain which is situated under the platform of the fortress served to keep the war machines (Texier, 1839:171).

The walls do not have a moat in front of them (Texier, 1839:171-172). The walls follow the undulations of the terrain and therefore at some points they rise hundreds of meters from the level of the plain (Texier, 1839:172).

The walls of the fortress were constructed almost of fragments coming from the antique monuments (Texier, 1839:184).

Commemorative and honorific steles were found in abundance in the walls. From the bottom to the top of the walls there are inscriptions depicting administrative events of the city (Texier, 1839:184). The most beautiful buildings constructed by the Romans are situated at the lower part of the city (Texier, 1839:172). The inscriptions tell us that Ankara had a hipodrome, baths, aqueducts and many temples (Texier, 1839:172).

Unlike Perrot the author thinks the Greek artists employed by the Romans created monuments which were more elegant than the buildings in Rome, “The gates of the classical temples are very rarely conserved and in Italy there are only two gates and for the beauty of the details they can not match that of Ankara” (Texier, 1839:172)

Cuinet mentioned the historical background of Ankara in his research of the provinces of Asia Minor (Cuinet, 1890:274-276,279,280). He remarked that ancient monuments were more abundant in Ankara than anywhere else and almost all the antique pieces which were seen in the walls of all the edifices from the fortress to the mosques were inscriptions (Cuinet, 1890:281). He mentioned the Hacı Bayram mosque, the temple of Augustus and the inscription on its walls; “The famous inscription was copied several times and taken to Europe; first by Antoine Wrandis bishop of Agria in 1554 and by Guillaume Busbeck, ambassador of Germany”, (Cuinet, 1890:281). He said that there were also other temples in Ankara dedicated to Roman Emperors like Nerva, Trajan, and Caracalla and mentioned the inscription in the Armenian cemetery which had come from the temple of Antonin (Cuinet, 1890:281,282).

Walter A. Hawley visited Ankara in 1918. He briefly mentioned the historical background of the city and gave a detailed description of Ankara; (Hawley, 1918:285,286). He described the walls as, “approached the citadel beneath fortifications in which other pieces of sculptured marble are promiscuously inserted between roughly hewn igneous rocks” (Hawley, 1918:288).

Henry C. Barkley visited Ankara in 1891. He described the topography and the city,

The town of Angora extends over the face of a rounded hill, which on its north side is severed from a corresponding hill by a ravine only twenty or thirty yards wide, with steep precipitous cliffs, at the bottom of which runs a small brook (Barkley, 1891:103). Immediately in front of the town to the west is a considerable plain rich and well watered, but in every other direction it is



surrounded by hills, some as much as fifteen hundred feet high (Barkley, 1891:103,104).

His comments about the castle are not correct,

There is very little to admire at the fortress itself, for the original building had, during various sieges and assaults been all destroyed, and the present one is of Turkish construction, the old stones being again used to make the walls. Ancient statues might be seen worked into the walls, some feet upwards, all mutilated and; intermixed with the granite cubes are fine marble pillars, cornices, etc (Barkley, 1891:103).

He also mentions spolia which have other functions rather than architecture; “Whilst in the town itself in almost every courtyard handsome capitals may be seen used as horse blocks, or, having had a round hole cut in the flat surface at the top, are converted into mortars to pound corn in”. He described the Temple of Augustus and mentioned the famous Ankara goats (Barkley, 1891:105,107,108).

Writer Lady Dorothy Mills visited Ankara in 1926 in the early days of the republic. She gave a false information about the fortress. She mentioned the museum near the fortress and the abundance of the architectural fragments (Mills, 1926:23, 24).

Another traveller who visited Ankara in the early days of the Turkish republic was Noelle Roger. He attributed the foundations of the walls to the Galatians and thought the walls were dated from 287 B.C. He also mentioned the historical background of Ankara (Roger, 1930:32,33,35,38,39). His descriptions of the walls are misleading (Roger, 1930:34).

### 3.3. Contemporary Scholarship

From the historical perspective Ankara has been mentioned by many writers some of which are “David Magie and Stephen Mitchell”. Magie gave a historical background of Ankara from its foundation to the period when Galatia was ruled by the Romans (Magie, 1950:1311).

Stephen Mitchell also examined the historical aspect of Ankara starting from its foundation to the Roman period. He mentioned the fortifications of the third century (Mitchell, 1974:193).

From the finds obtained in excavations and the surrounding area Afif Erzen concluded that Ankara was inhabited during the Phrygian period (Erzen, 1946:9). He discussed the historical background of Ankara with references to inscriptions and classifies the sources of information about the city as; recorded history by authors of the ancient world, the inscriptions and coins (Erzen, 1949:10, 15, 60,61,62,64). For the first group he gave references to ancient literary sources like the Egyptian priest Apolloniyas who wrote the “History of Caria”, Strabo’s “Geographica”, Pliny’s “Naturalis Historia” and Stefanos Byzantinos (Erzen, 1946:11, 12). He mentioned the inscriptions from the age of Tiberius to the Byzantine period and listed the scholars who worked on inscriptions (Erzen, 1946:13, 61,62). He also gives a bibliography on coins (Erzen, 1946:13), and a bibliography on the inscriptions of the Ankara castle (Erzen, 1946:95) with a list of the public buildings belonging to the Roman and Byzantine periods (Erzen, 1946:94-99).

Semavi Eyice examined the historical events in relation with architecture and discussed references to coins and inscriptions (Eyice, 1996:254-259). He gives a description of the castle with its historical background (Eyice, 1996:254,255) and a brief bibliography about the vicinity of the temple of Augustus. He mentions the inscription dedicated to a wealthy citizen who contributed in the rebuilding of the gymnasium and the fortifications in the mid third century B.C. (Eyice, 1996:245-46), (Bosch :351,no:289). Eyice discussed Ankara on the evidence provided by a painting at the Rijk museum in Amsterdam and recounted the history of the Ottoman walls (Eyice, 1970:61-124), (Figure 62). He also reproduced illustrations showing Ankara in the sixteenth and eighteenth centuries, and the plan of Major von Vincke<sup>61</sup> (Semavi Eyice, 1970:113-115). He stressed the importance of the painting in the Rijk museum and the map of Von Vincke with respect to the walls belonging to the

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<sup>61</sup> See Mamboury, 1933.

Ottoman period (Semavi Eyice, 1970:115). He also evaluated Jerphanion's research on the Ankara castle (Eyice, 1993: 9-32).

Mamboury's "Ankara Guide Touristique" is one of the few comprehensive studies on Ankara covering many aspects of the city. He examines the citadel in detail from the historical, topographical and architectural points of view and provides the reader with a map of the citadel and sections and plans of the towers and walls with pictures (Mamboury, 1933: 144-184). Mamboury also describes the course of the Roman walls (Mamboury, 1933:71) and gives a description of the Ottoman walls including a map by Major von Vincke (Mamboury, (1933:69, 78-82).

Mahmut Akok described a section of the ancient walls which was excavated near the Roman baths in Çankırı street and which extended from the north-west to the south-east. He gave some details and remarked that the wall was part of the exterior circuit belonging to the Medieval period. The information he gives is very important as far as the course of the ancient walls are concerned. If the inscriptions are excluded<sup>62</sup>, this information is the only substantial clue for determining the extension of the late antique city (Akok, 1955:316-17).

The inscriptions of Ankara were studied by<sup>63</sup> Gregoire, Jerphanion, Mamboury, Bosch, Stephen Mitchell and Macpherson. Mitchell cites some of the architectural fragments bearing inscriptions dedicated to prominent citizens of the late antique city who were responsible for the construction of public buildings or roads or won the Ancyran games (Mitchell, 1977:72-73, 75-76, 92).

Gregoire recounted the episodes told by the Byzantine and Arab chroniclers and cited the authors of the epics. He mentioned the names of the emperors who were responsible for the reconstruction of the citadel and translated the inscriptions

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<sup>62</sup> The walls are mentioned in the inscriptions, see Bosch, 1967, nos.289-93.

<sup>63</sup> For the inscriptions see, Gregoire, 1927-28, 1929-30, Jerphanion, 1928, Mamboury, 1933, Bosch, 1967, Mitchell, 1977.

dedicated to the emperors for their kind deeds. He believed the reconstructions of the citadel were carried out by Michael III (842-867), (Gregoire, 1929-30:340,342).

The most extensive survey of the citadel with respect to history, building materials, design, masonry and construction techniques was realized by Jerphanion (Jerphanion, 1928:144-190). He examined the building materials and techniques and compared the citadel with similar fortresses (Jerphanion, 1928:144-145). He examined the inscriptions which mentioned an emperor Michael<sup>64</sup>. He concluded the lower circuit was later than the upper circuit which is today generally accepted (Jerphanion, 1928:190).

Foss discussed Ankara and its citadel in a historical and architectural context<sup>65</sup>. He gave detailed accounts of the late antique and Byzantine Ankara with respect to its citadel and ancient monuments. He also mentioned the building materials and masonry of the citadel and made comparisons with similar fortresses.

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<sup>64</sup> Jerphanion thinks the Michael mentioned by the inscriptions was either Michael I (811-813) or Michael II (820-829), Jerphanion, 1928: 211.

<sup>65</sup> For the history of Ankara, see Foss, 1975, 1977, for the building materials and masonry of the citadel at Ankara, see Foss and Winfield 1986.

## CHAPTER 4

### SITE: “LOCATION AND GENERAL FEATURES OF THE CITADEL”

Ankara Kalesi is located at the summit of a steep hill (Figures 46-49, 51-57), (See Maps 1,2,5) and consists of two circuits; the inner circuit “İç Kale the citadel” and the outer circuit “Dış Kale” (See Maps 1,2,5). The inner circuit occupies the whole summit; the north east section, “Akkale” (Figures 49, 53, 63) is 970m above sea level and around 103m from the modern highway “Bend Deresi street”. This height gradually drops as the walls continue towards the west and the altitude varies accordingly; the north-west section of the circuit is around 940m, the stretch between the northwest and south west corners are 940-950m. The altitude increases towards the east and reaches 970m at the south-eastern corner; the Bastion “Şark Kale” (Figures 64, 74). From this section the altitude decreases as the walls continue towards the north and the height drops to 961m near ET9 in the middle of the east side (See Maps 1,2,5). The ground slopes up from that point until it reaches 970m near “Akkale”. The approximate altitude for the whole inner circuit is 970-940m. The altitude of the outer circuit is 915m from the exterior of the walls and 933m from the interior. The inner circuit covers an area of 46420m<sup>2</sup> and the outer 39600m<sup>2</sup><sup>66</sup>.

There are 40 towers in the inner circuit. Most of the towers are pentagonal with one square and two round towers on the east side of the circuit (See Map 1,2 ). The height of the towers varies from 15m to 9,5m<sup>67</sup>. The inner circuit was linked with the outer circuit from the north-west<sup>68</sup>. The rectangular protrusion BF2 was the section the two circuits linked (Figures 64, 74). At present that section is intersected by the Kale Kapısı sokak (See Maps 1,2). From that point the outer circuit extends down the slope to Saman Pazarı and makes a bend to the west at Hisar gate, “Hisar

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<sup>66</sup> The measurements and maps are obtained from the municipality of Ankara

<sup>67</sup> The heights of the towers are measured by using linear dimension in autocad 2004.

<sup>68</sup> See Lawrence, 1983:207,208.

Kapısı” (Figures 67,68) until it is intersected near the Museum of the Anatolian Civilizations by the “Hisar Parkı Sokak” (See Map ). The walls start again at the car park and extend to the north enclosing the Ankara Evi Parkı surrounding the inner circuit from the south and west.

The ground level at the Ankara Evi Parkı reaches almost up to the crenellations of the towers. The majority of the towers of the outer circuit are square with only two round towers on the west which originally flanked an entrance “Dış Ala Kapi”<sup>69</sup>. At present this section is walled and the entrance is near the north-west tower. The outer circuit has now fifteen towers; there are eight towers in the south which two them are round and the rest is rectangular<sup>70</sup>.

The inner circuit is surrounded from the north by the modern motorway Bent Deresi Caddesi which was named after the stream, “Bend Deresi” or “Hatip Çayı”. This river once flowed in the valley below the citadel and which existed until the construction of the mortorway in the last century (Figures 44, 46, 50). Old photographs taken in the early twentieth century show the stream and the dyke which crosses it, hence the name “Bend Deresi” (Figure 45).

The whole area occupied by the inner circle, “İç Kale” is now full of houses which constitute one of the populated quarters of the region and divided into small alleys (See Map ). The main street is Ali Taşı sokak which intersects the citadel into two halves and the area occupied by modern houses are separated by very narrow alleys (Başkale sokak, Genç Kapi sokak, İçhisar sokak, İstek sokak, Kurt Sokak). There are two mosques; The Sultan Alaaddin mosque which is located on the southwest corner and the Mustafa Fatih mosque in the middle of the circuit. There are two entrances to the citadel. The main entrance is on the south from G2 “Parmak Kapi” near the “Kale Kapısı Sokak” (Figures 71, 73) and the other entrance is from G1 “Genç Kapi” (Figure 120) on the west side of the circuit. This gate was previously a postern. There is another entrance; a postern between the towers WT19

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<sup>69</sup> See, Mamboury, 1933.

<sup>70</sup> Jerphanion, 1928, Mamboury, ibid.

and WT18 (Figure 167) which is today blocked with rubble. There is a narrow breach near this postern which gives access to the northwest section of the citadel. There is another postern near the Bastion “Şark Kale” on the southeast. It is blocked by rubble (Figure 80). The other postern is located on the east side<sup>71</sup> and obstructed by houses (Figure 59, 65).

The northeast of the circuit is occupied by a small fortress “Akkale” (Figures 49, 53, 63) ; a small castle which is closed to visitors and the south-east by a bastion “Şark Kale” (Figures 64, 74) . Akkale has two pentagonal towers<sup>72</sup> (See Map ).

The interior of the citadel is almost completely obstructed by houses (See Map). There is a small opening in the north-west corner which gives access to the citadel through WC18 near a postern between towers WT 18 and WT 19. The “Genç Kapı” G1 (See map,1, 2 ), (Figure 120) which leads into the castle from the west is situated between towers WT 13 and WT 12. The interior of this section is not obliterated by houses (See maps 1,2 ). The upper storey of WT 13 is accessible (Figure 58). The interior of the north side is obstructed on the north-west by houses and “Akkale” occupies the north-east (See map 1,2). There is also a small park on the north-west “Ankara Belediyesi Kaleiçi Parkı” (See map1, 2).

The entrance on the south is from G2 “Parmak Kapı” which opens into a courtyard (Figures 71, 73). The inner gate; G3 “Zindan Kapı” (Figure 72) is situated at right angles to the first gate. Zindan Kapı opens to the main street “Alitaşı Sokak”. The Sultan Alaaddin mosque (1197-1198) stands on the west of G3 and a path slopes up to the bastion on the east. The towers ST3, ST2, ST6 and ST7 have access from the wall walk which extends along the south side (Figures 184-186).

Houses perch on most of the superstructure (Figures 94, 129-130, 169, 170, 172, 174-176, 206, 207, 210). The section between ST4 and ST6 is the most attractive with respect to building materials (Figures 143, 180-182). The lower

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<sup>71</sup> Jerphanion, *ibid.* Mamboury, *ibid.*

<sup>72</sup> Jerphanion, *ibid.*, Plates LXXXII, LXXXIII, Mamboury, *ibid.*, 182.

structure of the rest of the circuit is obstructed by houses except the section between the bastion “Şark Kale” and ET2 (Figures 78-80, 150, 151). There is a narrow path in front of Akkale. Another circuit belonging to the Seljuck and Ottoman periods runs down the valley to the Bend Deresi street<sup>73</sup> (Figures 46-48, 54, 56).

The north-west corner of the citadel overlooks to the valley below; Bend Deresi street (Figure 44) and Hıdırlık Hill (Figure 50) on the north and Hacı Bayram mosque and the Temple Augustus on the west (Figure 44). The east of the citadel commands the valley below which is now the continuation of the Kale district and further down is the district of Cebeci (Figure 57). The view from this side extends as far as “Elmadağ”, the ancient mountain of “Megaba” which lays beyond the city limits. The water system would have been installed between this mountain and the east side of the citadel which explains the accumulation of water pipes on this side of the citadel<sup>74</sup> (Figures 131, 151, 165). Although the majority of the antique fragments were built into the the west and south sides of the citadel, spolia belonging to ancient monuments are also found on the south-east and east sides of the circuit (Figures 145, 146, 150, 151).

There are 19 pentagonal towers on the west side of the citadel (Figures 169-176). This section is perhaps the most impressive of all the other sections of the circuit as the towers are very closely positioned and their appearance gives the impression of the prows of ships. Most of the curtains have lost their original heights and the towers with reconstructed superstructures look higher than the curtains

There are two posterns; a small postern in WC18 is blocked by debris and does not give access to the interior of the fortress. The other postern is the main gate opening to the interior of the citadel which is called “Genç Kapı” (Figure 120). At present this gate is the main entrance from the west side and opens to one of the major alleys in the citadel (See map 1,2). Although there are many narrow alleys

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<sup>73</sup> Mamboury, *ibid*: 185,186, Jerphanion, 1928:147.

<sup>74</sup> For the water system during the Roman period, see Fıratlı, 1951:349-359, Mamboury, *ibid*. 138, 139.



among houses, many of these lead to dead ends and do not lead to one of the few main roads.

The majority of the east section of the citadel is mostly obliterated by houses which are abutted to the towers and curtains and only the superstructures of the towers are visible (Figures 205-210). Some of these sections can be reached by entering the gardens of the houses and the lower structures can thus be observed.

The bastion on the south-east corner is surrounded by one of the main roads of the “Kale”; “Kale Kapısı sokak” which extends from the main gate “Parmak Kapı”. This road joins the “Kale Dibi sokak” at the point when houses start blocking the towers and curtains<sup>75</sup>. The lower structures of all the towers and curtains are obstructed from ET2 to ET13 (Figures 205-211). The Kale Dibi sokak makes a sharp bend to the west and continues to the north in front of the towers ET10 and ET11. The section between towers ET 13 and ET15 and the whole east section of the Akkale is open (Figures 211-212). A small path leads down the slope at the bottom of Akkale but it is difficult to pass to the other side.

The dyke is now replaced by the modern motorway, “Bend Deresi Caddesi” and the area by the street is now a public parking place (Figure 48).

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<sup>75</sup> Houses start to obstruct the lower sections of the curtains and towers at ET2.

## CHAPTER 5

### APPRAISAL OF THE FORTRESS WITH RESPECT TO DEFENCE TECHNIQUES AND TOPOGRAPHY

There are four factors which makes the citadel at Ankara unique among the other fortifications; the nature of topography, the shape of its towers, the unusual arrangement of the main gates of the inner circuit and the bastion.

#### 5.1. Topography

The citadel is located on a steep hill. The top of the basalt rock on the north is approximately 100m. above the valley. Although, the south-east corner is the highest section of the citadel<sup>76</sup>, the deep ravine of “Bend Deresi” makes the north side the highest point from the street level and the most unapproachable. The circuit on the north is interrupted at places by natural protrusions of basalt and the walls follow the undulations of the terrain as topography becomes part of the defence system<sup>77</sup> (Figures 46-49, 53-56), (See Map 5).

The inner circuit defines a rectangular shape; the west and south sides join at right angles and the walls follow a straight line. Although the curtains of the north side run in zigzags the general rectangular appearance of the layout does not change. The straight line between the north-east corner, “Akkale” and the Bastion “Şark Kale” is broken around the middle of the east side and the walls curve inside (See map). Therefore Towers ET7, ET8 and ET9 are at the lowest point between the north-east and south east corners<sup>78</sup> (Figure 210). Akkale is 970m above sea level and this height reaches 972-74m on the east side of the bastion. Consequently the walls descend down the valley from the two highest points for about 10m., and curve

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<sup>76</sup> 972m. above sea level. The measurements are obtained from the municipality of Ankara.

<sup>77</sup> See also Foss, 1985:75-79 for the role of topography in the defence system.

<sup>78</sup> ET7, ET8, ET9 are 961-962m above sea level.

inside around the middle of the east side (See Map 1,2). The ground on the west and south sides allows the formation of a rectangular configuration. The northwest corner ascends for about 12m up to the south-west corner. The ground level does not change until WT4 which allows the towers to be spaced as closely as possible and arranged in a straight line. The south-east and the south-west corners of the citadel are protected by two strongholds, “Akkale” and the bastion “Şarkkale”. These are the strongest points of the citadel and dominate the valley below. The sharp descent down the valley “Bend Deresi” has protected the north side of the citadel from attacks and compensated the absence of a second wall. Consequently the undulations of the terrain and the steepness of the rock on the north and the drastic change of ground level in the middle of the east side were instrumental in the defence of the citadel; on the east the assailants would have remained between the curtains and towers of the circuit and subjected to fire from both sides. The middle section near towers ET5-ET9 would also have been defended from the towers and curtains at the upper levels of the terrain. Towers ET5 and ET9 are closely spaced to increase the range of fire. There is a shallow square tower; “ET7” at the lowest level and it is flanked at close distance by pentagonal towers which project to the front. Marsden writes about the capacity of the square tower for repelling attacks coming from the front (Marsden, 1969:141-143). The square tower at Ankara would have covered the area on its front and itself was defended from the sides by pentagonal towers. The enemy attacking from the sides would have been subjected to fire from the towers which were positioned on a higher level. Consequently the projecting pentagonal towers enclosed the enemy from both sides near the square tower. Also the ground level which increased towards the north and south would have given the towers a wider range of fire for covering the middle section of the east side.

The west and south sides of the citadel are protected by a second circuit. This circuit is connected with the citadel from the north-west. Most of the towers of the outer circuit are rectangular. There are also circular towers which flanked the main

gates; the gate on the west “Dış Ala Kapı”<sup>79</sup> and the main gate on the south “Hisar Kapısı” (Figures 67, 68).

The citadel was not only protected by high cliffs or a second circuit. The steep hill was once surrounded by streams on the north and south. The Bend Deresi street is constructed over the “Hatip Çayı”, “Bend Deresi” and follows its path (See Map), (Figure 44). The city was also surrounded from the south by another stream called İncesu. These two streams would have joined on the north-west and the city would have been surrounded by water or swamp from the north, north-west and south. Consequently the fortress was not only protected by a steep hill and a double circuit but also by streams.

Ancient writers who wrote on defence techniques mentioned the importance of an advantageous topography. Vegetius who must have lived during the period of Theodosius I (379-395) suggested steep hills for the defence of a fortress. Anonymous Byzantine<sup>80</sup> also mentioned the advantages of mountainous regions with respect to defence (Dennis, 1985:3, 33, Milner, 1993:114).

## 5.2. Pentagonal Towers

There are 40 towers at the citadel. All the towers are pentagonal except one square and two round towers on the east side of the circuit. (Mamboury, 1933:163, Jerphanion, 1928:149-166), (See Map). The citadel owes its unusual appearance to the pentagonal towers which are very closely spaced. These towers advance forward like the prows of ships which gives the citadel its unusual appearance (Figure 77). The Arab geographers described Ankara as “Kalat al-Salasil”, “The Fortress of the Chains” (Gibb, 1960:509). Philon who wrote treatises on defence mentioned the advantages of pentagonal towers (Garlan, 1974:297,298, Lawrence, 1979:83, 85, Jerphanion, 1928:155, 156, Marsden, 1969:148,149). He talked about a defence

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<sup>79</sup> Dış Ala Kapı is now walled and the entrance from the west is near the north-west tower. See Mamboury 1933, Jerphanion, 1928.

<sup>80</sup> He must have lived during the period of Justinian (527-65). See Dennis, 1985, Milner, 1993.

system in the form of saws teeth. Philon recommended pentagonal towers especially for mountainous regions (Garlan, 1974:300, Lawrence, 1979:87, 89)<sup>81</sup>. The advantages of polygonal towers are also mentioned by Vitruvius who suggested the towers should be either round or polygonal (Rowland, 1999:28). Despite these advantages, pentagonal towers are rarely seen in the Hellenistic, Roman and Byzantine fortifications where towers are mostly square, round or hexagonal and pentagonal towers are used in isolation<sup>82</sup>. In fact Ankara is the only fortress where most of the towers are pentagonal. There is only one pentagonal tower in the land walls of İstanbul which is the first tower of the circuit near the Marmara sea<sup>83</sup>. Most of the towers at İznik are semicircular with only one pentagonal tower on the south of the circuit between Southlake and Yenişehir gates<sup>84</sup> (Figure 86). This type of tower is usually used at the corners or protrusions which are strategically important or to protect the curtains from the sides.

In the reconstructions of the ninth century<sup>85</sup> the south-east corner of the citadel was reinforced by the addition of pentagonal protrusions (ET1, ET2), (Figures 78, 79). A similar arrangement at İznik shows the potential of pentagonal towers. Contrary to Ankara the pentagonal tower at İznik stands in isolation in front of a large square tower at the section where the walls protrude towards the south. Like the towers at Ankara, it is completely faced with marble spolia which suggests marble was used at strategic points for its strength. Likewise the tower which stands near the South Lake gate at İznik is exclusively faced with marble spolia (Figure 220). This section would have been reconstructed by Leo III (717-741) and marble spolia was obtained from the ancient city. Marble was also used in the towers of the south side of the circuit at İznik. This section was reconstructed by Michael III (842-867) and like Ankara the lower parts of the towers were faced with marble blocks (Figures 215-219). These towers were reconstructed during the Arab invasions (708-931)

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<sup>81</sup> See also Spieser, 1984:363-368, for Philon's treatise on defence

<sup>82</sup> The walls constructed by Aurelius (270-75) in Rome have square towers with round towers in between. See, Richmond, 1930, Todd, 1978

<sup>83</sup> See the map showing towers 1-38 by Meyer-Plath and Schneider, 1943.

<sup>84</sup> See Foss, 1986, Schneider and Karnapp, 1938.

<sup>85</sup> See Chapter II.

consequently the need for very strong fortifications necessitated the use of marble especially at the gates and towers. Ankara was located at the intersection of the main roads connecting İstanbul and İznik with the eastern provinces<sup>86</sup>. It was also the centre of the military theme in Anatolia<sup>87</sup>. Therefore the use of marble can be explained with respect to Ankara's importance as a military base which defended the city against the invasions of the dark ages.

Nevertheless the topographies of İznik and Ankara are different. The fortress at Ankara lies on a steep hill<sup>88</sup> and the walls of İznik extend on a plain. In addition, İznik was an important sprawling city during the Roman and Byzantine periods while Ankara was transformed into a fortress during the Persian invasions (615-628)<sup>89</sup>. In that respect Ankara exemplifies the typical walled acropolis of the middle ages. Therefore topographical differences must have played an important role in the design of the fortifications and in tower shapes<sup>90</sup>; the topography and geographical location of İstanbul are important factors for the expansion of the city. Consequently neither İstanbul nor İznik are citadel cities. They are the cities of the plains. Therefore the design of their fortifications was largely affected by the nature of their topographies<sup>91</sup>. Contrary to Ankara the land walls at İstanbul and İznik were protected by a triple defence; the moat, the outer walls and the inner walls. Consequently their defence was artificial and topography had very little contribution. However topography works in conjunction with the defences at Ankara and in that respect Ankara exemplifies the hill top medieval fortress, "a refuge"<sup>92</sup>. Its location on a steep hill provided a great expanse of view and a wider range of fire. Therefore the height of its towers was lower than İstanbul and İznik where tall towers were needed to see the enemy and to give the war machines a wider range of fire.

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<sup>86</sup> See, Chapter II.

<sup>87</sup> See Foss for the military organization of the Byzantine period, Foss, 1977 and 1986:136.

<sup>88</sup> See Foss, 1986:16.

<sup>89</sup> See Foss, 1977: 68-74.

<sup>90</sup> See, Lawrence for the shape of the towers at Ankara, 1983:205

<sup>91</sup> See Schneider and Karnapp, 1938, Meyer-Plath and Schneider, 1943.

<sup>92</sup> Foss says "Nothing in the early medieval West can compare with the ramparts of Ankara or Cotyaeum, or, for that matter, with the stone walls of most of the reduced cities", Foss, 1986:167.

Consequently there would have been no reason for the towers to be as tall as İznik or İstanbul.

The towers at İznik and İstanbul are rectangular, round and polygonal. Round and polygonal towers have a range of 180 degrees and square towers have the advantage of covering the front lines of the circuit. Most of the towers at İstanbul are rectangular and this shape would have been chosen to ward off enemy attacking from the front. On the other hand contrary to İstanbul and İznik there is not a big difference between the height of the towers of the inner and outer circuits at Ankara. The height of the towers of both circuits is approximately 11-12 m<sup>93</sup>. There is not a big difference in ground level at İstanbul and İznik. Consequently the outer circuits in both İznik and İstanbul are kept in a small scale to avoid obstructing the view of the towers and curtains of the inner wall. The hill at Ankara slopes at a lower angle on the west and south so access to these sections of the fortress is easier than the other sides. This explains the addition of a second circuit on the south and west sides of the hill following the destruction of the city in the ninth century<sup>94</sup>. Nevertheless the risk of frontal attack is generally minimized in the upper circuit by the triangular protrusions of the towers. These triangular protrusions are solid<sup>95</sup> and the rooms inside the towers remain at a distance from the front which explains the rather small sizes of the rooms especially when compared with the rooms of the towers in the land walls of İstanbul. The massive rubble core of the protrusions is faced with large blocks of marble and andesite. Therefore the protrusions were constructed to repel the missiles coming from the front. Also the angular surfaces of these projections would have decreased the impact of the missiles which would have ricocheted when they hit the surface<sup>96</sup>. The building materials such as reused building blocks with projecting lifting bosses would also have helped for the deflection of the missiles (Figures 91, 104-106, 154, 155).

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<sup>93</sup> See Chapter IV.

<sup>94</sup> See Chapter II.

<sup>95</sup> See Jerphanion, 1928, Mamboury, 1933.

<sup>96</sup> See Jerphanion and Lawrence for the interpretation of the circuit at Ankara with respect to defence techniques, Jerphanion, 1928:155-166, Lawrence, 1983:205.

### 5.3. Main Gates of the Inner Circuit

The arrangement of the main gates of the citadel is as unusual as the pentagonal towers<sup>97</sup> (See map ). The main gates of the inner citadel “Parmak Kapı” and “Zindan Kapı” (Figures 71-73) are concealed from view by their orientations inside the barbican; The gates are positioned at right angles to each other and both are hidden from the street leading to the “Hisar Gate”. The exterior gate; “Parmak Kapı” is positioned parallel to the curtains and towers and opens to a rectangular courtyard. Towers ST4 and ST5 are placed in front of the barbican. This type of arrangement has few precedents in castle design<sup>98</sup> and another odd feature at the castle. This section must have been designed for the defence of the gates as it would have been very difficult for the war chariots or soldiers charging on horse back to turn ninety degrees to reach the second gate. At present it is still difficult for motor cars to go in and out of the fortress. Such an unusual arrangement reflects the effort to fortify the weakest section of the walls; “the gates”. Also it would have been very difficult for the assailants to reach the second gate as they would have been the target of the archers placed around the walls of the courtyard firing from four sides. Also the maneuver of the war chariots would have been very difficult because of the angularity of the entrance. The towers “ST4” and “ST5” protected the courtyard from the exterior and interior. These towers and the curtain between them are comparatively tall<sup>99</sup> and the exclusive use of marble (Figures 180-182, 235, 240, 246, 251) in this section stresses the importance given to the visual appearance and strength of the main gates. Therefore the exterior of the courtyard which covers the inner gate was defended by these two towers (ST4 and ST5) and the soldiers would also have controlled the courtyard from the top of these towers<sup>100</sup>.

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<sup>97</sup> See Foss, 1986:134, 135.

<sup>98</sup> See Lawrence, 1983:207, 1979: 23,25.

<sup>99</sup> ST4 F2 -15,77m, ST4 F3-13,85m, ST4 F4-13,35m, SC4-14,2m, ST5 F1- 14.06m, ST5, F2-13.79m. The measurements were taken by using linear dimension in autocad 2004. See table 3. These measurements are taken after recent reconstructions therefore the height of the towers and the curtain in the ninth century is not known.

<sup>100</sup> See Lawrence, 1983:207.



Despite the barrier of the outer circuit, the south side of the citadel would always have been prone to attacks. The reconstruction of this section is mentioned by two inscriptions which are built into the superstructure of SC5<sup>101</sup> (Figures 29-31). The walls would have been severely damaged as the inscription relates the extent of the catastrophe. Also the existence of crosses over the loopholes of the towers (Figures 81-84) show how important was the defence of this side; the walls were strengthened not only by using marble but the protection of the inhabitants was also secured by the placement of the crosses over the loopholes of the towers. These precautions also show the extent of destruction this side had suffered.

#### 5.4. Bastion

The bastion is an irregular heptagon and commands the south and south-east sides of the citadel (Figures 64, 74, 197, 199, 200, 202, 203)<sup>102</sup>. The loopholes pierced along the circumference of the superstructure (Figures 75, 76, 197) on the interior shows the capacity of the structure commanding a fire range of more than 180 degrees from the south to the east<sup>103</sup>. Also the great height of the structure would have increased the field of fire<sup>104</sup> (Figures 77, 241, 242, 252, 253).

The restorations of Michael III (842-867) on the south side of the citadel incorporated the bastion and the adjacent wall on the south-east corner (Figures 78-80). This section was reinforced by the addition of a second layer of masonry which increased the thickness of the walls almost half as much the original<sup>105</sup>.

It is not known when the outer circuit was built<sup>106</sup>. However the projection in the form of a shallow square tower (Figures 64, 74), (See map) is part of the shell

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<sup>101</sup> See Chapter III.1. p.26, and note 37. See Chapter III, Figures 18-20. See also map for inscriptions.

<sup>102</sup> See map

<sup>103</sup> See Marsden, 1969, 1971.

<sup>104</sup> The heights of the two walls of the bastion are taken after its recent reconstruction; BF7: 14.19m, BF6: 14.45m. These measurements are taken by using linear dimension in autocad 2004.

<sup>105</sup> See Mamboury, 1933:177. Jerphanion, 1928:181, plate LXXXI, Lawrence, 1983:207,208. Foss, 1986:144.

<sup>106</sup> See Chapter II.

enveloping the original thickness of the bastion<sup>107</sup> and connected the citadel to the outer walls (Lawrence, 1983:208). The reconstruction of the south-east side of the citadel and the construction of the lower circuit in the ninth century shows the vulnerability of the south side. This would have been compensated by the construction of the outer wall and the reconstruction of the bastion which protected both the east and south sides of the citadel. The thickness of its walls makes this section one of the strongest points of the citadel and the addition of ET1 and ET2 (Figures 78-80) during the reconstructions doubled the protection of the south-east side. Philon mentions the advantages of polygonal towers at strategical points like posterns, and curtains (Garlan, 1974:292, 297, Lawrence, 1979:75, 83). The solid masonry of the bastion and its wide range of fire also enabled the war machines to move freely over the structure and explain its odd structure.

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<sup>107</sup> See Jerphanion, plate LXXXI.

## CHAPTER 6

### GENERAL DESCRIPTION OF THE BUILDING MATERIALS AND TECHNIQUES

This chapter gives a descriptive analysis of the construction materials used on the curtains and towers. Each tower and curtain is studied individually after a general introduction to the materials (See Tables 3, 4).

The curtains and towers of the citadel consist of a mortared rubble core<sup>108</sup> (Figure 87). The materials used as facing are large blocks of andesite, marble, basalt, rubble stone and brick<sup>109</sup>. Large blocks of andesite/basalt and marble are used in the lower structure of the towers and curtains and usually these extend up to the second storey level of the towers (Figures 88, 89, 130, 133, 140, 142, 143). The majority of the surfaces are faced with large blocks of marble and andesite which are considered as the primary building materials. The materials used in the superstructure are small rubble stones and brick which are considered as the secondary building materials (Figures 121-123, 126-128). Therefore all the building materials are classified with respect to the “type” of the material as; “andesite, marble, basalt, rubble stone, brick and mortar”. The architectural elements are classified as “reused materials” and water pipes are described with respect to their function (Figures 154, 165, 166), (See Tables 3 and 4).

Most of the large blocks are spolia taken from the ancient buildings which also include blocks of andesite and basalt<sup>110</sup>. The traces of lewis holes or holes for dovetail clamps indicate that these blocks were also used in ancient buildings and

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<sup>108</sup> See, Foss, 1986:134,135, Lawrence, 1983:205.

<sup>109</sup> See Foss 1986: 135, 162, for the masonry of the Dark Ages.

<sup>110</sup> For the masonry at the citadel see Foss, 1986:141-142, Lawrence, 1983:204-208, Mamboury, 1933:165-180, Jerphanion, 1928: 150-155, Morganstern, 1993.

joined by Greek building methods by using dry building techniques<sup>111</sup> (Figures 90, 107, 109-111, 158, 159). The use of andesite and basalt are not limited to building blocks. There are also architectural elements which were made from these materials (architraves, cornices, doorjambs etc) (Figures 91, 92). The availability of this material from the site must have played a role in the choice of this material for buildings. Also the abundance of this material along the circuit shows these local stones would have been used as much as marble. The difficulty of bringing marble from the quarries would also have been another reason for using this less attractive material<sup>112</sup>. Nevertheless ancient Ankara would also have been full of marble buildings as it was one of the important cities of Galatia which was testified by the construction of an important temple bearing an inscription mentioning the deeds of Augustus<sup>113</sup>.

At present fragments of marble might not reflect the abundance of this material when the ancient city was full of monuments as many of the marble spolia must have been lost during conflagrations<sup>114</sup> or used as building blocks in buildings<sup>115</sup>. The accounts of travellers during the last four hundred years mention many beautiful marble pieces coming from the ancient buildings<sup>116</sup>. Today the curtains and towers are the only places where these pieces, which should belong to a museum, are exhibited. In this respect the citadel is more like an open air museum. There are also fragments of sculpture in marble as well as building blocks and architectural elements (Figures 93, 98, 100, 101, 103, 105, 112-115, 117, 124, 138-140, 144). Marble blocks are usually used at prominent sections like the spurs of the towers (Figures 94, 88, 89, 133, 142) or as blocks to anchor the facing to the rubble core (Figures 95, 96, 110, 113). Consequently both andesite and marble are used as

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<sup>111</sup> For Greek building methods see, Orlandos, 1968, Adam, 1977, 1994, Coulton, 1977, Dinsmoor, 1922, 1950, Lawrence, 1996, Singer, 1956, Tomlinson, 1995, 1976, 1960-61, White, 1984, Wright, 2000, Scranton, 1941, American School of Classical Studies at Athens, 1984. For Roman building methods see, Adam, 1994, Choisy, 1873, Carrington, 1933, Forbes, 1963, McKay, 1978, Perkins, 1951, Sear, 1982, White, 1984.

<sup>112</sup> For the extraction and transportation of marble see, Adam 1994: 20-29, 1977:31-63.

<sup>113</sup> See Cross and Leiser, 2000: 73-75, Koşay, 1956:1-12, Tournefort, 1717:446, Chapter III.1.

<sup>114</sup> See Jerphanion, 1928:148, Mamboury, 1933:163, Cuinet, 1890:282.

<sup>115</sup> See Cuinet, 1890:281.

<sup>116</sup> See Chapter III.2.

building blocks and decorative pieces and many grave stones with reliefs or altar pieces are employed on the towers and curtains (Figures 113, 114, 143, 144, 146-148). Among them are medusas and bucranium which make an interesting contrast with surfaces faced with andesite. Therefore this rich collection of spolia gives the citadel its unique appearance as much as the shape of the towers. The blocks of andesite and basalt were also made interesting by the treatment of their surfaces. Lifting bosses and chiselled surfaces of the blocks animate the surfaces as much as marble architectural elements and sculpture (Figures 91, 102, 104, 105, 106, 154, 155, 173).

Almost all the building blocks have traces of Greek building techniques. There are blocks with lewis holes, sockets, spike holes, anathyrosis rebating or chiselled rusticated surfaces and lifting bosses (Figures 107, 109, 111, 110, ).

The exterior of the walls constitutes the major part of the research because the interior of the castle is mostly obliterated by houses except a few regions such as Zindan Kapı, Genç Kapı and the Bastion (See map).

Marble pieces mainly accumulate in visible sections of the walls such as the main gates or used in the corners of the towers as quoins or keystones (Figures 88, 89, 94, 133). Many of the windows are surmounted by marble lintels which would originally have been cornices or had other functions (Figures 98, 100, 121-123). Marble columns were used to anchor the facing into the mortar core or placed perpendicularly in the facing to enliven the surface of a wall (Figures 95, 96, 168). The superstructure follows the usual Byzantine pattern of three rows of rubble stone alternating with five rows of brick<sup>117</sup> (Figures 98, 100, 121-123, 125, 126, 162). However the superstructures of many towers and curtains were reconstructed during the Turkish period and the brick bands seem not penetrate into the mortared rubble

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<sup>117</sup> See Choisy, 1883, Mango, 1976, Millingen, 1899, Krautheimer, 1986, Foss and Winfield, 1986, Müller-Wiener, 1977. See also Berge and Reusche for wall construction and brickwork in Byzantine architecture, Berge, 1981, 1981-82, Reusche, 1971, for building materials see Ousterhout, 1999.

core at least on the south-east corner of the circuit<sup>118</sup> (Figure 87). The superstructure of many curtains on the west side consists of rubble stone in irregular courses. The sections with regular courses are restored. Also the superstructure of many of the curtains is broken and some of them have houses perched over them.

The masonry of the west, south and east sides are more or less identical<sup>119</sup>. The superstructure of the curtains and walls would have been destroyed and reconstructed for many times therefore the original masonry of these sections and the actual heights of the towers and curtains can be only be based on presumptions<sup>120</sup>. The old photographs taken by Jerphanion and Mamboury and the photographs of the castle obtained from the municipality show most of the superstructure was damaged<sup>121</sup>. Nevertheless the Byzantine pattern of alternating courses of brick and rubble is clearly visible. Therefore the superstructure of the west, south and east sides of the citadel must have originally belonged to the Byzantine period and reconstructed during the Turkish period. Generally the masonry of the lower structure of the towers is identical especially on the west and south sides with large blocks extending up to the second storey level and followed by alternating courses of brick and stone<sup>122</sup> (Figures 88, 89, 94, 98, 101, 133, 140, 142, 143). The curtains are mainly constructed by large blocks in the lower structure that reach more than half the height of the wall and followed by courses of rubble stone which are either carefully cut and regularly coursed or shapeless and laid in heaps (Figures 97, 125-128, 142). The masonry of the north side differs considerably from the rest of the circuit as this section consists of regular courses of rubble stone which are joined with greyish mortar<sup>123</sup> (Figures 134, 135). There are tie-beam holes on the surfaces

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<sup>118</sup> See, Foss, 1986:135.

<sup>119</sup> See Jerphanion, 1928, Mamboury, 1933, Foss, 1986. Lawrence, 1983.

<sup>120</sup> In this thesis the heights of some towers and curtains are measured after recent reconstructions therefore the results should not be taken as their original. See tables 3 and 4. See also Foss, 1986:135.

<sup>121</sup> See Jerphanion, 1928, Plates XCV, XCVI, XCVII, XCVIII, XCIX, CI, CII, CIV, CVI, Mamboury, 1933, Chapter V, Figure 9.

<sup>122</sup> Foss says brick appears on a large scale in the ninth century and towers have bases of spoils and superstructures of brick, Foss, 1986:162.

<sup>123</sup> Mamboury says the mortar and the construction belongs to the Otoman period, Mamboury, 1933:152.

of the towers and curtains <sup>124</sup> (Figures 47, 55, 134, 135). These towers stand on large blocks<sup>125</sup> (Figures 47, 49, 55) and could have been constructed on Byzantine foundations.<sup>126</sup>

## 6.1. Building Materials

The building materials are examined and described under the titles given below and the materials are listed with respect to the amount of their distribution on the curtains and towers (See Tables 3,4). Therefore andesite (Figure 152) is mentioned first for being the major building material and it is followed by marble. Basalt (Figure 153) is studied in conjunction with andesite because of its similarity in appearance<sup>127</sup> and its limited use compared to andesite and the other materials.

### 6.1.1. Andesite/Basalt

Andesite accumulates especially on the west side of the walls. Basalt is rarely used. The main bulk of the surfaces are faced with andesite. There are huge blocks with lifting bosses, lewis holes, or sockets for dowels or dovetail mortices for clamps<sup>128</sup>. The variation of the surface treatments of the blocks also make the walls look more interesting; some blocks have anathyrosis rebating and others have chiselled rusticated surfaces. These traces show that these blocks were once used as building blocks and joined together by clamps and dowels without using mortar. Some of the heavily bossed blocks were laid in headers perhaps more for defence purposes than decoration<sup>129</sup>. These bosses were lifting bosses or pins “a lifting

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<sup>124</sup> Mamboury, *ibid.*

<sup>125</sup> See Jerphanion, 1928:191, Figure 21. Jerphanion says the structures on the north belong to the Turkish period and constructed on Byzantine substructures, Jerphanion, *ibid.*, 102, Mamboury also says the circuit descending down the ravin was reconstructed several times during the Seljuk and Otoman periods and the towers stand on Byzantine substructures, Mamboury, 1933:152. See also Foss, 1986:143.

<sup>126</sup> See *supra*.

<sup>127</sup> Its physical appearance is very similar to andesite which makes it difficult at times to distinguish the two materials from each other.

<sup>128</sup> See chapter VI.

<sup>129</sup> See chapter V.

technique” used by the Romans<sup>130</sup>. Therefore the traces of dry joining techniques indicate that these blocks were reused in later periods for the same purpose but joined in thick beds of mortar (Figures 154, 155).

Ankara was one of the major cities of the Galatians and the city would have been embellished with many public buildings during the Roman period. This material must have been widely available in the site and many public and important buildings must have been faced with this material. Water pipes which are studied separately are mostly made from this material (Figures 165, 166), but the use of andesite/basalt was not limited to facing blocks or water pipes. There are also architectural elements such as architraves, cornices and door frames (Figures 91, 92). These elements show andesite or basalt were used during the Roman period in prominent buildings. There are also large blocks of steles with reliefs such as a cross covering the whole surface (Figures 147, 148). These reliefs indicate the change of faith during the Christian period when the blocks were reused as building materials.

#### 6.1.2. Marble

Marble is extensively used on the south side of the citadel especially between the SWT1 and ST5 (Figures 88, 89, 133, 140, 141, 143). The marble pieces include blocks which would originally have been used as building blocks and many architectural elements and sculpture. There are fragments of entablatures, architraves, cornices, door frames, column drums and shafts, sculptures, modillions, reliefs, capitals, pedestals, altars, keystones and pilasters which would have belonged to the period between Augustus and third century AD <sup>131</sup> (Figures 105, 108, 112, 114-119, 122-124, 138-140, 143-146). This material is used on all sides of the citadel

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<sup>130</sup> Adam says blocks were lifted by lifting machines by means of handling bosses, lewises or lifting pins and the Romans took over two of these; the bosses and the lewises, Adam, 1994:48. See also Orlandos, 1968.

<sup>131</sup> See Chapters II and III for the Roman period.



and perhaps less on the north where the upper structure is faced with comparatively small and irregularly cut andesite/basalt blocks in irregular rows<sup>132</sup>.

The marble blocks on the west side are mostly building blocks. They are rectangular and some of them very large. Most of them are regularly cut and their surfaces are chiselled to give them a rusticated appearance. The marble blocks also have mortices, sockets for dowels, lewis holes, anathyrosis bands holes for grips, lifting bosses and chisel marks on their surfaces (Figures 109-110, 156-159, 164). Marble is used almost as extensively as andesite. Nevertheless most of the areas are faced with andesite. Marble is used for its strength as much as for its appearance. Consequently marble blocks cover the spur of the towers or used decoratively on the surfaces of the walls. Most of the sculpture accumulates on the south side; there are human figures, medusa heads, bucranium and relieves on capitals and steles and marble lintels which are used over loopholes and windows. The extensive use of marble also shows the precaution to cover the surfaces on this side with a strong material for the security of the main gates.

The pagan and Christian elements can be observed at the same tower or curtain with crosses engraved on blocks that surmount the loopholes (Figures 17, 81-84) or by the architectural elements and sculpture like priapus, bucranium, medusa and rain-water spout (Figures 93, 97-101, 108, 138). The marble columns are mostly used to anchor the facing to the rubble core (Figures ) and at times for decorative purposes (Figures 124, 139).

Marble is also widespread on the south-east and east of the circuit. There are many architectural elements on the walls of the bastion such as altar pieces, garlands, acroterion, architraves, steles with reliefs and columns. These pieces are scattered among andesite/basalt blocks and water-pipes.

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<sup>132</sup> The lower structure of the walls is hidden behind houses and not available for inspection. See Chapter VI.

The use of marble is less consistent on the other sections of the east side. Nevertheless there are many columns shafts, springer blocks and building blocks hidden at the back of the houses which line the front of the towers and curtains<sup>133</sup>.

Consequently marble is used in prominent sections of the curtains and towers for decoration and defence purposes. Also the extensive use of marble near the main gates on the south reflects the Byzantine tradition of facing the exterior of the gates with strong and visually attractive material<sup>134</sup>.

### 6.1.3. Rubble Stone

This material is used in conjunction with brick and usually in the superstructure of the curtains and towers. The usual pattern in the towers is three or four courses of rubble stone alternating with five or six courses of brick (Figures 121-123, 125, 126). In many of the towers on the west and south<sup>135</sup> rubble stone is carefully cut and laid in regular courses. On the other hand rubble stone is often used in the superstructures of the curtains without brick courses in between or brick is used to fill the gaps or in discontinuing single or double courses among rubble (Figures 127, 128). Rubble stones in the curtains are usually shapeless and laid in irregular courses. Unlike the curtains, the superstructure of most of the towers on the west side are usually reconstructed. Therefore there is a contrast between them with respect to appearance. Most of the towers and curtains are reconstructed on the south side. The superstructure of both the towers and curtains are damaged on the east (Figures 131, 205-211). In that section rubble stone is used as mixed with brick in irregular courses.

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<sup>133</sup> Some of these sections are clearly visible from the gates of the houses.

<sup>134</sup> See Foss, 1986:53. Also compare the masonry of the exterior and interior of the south side; see Figures 67, 68, 88, 89, 133, 180-183, 195, 196.

<sup>135</sup> Most of the superstructures of the towers are recently restored. The earlier superstructures of the towers are shown by Jerphanion, 1928, See also Chapter VI, note 104.

#### 6.1.4. Brick

Brick is mainly used in the superstructure of the towers<sup>136</sup> (Figures 121-123, 125, 126). It is not known whether its use is functional or decorative. Foss says the brick courses in the original construction did not extend into the rubble core<sup>137</sup>. He also says brick bonding has been noted in Nicea and Ankara in the late antique period (Foss, 1986:28) However it is difficult to test this suppositions as these sections are unreachable. Other than that brick was also used to fill the gaps between the courses and rectify the irregularity of the stone courses. Brick courses are mostly seen on the west, south and south-east of the citadel. They are used as isolated courses on the east side of the circuit and replaced by rubble stones.

#### 6.1.5. Mortar

All the blocks are bound with mortar. Mortar beds are usually very thick especially on the west side of the walls. The colour of the mortar suggests it is Byzantine<sup>138</sup>. This suggestion is conjectural and based on its pink colour. Some of the blocks do not seem to have mortar at all especially SWT1 where the crevices between the marble blocks are filled with small stones (Figures 140-142). This tower is an exception and mortar is generously used between the blocks in the other sections (Figures 154, 155, 157-160, 163, 164, 166).

#### 6.1.6. Water-Pipes

This material is mostly used on the south-east and east of the citadel<sup>139</sup>. Water was transported to the citadel by means of a water system installed during the Roman period which explains the accumulation of this material on the east side of the walls. It is also used on the west of the citadel but not as much as the south-east (Figures 165, 166, 203, 207, 208).

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<sup>136</sup> See Foss for the use of brick in the ninth century, Foss, 1986:162.

<sup>137</sup> Foss, 1986:135.

<sup>138</sup> See, Jerphanion, 1928:153, Mamboury, 1933:164, Foss, 1986:134

<sup>139</sup> See Firatli, 1951.

## 6.2. Appraisal of the Building Materials and Techniques employed on the West, South and East Sides of the Inner Circuit.

The building techniques used in the fortress are more or less identical especially on the west, south and east sides where the masonry is mainly Byzantine with the upper sections rebuilt during the Turkish period. The north side is mainly Seljuk and Ottoman. The main feature of the masonry is the extensive use of large blocks throughout the circuit. Foss says the walls have undergone many changes and reconstruction (Foss, 1986:144). During successive rebuilding the superstructures of the towers and curtains were raised and the battlements at the upper levels were covered to become windows opening to a covered wall walk (Figures 184-186)<sup>140</sup>. The uniformity of the masonry suggests that most of the fortress was rebuilt in the Dark ages. Therefore as far as the Byzantine period is concerned the type of masonry seen on the west, south and east sides of the citadel belongs to the period between the seventh and the ninth centuries.

The north side is constructed by using the material obtained from the volcanic rock which the structure stands on. This section belongs to the Seljuk and Ottoman periods<sup>141</sup>. It was reconstructed by Keikavus II (1249-1250). The masonry consists of small blocks which are laid in regular rows and joined with white mortar mixed with sand. The brick courses which are used on the west, south and east sides are replaced here by logs of cypress trees which are arranged longitudinally<sup>142</sup> (Figures 47, 55, 134, 135). The original towers would have been constructed almost entirely of large blocks but in later periods reconstructed by using brick and small roughly shaped stones in regular courses (Figure 47, 55). Therefore the lower sections of the towers on the north would have belonged to an earlier period than the superstructures<sup>143</sup>.

The rest of the citadel is constructed in the same manner as a whole; large blocks at the lower sections reaching to the level of the rooms continued by bands of

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<sup>140</sup> See Foss, 1986:144, Lawrence, 1983:205, Jerphanion, 1928:169, Mamboury, 1933:167-68.

<sup>141</sup> See Mamboury, 1933: 186.

<sup>142</sup> See *ibid.* 186

<sup>143</sup> See *ibid.* 184.

brick and smaller stones. The masonry of the west and south sides are carefully executed. Sometimes large blocks are replaced by water pipes. This material is mainly seen on the south-east and in large quantities on the east side where masonry is comparatively less careful.

Therefore the building materials and techniques mentioned below mainly include the west and south sides of the walls. The east side is also mentioned but with less detail than the west and south because the majority of the lower structures of the curtains and towers are obstructed by houses. A close inspection of the north side was not possible due to the steepness of the hill. Nevertheless examination of some of the accessible sections was possible (Figures 49, 53). However these sections are mentioned within the text without a heading as they belong to periods later than the Byzantine and were not studied as intensively as the other sections of the citadel.

#### 6.2.1. West side

The majority of the blocks are andesite (Figures 168-177). The rest is marble spolia of large blocks and column shafts, architraves, cornices, friezes and water pipes. The blocks are usually loosely fitted with large mortar joints. The corners of the blocks are usually broken as they must have been successively reused. Some of the blocks, especially andesite are heavily rebated and have neatly worked edges for joints. Their surfaces are roughly chiselled to achieve a rusticated look, which contrasts with the smooth surfaces of their margins. These surfaces stick out with large protrusions. One of the reasons for the use of such blocks must have been to enliven the otherwise dreary surface of the walls. There are also sockets for vertical dowels, holes for dovetail clamps and spike holes on the surfaces and edges of the blocks which give hints of ancient masonry techniques. They were joined with the other blocks by clamps and dowels but presently these holes and sockets do not have any relation with the adjacent courses. Therefore they are reused blocks and once joined with the other blocks by employing Greek and Roman building techniques.

The mortar which is clearly observed at some of the joints is pink and could be Byzantine made of pounded brick aggregate<sup>144</sup>. Large blocks are usually employed at lower levels and they are also used decoratively in alternating rows of large and narrow bands. Large blocks at places are replaced by rows of smaller stones. Stones are irregularly shaped in the superstructure or have very round edges which are accentuated by larger mortar joints. Yet in some towers the blocks of andesite and marble go up to the level of the second storey of the towers in neat rows and after that they are replaced by bands of brick and rubble stone which are either neatly cut and rectangular with rather narrow joints or in some towers and curtains the masonry is irregular with larger joints alternating in regular rows with brick. Generally the masonry on this side of the walls is carefully executed with rows of large blocks continuing up to the level of the windows of the second storey. Large blocks cover the first storey of the towers and the loopholes are so narrow that they are barely visible on the surface and hardly any larger than the joints between the blocks. There are one or two loopholes for each tower. The windows of the second storey are usually blocked with rubble. Most of the windows, both in the towers and curtains still carry marble lintels above them as in the towers of İstanbul and Nicaea. Some of the openings of the previous wallwalk are converted to windows for houses which still have marble lintels above the windows. The remaining wall of the wallwalk which was once covered functions at present as a retaining wall for houses. Therefore the openings are sometimes blocked with rubble or used as windows of the present houses which are perched on top of the walls. Consequently the most ruined sections are the curtains and the superstructure of the curtains lost a portion of their height and should originally have had crenellations. In some parts almost one third of the curtains are destroyed and replaced by houses or rows of larger stones in regular courses which are interrupted by alternating courses of bricks and small stones. These bands are interrupted at places by rows of bricks where neither the brick nor the stone bands continue without being interrupted by patches of brick or stone bands. These sections probably belong to much later reconstructions and have a very spoiled look especially with the addition of windows and houses. The superstructures

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<sup>144</sup> Jerphanion, 1928:153, Mamboury, 1933:164, Foss, 1986:134.

of some curtains are mainly constructed from regular rows of small rather irregularly shaped stones which at times are divided by one or two courses of brick. These courses seem to be levelling courses as they do not continue all the way on the surface of the walls and would have belonged to later periods.

#### 6.2.2. South Side

This side is almost exclusively faced with marble spolia. The section between SWT1 and ST5 (Figures 178-183) is faced with spolia with little andesite or basalt. There is access to ST2 and ST3 from the interior of the curtains but the lower structures of these towers and curtains are obstructed by houses. The superstructures of the towers are recently restored and as in the other sections of the citadel five rows of bricks alternate with three or four courses of stones which are laid in regular rows. The brick courses are joined in thick beds of mortar. The stones are small and rectangular and get smaller towards the top. Their edges are round and the joints are filled with pink mortar. Lower sections of the curtains and towers must have remained the same as the blocks surmounting the loopholes still carry the crosses which were engraved over them<sup>145</sup>. Towers and curtains in this section are faced with large marble blocks and architectural elements. Towers SWT1, ST5 and ST6 are faced with fragments of cornices, entablatures, altars, and inscriptions. At present there are no battlements in any of the towers and walls which indicate recent reconstructions. Access to the lower sections of ST2 and ST3 is from the interior of the south side.

##### 6.2.2.1. Inner sections of the Curtains and Towers

The masonry of the interior can only be observed from Zindan Kapı (Figures 195, 196). The walls in this section are faced with stones of different sizes. The lower sections are faced with blocks of andesite and marble. The blocks are comparatively small. The masonry is carefully executed. Sometimes two blocks

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<sup>145</sup> The blocks which are built into SWT1 F3, ST5 F3, ST6, F2 , ( Figures 81-84). See Chapter III.1.

follow a large block in a row to maintain the regularity of the rows. The blocks are joined in thick mortar beds especially at the lower sections of the walls. The superstructures are faced with small stones laid in regular rows. The mortar seems to be pink as in the other sections of the citadel.

This section is comparatively unobstructed by houses. The Sultan Alaaddin mosque is located on the southwest corner. There is a short stretch of wall which leads to the bastion. This wall supports a terrace. The wall walk which connects the towers to each other was originally covered by a vault (Figures 184-186). Its battlements is now used as windows or filled with rubble. The wall walk extends behind the towers ST2, ST3, ST4, ST5, ST6, ST7. It would have been constructed during the offensive against the Arabs in the ninth century. All the above mentioned towers have access from this wall walk which runs up from ST2 to the bastion. The difference in ground level is compensated by flights of stairs built into the wall walk. Only the first storey level of ST2 is level with the wall walk and this indicates the increasing slope of the topography towards the east. The wall walk should originally have extended to SWT1 which is now inaccessible from the interior. Nevertheless the ground level at the south-west corner would have been preserved because of the location of the Alaaddin mosque which belongs to the twelfth century. Originally the towers should have had access from the wallwalk by stairs positioned sideways to it as in the land walls of İstanbul.

ST2, ST3, ST6 and ST7 are the only towers in the circuit which are accessible from the inner sections of the walls. It is not possible to see the interior of ST4 and ST5.

The masonry of the interior of the circuit can only be observed from this side as the interiors of the west and east sides are completely obstructed by houses. The sizes of the rooms are very small as compared with the rooms in the towers of the wall of Heraclius. The masonry of ST 2 consists almost entirely of brick (Figures 193, 194). The interior at present is a fairly large room extending vertically and ending with a barrel vault. The masonry of the lower section consists of irregularly



shaped stones in regular rows and have very thick mortar joints. Most of the interior is laid with brick including the vault. The thickness of mortar is as much as the thickness of the bricks. Here again as in most parts of the citadel walls the mortar is pink.

#### 6.2.2.1.1. Interior of Towers

The interiors of most of the towers along the whole inner and outer circuits are blocked either by rubble or filled with rubbish and debris. The ground level reaches almost up to the crenellations of the towers of the outer circuit and only some of the loopholes are preserved. The interiors of the towers on the west side are mostly blocked; the windows of the upper storeys are either covered with rubble or interpolated into the interior of the modern houses abutting the curtains and walls. Consequently only the upper storey of WT13 (Figure 58) is accessible on the west side and the towers on east side are completely obstructed by houses. Therefore the towers on the south side are taken as examples. ST2, ST3, ST6 and ST7 are the only towers in the whole circuit that can be reached from the interior of the walls. Nevertheless it is not possible to see the interior of ST4 and ST5. Only the roof of ST5 is accessible by a narrow stretch of wall extending from the wall walk which runs along the south side of the circuit. The roof of ST4 is damaged.

ST6 and ST7 are recently reconstructed and the original masonry would have modified during the reconstruction. Therefore they are identical with respect to the style of masonry.

ST6 is roofless. The windows are surmounted by radiating brick arches. The walls are constructed by using shapeless rubble stones and in some sections patches of brick are inserted between the rows of rubble. The mortar joints are very large to compensate the irregularity of the stones.

The masonry of ST7 is similar with arches over windows. The masonry of the ceiling is in brick and the walls are faced with rubble stone and brick as in the same manner as ST6. Both of these towers are recently reconstructed. Therefore it is difficult to assess the original masonry.

ST2 and ST3 (Figures 187-194) has not yet reconstructed and considerably in good condition. The windows at the upper storey of ST2 have brick arches (Figures 192, 193). Its ceiling is vaulted and faced with brick. The bricks are laid longitudinally conforming to the curve of the vault (Figures 190, 191, 194). The sides of the lower structure are faced with shapeless rubble stones in thick mortar (Figures 187, 188, 191, 194). The mortar is pink and would have been Byzantine. The masonry of ST3 is similar but its lower room is left beneath the present ground level. These rooms are very small compared with the rooms in the towers of Heraclius at the land walls of İstanbul.

#### 6.2.2.1.2. Interior of Zindan Kapı

The main entrances are located on the south side of the citadel. There are two gates; “Parmak Kapı and Zindan Kapı” (Figures 71-73, 183, 195, 196) The gates are positioned in a double bend and there is a courtyard between them. The superstructure of the courtyard is now occupied by a restaurant. The masonry of the gates shows they are Byzantine. A stone lintel which would have belonged to an antique construction is placed over the jambs made of stone blocks. The door is surmounted by a round arch with brick voussoirs. The tympanum is filled with bricks in regular courses. This façade is very similar to the South Lake Gate of the circuit in İznik of which only the brick voussoirs are standing and the tympanum missing. The inner section of the gate is constructed from brick in two concentric barrel vaults. The second gate, “Zindan Kapı” is positioned at exactly right angles to the first gate. Its jambs are stone and one of them is a section of an architrave belonging to the Roman period. The lintel is also a part of an architrave. The whole tympanum is faced with brick and there is a shallow relieving arch. The tympanum is surmounted

by an arch formed by stone voussoirs. The exterior of this gate opens to the interior by a barrel vault. The masonry consists of regular courses of stone blocks which extend to the springing point of the barrel vault then replaced by brick. The arch is in brick. The south-west corner is located by the Alaaddin mosque. SWT 1 is inaccessible. ST2, ST3 are accessible from the interior of the bastion near the wall walk. The wall around the inner gate has been recently restored with the rest of the south-east section. The original masonry should have been similar to the present one; the lower sections of the wall are faced with blocks of spolia; “marble, andesite/basalt” with the superstructure in neat rows of small rubble stones. The blocks used in the lower structure are smaller than the blocks on the exterior. The superstructure above the inner gate is broken. The use of rather inferior material on the faces of the interior stresses the importance of the front facades.

### 6.2.3. Bastion

The bastion is a polygonal structure on the south-east of the citadel. This section was reconstructed during the reign of Michael III (842-867) during the campaign against Mu'tasim<sup>146</sup> (833-42). It also includes ET1 and ET2. This structure is recently reconstructed. The thickness of the walls was increased during the reconstructions of the ninth century which doubled the width of the walls<sup>147</sup>. There is a rectangular projection on the south and it would have been the section connecting the inner circuit with the outer<sup>148</sup>. This projection is in the same line with the wall of the outer circuit and it is obvious that the two circuits were joined with each other at that point (Figures 64, 74, 165, 201).

#### 6.2.3.1. Interior

The interior of the structure is in the form of a round courtyard surrounded by tall walls (Figures 197, 199). The entrance and the whole interior have been

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<sup>146</sup> Gregoire, 1929:327-328.

<sup>147</sup> See, Lawrence, 1983:207.

<sup>148</sup> Ibid. 207-208.

reconstructed. Stairs opposite the entrance leads to the battlements. Loopholes are concealed inside repeating arches which surround the faces of the polygon (Figures 75, 76, 198, 200). A flight of stairs lead to the top of the superstructure and a large round platform extends over the arches. This structure is adjacent to ST7 and stairs near the rectangular structure leads to the wall walk which gives access to the towers ST7, ST6, ST3, and ST2. The courtyard of the main gates on the south and ST5 and ST4 can be observed from the wall walk. The masonry consists of irregularly shaped rubble stones in neat rows. It is not known whether the reconstruction reflects the original masonry.

#### 6.2.3.2. Exterior

The superstructure is recently reconstructed. There is a door on the west face of the rectangular projection<sup>149</sup>. It has a marble lintel “an architrave” which is surmounted by concentric arches of bricks. This opening is blocked by rubble stone and originally it must have been the door opening to the covered wall walk inside the wall joining the inner circuit to the outer<sup>150</sup>. The masonry of the exterior consists of marble spolia, water pipes and blocks of andesite /basalt (Figures 149-151, 165). There are also blocks which would have been grave steles and sculptural pieces such as acroterion (Figures 145, 146). The abundance of marble on the walls shows this material was also available on the east side of the citadel (Figures 202, 203). There are narrow loopholes pierced on the walls. The superstructure consists of four and three rows of rubble stones in regular rows which alternate with five or six courses of bricks.

#### 6.2.4. East side

The masonry of the east side is less careful than the rest of the whole citadel with the exception of the bastion and its neighbouring towers on the south-east. The superstructure of the bastion was damaged as seen from the old photographs and its

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<sup>149</sup> Lawrence, 1983:208.

<sup>150</sup> Ibid.

reconstruction is very recent<sup>151</sup>. The reconstruction includes its whole circumference. The superstructure is reconstructed in the same manner of the towers with three courses of irregularly shaped rubble stone in regular courses alternating with five or six courses of brick. The superstructure of EC1 (Figures 78, 204) is broken and the reconstruction work does not extend up to this section but the masonry of its superstructure repeats the pattern of alternating bands of bricks and rubble stone. The superstructure of the ET1 (Figures 79, 204) is carefully executed and seems to be reconstructed. The front section is faced with many pieces of marble spolia (architraves, column drums and building blocks). The rest of the facing consists of blocks of andesite and basalt which some of them are carefully cut with round edges and others less careful. The coursing of both the marble and the andesite/basalt blocks are regular. The curtain connecting ET1 and ET2 is likewise reconstructed with a superstructure of small rectangular or square stones reaching almost to the upper sections of the second storey level with single courses of square blocks alternating with five courses of brick. The rest of the curtain seems to be faced with large rectangular blocks of andesite/basalt with a few marble pieces; "column drum, building blocks". The lower structure is impossible to see as it is completely obstructed by a house. The towers and curtains from this point are all obstructed by houses which must have been built after the thirties as photographs belonging to this period show the front sections of this side of the circuit to be clear of houses (Figure 57). At present most of the houses lean against the curtains and towers. Therefore the section from EC1 to ET13 is all blocked by houses (Figures 131, 205, 211). Access to some of the curtains or towers is by permission from the dwellers. Nevertheless the superstructure of most of the towers and some curtains are visible. The superstructure of all the curtains after EC2 is broken and these sections are not reconstructed. They constitute part of the walls of the houses which are either perched on the walls or lean against them from the interior of the citadel and some parts of the curtains are perforated to accommodate windows for houses. These sections would originally have belonged to the loopholes of the covered wall walk encircling the citadel walls. The visible sections of the curtains are faced with large

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<sup>151</sup> See Jerphanion, Plate, XCVII, Mambury, 1933:162.

blocks of andesite/basalt or blocks of water pipes and the superstructures with shapeless rubble stones heaped over each other in broken lines. The mortared rubble core is visible at certain points where the facing blocks are fallen. The facing consists of large blocks which continue almost along the whole height of the walls. However these sections are much damaged and the curtains probably would have lost a portion of their heights. Therefore it is impossible to guess the actual heights of these sections. The authors say the height of the curtains and towers were more or less the same and the difference of height was minimal. The old photographs do not help much as they were taken from a distance and it is difficult to make an accurate appraisal of many of the curtains and towers. Nevertheless the close ups of some towers show that the upper structures were already damaged and the curtains and towers lost from their original heights<sup>152</sup>.

#### 6.2.5. Distribution of the Building Materials

##### 6.2.5.1. West Side

West Tower 19: All the facing blocks other than spolia are andesite. There are antique pieces; an architrave with dentals, pieces of cornices, architraves? There are column drums which are laid perpendicularly to anchor the facing to the rubble core of the wall. The column drums have sockets for dowels.

West Curtain 18: Most of the facing material is andesite. There are also marble blocks and column drums. Both the marble blocks and column drums have sockets for dowels. Twin columns.

West Tower 18: The majority of the blocks are andesite. There are also marble blocks.

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<sup>152</sup> Foss says the towers and walls were at the same height at Ankara, Foss, 1986:144. If this was the case the present curtains would have lost a large portion of their heights. See Jerphanion, 1928, Plate XCVII.

West Curtain 17: The majority of the blocks are andesite. There are marble blocks and column drums. Some of the blocks have heavily bossed surfaces.

West Tower 17: The majority of the blocks are andesite. There are also marble blocks. The surfaces of the marble blocks are chiselled. There is a piece of a marble entablature or an architrave? There is a very small piece of andesite which seems to belong to an architrave or an entablature. There is one basalt water pipe.

West Curtain 16: The majority of the blocks are andesite. There are marble blocks with chiselled surfaces. There is a marble piece which might have belonged to a pedestal or an architrave?

West Tower 16: Most of the blocks are andesite. There are some marble blocks. There is a water pipe and a column placed upright of which the shaft is fluted, columnette, twin columnette?.

West Curtain 15: The majority of the blocks are andesite. There is little basalt. There are three pieces of a marble architrave, cornice or entablature (?) which are placed side by side. There is a piece of a wedge shaped marble capital in the middle of the wall which has a relief of a bucranium on its surface. Fragment of an altar, soffit of an architrave and lintel. Some blocks have traces of Greek building methods on their surfaces.

West Tower 15: Most of the blocks are andesite with very little basalt. Some of the blocks have heavily bossed surfaces and some marble blocks anathyrosis rebating. There is a section of a frame of a door in andesite. There is a piece of a frieze having a rectangular motive and architrave. Grave stele, Door jamb.

West Curtain 14: There are blocks of andesite and basalt. There is a block with a bossed surface. There are two marble pieces belonging to an architrave and a huge marble block with a socket hole.

West Tower 14: The majority of the blocks are andesite. There are also marble blocks. Some of the blocks have socket holes on their surfaces and some are heavily bossed. There is little basalt.

West Curtain 13: The majority of the blocks are andesite. There is little basalt. There are two marble pieces belonging to an architrave. Some of the blocks have heavily bossed surfaces. There is also a fragment of a cornice.

West Tower 13: Most of the blocks are andesite. There is very little basalt. There is a marble column shaft with flutes in a spiral line. This column is laid perpendicularly and its function is decorative. There is a large marble water pipe. There are few marble blocks. There are two marble cornice pieces in front of the tower. Some blocks have traces of Greek building techniques (sockets, lewis holes etc.). There is a marble block with a socket hole.

West Curtain 12: Half of the wall is covered with marble blocks. There is a marble Ionian capital, two pieces of a marble architrave and a water pipe. There are two long pieces of an entablature or architrave? The rest of the blocks are andesite with little basalt.

West Tower 12: Most of the wall is covered with large blocks of andesite. There are marble blocks which are laid in headers and stretchers. Some of the marble blocks have socket holes. Marble blocks concentrate at the spur of the tower. There is little basalt.

West Curtain 11: The majority of the blocks are andesite. There is little basalt. The rest of the wall is covered with large marble blocks. There is a small piece of a marble architrave.



West Tower 11: Most of the blocks are andesite. There are fragments belonging to buildings of the Roman Imperial period; a marble capital in a wedge shape with a relief of a bucranium on its surface, a marble column drum with a socket hole, large pieces of marble blocks, a block with a socket hole and blocks with bossed surfaces, springing block.

West Curtain 10: The majority of the blocks are andesite. There is little basalt and marble. There is a wedge shaped marble capital with a bucranium on its surface.

West Tower 10: Most of the blocks are andesite. There is more basalt as compared with the other walls. Huge marble blocks accumulate at the spur of the tower. There is a fragment of a marble architrave (entablature?), voussoir block.

West Curtain 9: There are pieces belonging to antique buildings; two marble fragments of a door frame, one Ionian capital, some marble blocks of which one of them has a circular groove and a socket hole in the middle. Most of the blocks are andesite and very little basalt.

West Tower 9: There are antique fragments; piece of a cornice with an egg and dart motive. There are two identical wedge shaped capitals with a relief of a bucranium. Most of the blocks are andesite. There are blocks with heavily bossed surfaces. There are very little marble and basalt, door jamb..

West Curtain 8: Most of the blocks are andesite. There is very little basalt. There is only a small piece of a marble architrave (entablature?).

West Tower 8: The majority of the blocks are andesite. There is very little marble. There are antique fragments; piece of a marble cornice with a lion's head in the middle and a section of an architrave (entablature?). The marble blocks have chiselled surfaces. There is very little basalt.

West Curtain 7: Most of the curtain is covered with large andesite blocks. There is very little basalt. There are large marble blocks in the lower section of the wall. There are some antique pieces; fragments of a cornice (entablature or architrave?).

West Tower 7: The majority of the blocks are andesite. There is very little basalt. There is a column drum with a socket and part of an entablature (architrave?). There are huge marble blocks with socket holes.

West Curtain 6: Most of the blocks are andesite. There is a long piece of an architrave. There are few large marble blocks.

West Tower 6: The majority of the blocks are andesite. There are few marble blocks. There are two marble blocks with many holes on their surfaces (sockets, lewis holes etc.). There is little basalt. There are blocks with bossed surfaces, a marble block with a chiselled surface and anathyrosis rebating.

West Curtain 5: Most of the blocks are andesite with a few marble pieces scattered. There is very little basalt.

West Tower 5: The majority of the blocks are andesite. There are large marble blocks. There is very little basalt. There is a fragment of a marble architrave. There is a marble block carrying an inscription in Greek, a block bearing a cross with relieves between the arms of the cross, stele.

West Curtain 4: Most of the blocks are andesite which are very neatly cut and regularly laid. There is very little marble.

West Tower 4: The majority of the blocks are andesite. There are more basalt compared with the other walls and towers. There are some marble blocks with socket holes (lewis holes?) and sections of a marble architrave (?), soffit of a lintel.

West Curtain 3: Most of the blocks are andesite. There is little basalt and very few marble. There is a column shaft with a socket, drainage corner cover block, architrave, sculpture with garland..

West Tower 3: There are two cornice fragments; one basalt, one marble. Most of the blocks are andesite. There is a marble block with a relief of a cross., a fragment of a cornice and a wedge shaped capital with a relief of a bucranium on its surface. There is little basalt. Grave stele, pedestal base, pier base, console, spirally fluted columnette, architrave; bronze inscription with holes.

West Curtain 2: Most of the facing consist of large blocks of andesite. There are only a few pieces of large marble blocks.

West Tower 2: Most of the blocks are andesite. There are two large marble blocks; one of them has a Greek inscription carved on its surface. These blocks would have belonged to a cornice or an entablature. The block carrying the inscription is placed on the spur wall of the tower. There are also some large marble blocks with sockets and chiselled, rusticated surfaces.

West Curtain 1: There are huge blocks of andesite. There is a large water pipe and few large marble blocks.

South-West Tower 1: Most of the tower is faced with spolia taken from the buildings of the Roman Ankara. Marble is accumulated in the front the tower. The side looking north is laid with large blocks of andesite with heavily bossed surfaces. There are also marble spolia at the upper sections; column drums with sockets, fragments of cornice. The front section of the tower is faced completely with marble spolia; fragment of a cornice, piers with socket holes. There is also a block carrying an inscription in Latin. The inscription is not complete as half of this block is given a rusticated dressing or broken. The other front side looking south has many pieces of spolia; fragment of a cornice with acanthus leaves, column drums with sockets,

wedge shaped capitals with a relief of a bucranium on their surfaces, a small block which is placed over a loophole and which has a cross carved on its surface. The upper sections of the side looking south are covered with marble and the lower sections with andesite which have bossed surfaces.

#### 6.2.5.2. South Side

South Curtain 1: The wall is obstructed by modern houses.

South Tower 2: The lower section of the tower is obstructed by modern houses. The tower is accessible only from the interior of the walls. The superstructure is faced with three courses of small stones alternating with five courses of brick.

South Curtain 2: The wall is obstructed by modern houses.

South Tower 3: The lower section of the tower is obstructed by modern houses. The tower is only accessible from the interior of the walls. The visible section of the tower is faced with blocks of andesite, basalt and marble with occasional column drums and the superstructure with three courses of small stones alternating with five courses of brick.

South Curtain 3: The wall is obstructed by modern houses.

South Curtain 4: Sculpture of priapus, altar piece.

South Tower 4: The side looking to the west is obstructed by modern houses. The rest of the tower is faced with marble spolia. There is a large piece of marble architrave. The loophole is surmounted by a block bearing a cross. The superstructure is faced with alternating courses of brick and rubble and rubble stone.

South Tower 5: Architrave, bucranium.

Parmak Gate (exterior gate): Like the posterns of the west side, a tympanum faced with bricks and surmounted by an arch comprised of brick voussoirs and there is also a relieving arch made of brick voussoirs. The lintel is stone and the jambs are made of horizontally laid blocks of stone.

Zindan Gate (inner gate): The arch is built from stone voussoirs. The tympanum is faced with bricks. There is a relieving arch in brick voussoirs. The lintel is an antique architrave, the jambs; one of them a fragment of a cornice, the other stone.

#### 6.2.5.3. Bastion:

Its square tower (previously linking the outer circle to the citadel): marble and basalt blocks, Roman water pipes. There is an arched window. The arch repeats the same configuration; brick voussoirs both for the arch proper and the relieving arch. The lintel seems to be a fragment of an antique architrave, acroterion, altar piece, garland. The orthostats are stone. This window is blocked with stones. The upper part of the tower consist of alternating rows of bricks and stones: 5 rows of bricks, 3 rows of stones, 5 rows of bricks, 3 rows of stones. Lower section consist of blocks of basalt and marble (pieces of antique architraves), the upper parts: Roman water pipes and alternating bands of stone and bricks: 6 rows of bricks, 3 rows of stones, 5 rows of bricks, 4 rows of stones, 5 rows of bricks, 4 rows of stones, 4 rows of bricks and 3 rows of stones.

#### 6.2.5.4. East Side

East Curtain 1: The postern between the Bastion B and tower 1 is the same as the others with marble jambs and lintel (brick arch, tympanum and relieving arch), grave stele..

East Tower 1, East Curtain 2, East Tower 2 : The lower structures are obstructed by houses. The superstructures mainly consist of blocks of andesite/basalt with marble blocks interspersed amongst them. The top sections consist of alternating bands of stone and bricks. Construction is less careful in this part starting from tower number 2, twin column.

Towers and Curtains between East Tower 2 and East tower 7: Most of the towers and curtains in this section are obstructed by modern houses. Their construction is less careful. Mainly blocks of andesite/basalt, marble spolia and water pipes. The superstructure of the curtains are filled with courses of rubble stone and mostly damaged.

East Tower 7: The superstructure is damaged and a house is built over it. The rest is faced with blocks of andesite/basalt and few marble.

East Tower 8: In spite of being obstructed by modern houses the superstructure seems less damaged and consist of alternating courses of andesite/basalt and bricks.

Towers and Curtains between East Tower 8 and East Tower 13: They are all obstructed by houses. The construction is less careful. The superstructures are mostly damaged. The masonry seem to have been composed of alternating bands of stone and bricks. The lower sections have Roman water pipes and blocks of andesite/basalt.

East Tower 13: The superstructure is damaged. From what is left it is seen that it was composed of alternating rows of bricks and stones. The lower section consist of blocks of marble and andesite/basalt. A row of marble columns are used at its north side.

East Curtain 14: Blocks of andesite/basalt and few marble topped with courses of mostly rough stones. Masonry is less careful. The top parts are damaged.

East Tower 14: Blocks of basalt and few marble topped with courses of mostly rough stones. Masonry is less careful. The top parts are damaged.

East Curtain 15: It is partly demolished and filled with houses. The lower section is filled with large blocks of andesite/basalt with few marble and what is left from the upper section is courses of shapeless stones.

East Tower 15: Masonry is comparatively careful. The lower section consist of blocks of andesite/basalt. In the middle there are two bands of bricks (4 or 5 rows each band) separated by 4 rows of stones. The top part consist of roughly shaped stones. The top part has crenellations.

## CHAPTER 7

### COMPARATIVE STUDY: “İZNİK”

#### 7.1. İznik

There are many similarities between the circuit at İznik and the citadel of Ankara. Despite the differences of topography and the shape of the towers the two circuits can be compared with respect to the style of masonry and building materials. At İznik the masonry of the curtains and towers between the South-Lake and Yenişehir gates<sup>153</sup> consists of large reused blocks coming from the monuments of the ancient city (See map 6, Figures 214, 215, 219). Foss says the walls of İznik were extensively rebuilt by Michael III (842-867) the year before those of Ankara (Foss, 1986:144). Considering the periods these circuits were built, the similarity of masonry is not surprising.<sup>154</sup> Michael was responsible for the reconstructions of the south and south-east sides of the citadel at Ankara which was reconstructed in 859<sup>155</sup>. Therefore both circuits exemplify the masonry of the Dark Ages<sup>156</sup>.

There is little information about the reconstruction of the citadel walls. The only written evidence is the two blocks built into the top section of the curtain SC5<sup>157</sup>. These inscriptions mention Michael III (842-867) and Basil I (867-886) as builders of the south and south-east sides of the circuit and the uniformity of masonry suggests the masonry would have belonged to the same building program. At İznik the type of masonry and building materials used on some of the towers

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<sup>153</sup> See, Schneider and Karnapp, 1938:34-36.

<sup>154</sup> See Foss, 1986: 80, 82, 144, 162,165,

<sup>155</sup> Like Ankara “Nicaea assumed the role of a major fortress on the main highway from İstanbul to the east and also from the middle of the eight century was the capital of the theme or military province of the Opsikion which controlled the defences of the strategic northwestern part of Anatolia”, Foss, 1986:80.

<sup>156</sup> See Foss, 1986:139.

<sup>157</sup> See Chapter 3, p.42.



between the South Lake and Yenişehir gates are quite similar to the towers at Ankara; large irregularly shaped marble spolia laid in regular rows with wide mortar joints (Figures 214, 215, 217-219). This type of masonry indicates that the lower sections of these towers were reconstructed as mortar was used to cover large gaps between the blocks. The mortar joints are even larger on the west side of the citadel at Ankara which conceals the irregularity of the blocks.

The circuit at İznik was destroyed several times because of invasions and earthquakes<sup>158</sup>. However unlike Ankara there is enough evidence for dating some sections of the walls to certain periods<sup>159</sup>. Some of the towers and curtains between the South Lake and Yenişehir Gates are dated to the reign of Michael III (842-867)<sup>160</sup>. The masonry indicates the style of the period; the superstructures of the towers are faced with alternating courses of brick and rubble stone and the lower sections with large pieces of spolia with wide mortar joints<sup>161</sup> (Figures 213, 218, 219). The similarity of masonry styles is not limited to the reconstructions of Michael's period. The tall round towers which flank the Yenişehir Gate at İznik (Figure 213), and the two semi-circular towers of the Hisar Gate at Ankara (Figures 67, 69, 70) are identical with respect to their building materials, masonry style and shapes<sup>162</sup>. The lower sections of these towers were constructed using large marble blocks followed by alternating courses of bricks and stones. There are column shafts in rows which anchor the facing to the rubble core. The similarity of masonry styles indicates at least the lower structures of the towers and curtains at the citadel would have belonged to the period between the seventh and ninth centuries.

Therefore masonry styles of both circuits show that reused blocks were extensively employed between the seventh and ninth centuries. This material was

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<sup>158</sup> Krautheimer, 1986, Foss, 1986:80, 81, Schneider and Karnapp, 1938: 2, 5. For the history of İznik see also Schneider and Karnapp, 1938: 1-8, for the dates of the towers and curtains at İznik see Schneider and Karnapp, 1938:36-42.

<sup>159</sup> Foss, 1986:79,101.

<sup>160</sup> Foss, 1986:80. the similarity of masonry between the towers 97-100 on the south side of the circuit at Nicea and Ankara is mentioned by Schneider and Karnapp, 1938:42.

□ Foss, 1986:101.

<sup>162</sup> Foss, 1986:143.

available from the ancient buildings at the sites and would have been chosen for their strength and visual appearance. Consequently the quick response against frequent attacks would have been another reason for the use of spolia which would have been easily available during that period.

The building techniques can be easily observed at İznik because most of the superstructure of the curtains and towers are not restored and it is possible to study their structure. (Figure 137, 224). The superstructure of the curtains between the South Lake and Yenişehir Gates are faced with very large blocks which were originally the seats of the ancient theatre (Figures 224, 225). Marble blocks are abundantly used between towers 94 and 96 (Figures 221, 222). The masonry of tower 94 is carefully executed with large blocks extending to the superstructure. The blocks are tightly joined and the crevices are filled with small stones (Figure 220). This regularity continues in the section between towers 94 and 96<sup>163</sup> (Figures 221,222). The sections reconstructed during this period contain little mortar and the crevices are filled with small stones or pieces of brick. The regularity of this section contrasts with Michael's reconstructions. Similarly the masonry style of SWT1 at Ankara contrasts with the other sections of the citadel. The lower structure of this tower is completely faced with marble spolia which is tightly joined with little mortar and the crevices are filled with pieces of rubble stones<sup>164</sup> (Figures 82, 140-142). The regularity of the courses and the style of the masonry resembles to tower 94 by the South Lake Gate and the curtains between the towers 94-96<sup>165</sup> (Figures 220-222). Consequently the south-west corner of the citadel would have been reconstructed using the same style of masonry of the eighth century. Nevertheless the uniformity of masonry on the south and south-east sides of the citadel at Ankara shows at least the lower sections of the walls were reconstructed by Michael III.

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<sup>163</sup> Foss says the use of spolia in regular rows is the style employed during the reigns of Leo III (717-741) and Constantine V (741-775), Foss, 1986:53.

<sup>164</sup> See Figures 82, 102-108, 140-142 to compare the styles of masonry.

<sup>165</sup> These sections are attributed to the reign of Leo III (717-741) and Constantine V (741-775), Foss, 1986:100.

Consequently Ankara would also have been reconstructed during the reigns of Leo III (717-741) and Constance V (741-775) but the whole circuit must have been heavily damaged during the decades preceding Michael III's efforts to recover the main cities of Anatolia. In that respect the similarity of reconstructions at Ankara and İznik also indicates the importance of both cities as a military base which connected the capital with the eastern provinces.

The spolia used on the walls of the citadel indicates Ankara was one of the prominent cities of the antique period. The abundance of such material shows that Ankara was once full of public monuments. The importance of Ankara continued during the middle ages under the Byzantine rule when it became one of the important headquarters of the Byzantine army because of its location at the intersection of the ancient roads. Therefore the circuit at Ankara was reinforced, repaired and modified during the centuries following the collapse of the Roman Empire and continued its existence till the present time. Therefore it resembles İznik not only with respect to the masonry of its walls but also with its historical background.

Ancient material was used at Ankara as much as İznik. The superstructure of some curtains at İznik was reinforced with huge blocks which originally belonged to the ancient Theatre or to public buildings of the Roman period. Tower 94 (Figure 220) near the South-Lake Gate is completely covered with spolia. These blocks have traces of ancient building techniques on their surfaces and in that respect İznik resembles Ankara in the exclusive use of this material on the surfaces of its towers. At İznik the curtain between towers 94-95 is mostly covered with large blocks of marble with only a small section of the superstructure faced with rubble stone which alternates with two courses of bricks and in some sections the masonry consists only of brick (Figure 221). There are also column shafts to anchor the facing to the core of the wall (Figure 216, 219) and the rubble core is visible at certain sections of the curtains and towers (Figure 137). The lower structures of the towers 95-102 are faced with spolia with large mortar joints (Figures 215-219). There are many column shafts and other architectural elements. The curtain between towers 101-102 are faced with

large marble blocks extending to the superstructure (Figure 223). The superstructure of this wall is destroyed and it is not known whether the marble blocks continued to the upper sections. However large blocks on the south-east corner of tower 101 indicates marble blocks were used in the upper sections of the walls (Figure 218) with irregular courses of rubble stone and bricks. The lower structure of the tower 102 is faced with spolia; building blocks, column shafts and other architectural elements (Figure 219). The pentagonal Tower 106 B (Figure 86) belongs to a later period<sup>166</sup>. However its masonry is similar to tower 94 which could be interpreted as the repetition of the same style in fortifications at strategical points using strong materials like marble blocks (Figure 220). This tower can also be compared with the towers at the south-east corner of the citadel at Ankara with respect to defence techniques<sup>167</sup> (Figures 78, 79, 204, 205).

Consequently there are many similarities between İznik and Ankara in terms of historical background, masonry style and building materials. At İznik the inscriptions which dated some of the sections of the curtains and towers to certain periods and the similarity of the masonry styles of these sections to some of the towers and curtains at Ankara help to understand and interpret different aspects of the citadel.

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<sup>166</sup> Foss, 1986:96.

<sup>167</sup> See Chapter 5, p. 62.

## CHAPTER 8

### CONCLUSION

The aim of this research was to identify and document the building materials and building techniques used at the citadel of Ankara. For this purpose the masonry of the visible sections of the curtains and towers on the west, south and east sides of the citadel were examined. The selection of the wall sections for detailed documentation was done with respect to analogy of the masonry styles and the attribution of these sections to certain periods.

The masonry of the west, south and east sections of the citadel belongs to the Dark Ages. The towers and curtains of some sections reflect the style of the ninth century<sup>168</sup>. These sections are dated to the period between the seventh and ninth with respect to the style of masonry. The similarity is more obvious in the towers where the lower structures are faced with large blocks which reach the second storey level and from here onwards continue with alternating courses of brick and rubble stones.

The curtains are more damaged than the towers and their superstructures differ from the towers with the irregularity of the masonry and the type of the building materials. On the other hand the lower structures are faced like towers with large blocks of stone and wide mortar joints. Therefore the masonry of the lower structures of the curtains and towers are similar in terms of building materials and techniques. Consequently this thesis mainly focused on the masonry of the lower structures of the towers and curtains on the west, south and south-east sections of the citadel. The building materials used in the upper structures; “rubble stone and brick”

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<sup>168</sup> See Foss, 1986:101.

were also documented in order to show the correct percentages of the distribution of building materials in selected areas.

The research included historical events that would have necessitated reconstructions and additions throughout centuries and also covered the research of the site to understand the idea behind the defence system and the extension of the walls in different periods. The monuments and history of the Roman period were also studied for the identification of the building materials and to study the inscriptions which give important information on the history of the period.

In this study a large number of inscriptions, some of which were not even recorded before, were documented and their locations were shown on a map (See map 3). This research not only included the inscriptions mentioning the emperors involved in the construction of the citadel walls but the inscriptions belonging to different periods. These are usually engraved on architectural elements of the Roman period and on grave steles and they are very important for understanding the history of the city. Consequently this thesis not only embraced the building materials and techniques but also the history of Ankara and its inscriptions. Consequently the inscriptions included in this thesis would be helpful for future studies of the citadel with respect to the history of Ankara as all the recorded inscriptions were documented by photographs.

However, only very few of these inscriptions are directly related to the construction of the citadel while the others are reused inscribed stones. This scarcity of dated inscriptions was tried to be compensated with other written sources: that of the travellers who visited and described Ankara and its citadel. They gave valuable information about the physical appearance of the walls. Furthermore, some of the inscriptions which are lost today were read and interpreted by scholars who visited Ankara between the sixteenth and twentieth centuries. Their interpretations helped in dating some of the sections of the walls. Today there are only two blocks which bear

inscriptions referring to the date of the construction of the citadel. Therefore previous accounts of the travellers and scholars were indispensable for further information.

The subject was also approached in terms of defence techniques and topography. The shape of the towers, gates and general design of the fortress were studied with respect to topography. Therefore site photographs were taken and maps, aerial views and old photographs of the citadel were obtained from the municipality of Ankara to compare the physical changes and to understand the design of the castle.

The fortifications have been studied or mentioned briefly by early and contemporary scholars and travellers. Nevertheless a comprehensive study of the fortress has not been done. Therefore this thesis combined evidences including different aspects of the fortress by employing modern methods of documentation and evaluation depending on rectified photography and drawings: Consequently different aspects of the citadel were documented and evaluated in detail. The towers and curtains were photographed to record their physical characteristics and to show the distribution of the building materials. The areas were measured and recorded. The GPS and photo rectification methods were applied on the west, south and south-east sections to document the distribution of the building materials in selected areas. This selection was based on a random selection but mainly those wall pieces which were easily visible were included. After the rectification of the selected areas the elevations were drawn in the CAD programme. The distribution of the building materials were evaluated by statistical methods which also included the superstructure of the towers and curtains for accurate evaluation of the areas covered by large blocks. The statistical results show that different types of building materials used in different ratios on the curtains and towers. Although marble was extensively used on the south side of the citadel, most of the surfaces are covered with andesite/basalt. Nevertheless it was shown that marble spolia accumulates at prominent sections like the spurs of the towers or on areas like the main gates. The superstructure of the curtains differs from the towers. This difference would have

resulted from later reconstructions. Also these sections are not restored like the superstructures of the towers. The rest of the surfaces of both the towers and curtains are similar with respect to the style of masonry.

The citadel was compared with the circuit at İznik. This was essential as the analogy between the two fortresses was not only limited to building materials and techniques but also to historical background. The site at İznik was visited and the section related to Ankara was documented by photographs. The masonry style of the selected section was studied and parallels with Ankara in terms of building materials and techniques were shown.

Consequently this thesis included the documentation of the physical data, history, design and written materials of the citadel walls at Ankara and would hope to provide important information for further studies.





Figure 1. Nurdan Atalan is carrying GPS receiver



Figure 2. Nurdan Atalan is setting up base station of the GPS receiver



Figure 3. West Tower 7; Face 1



Figure 4. Photograph of West Tower 9, Face 3



Figure 5. West Tower 9, Face 3



Figure 6. West Tower 15 Face 3 (inscription/Latin)





Figure 7. West Curtain 12 (mason's mark/Greek)



Figure 8. West Tower 11 Face 2 (inscription/Greek)



Figure 9. West Tower 10 Face 3 (inscription/Greek)



Figure 10. West Tower 10, Face 4 (inscription/Greek)





Figure 11. West Tower 10, Face 4 (inscription/Greek)



Figure 12. West Curtain 9 (inscription/Greek?)



Figure 13. West Curtain 9 (inscription/Greek)



Figure 14. West Tower 5, Face 3 (inscription in tabula ansata/Greek)





Figure 15. West Tower 5, Face 3 (mason's mark/Greek)



Figure 16. West Tower 4, Face 2 (inscription/Greek)





Figure 17, West Tower 3, Face 2 (inscription/Greek)



Figure 18. West Tower 2, Face 2 (inscription/Greek)



Figure 19. West Tower 2, Face 2 (inscription/Greek)



Figure 20. South West Tower 1, Face 2 (inscription/Latin)



Figure 21. South West Tower 1, Face 2 (inscription/Latin)



Figure 22. South Curtain 4 (mason's mark/Greek?)





Figure 23. South Tower 5, Face 3 (inscription/Greek)



Figure 24. South Tower 5, Face 3 (inscription/Greek)



Figure 25. South Tower 5, Face 3 (inscription/Greek)



Figure 26. South Tower 5, Face 3 (inscription/Greek)



Figure 27. . South Tower 5 Face 3 (inscription/Greek)



Figure 28. Zindan Kapı, interior (inscription/Greek?)



Figure 29. South Curtain 5 (inscription/Greek)



Figure 30. South Curtain 5 (inscription/Greek)





Figure 31. South Curtain 5 (inscription/Greek)



Figure 32. South Curtain 5 (inscription/Greek ?)





Figure 33. Bastion, interior (inscription/Greek)



Figure 34. Bastion Face 3 (inscription/Greek)



Figure 35. Bastion Face 3 (inscription/Greek)



Figure 36. East Tower 9, Face 2 (inscription/Latin? Greek?)



Figure 37. East Tower 9, Face 2 (inscription/Latin? Greek?)



Figure 38. East Tower 13, Face 2 (inscription/Greek)





Figure 39. East Tower 13, Face 2 (mason's mark/Greek)



Figure 40. Ankara Evi Parkı (inscription in tabula ansata/Greek?)



Figure 41. Inscribed stone built into the wall across the Museum of the Anatolian Civilizations (Greek)



Figure 42. Hisar Kapı, exterior (inscription/Persian)

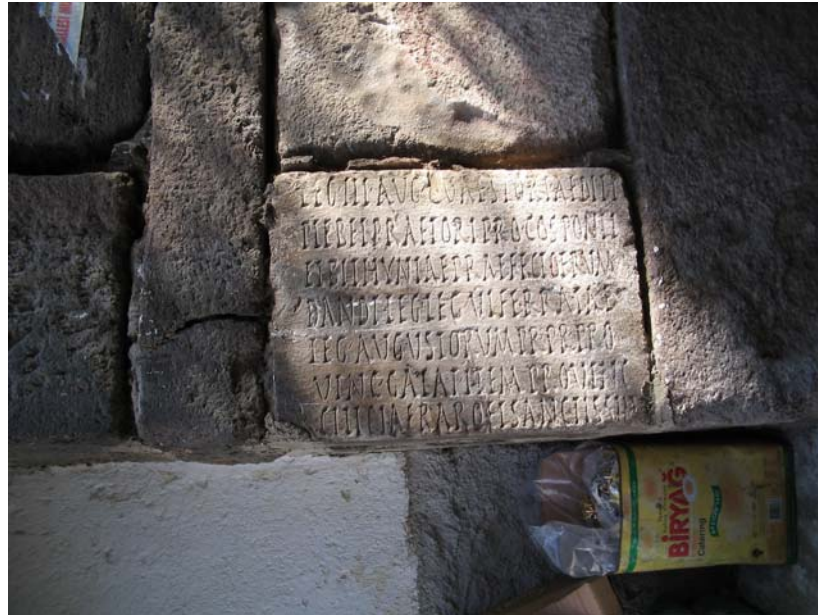


Figure 43. Hisar Kapı, interior (inscription/Latin)



Figure 44. Hacı Bayram Mosque and the Temple of Augustus



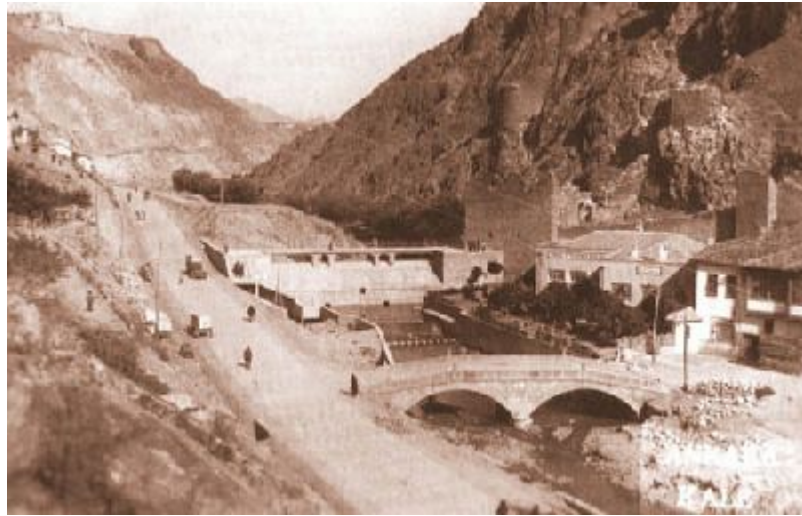


Figure 45. Bent Deresi, view from the north (circa 1930)



Figure 46. Bent Deresi Street



Figure 47. View from the north



Figure 48. View from the north



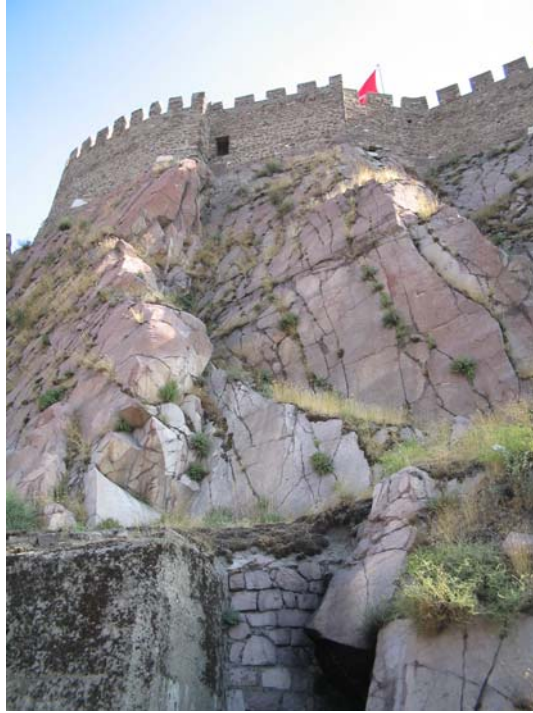


Figure 49. Akkale, view from the north

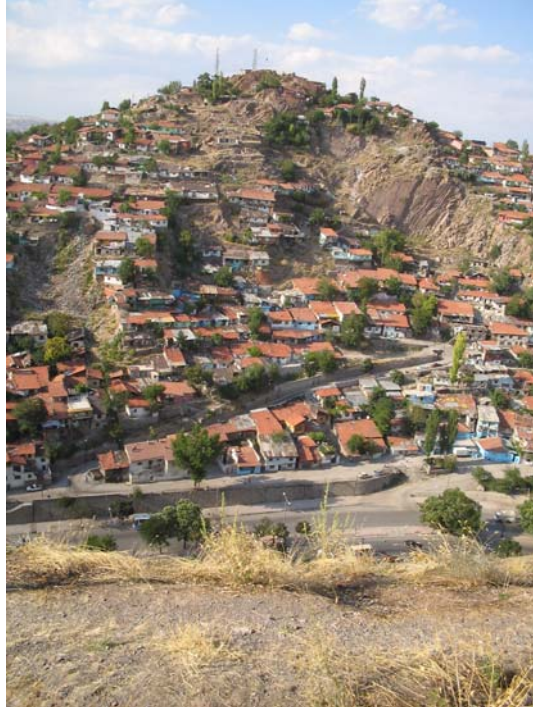


Figure 50. Mount of Tamerlane, Hıdırlık hill



Figure 51. View from the west, citadel and Hıdırlık hill (circa 1930)



Figure 52. West side (circa 1930)



Figure 53. Akkale, view from the north

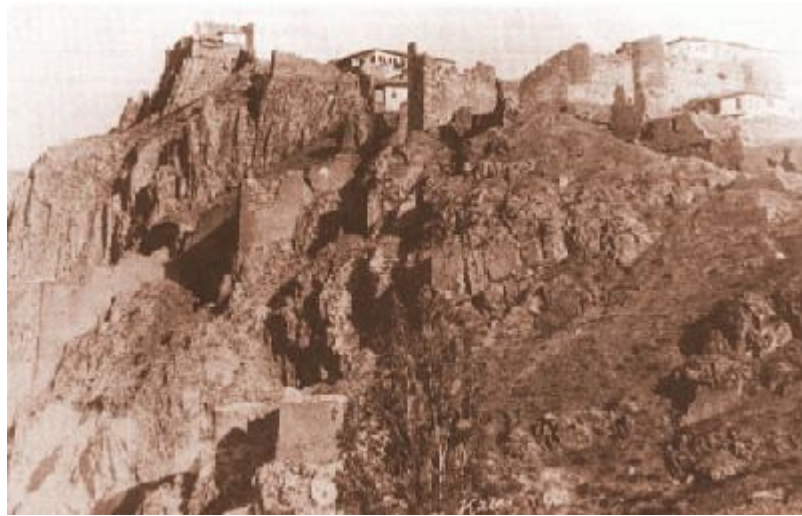


Figure 54. View from the north (circa 1930)





Figure 55. Extension of the outer circuit (from the north)



Figure 56. Wall linking the inner and outer circuits



Figure 57. East side (circa 1930)



Figure 58. West Tower 13, interior



Figure 59. Postern between towers ET 10 and ET 9

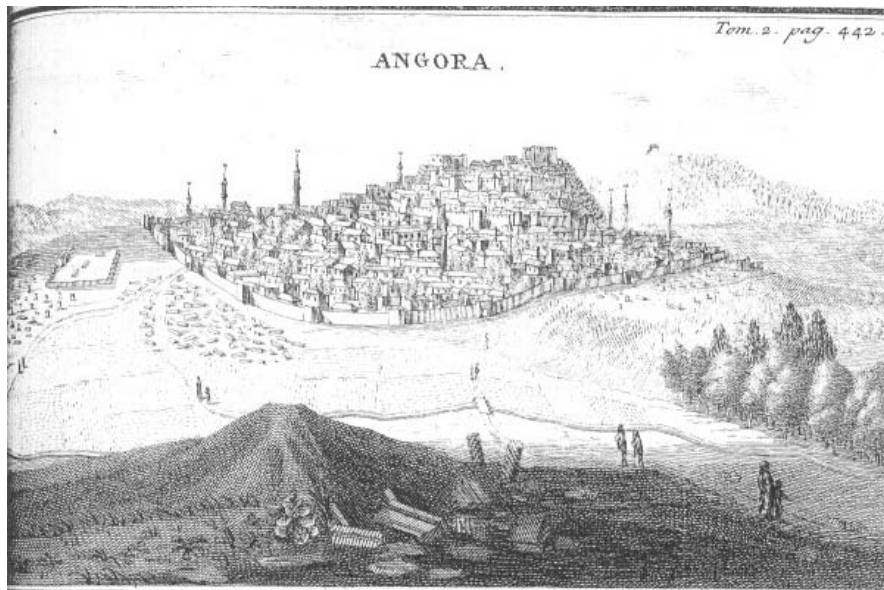


Figure 60. Ankara by Tournefort (1701)



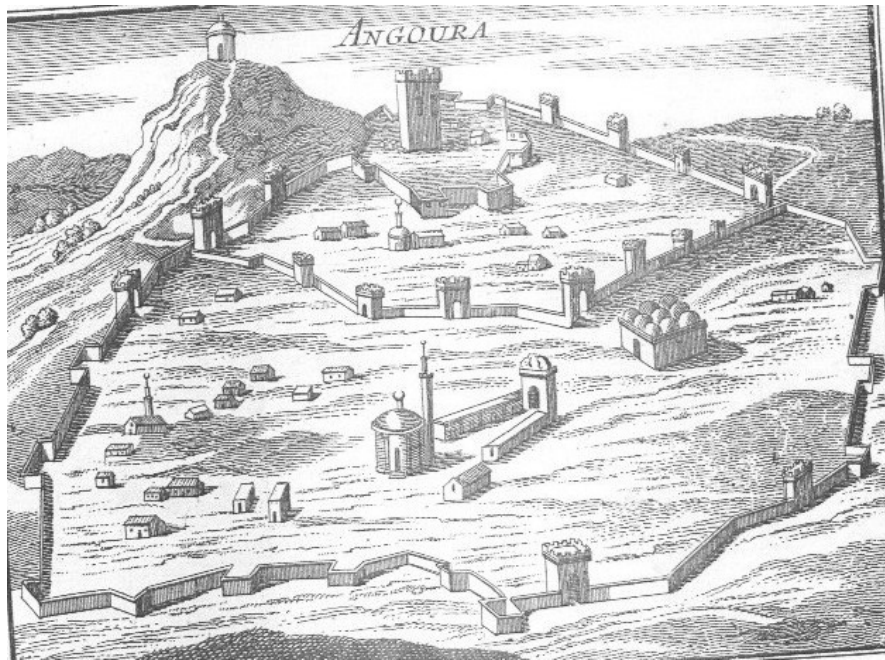


Figure 61. Ankara by Pococke (1743-45)

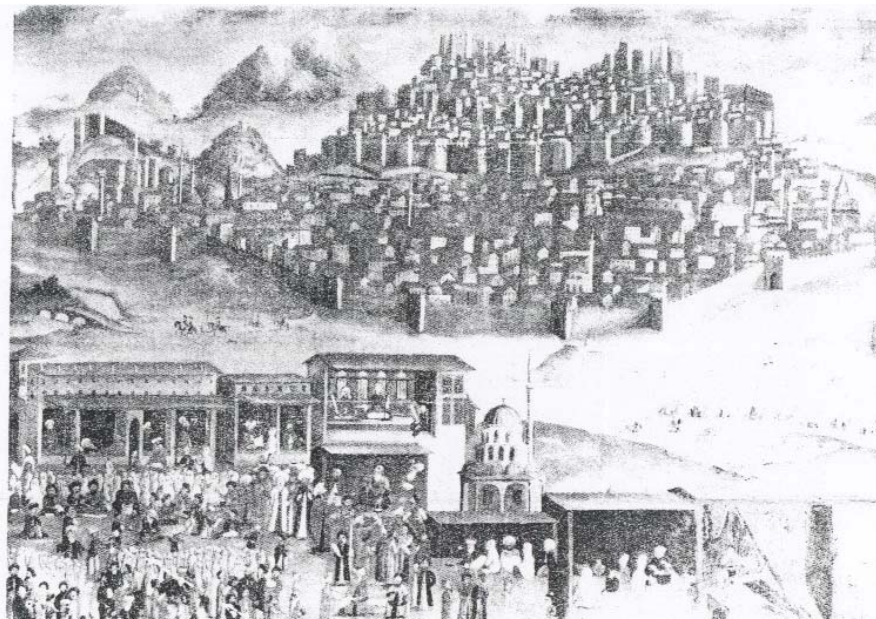


Figure 62. Ankara in the seventeenth century, Rijk museum, Amsterdam.



Figure 63. Akkale, looking north



Figure 64. Bastion, looking south





Figure 65. East side of the citadel



Figure 66. East side (circa 1930)

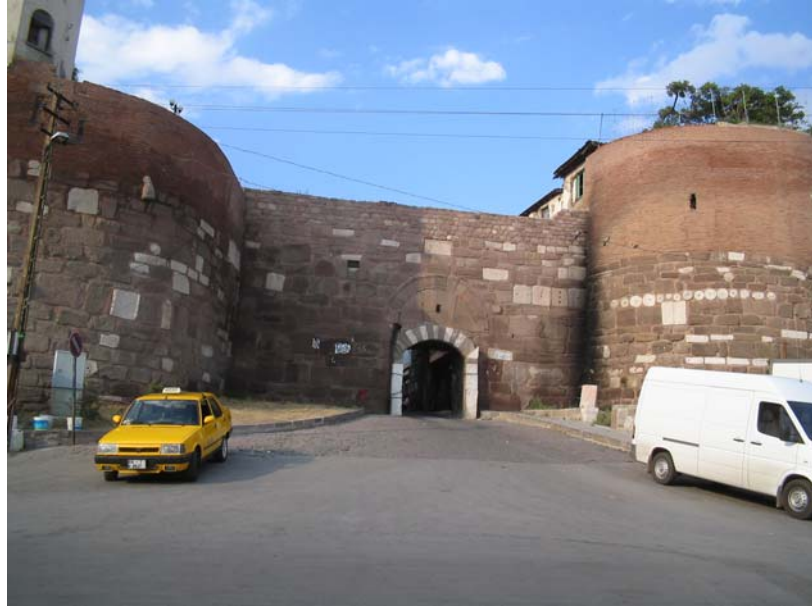


Figure 67. Hisar Gate, south



Figure 68. Hisar Gate, interior



Figure 69. Hisar Gate, round tower (circa 1930)



Figure 70. Tower near Hisar Gate

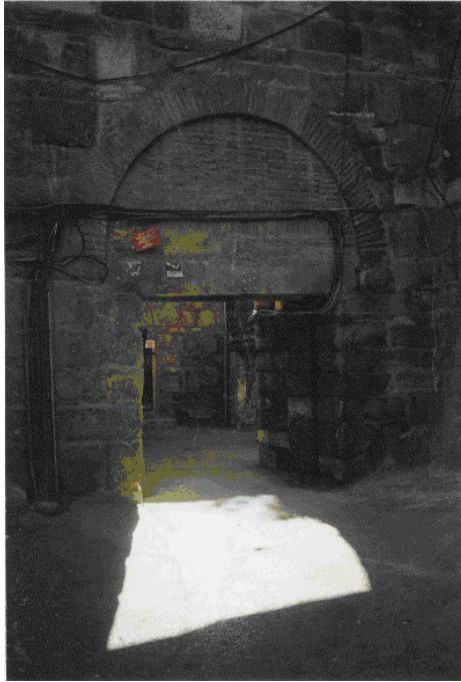


Figure 71. Parmak Gate, exterior



Figure 72. Zindan Gate, exterior



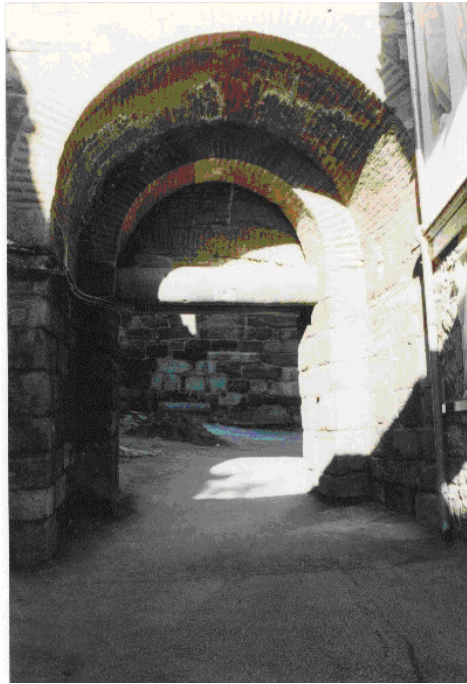


Figure 73. Parmak Gate , interior



Figure 74. Bastion, looking south



Figure 75. Bastion, loophole, interior



Figure 76. Bastion, loophole, interior



Figure 77. South Tower 6 (front), South Towers 5, 4 (back) as seen from the Bastion



Figure 78. East Curtain 1



Figure 79. East Tower 1



Figure 80. East Curtain 1, postern





Figure 81. South Tower 5, loophole



Figure 82. South-West Tower 1, loophole



Figure 83. South Tower 6, loophole



Figure 84. South Tower 5, loophole



Figure 85. Tower 102, İznik



Figure 86. Tower 106 B, İznik





Figure 87. Rubble core, Bastion



Figure 88. South Tower 4



Figure 89. South Tower 5



Figure 90. Building block, West Tower 13



Figure 91. West Tower, door frame



Figure 92. Bastion Face 6





Figure 93. South Curtain 4, sculpture



Figure 94. West Tower 10



Figure 95. West Curtain 18



Figure 96. West Curtain 3





Figure 97. West Curtain 10



Figure 98. South Tower 5



Figure 99. West Curtain 15



Figure 100. South Tower 5



Figure 101. South Tower 5



Figure 102. West Curtain 13





Figure 103. West Curtain 13



Figure 104. West Tower 9



Figure 105. West Tower 13



Figure 106. West Tower 9



Figure 107. West Tower 11



Figure 108. West Curtain 10





Figure 109. West Tower 15



Figure 110. West Curtain 15



Figure 111. West Tower 15



Figure 112 Bastion, Face 7





Figure 113. Detail, Bastion



Figure 114. South Tower 5



Figure 115. West Curtain 12



Figure 116. West Curtain 12



Figure 117. West Curtain 15



Figure 118. West Curtain 15





Figure 119. West Curtain 9



Figure 120. West Curtain 12 (Genç Gate)



Figure 121. West Tower 13



Figure 122. West Tower 12



Figure 123. West Tower 13



Figure 124. West Tower 13





Figure 125. South Tower 5



Figure 126. West Tower 6



Figure 127. West Curtain 7



Figure 128. West Curtain 7





Figure 129. East Curtain 15



Figure 130. West Curtain 7



Figure 131. East side



Figure 132. South Tower 2, South Curtain 2



Figure 133. South Tower 4



Figure 134. Extension of the outer circuit to the west





Figure 135. Extension of the outer circuit to the west



Figure 136. Extension of the outer circuit down the valley, to the west

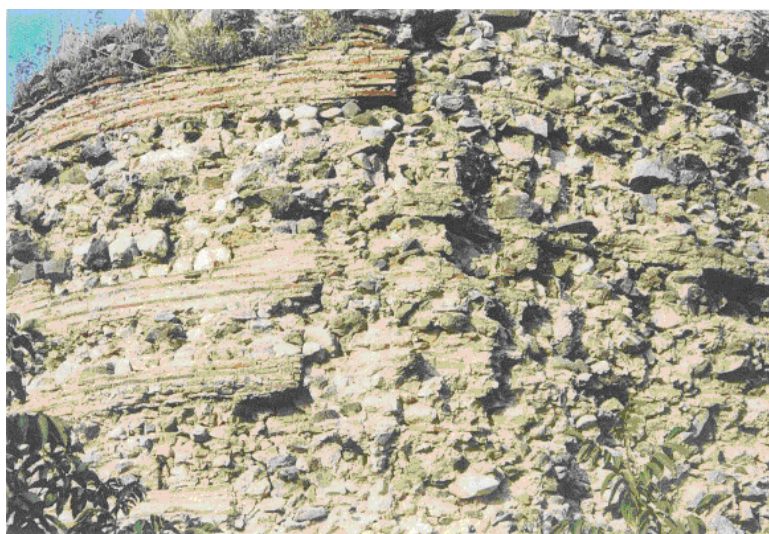


Figure 137. Tower of the outer wall , in front of Tower 106, İznik, rubble core



Figure 138. West Tower 8



Figure 139. West Tower 16



Figure 140. South-West Tower 1





Figure 141. South West Tower 1



Figure 142. South West Tower 1

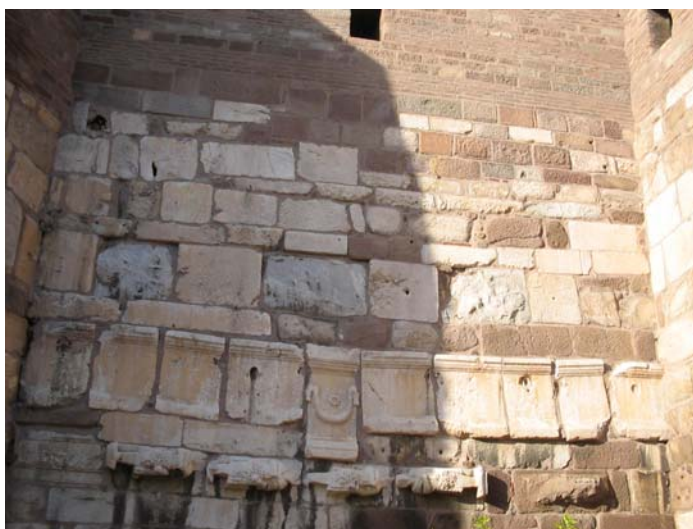


Figure 143. South Curtain 4



Figure 144. South Curtain 4, pedestal





Figure 145. Bastion, Face 6



Figure 146. Bastion, Face 6



Figure 147. West Tower 15



Figure 148. East Curtain 1



Figure 149. Bastion Face 5



Figure 150. Bastion, Face 4





Figure 151. Bastion, Face 3



Figure 152. Andesite



Figure 153. Basalt



Figure 154. West Tower 15



Figure 155. West Tower 6



Figure 156. West Tower 15





Figure 157. West Curtain 15



Figure 158. West Curtain 15





Figure 159. West Tower 15



Figure 160. West Curtain 15



Figure 161. West Curtain 13



Figure 162. West Tower 6



Figure 163. West Curtain 12

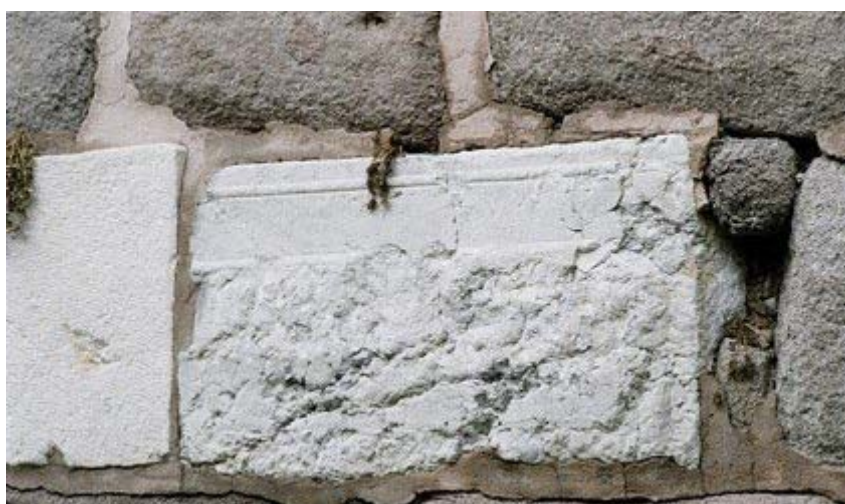


Figure 164. West Tower 14





Figure 165. Bastion



Figure 166. West Tower 17

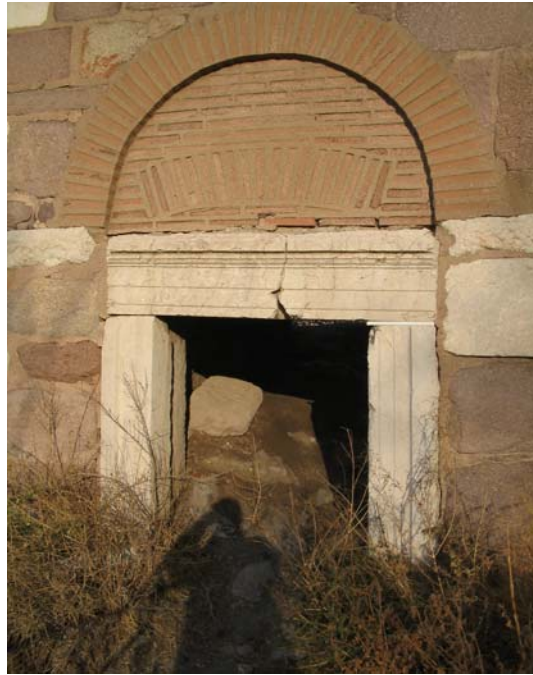


Figure 167. Postern

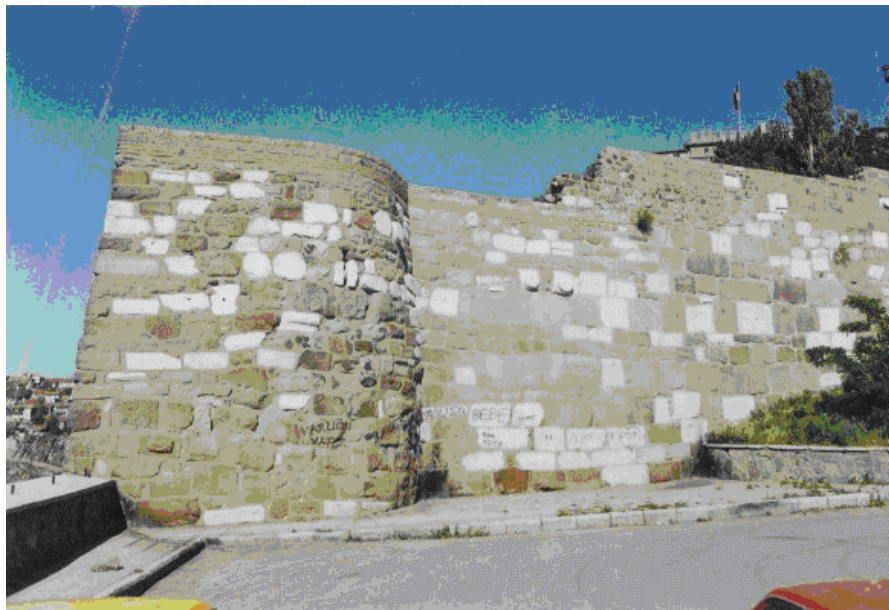


Figure 168. West Curtain 18



Figure 169. West Tower 16



Figure 170. West Tower 14





Figure 171. West Curtain 14



Figure 172. West Curtain 13





Figure 173. West Tower 13



Figure 174. West Curtain 11, West Tower 11



Figure 175. West Curtain 7, West Towers 7 and 6

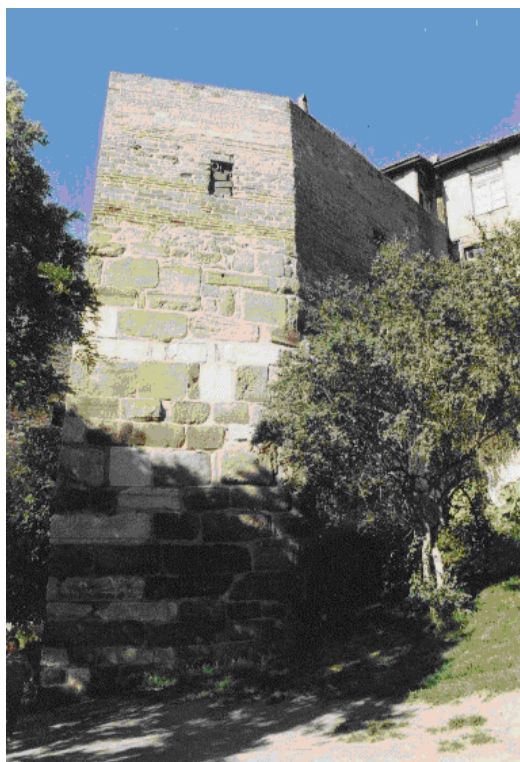


Figure 176. West Tower 5

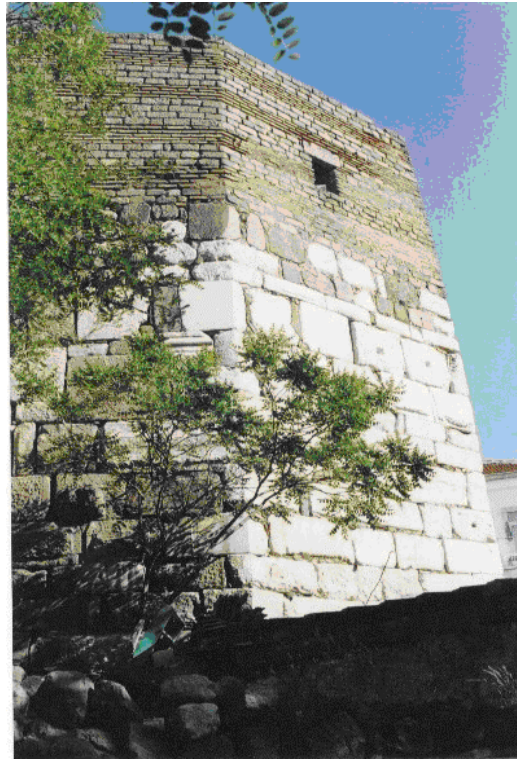


Figure 177. South-West Tower 1, View from the west



Figure 178. South Tower 2, South Curtain 2





Figure 179. South Curtain 2, South Tower 3

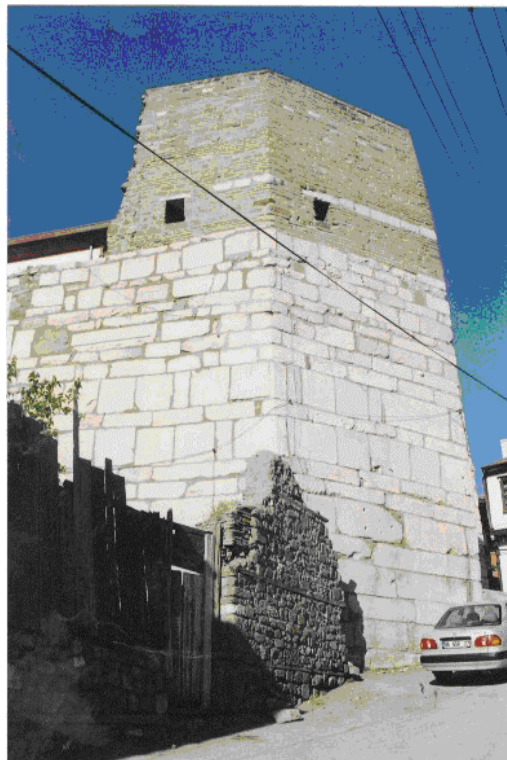


Figure 180. South Tower 4



Figure 181. South Curtain 4, South Tower 5

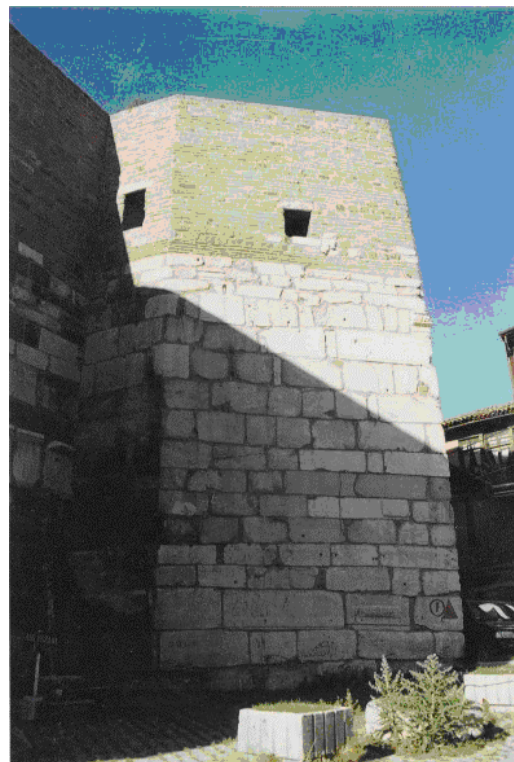


Figure 182. South Tower 5



Figure 183. Parmak Gate



Figure 184. Wall Walk between South Tower 3 and South Tower 4





Figure 185. Wall Walk between South Tower 5 and South Tower 6



Figure 186. Wall Walk between South Tower 3 and South Tower 4





Figure 187. South Tower 3, interior



Figure 188. South Tower 3, interior, masonry



Figure 189. South Tower 3, window, interior



Figure 190. South Tower 3, interior, masonry



Figure 191. South Tower 3, interior



Figure 192. South Tower 2, window, interior





Figure 193. South Tower 2, window, interior



Figure 194. South Tower 2, interior

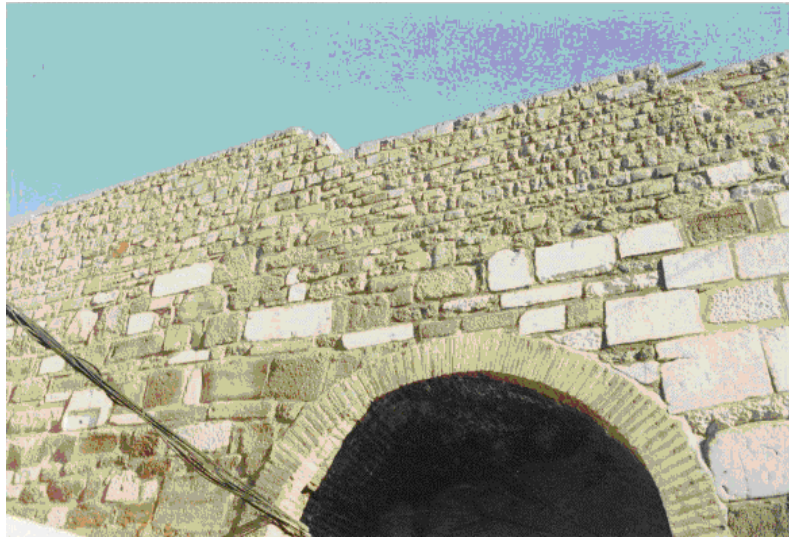


Figure 195. Zindan Gate, interior



Figure 196. Zindan Gate, interior



Figure 197. Bastion, interior



Figure 198. Bastion, interior





Figure 199. Bastion, interior



Figure 200. Bastion, interior





Figure 201. Bastion Face 2, view from the south



Figure 202. Bastion Face 4, view from the south-east

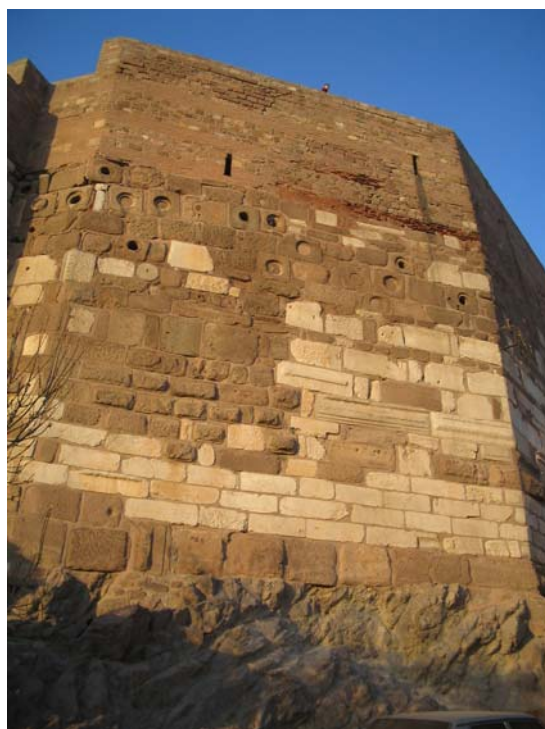


Figure 203. Bastion Face 3, view from the south-east

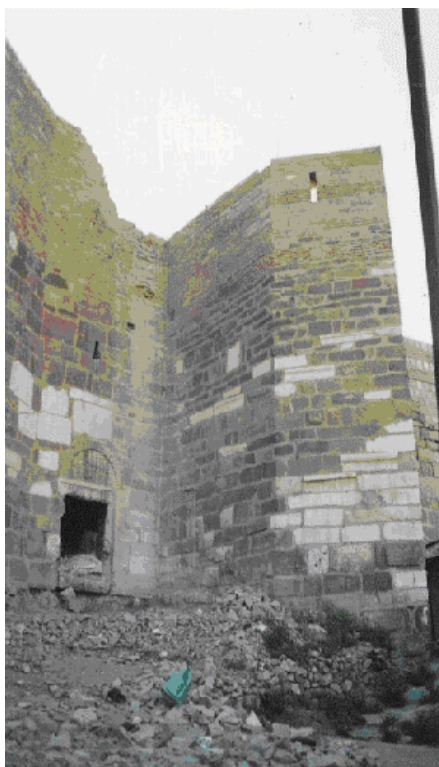


Figure 204. East Curtain 1, East Tower 1



Figure 205. East Tower 2



Figure 206. Towers and curtains between East Tower 2 and East Tower 7





Figure 207. Towers and curtains between East Tower 2 and East Tower 7



Figure 208. Towers and curtains between East Tower 2 and East Tower 7



Figure 209. Towers and curtains between East Tower 2 and East Tower 7



Figure 210. East Towers 7 and 8



Figure 211. East Towers 13 and 14



Figure 212. East Tower 14





Figure 213. Tower1 near Yenişehir Gate



Figure 214. Detail of masonry between Towers 95-96, south



Figure 215. Detail of masonry, Tower 97, south



Figure 216. Detail of masonry, Tower 100



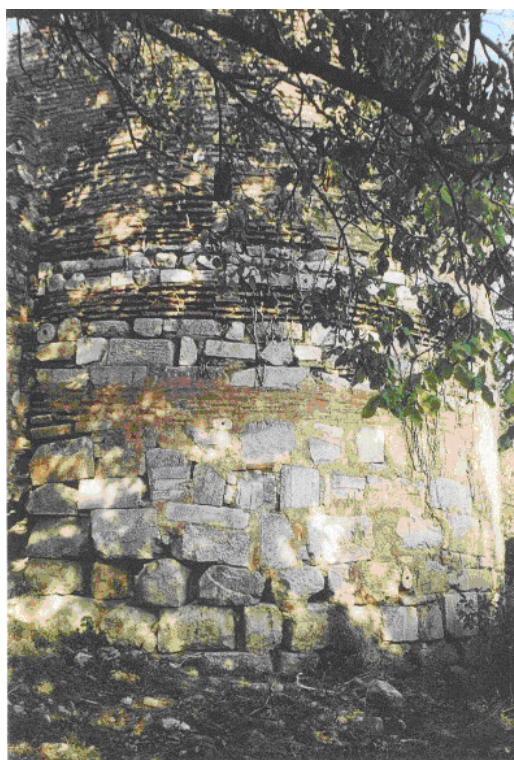


Figure 217. Tower 100



Figure 218. Tower 101



Figure 219. Tower 102



Figure 220. Tower 94



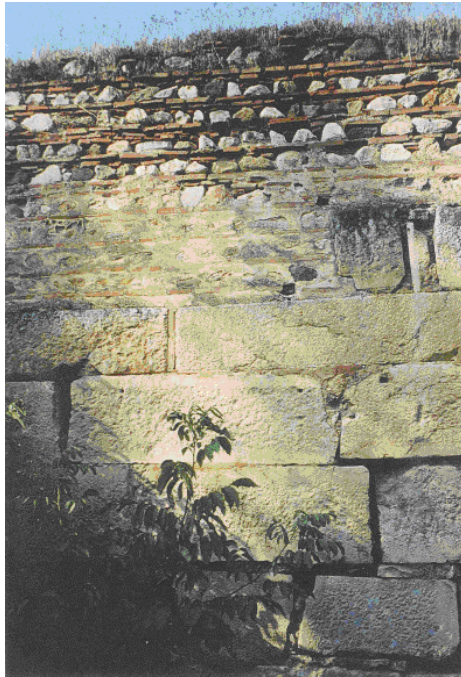


Figure 221. Masonry of wall between Towers 94-95



Figure 222. Masonry of wall between Towers 95-96



Figure 223. Wall between Towers 101-102

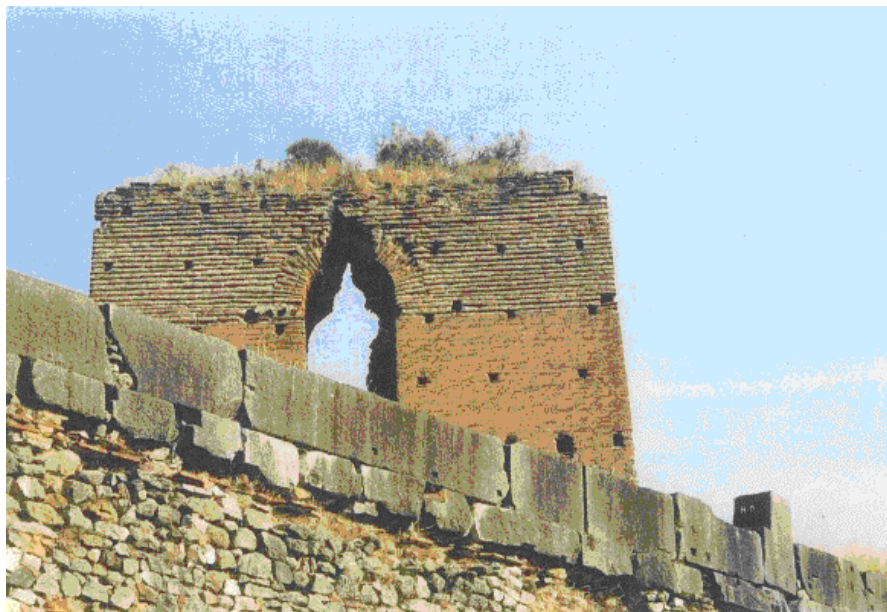


Figure 224. Tower 106 and ballustrade of spoils





Figure 225. Wall between Towers 106-108

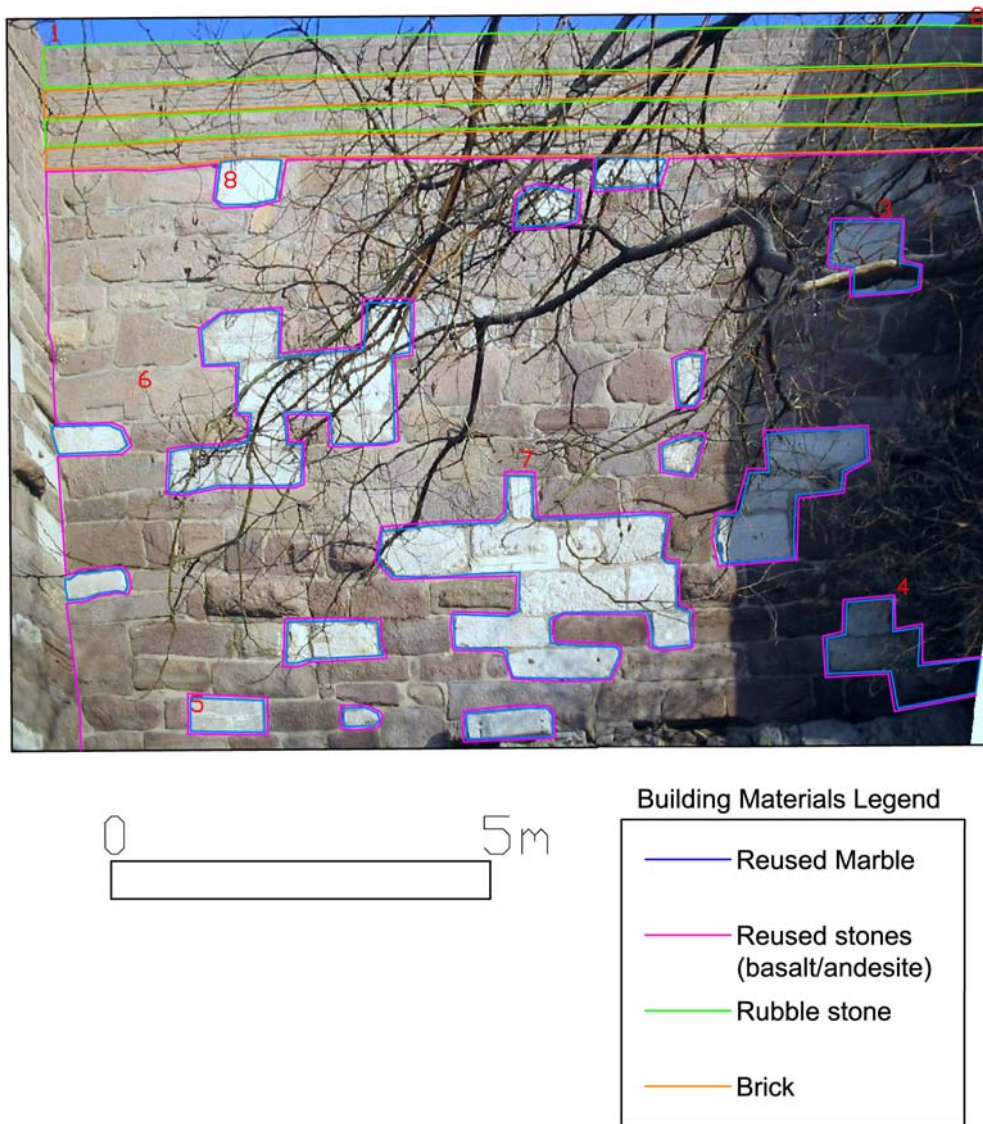


Figure 226. West Curtain 17

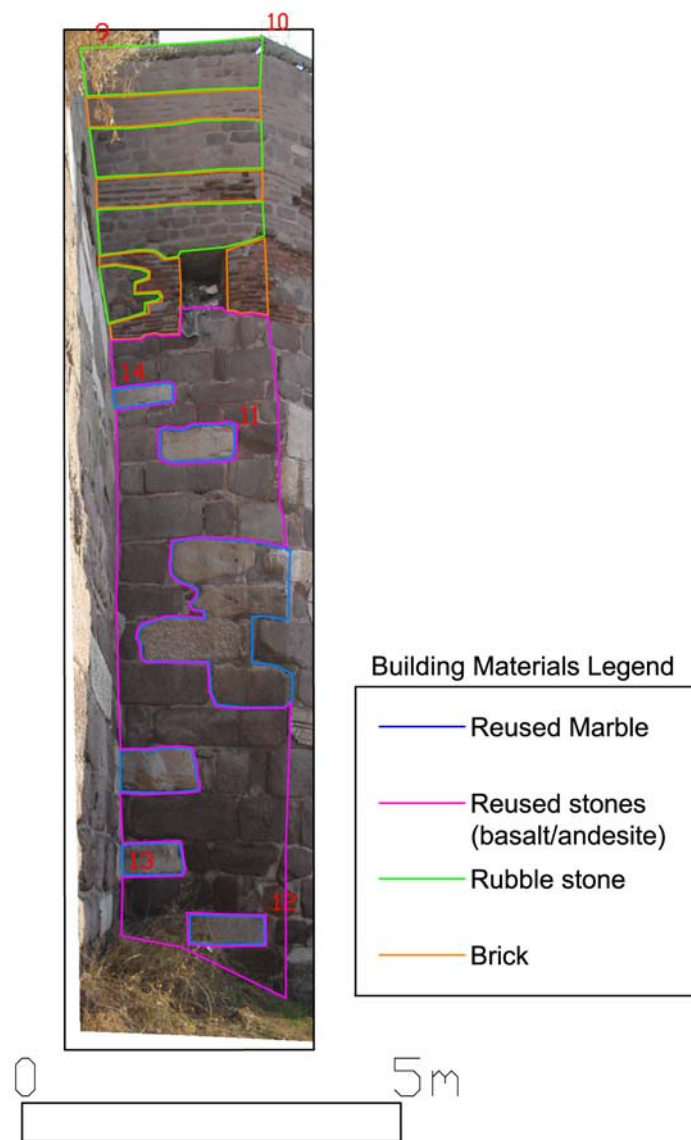


Figure 227 West Tower 16 Face 1

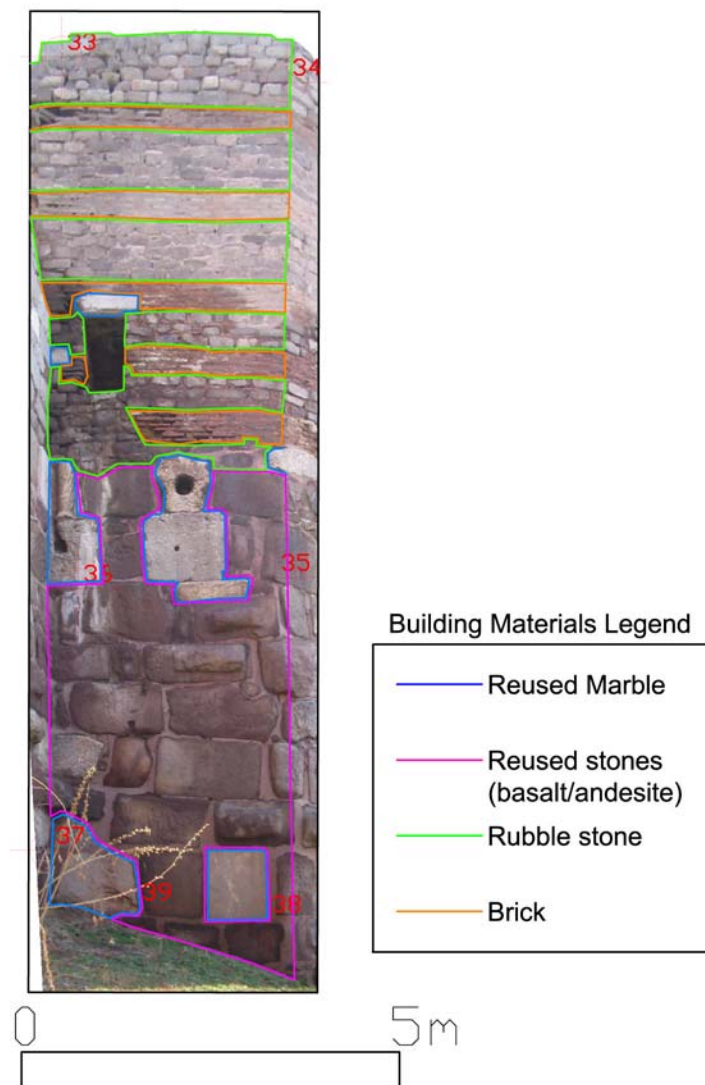


Figure 228. West Tower 13 Face 1

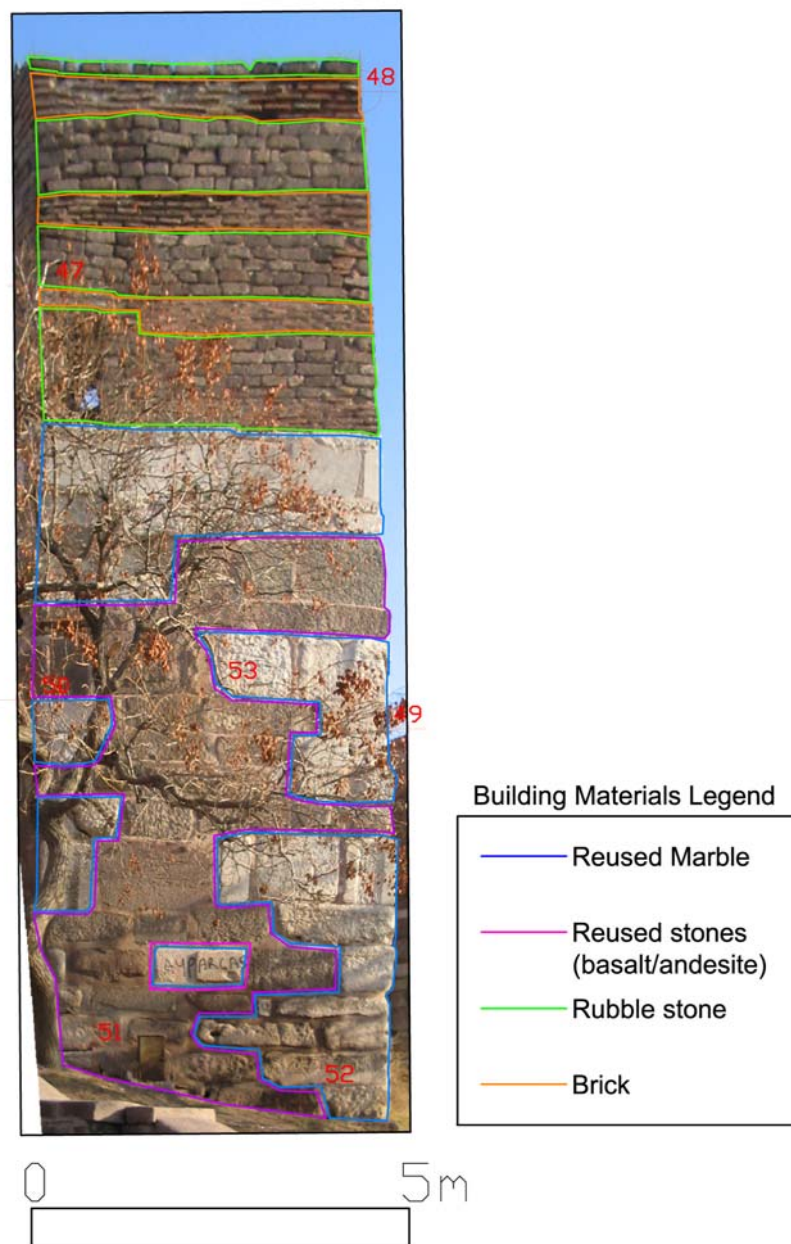


Figure 229. West Tower 12 Face 2



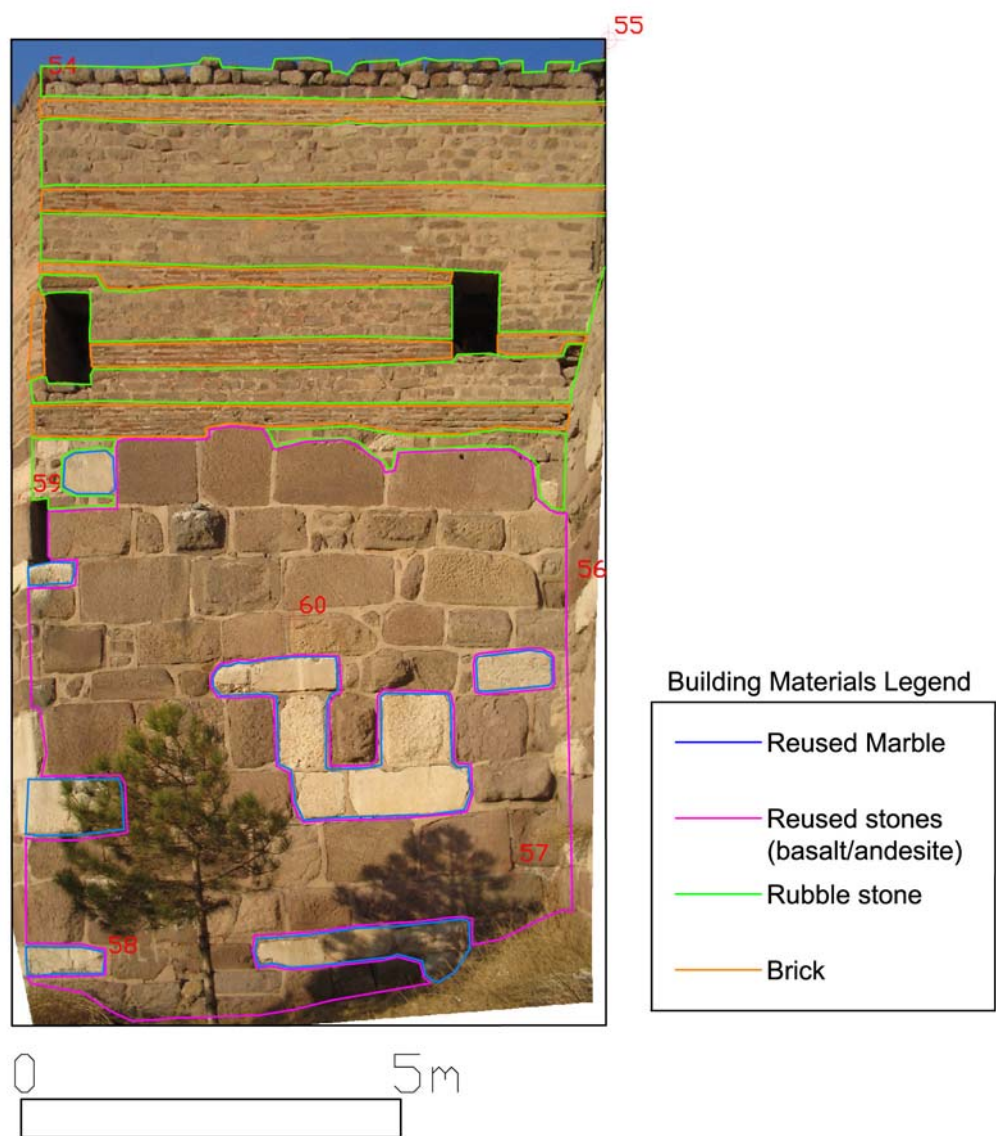


Figure 230. West Tower 11 Face 4



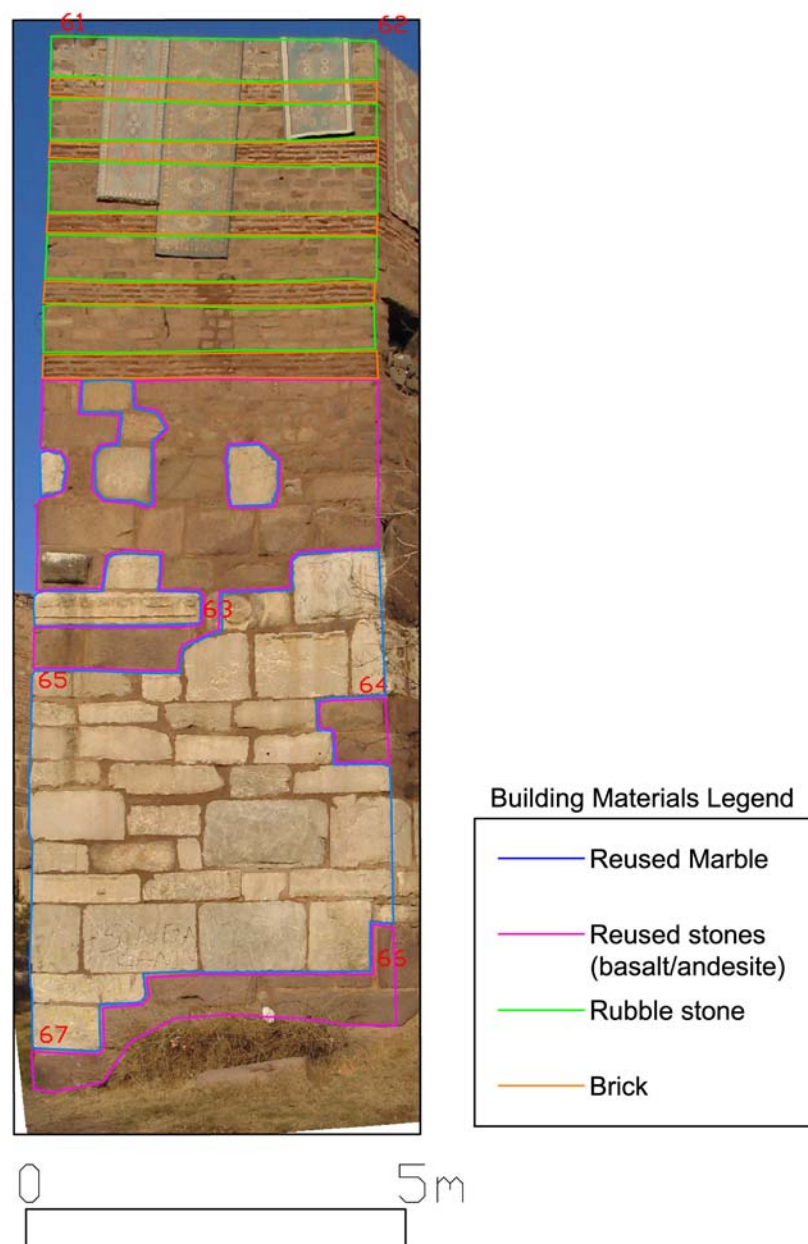


Figure 231. West Tower 10 Face 3

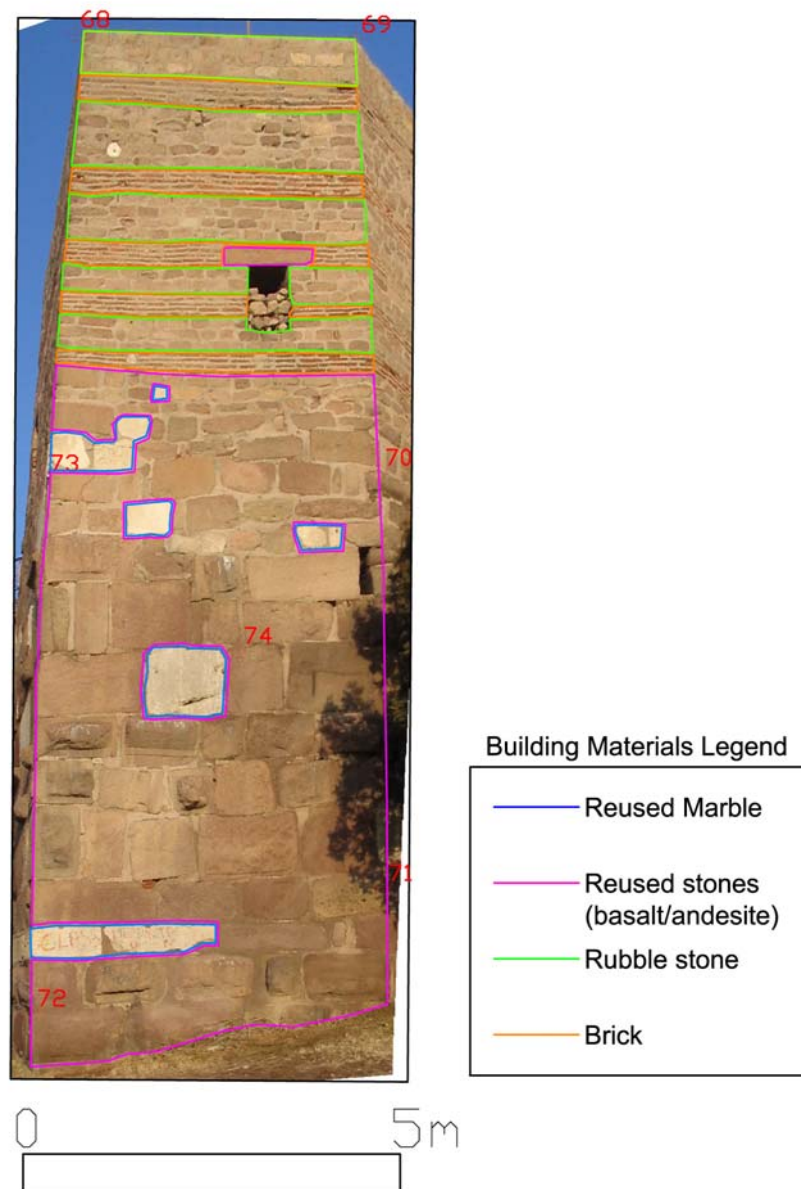


Figure 232. West Tower 9 Face 3

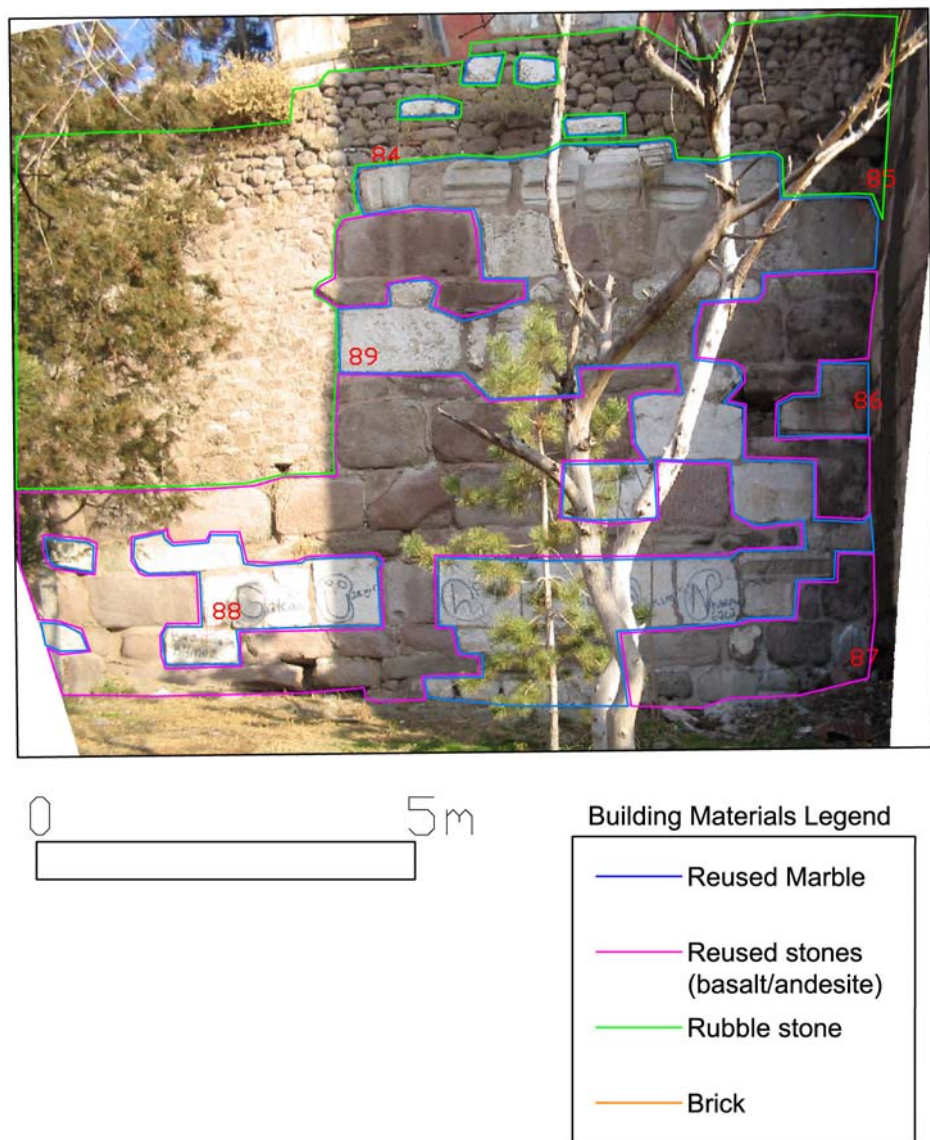


Figure 233. West Curtain 7





0 5m

#### Building Materials Legend

- Reused Marble
- Reused stones (basalt/andesite)
- Rubble stone
- Brick

Figure 234. West Curtain 2

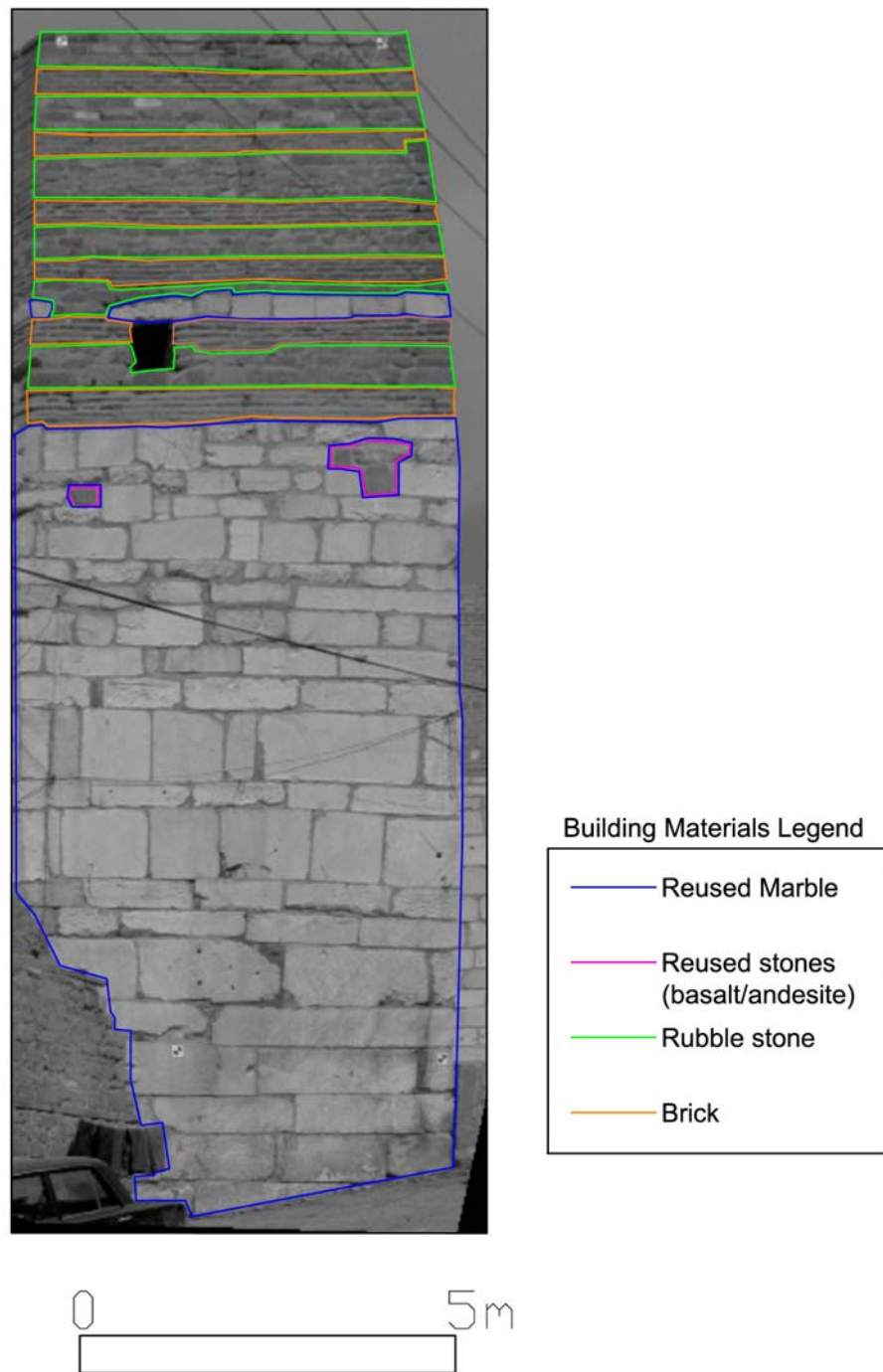


Figure 235. South Tower 4 Face 2

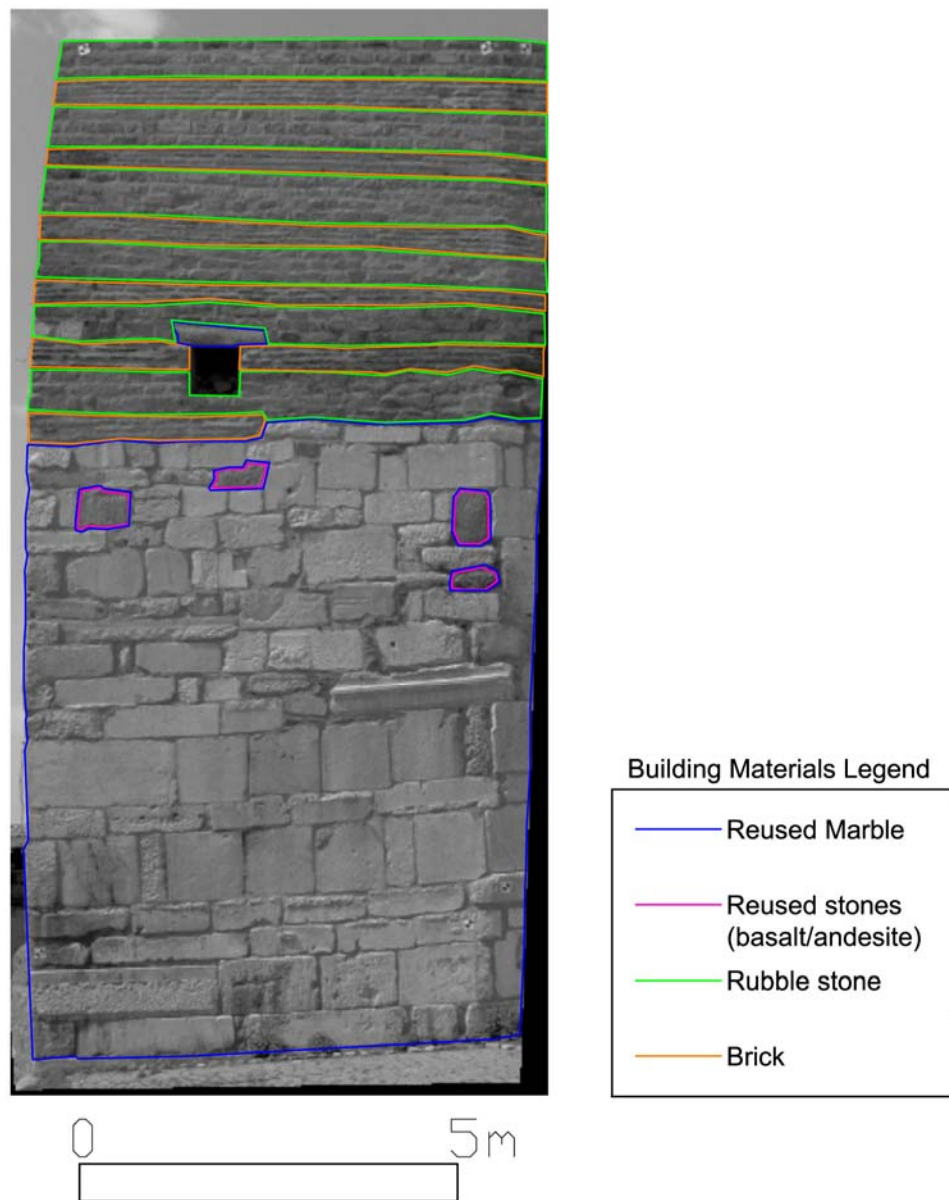


Figure 236. South Tower 4 Face 3



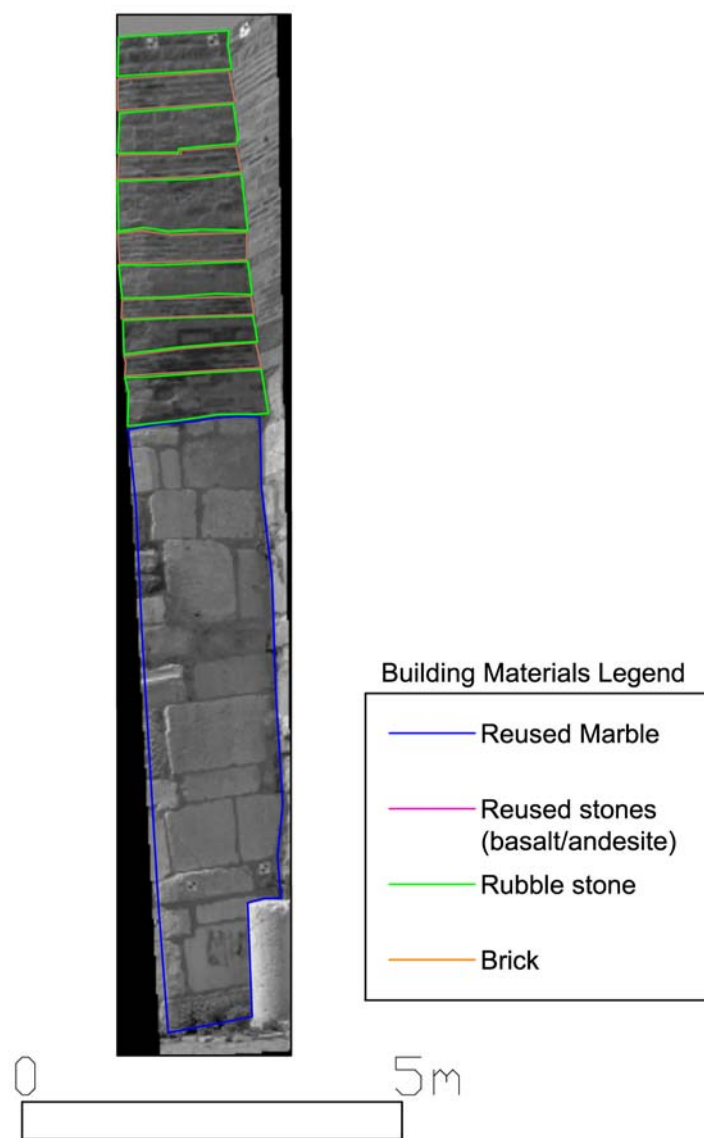


Figure 237. South Tower 4 Face 4

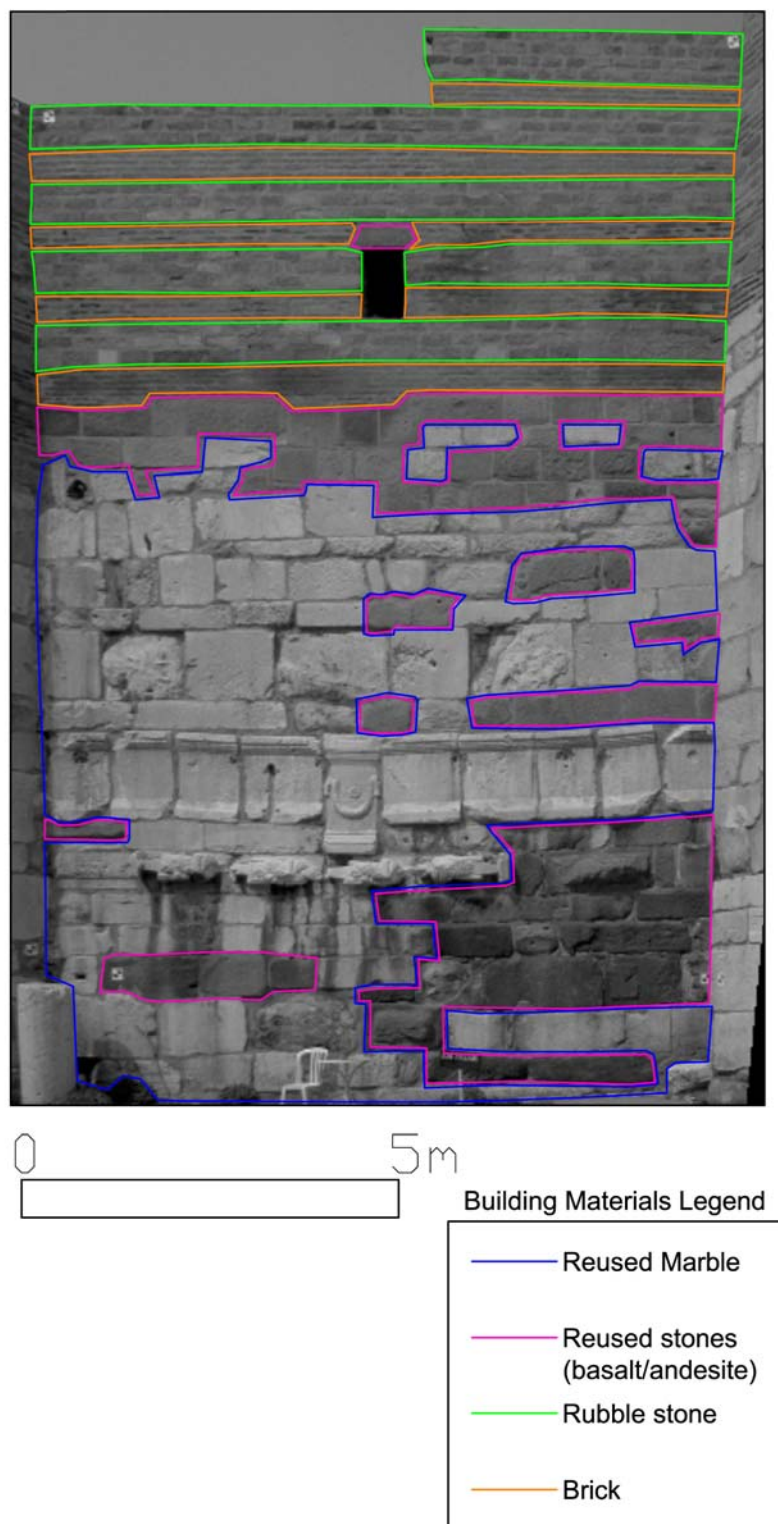


Figure 238. South Curtain 4

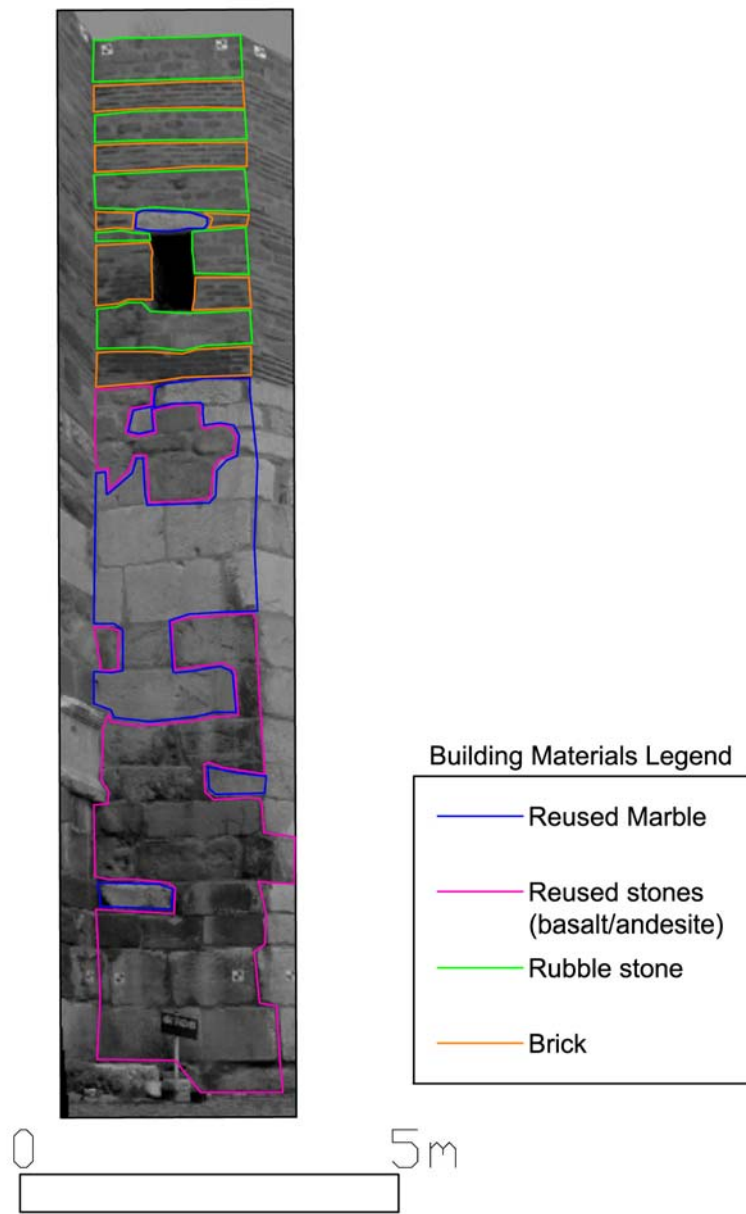


Figure 239. South Tower 5 Face 1

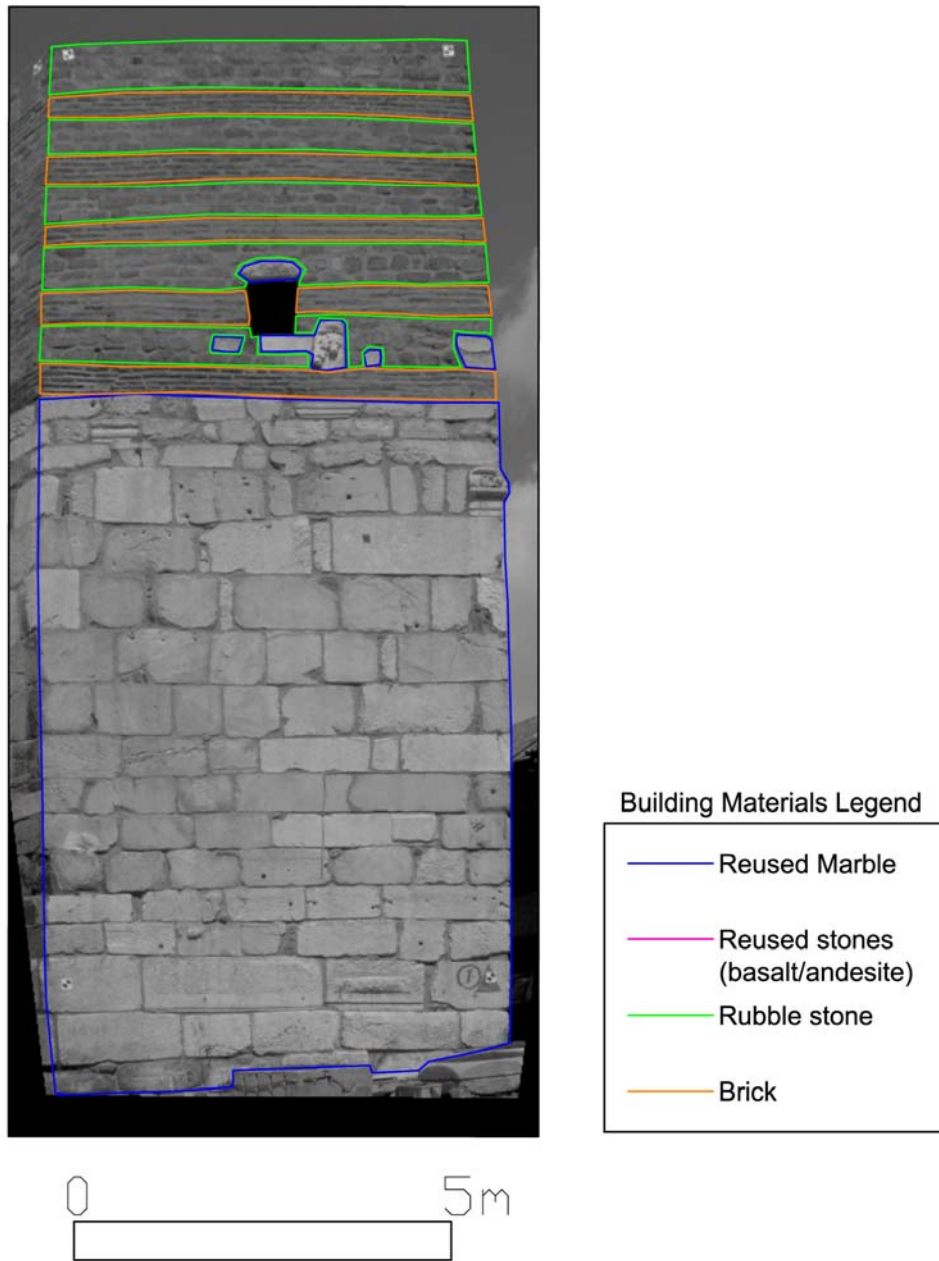


Figure 240. South Tower 5 Face 2



Figure 241. Bastion Face 6

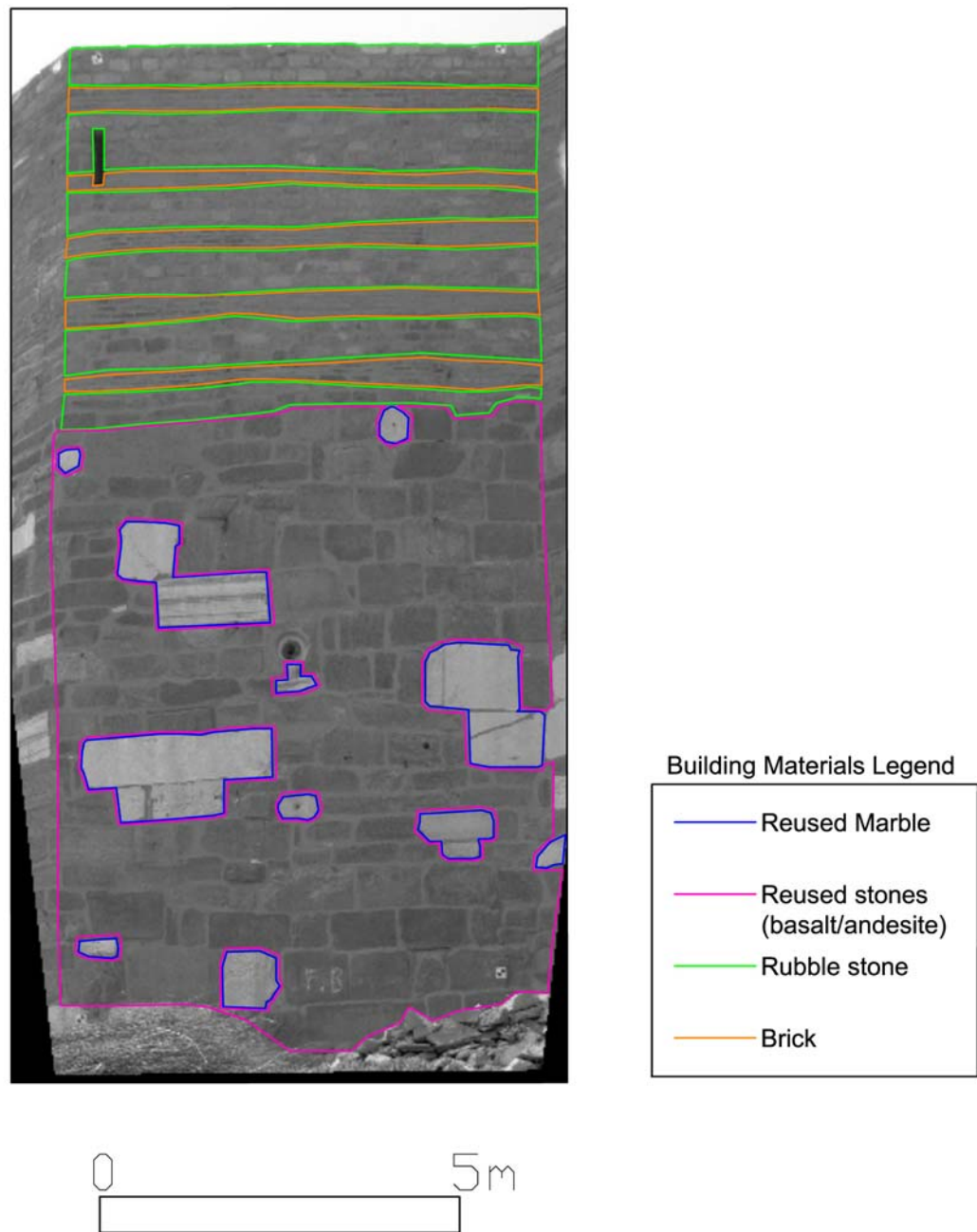


Figure 242. Bastion Face 7



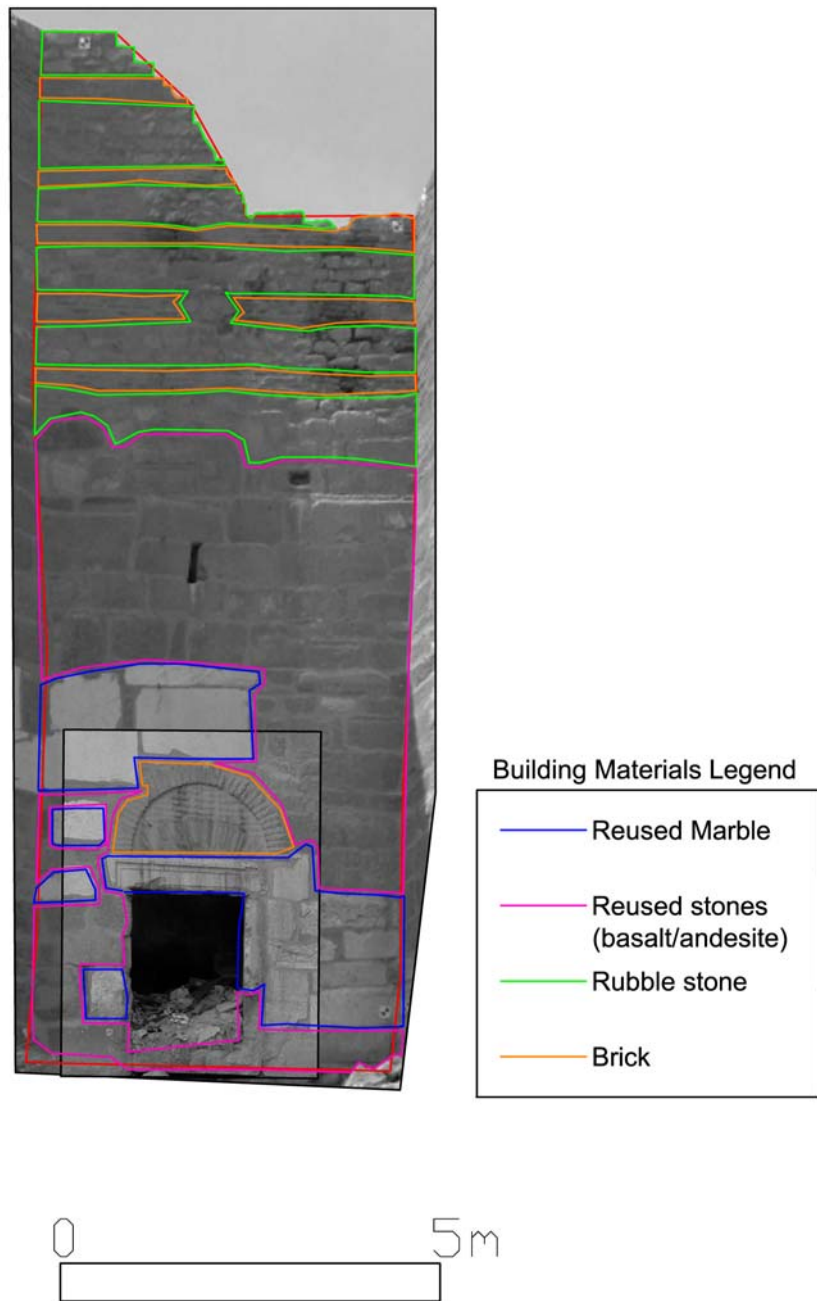


Figure 243. East Curtain 1

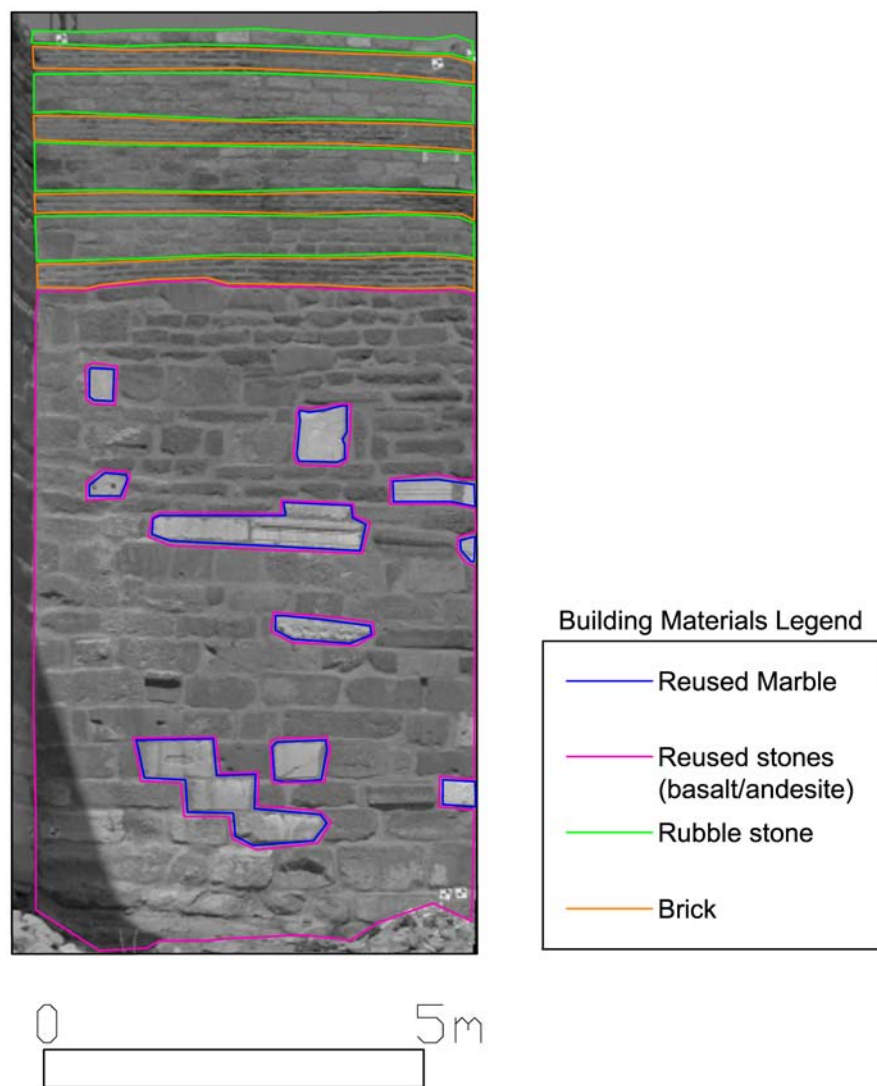


Figure 244. East Tower 1 Face 1

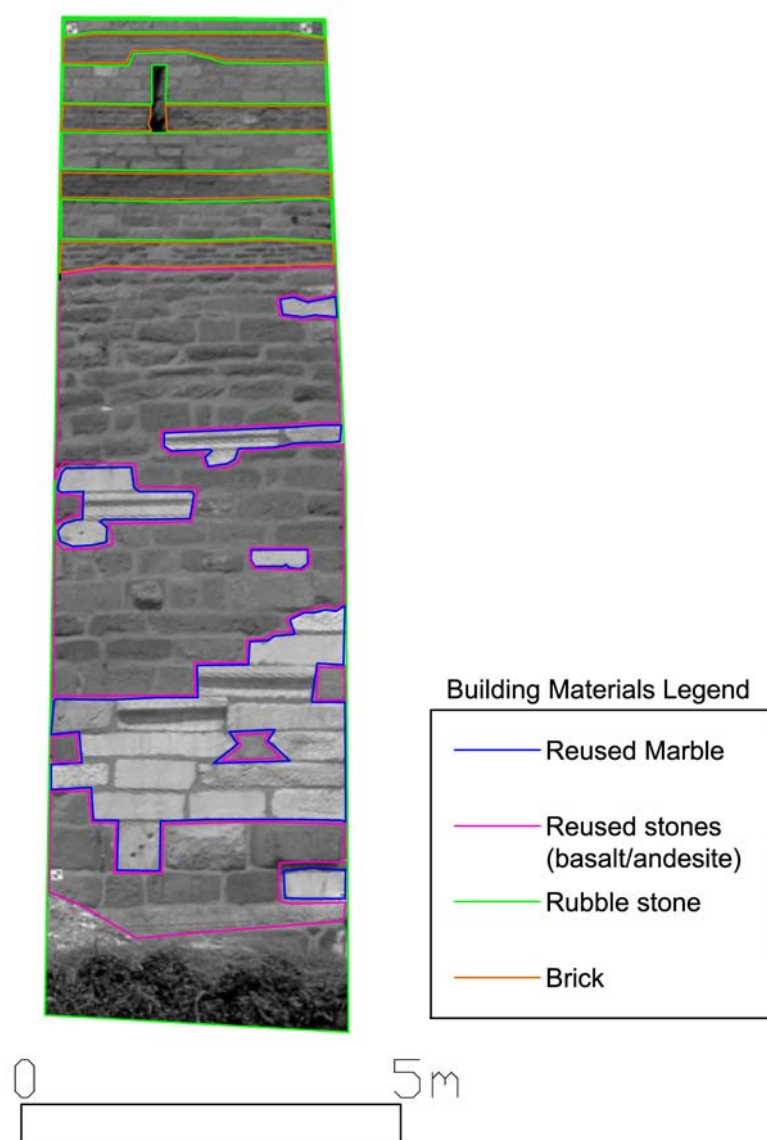


Figure 245. East Tower 1 Face 2

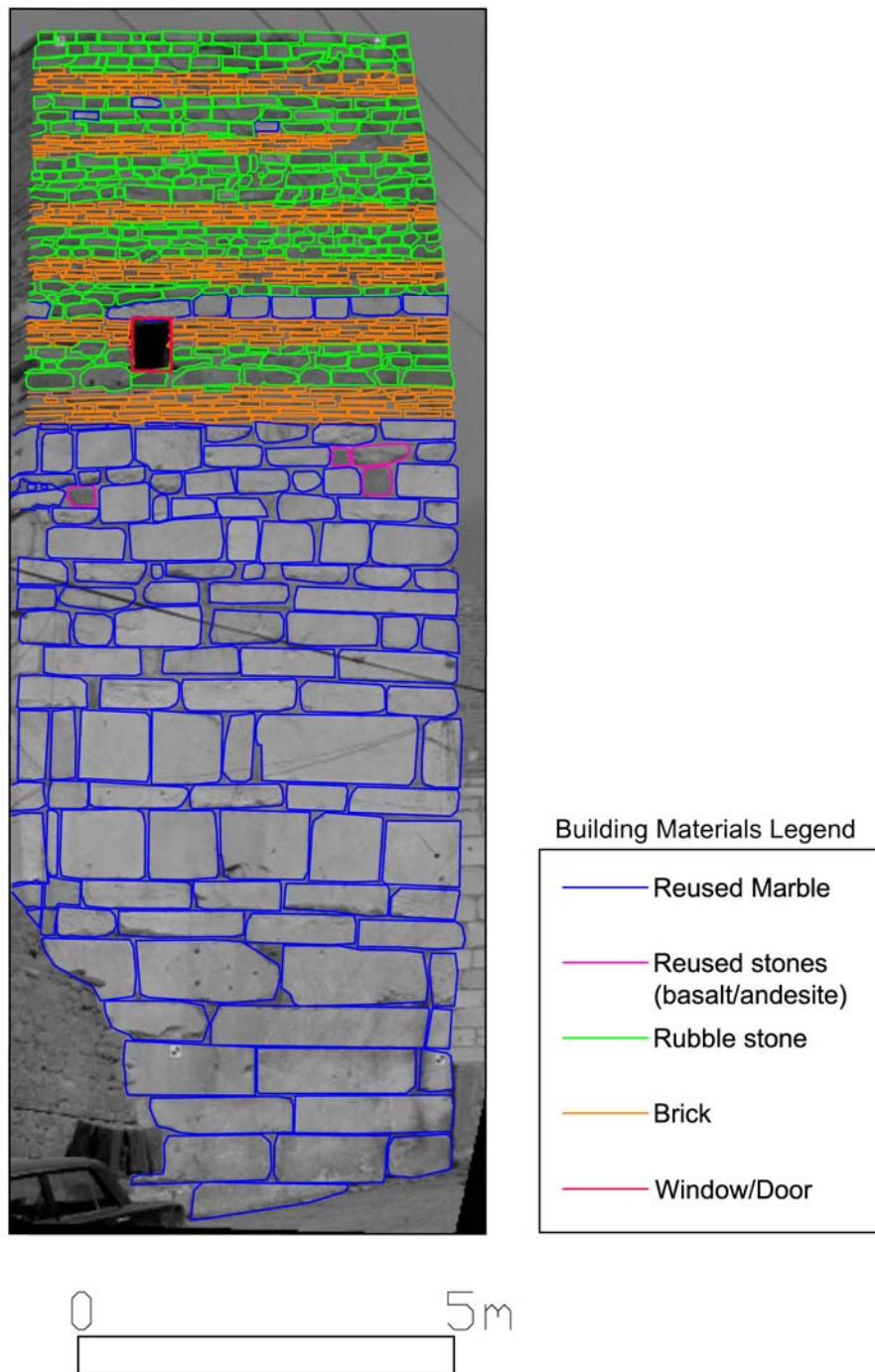


Figure 246. South Tower 4 Face 2

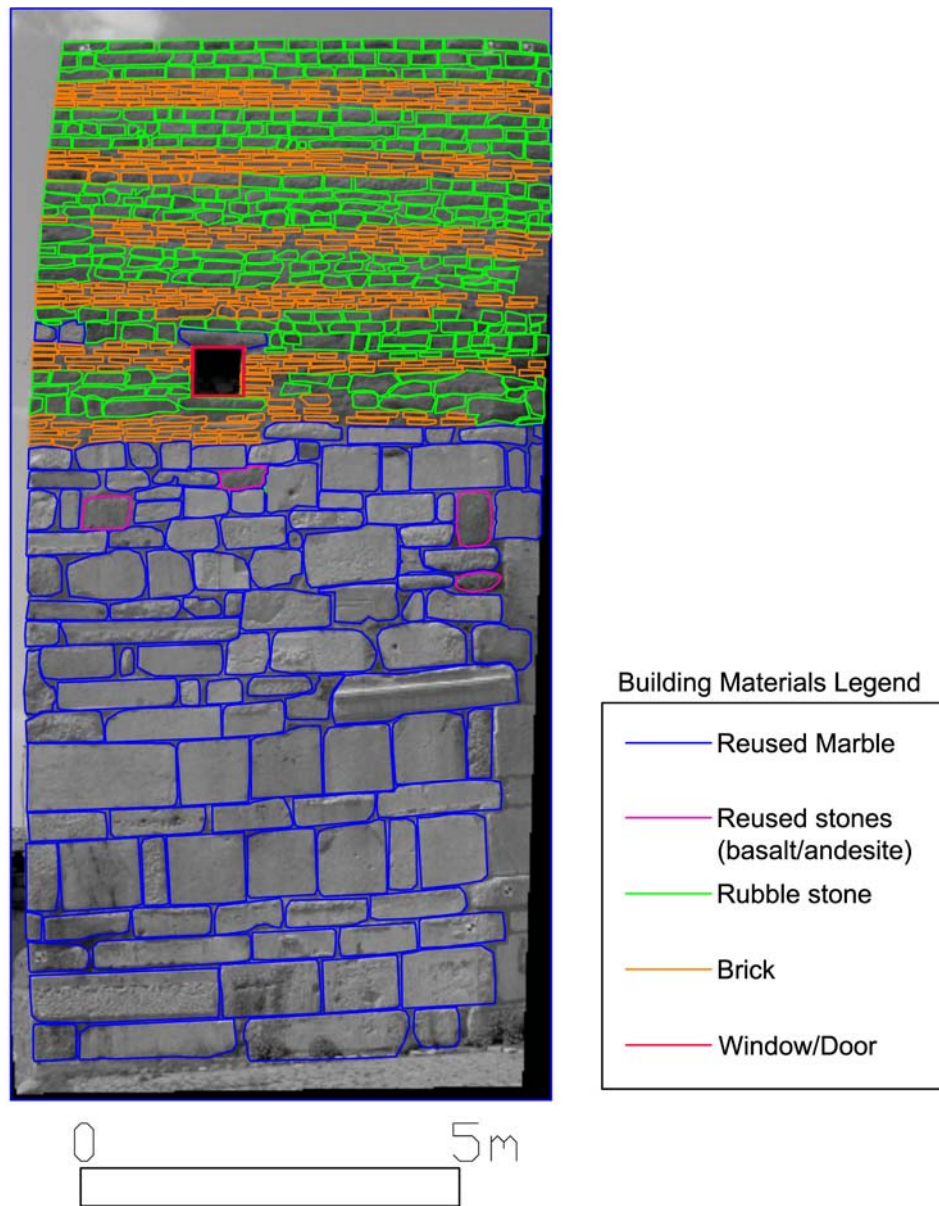


Figure 247. South Tower 4 Face 3

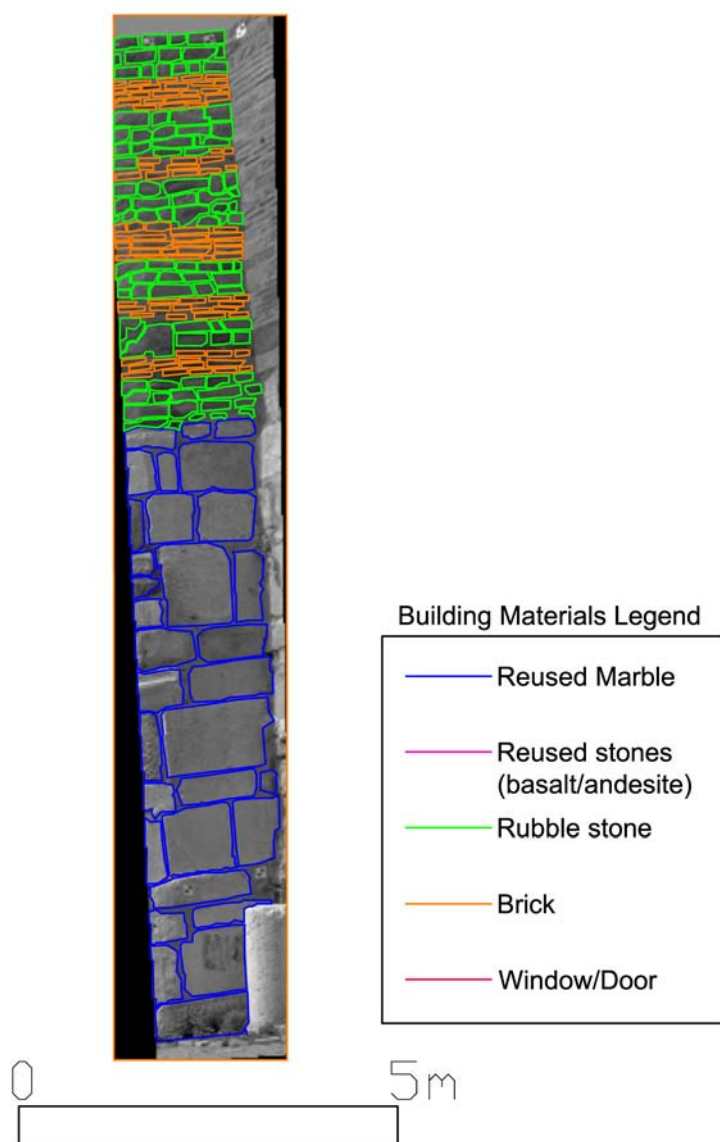
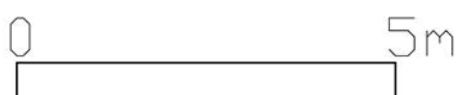


Figure 248. South Tower 4 Face 4





#### Building Materials Legend

- Reused Marble
- Reused stones (basalt/andesite)
- Rubble stone
- Brick
- Window/Door

Figure 249. South Curtain 4

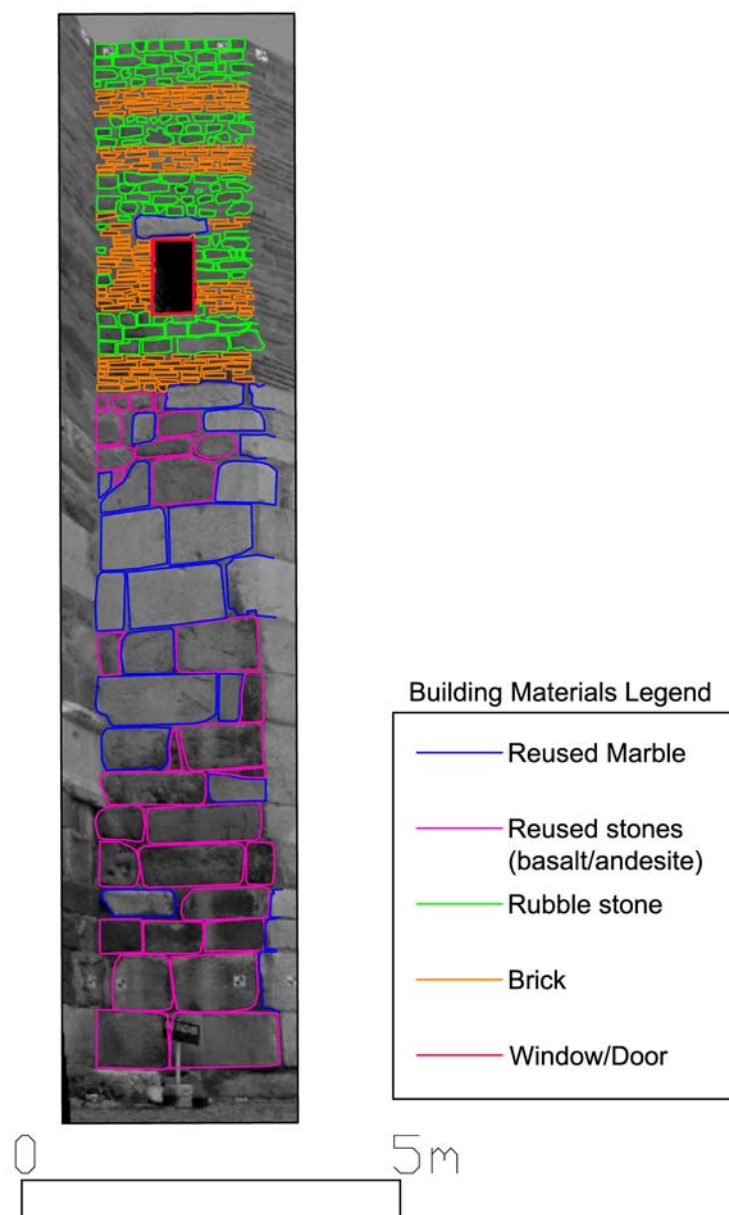


Figure 250. South Tower 5 Face 1

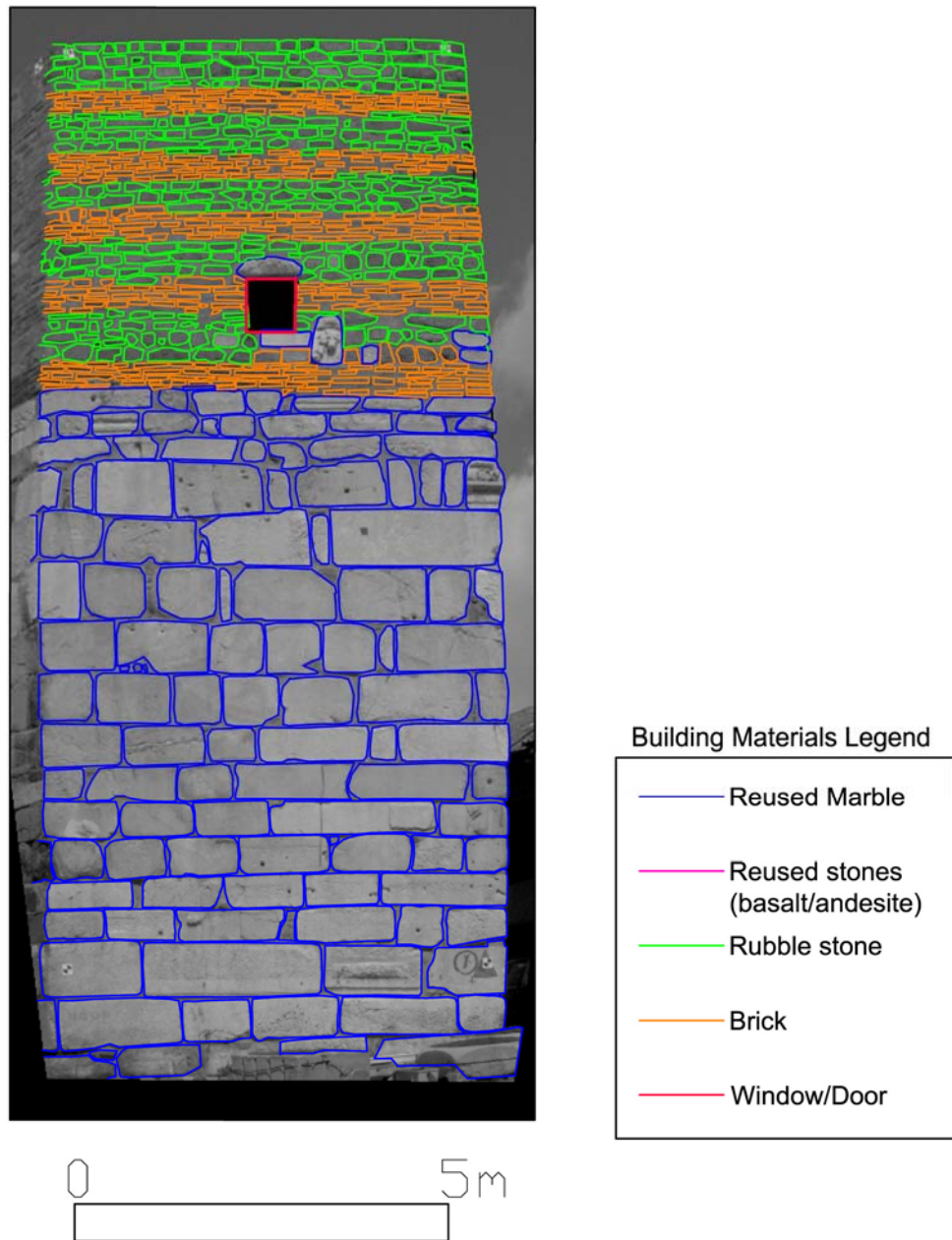
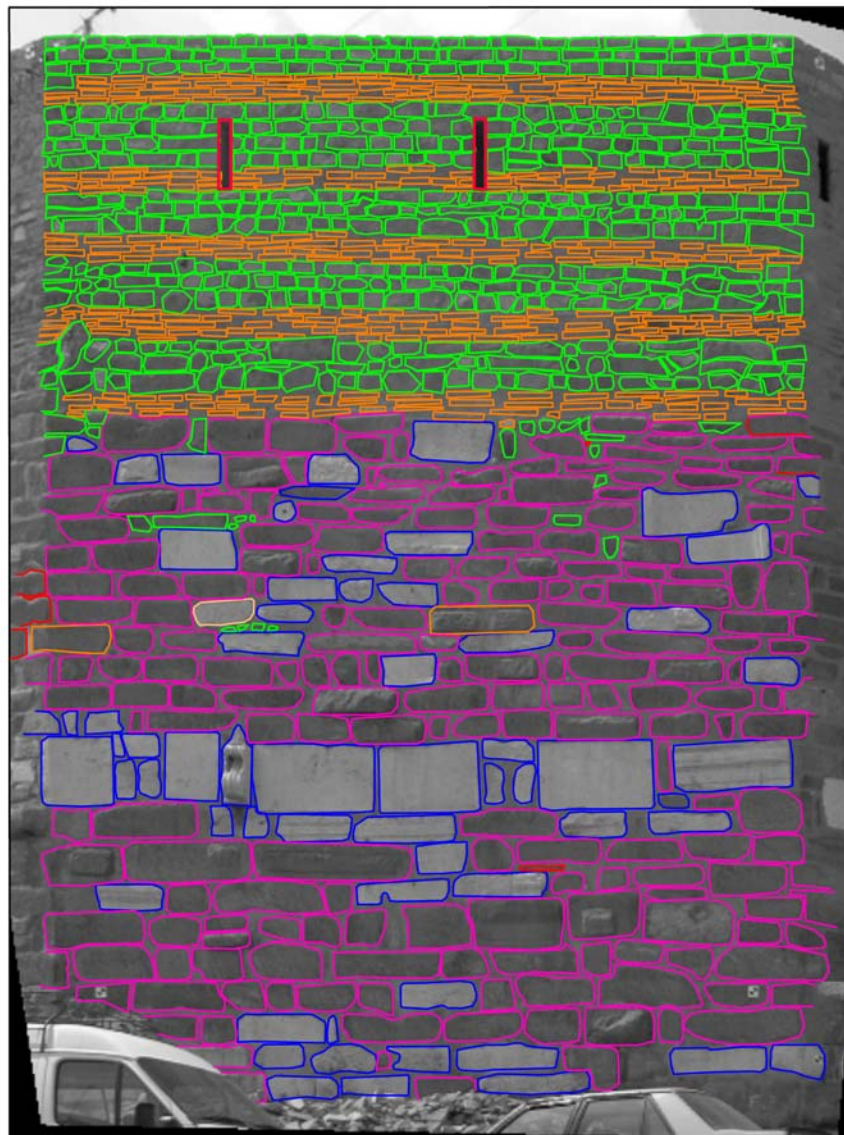


Figure 251. South Tower 5 Face 2



#### Building Materials Legend

- Reused Marble
- Reused stones (basalt/andesite)
- Rubble stone
- Brick
- Window/Door

Figure 252. Bastion Face 6



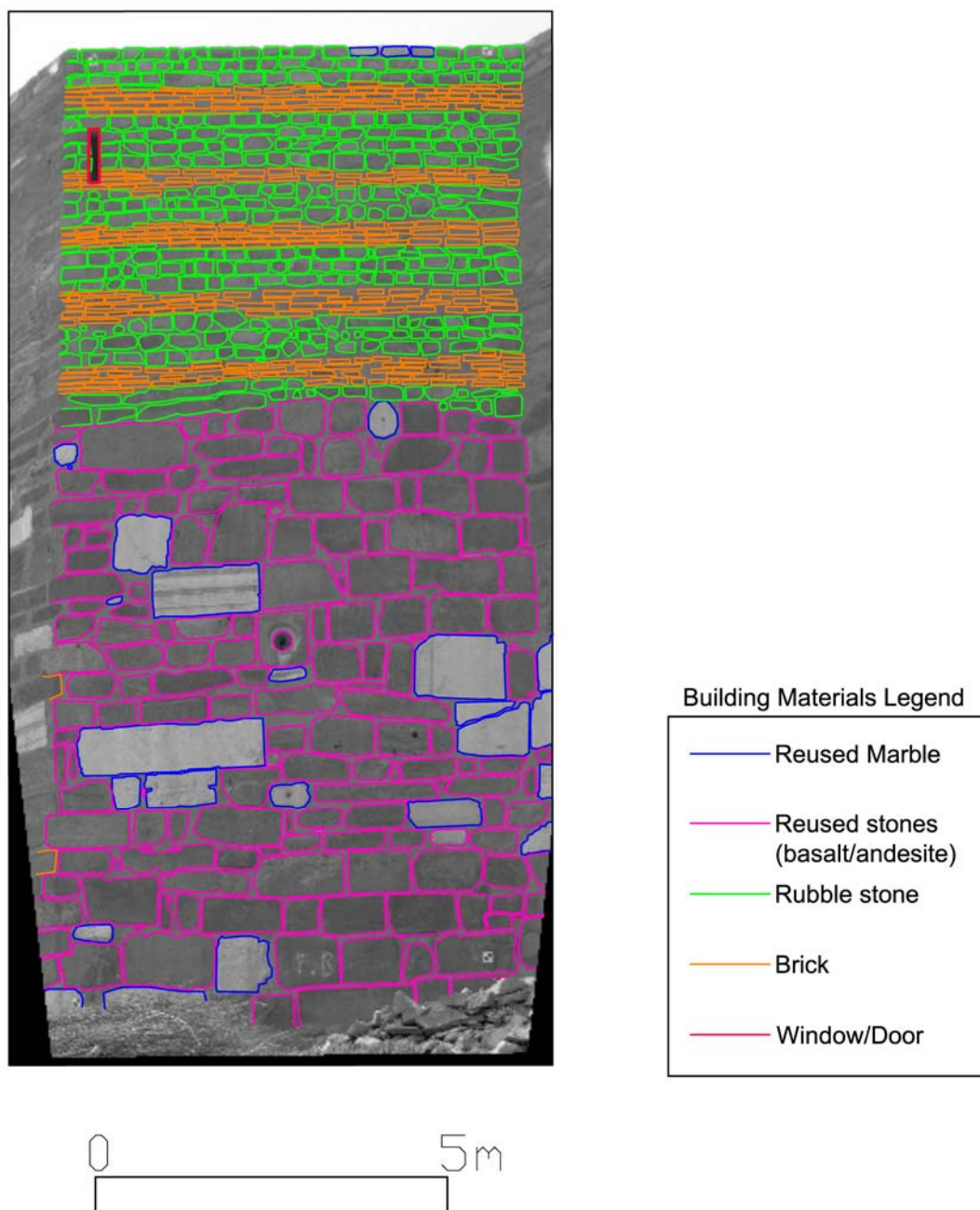


Figure 253. Bastion Face 7

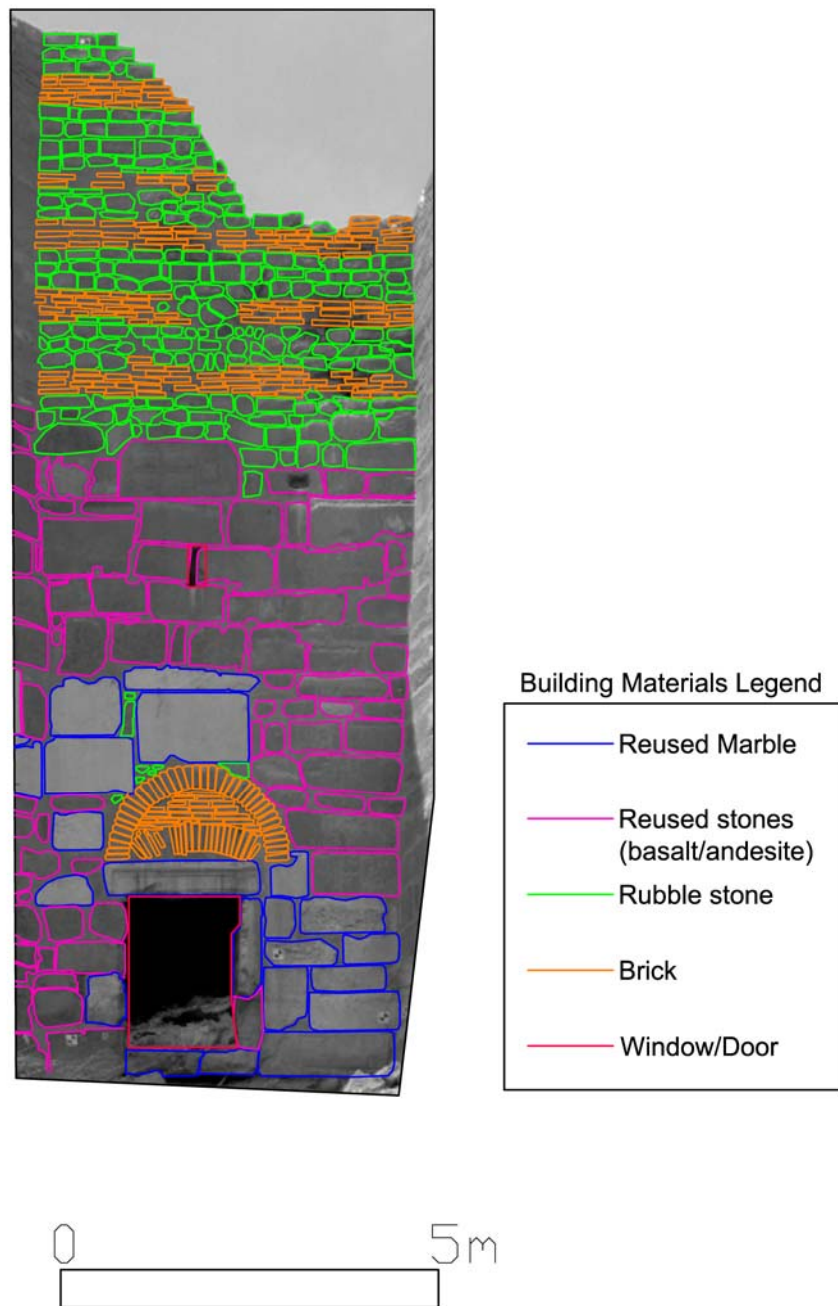


Figure 254. East Curtain 1



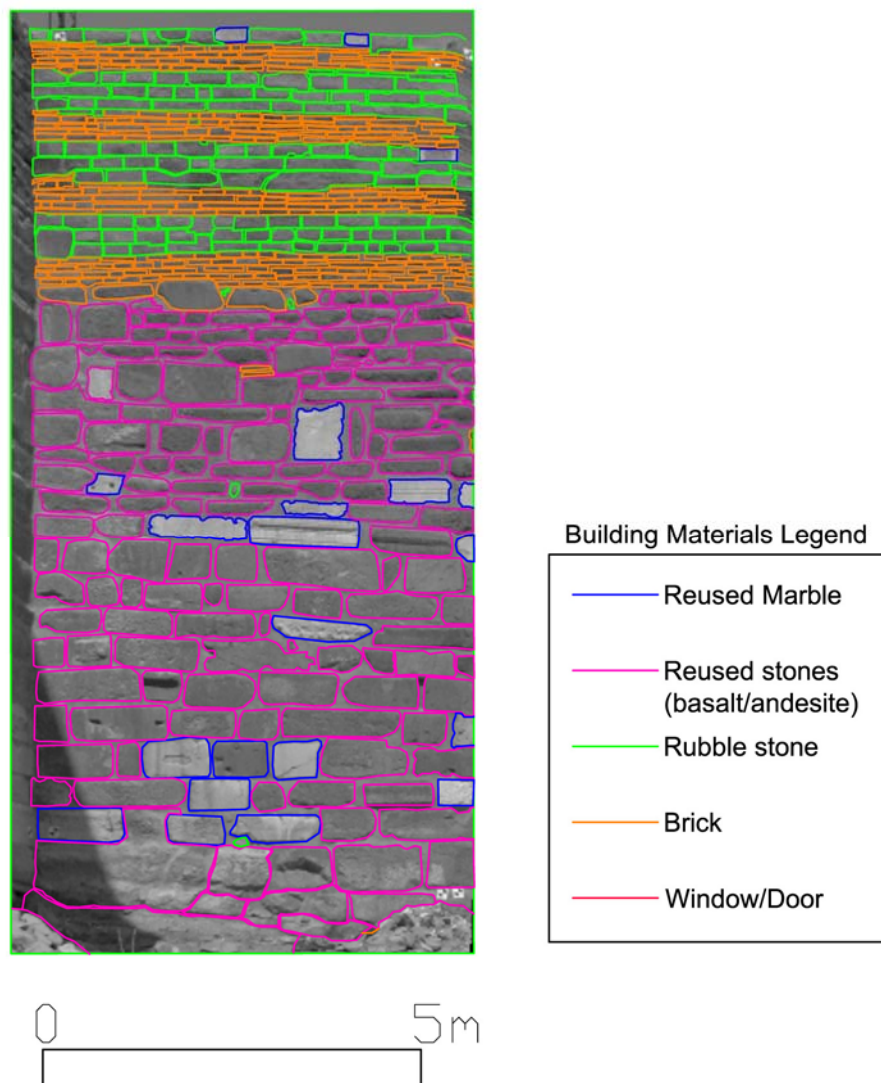


Figure 255. East Tower 1 Face 1

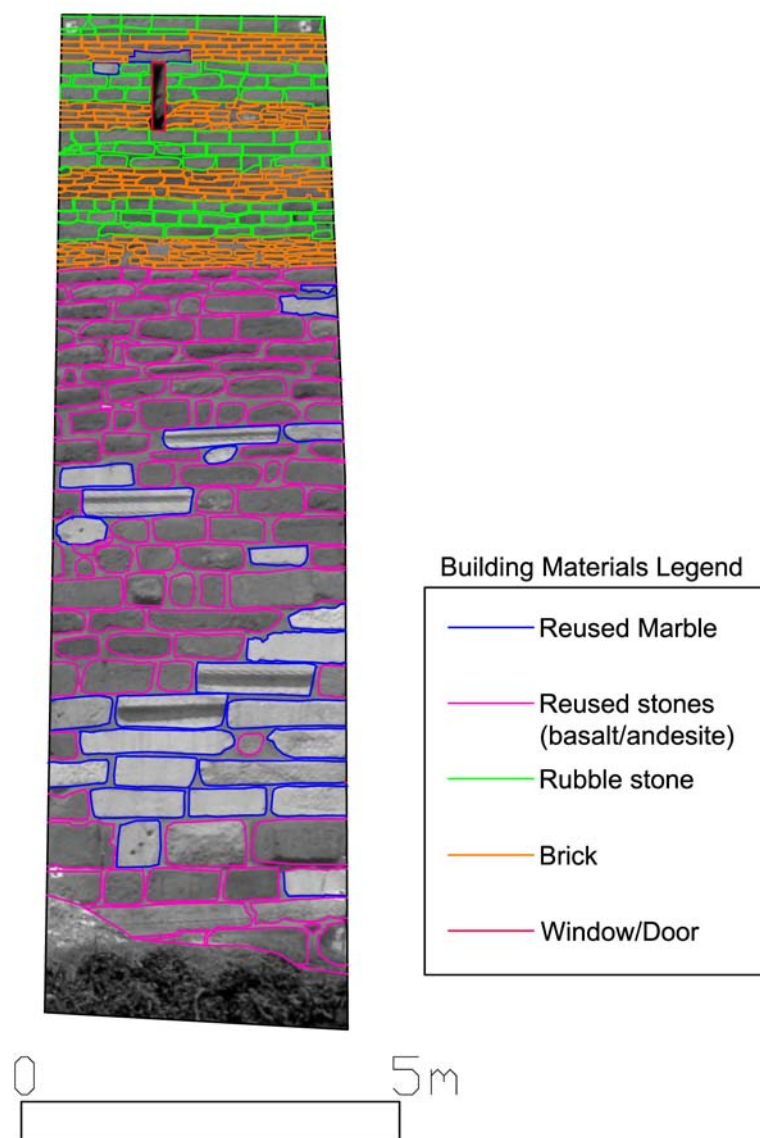


Figure 256. East Tower 1 Face 2

**TABLE 1. TOWERS, CURTAINS AND GATES**

**WEST SIDE**

<u>WT19 F1</u>	<u>West Tower 19 Face 1</u>
<u>WT19 F2</u>	<u>West Tower 19 Face 2</u>
<u>WT19 F3</u>	<u>West Tower 19 Face 3</u>
<u>WT19 F4</u>	<u>West Tower 19 Face 4</u>
<u>WT18 F1</u>	<u>West Tower 18 Face 1</u>
<u>WT18 F2</u>	<u>West Tower 18 Face 2</u>
<u>WT18 F3</u>	<u>West Tower 18 Face 3</u>
<u>WT18 F4</u>	<u>West Tower 18 Face 4</u>
<u>WT17 F1</u>	<u>West Tower 17 Face 1</u>
<u>WT17 F2</u>	<u>West Tower 17 Face 2</u>
<u>WT17 F3</u>	<u>West Tower 17 Face 3</u>
<u>WT17 F4</u>	<u>West Tower 17 Face 4</u>
<u>WT16 F1</u>	<u>West Tower 16 Face 1</u>
<u>WT16 F2</u>	<u>West Tower 16 Face 2</u>
<u>WT16 F3</u>	<u>West Tower 16 Face 3</u>
<u>WT16 F4</u>	<u>West Tower 16 Face 4</u>
<u>WT15 F1</u>	<u>West Tower 15 Face 1</u>
<u>WT15 F2</u>	<u>West Tower 15 Face 2</u>
<u>WT15 F3</u>	<u>West Tower 15 Face 3</u>
<u>WT15 F4</u>	<u>West Tower 15 Face 4</u>
<u>WT14 F1</u>	<u>West Tower 14 Face 1</u>
<u>WT14 F2</u>	<u>West Tower 14 Face 2</u>
<u>WT14 F3</u>	<u>West Tower 14 Face 3</u>
<u>WT14 F4</u>	<u>West Tower 14 Face 4</u>
<u>WT13 F1</u>	<u>West Tower 13 Face 1</u>
<u>WT13 F2</u>	<u>West Tower 13 Face 2</u>
<u>WT13 F3</u>	<u>West Tower 13 Face 3</u>
<u>WT13 F4</u>	<u>West Tower 13 Face 4</u>
<u>WT12 F1</u>	<u>West Tower 12 Face 1</u>

<u>WT12 F2</u>	<u>West Tower 12 Face 2</u>
<u>WT12 F3</u>	<u>West Tower 12 Face 3</u>
<u>WT12 F4</u>	<u>West Tower 12 Face 4</u>
<u>WT11 F1</u>	<u>West Tower 11 Face 1</u>
<u>WT11 F2</u>	<u>West Tower 11 Face 2</u>
<u>WT11 F3</u>	<u>West Tower 11 Face 3</u>
<u>WT11 F4</u>	<u>West Tower 11 Face 4</u>
<u>WT10 F1</u>	<u>West Tower 10 Face 1</u>
<u>WT10 F2</u>	<u>West Tower 10 Face 2</u>
<u>WT10 F3</u>	<u>West Tower 10 Face 3</u>
<u>WT10 F4</u>	<u>West Tower 10 Face 4</u>
<u>WT9 F1</u>	<u>West Tower 9 Face 1</u>
<u>WT9 F2</u>	<u>West Tower 9 Face 2</u>
<u>WT9 F3</u>	<u>West Tower 9 Face 3</u>
<u>WT9 F4</u>	<u>West Tower 9 Face 4</u>
<u>WT8 F1</u>	<u>West Tower 8 Face 1</u>
<u>WT8 F2</u>	<u>West Tower 8 Face 2</u>
<u>WT8 F3</u>	<u>West Tower 8 Face 3</u>
<u>WT8 F4</u>	<u>West Tower 8 Face 4</u>
<u>WT7 F1</u>	<u>West Tower 7 Face 1</u>
<u>WT7 F2</u>	<u>West Tower 7 Face 2</u>
<u>WT7 F3</u>	<u>West Tower 7 Face 3</u>
<u>WT7 F4</u>	<u>West Tower 7 Face 4</u>
<u>WT6 F1</u>	<u>West Tower 6 Face 1</u>
<u>WT6 F2</u>	<u>West Tower 6 Face 2</u>
<u>WT6 F3</u>	<u>West Tower 6 Face 3</u>
<u>WT6 F4</u>	<u>West Tower 6 Face 4</u>
<u>WT5 F1</u>	<u>West Tower 5 Face 1</u>
<u>WT5 F2</u>	<u>West Tower 5 Face 2</u>
<u>WT5 F3</u>	<u>West Tower 5 Face 3</u>
<u>WT5 F4</u>	<u>West Tower 5 Face 4</u>
<u>WT4 F1</u>	<u>West Tower 4 Face 1</u>

<u>WT4 F2</u>	<u>West Tower 4 Face 2</u>
<u>WT4 F3</u>	<u>West Tower 4 Face 3</u>
<u>WT4 F4</u>	<u>West Tower 4 Face 4</u>
<u>WT3 F1</u>	<u>West Tower 3 Face 1</u>
<u>WT3 F2</u>	<u>West Tower 3 Face 2</u>
<u>WT3 F3</u>	<u>West Tower 3 Face 3</u>
<u>WT3 F4</u>	<u>West Tower 3 Face 4</u>
<u>WT2 F1</u>	<u>West Tower 2 Face 1</u>
<u>WT2 F2</u>	<u>West Tower 2 Face 2</u>
<u>WT2 F3</u>	<u>West Tower 2 Face 3</u>
<u>WT2 F4</u>	<u>West Tower 2 Face 4</u>

#### **SOUTH SIDE**

<u>SWT1 F1</u>	<u>South-West Tower 1 Face 1</u>
<u>SWT1 F2</u>	<u>South-West Tower 1 Face 2</u>
<u>SWT1 F3</u>	<u>South-West Tower 1 Face 3</u>
<u>SWT1 F4</u>	<u>South-West Tower 1 Face 4</u>
<u>ST2 F1</u>	<u>South Tower 2 Face 1</u>
<u>ST2 F2</u>	<u>South Tower 2 Face 2</u>
<u>ST2 F3</u>	<u>South Tower 2 Face 3</u>
<u>ST2 F4</u>	<u>South Tower 2 Face 4</u>
<u>ST3 F1</u>	<u>South Tower 3 Face 1</u>
<u>ST3 F2</u>	<u>South Tower 3 Face 2</u>
<u>ST3 F3</u>	<u>South Tower 3 Face 3</u>
<u>ST 3 F4</u>	<u>South Tower 3 Face 4</u>
<u>ST4 F1</u>	<u>South tower 4 Face 1</u>
<u>ST4 F2</u>	<u>South tower 4 Face 2</u>
<u>ST4 F3</u>	<u>South tower 4 Face 3</u>
<u>ST4 F4</u>	<u>South tower 4 Face 4</u>
<u>ST5 F1</u>	<u>South Tower 5 Face 1</u>
<u>ST5 F2</u>	<u>South Tower 5 Face 2</u>
<u>ST5 F3</u>	<u>South Tower 5 Face 3</u>

<u>ST5 F4</u>	<u>South Tower 5 Face 4</u>
<u>G1</u>	<u>Gate 1 (Genç Kapı)</u>
<u>G2</u>	<u>Gate 2 (Parmak Kapı)</u>
<u>G3</u>	<u>Gate 3 (Zindan Kapı)</u>
<u>ST6 F1</u>	<u>South Tower 6 Face 1</u>
<u>ST6 F2</u>	<u>South Tower 6 Face 2</u>
<u>ST6 F3</u>	<u>South Tower 6 Face 3</u>
<u>ST6 F4</u>	<u>South Tower 6 Face 4</u>
<u>ST7 F1</u>	<u>South Tower 7 Face 1</u>
<u>ST7 F2</u>	<u>South Tower 7 Face 2</u>
<u>ST7 F3</u>	<u>South Tower 7 Face 3</u>
<u>ST7 F4</u>	<u>South Tower 7 Face 4</u>
<u>BF1</u>	<u>Bastion Face 1</u>
<u>BF2</u>	<u>Bastion Face 2</u>
<u>BF3</u>	<u>Bastion Face 3</u>
<u>BF4</u>	<u>Bastion Face 4</u>
<u>BF5</u>	<u>Bastion Face 5</u>
<u>BF6</u>	<u>Bastion Face 6</u>
<u>BF7</u>	<u>Bastion Face 7</u>
<b><u>EAST SIDE</u></b>	
<u>ET1 F1</u>	<u>East Tower 1 Face 1</u>
<u>ET1 F2</u>	<u>East Tower 1 Face 2</u>
<u>ET1 F3</u>	<u>East Tower 1 Face 3</u>
<u>ET1 F4</u>	<u>East Tower 1 Face 4</u>
<u>ET2 F1</u>	<u>East Tower 2 Face 1</u>
<u>ET2 F2</u>	<u>East Tower 2 Face 2</u>
<u>ET2 F3</u>	<u>East Tower 2 Face 3</u>
<u>ET2 F4</u>	<u>East Tower 2 Face 4</u>
<u>ET3 F1</u>	<u>East Tower 3 Face 1</u>
<u>ET3 F2</u>	<u>East Tower 3 Face 2</u>
<u>ET3 F3</u>	<u>East Tower 3 Face 3</u>
<u>ET3 F4</u>	<u>East Tower 3 Face 4</u>



<u>ET4 F1</u>	<u>East Tower 4 Face 1</u>
<u>ET4 F2</u>	<u>East Tower 4 Face 2</u>
<u>ET4 F3</u>	<u>East Tower 4 Face 3</u>
<u>ET4 F4</u>	<u>East Tower 4 Face 4</u>
<u>ET5 F1</u>	<u>East Tower 5 Face 1</u>
<u>ET5 F2</u>	<u>East Tower 5 Face 2</u>
<u>ET5 F3</u>	<u>East Tower 5 Face 3</u>
<u>ET5 F4</u>	<u>East Tower 5 Face 4</u>
<u>ET6 F1</u>	<u>East Tower 6 Face 1</u>
<u>ET6 F2</u>	<u>East Tower 6 Face 2</u>
<u>ET6 F3</u>	<u>East Tower 6 Face 3</u>
<u>ET6 F4</u>	<u>East Tower 6 Face 4</u>
<u>ET7 F1</u>	<u>East Tower 7 Face 1</u>
<u>ET7 F2</u>	<u>East Tower 7 Face 2</u>
<u>ET7 F3</u>	<u>East Tower 7 Face 3</u>
<u>ET7 F4</u>	<u>East Tower 7 Face 4</u>
<u>ET8 F1</u>	<u>East Tower 8 Face 1</u>
<u>ET8 F2</u>	<u>East Tower 8 Face 2</u>
<u>ET8 F3</u>	<u>East Tower 8 Face 3</u>
<u>ET8 F4</u>	<u>East Tower 8 Face 4</u>
<u>ET9 F1</u>	<u>East Tower 9 Face 1</u>
<u>ET9 F2</u>	<u>East Tower 9 Face 2</u>
<u>ET9 F3</u>	<u>East Tower 9 Face 3</u>
<u>ET9 F4</u>	<u>East Tower 9 Face 4</u>
<u>ET10 F1</u>	<u>East Tower 10 Face 1</u>
<u>ET 10 F2</u>	<u>East Tower 10 Face 2</u>
<u>ET10 F3</u>	<u>East Tower 10 Face 3</u>
<u>ET10 F4</u>	<u>East Tower 10 Face 4</u>
<u>ET11 F1</u>	<u>East Tower 11 Face 1</u>
<u>ET11 F2</u>	<u>East Tower 11 Face 2</u>
<u>ET11 F3</u>	<u>East Tower 11 Face 3</u>
<u>ET11 F4</u>	<u>East Tower 11 Face 4</u>

<u>ET12 F1</u>	<u>East Tower 12 Face 1</u>
<u>ET12 F2</u>	<u>East Tower 12 Face 2</u>
<u>ET12 F3</u>	<u>East Tower 12 Face 3</u>
<u>ET12 F4</u>	<u>East Tower 12 Face 4</u>
<u>ET13 F1</u>	<u>East Tower 13 Face 1</u>
<u>ET13 F2</u>	<u>East Tower 13 Face 2</u>
<u>ET13 F3</u>	<u>East Tower 13 Face 3</u>
<u>ET13 F4</u>	<u>East Tower 13 Face 4</u>
<u>ET14 F1</u>	<u>East Tower 14 Face 1</u>
<u>ET14 F2</u>	<u>East Tower 14 Face 2</u>
<u>ET14 F3</u>	<u>East Tower 14 Face 3</u>
<u>ET14 F4</u>	<u>East Tower 14 Face 4</u>
<u>ET15 F1</u>	<u>East Tower 15 Face 1</u>
<u>ET15 F2</u>	<u>East Tower 15 Face 2</u>
<u>ET15 F3</u>	<u>East Tower 15 Face 3</u>
<u>ET15 F4</u>	<u>East Tower 15 Face 4</u>

## **TABLE OF CURTAINS**

### **WEST SIDE**

<u>WC18</u>	<u>West Curtain 18</u>
<u>WC17</u>	<u>West Curtain 17</u>
<u>WC16</u>	<u>West Curtain 16</u>
<u>WC15</u>	<u>West Curtain 15</u>
<u>WC14</u>	<u>West Curtain 14</u>
<u>WC13</u>	<u>West Curtain 13</u>
<u>WC12</u>	<u>West Curtain 12</u>
<u>WC11</u>	<u>West Curtain 11</u>
<u>WC10</u>	<u>West Curtain 10</u>
<u>WC9</u>	<u>West Curtain 9</u>
<u>WC8</u>	<u>West Curtain 8</u>
<u>WC7</u>	<u>West Curtain 7</u>

<u>WC6</u>	<u>West Curtain 6</u>
<u>WC5</u>	<u>West Curtain 5</u>
<u>WC4</u>	<u>West Curtain 4</u>
<u>WC3</u>	<u>West Curtain 3</u>
<u>WC2</u>	<u>West Curtain 2</u>
<u>WC1</u>	<u>West Curtain 1</u>

### **SOUTH SIDE**

<u>SC1</u>	<u>South Curtain 1</u>
<u>SC2</u>	<u>South Curtain 2</u>
<u>SC3</u>	<u>South Curtain 3</u>
<u>SC4</u>	<u>South Curtain 4</u>
<u>SC5</u>	<u>South Curtain 5</u>
<u>SC6</u>	<u>South Curtain 6</u>
<u>SC7</u>	<u>South Curtain 7</u>

### **EAST SIDE**

<u>EC1</u>	<u>East Curtain 1</u>
<u>EC2</u>	<u>East Curtain 2</u>
<u>EC3</u>	<u>East Curtain 3</u>
<u>EC4</u>	<u>East Curtain 4</u>
<u>EC5</u>	<u>East Curtain 5</u>
<u>EC6</u>	<u>East Curtain 6</u>
<u>EC7</u>	<u>East Curtain 7</u>
<u>EC8</u>	<u>East Curtain 8</u>
<u>EC9</u>	<u>East Curtain 9</u>
<u>EC10</u>	<u>East Curtain 10</u>
<u>EC11</u>	<u>East Curtain 11</u>
<u>EC12</u>	<u>East Curtain 12</u>
<u>EC13</u>	<u>East Curtain 13</u>
<u>EC14</u>	<u>East Curtain 14</u>
<u>EC15</u>	<u>East Curtain 15</u>
<u>EC16</u>	<u>East Curtain 16</u>

**TABLE 2 INSCRIPTIONS**

LOCATION	MATERIAL	ORIGINAL USE OF MATERIAL	LANGUAGE	STATE OF PRESERVATION	POSITION
WT 15, F3	marble	?	Latin	fragmentary	
WC 12	marble	?	Greek	fragmentary	
WT 11, F2	marble	?	Greek	fragmentary	sideways
WT 10, F3	marble	?	Greek	fragmentary	
WT10, F4	marble	?	Greek	fragmentary	sideways
WT10 F4	marble	?	Greek	fragmentary	sideways
WC 9	marble	?	Greek	fragmentary	
WC 9	marble	?	Greek	fragmentary	
WC 9	marble	?	Greek	fragmentary	
WT5, F3	marble	tabula ansata	Greek		
WT5, F3	andesite	?	Greek	fragmentary	
WT4, F2	marble	?	Greek ?	fragmentary	
WT3 F2	andesite	Grave Stele ?	Greek ?	fragmentary	
WT2, F2	marble	architrave	Greek	fragmentary	
SWT1, F2	marble	?	Latin	fragmentary	upsidedown
SC4	marble	?	Greek	fragmentary	upsidedown
ST5, F3	marble	?	Latin	fragmentary	upsidedown
ST5, F3	marble	?	Greek	fragmentary	sideways
ST5, F3	marble	?	Greek	fragmentary	sideways
ST5, F3	marble	?	Greek	fragmentary	sideways
ST5, F3	marble	?	Greek	fragmentary	sideways
Zindan Kapi (interior)	marble	architrave ?	Greek ?	fragmentary	

SC5	marble	?	Greek	fragmentary	
SC5	marble	?	Greek	fragmentary	
SC5	marble	?	Greek	fragmentary	
B (interior)	marble	architrave	Greek	fragmentary	
BF3	marble	architrave	Greek	fragmentary	
ET2 F2	marble	Grave Stele ?	Greek ?	fragmentary	sideways
ET 9 F2	marble	?	Greek ?	fragmentary	sideways
ET 13 F2	marble	?	Greek	fragmentary	sideways
ET 13 F2	marble	?	Greek	fragmentary	sideways
Ankara Evi Parkı	marble	tabula ansata	Greek ?	fragmentary	
across the museum of A.C.	marble	?	Greek	fragmentary	
Hisar Kapısı (exterior)	marble	inscribed stone	Persian	?	
Hisar Kapısı (interior)	marble	?	Latin	?	

TABLE 3. TOWERS

Tower Name	Face	Code	Description	Height of the wall	Material type	"devsirme" reused material	Original Use	mazgal-loop halls	windows-gates	Drawn at scale	Inscribed Stone	restoration
SWT1	F1	SWT1F1	South West Tower 1 Face 1		andesite, marble,brick, mortar	column drums, cornice, building blocks,	column, cornice, building block	none	one	not drawn	none	superstructure
SWT1	F2	SWT1F2	South West Tower 1 Face 2		marble, andesite, basalt, brick, mortar	cornice, piers, building blocks	cornice, pier, facing block,	one	one	not drawn	one	superstructure
SWT1	F3	SWT1F3	South West Tower 1 Face 3		marble, brick, mortar	capital, column, pilaster, cornice facing block	capital, column, pilaster, cornice, building block	one	one	not drawn	none	superstructure
SWT1	F4	SWT1F4	South West Tower 1 Face 4		marble, andesite, brick, mortar	building block?	building block			not drawn	none	superstructure
WT2	F1	WT2F1	West Tower 2 Face 1		andesite, basalt, marble, brick, mortar	building block?	building block?	none	none	not drawn	none	superstructure
WT2	F2	WT2F2	West Tower 2 Face 2		andesite, basalt, marble, brick, mortar	cornice?, facing block	cornice?, building block		one	not drawn	one	superstructure
WT2	F3	WT2F3	West Tower 2 Face 3		andesite, basalt, marble, brick, mortar?	building block?	building block?	?	?	not drawn	none	superstructure
WT2	F4	WT2F4	West Tower 2 Face 4		andesite, marble, brick, mortar	building block?	building block?	none	one	not drawn	none	superstructure
WT3	F1	WT3F1	West Tower 3 Face 1		andesite, marble, brick, mortar?	building block?	building block?	?	?	not drawn	none	superstructure
WT3	F2	WT3F2	West Tower 3 Face 2		andesite, basalt, marble, brick, mortar?	building block, cornice, architrave?	building block, cornice, architrave?	none?	one	not drawn	none	superstructure
WT3	F3	WT3F3	West Tower 3 Face 3		andesite, basalt, marble, brick, mortar?	building block	building block?	one	one	not drawn	none	superstructure
WT3	F4	WT3F4	West Tower 3 Face 4		?	?	?	?	?	not drawn	none	superstructure
WT4	F1	WT4F1	West Tower 4 Face 1		?	?	?	?	?	not drawn	none	superstructure
WT4	F2	WT4F2	West Tower 4 Face 2		andesite, basalt, marble, brick, mortar?	building block, cornice, architrave, pier?	building block, cornice, architrave, pier?	?	one	not drawn	none	superstructure
WT4	F3	WT4F3	West Tower 4 Face 3		andesite, basalt, marble, brick, mortar?	building block, cornice, architrave, pier?	building block, cornice, architrave, pier?	?	one	not drawn	none	superstructure
WT4	F4	WT4F4	West Tower 4 Face 4		?	?	?	?	?	not drawn	none	superstructure
WT5	F1	WT5F1	West Tower 5 Face 1		?	?	?	?	?	not drawn	none	superstructure



WT5	F2	WT5F2	West Tower 5 Face 2		andesite, basalt, marble, brick, mortar?	building block?	building block?	one	not drawn	none	superstructure
WT5	F3	WT5F3	West Tower 5 Face 3		andesite, basalt, marble, brick, mortar?	building block, cornice, architrave, pier?	building block, cornice, architrave, pier?	one	not drawn	two	superstructure
WT5	F4	WT5F4	West Tower 5 Face 4		?	?	?	?	not drawn	none	superstructure
WT6	F1	WT6F1	West Tower 6 Face 1		andesite, basalt, marble, brick, mortar?	?	?	?	not drawn	none	superstructure
WT6	F2	WT6F2	West Tower 6 Face 2		andesite, basalt, marble, brick, mortar?	building block	building block, facing block	one	not drawn	none	superstructure
WT6	F3	WT6F3	West Tower 6 Face 3		andesite, basalt, marble, brick, mortar?	building block	building block	one	not drawn	none	superstructure
WT6	F4	WT6F4	West Tower 6 Face 4		?	?	?	?	not drawn	none	superstructure
WT7	F1	WT7F1	West Tower 7 Face 1		?	?	?	?	not drawn	none	superstructure
WT7	F2	WT7F2	West Tower 7 Face 2		andesite, basalt, marble, brick, mortar?	pier, column drum	pier, column drum, building block	one	not drawn	none	superstructure
WT7	F3	WT7F3	West Tower 7 Face 3		andesite, basalt, marble, brick, mortar?	pier, architrave	pier, building block, architrave	one	not drawn	none	superstructure
WT7	F4	WT7F4	West Tower 7 Face 4		?	?	?	?	not drawn	none	superstructure
WT8	F1	WT8F1	West Tower 8 Face 1		andesite, basalt, marble, brick, mortar?	?	?	?	not drawn	none	superstructure
WT8	F2	WT8F2	West Tower 8 Face 2		andesite, basalt, marble, brick, mortar?	building block, cornice, architrave? pier	facing block, cornice, architrave? pier	one	not drawn	none	superstructure
WT8	F3	WT8F3	West Tower 8 Face 3		andesite, basalt, marble, brick, mortar?	building block, cornice, architrave? pier	building block, cornice, architrave? pier	one	not drawn	none	superstructure
WT8	F4	WT8F4	West Tower 8 Face 4		?	?	?	?	not drawn	none	superstructure
WT9	F1	WT9F1	West Tower 9 Face 1		?	?	?	?	not drawn	none	superstructure
WT9	F2	WT9F2	West Tower 9 Face 2		andesite, basalt, marble, brick, mortar?	capital, pier, building block, cornice?	capital, pier, building block, cornice?	one	not drawn	none	superstructure
WT9	F3	WT9F3	West Tower 9 Face 3	13.62m	andesite, basalt, marble, brick, mortar?	cornice?, building block	cornice? building block	one	not drawn	none	superstructure
WT9	F4	WT9F4	West Tower 9 Face 4		?	?	?	?	not drawn	none	superstructure

WT10	F1	WT10F1	West Tower 10 Face 1		andesite, basalt, marble, brick, mortar?	?		?	none	one	not drawn	none	superstructure
WT10	F2	WT10F2	West Tower 10 Face 2		andesite, basalt, marble, brick, mortar?		cornice, column drum, building block	cornice, column drum, building block	one	one	not drawn	none	superstructure
WT10	F3	WT10F3	West Tower 10 Face 3	13.94m.	andesite, basalt, marble, brick, mortar?		architrave, building block	architrave, building block	none	none	not drawn	none	superstructure
WT10	F4	WT10F4	West Tower 10 Face 4		?	?		?	?	?	not drawn	none	superstructure
WT11	F1	WT11F1	West Tower 11 Face 1		andesite, marble, brick, mortar?		facing block, building block, pier?	facing block, building block, pier?	?	one	not drawn	none	superstructure
WT11	F2	WT11F2	West Tower 11 Face 2		andesite, marble, brick, mortar?		building block, pier?	building block, pier?	?	one	not drawn	none	superstructure
WT11	F3	WT11F3	West Tower 11 Face 3		andesite, marble, brick, mortar?		facing block, pier, capital, column, architrave	building block, pier, capital, column, architrave	one	none	not drawn	none	superstructure
WT11	F4	WT11F4	West Tower 11 Face 4	12.65m.	?	?		?	?	?	not drawn	none	superstructure
WT12	F1	WT12F1	West Tower 12 Face 1		andesite, marble, brick, mortar?		architrave, cornice, building block,	architrave, cornice, building block,	none	one	not drawn	none	superstructure
WT12	F2	WT12F2	West Tower 12 Face 2	13.96m.	andesite, marble, brick, mortar?		building block, pier? cornice	facing block, building block, pier? cornice	none	one	not drawn	none	superstructure
WT12	F3	WT12F3	West Tower 12 Face 3		andesite, marble, brick, mortar?		architrave, cornice, facing block	architrave, cornice, building block	?	one	not drawn	none	superstructure
WT12	F4	WT12F4	West Tower 12 Face 4		andesite, marble, brick, mortar?		architrave, cornice, building block	architrave, cornice, building block	none	one	not drawn	none	superstructure
WT13	F1	WT13F1	West Tower 13 Face 1	12.63m.	andesite, basalt, marble, brick, mortar?		column, pier, waterpipe, building block	column, pier, waterpipe, building block	?	one	not drawn	none	superstructure
WT13	F2	WT13F2	West Tower 13 Face 2		andesite, basalt, marble, brick, mortar?		pier, building block	pier, building block	none	one	not drawn	none	superstructure
WT13	F3	WT13F3	West Tower 13 Face 3		andesite, basalt, marble, brick, mortar?		cornice/cyma recta, pier, architrave, building block	cornice/cyma recta, pier, architrave, building block	none	one	not drawn	none	superstructure
WT13	F4	WT13F4	West Tower 13 Face 4		andesite, basalt, marble, brick, mortar?		pier, column drum, building block	pier, column drum, building block	none	one (blocked)	not drawn	none	superstructure
WT14	F1	WT14F1	West Tower 14 Face 1		andesite, marble, basalt, brick, mortar		building block	building block	none	one	not drawn	none	superstructure
WT14	F2	WT14F2	West Tower 14 Face 2		andesite, marble, basalt, brick, mortar		building block, facing block	building block	none	one	not drawn	none	superstructure
WT14	F3	WT14F3	West Tower 14 Face 3		andesite, marble, basalt, brick, mortar		pier, building block	building block	?	one	not drawn	none	superstructure



WT19	F3	WT19F3	West Tower 19 Face 3		andesite, marble, brick mortar	architrave, cornice, column drum pier, building block	architrave, cornice, column drum pier, building block	one	none	not drawn	none	superstructure
WT19	F4	WT19F4	West Tower 19 Face 4		andesite, marble, brick mortar	architrave, cornice, column drum pier, building block	architrave, cornice, column drum pier, building block	none	none	not drawn	none	superstructure
ST2	F1	ST2F1	South Tower 2 Face 1		Upper structure: andesite, basalt brick, mortar	?	?	?	?	not drawn	none	superstructure
ST2	F2	ST2F2	South Tower 2 Face 2		Upper structure: andesite, basalt brick, mortar	?	?	?	?	not drawn	none	superstructure
ST2	F3	ST2F3	South Tower 2 Face 3		Upper structure: andesite, basalt brick, mortar	?	?	?	?	not drawn	none	superstructure
ST2	F4	ST2F4	South Tower 2 Face 4		Upper structure: andesite, basalt brick, mortar	?	?	?	?	not drawn	none	superstructure
ST3	F1	ST3F1	South Tower 3 Face 1		Upper structure: andesite, basalt, marble, brick, mortar	building block	building block	?	one	not drawn	none	superstructure
ST3	F2	ST3F2	South Tower 3 Face 2		Upper structure: andesite, basalt, marble, brick, mortar	column drum, building block	column, building block	?	one	not drawn	none	superstructure
ST3	F3	ST3F3	South Tower 3 Face 3		?	?	?	?	?	not drawn	none	superstructure
ST3	F4	ST3F4	South Tower 3 Face 4		?	?	?	?	?	not drawn	none	superstructure
ST4	F1	ST4F1	South Tower 4 Face 1		andesite, marble, basalt, brick, mortar	architrave, building block	architrave, building block	one	one	not drawn	none	superstructure
ST4	F2	ST4F2	South Tower 4 Face 2	15.77m.	andesite, marble, basalt, brick, mortar	building block	building block	one	one	Drawn at scale	none	superstructure
ST4	F3	ST4F3	South Tower 4 Face 3	13.85m.	andesite, marble, basalt, brick, mortar	entablature, building block	entablature, building block	one	one	Drawn at scale	none	superstructure
ST4	F4	ST4F4	South Tower 4 Face 4	13.35m.	andesite, marble, basalt, brick, mortar	building block	building block	none	none	Drawn at scale	none	superstructure
ST5	F1	ST5F1	South Tower 5 Face 1	14.06m.	andesite, marble, basalt, brick, mortar	building block	building block	none	one	Drawn at scale	none	superstructure
ST5	F2	ST5F2	South Tower 5 Face 2	13.79m.	andesite, marble, basalt, brick, mortar	cornice, entablature, sculpture building block	cornice, entablature, sculpture building block	one	one	Drawn at scale	none	superstructure
ST5	F3	ST5F3	South Tower 5 Face 3		andesite, marble, basalt, brick, mortar	entablature, architrave, pilaster, sculpture building block	entablature, architrave, pilaster, sculpture building block	one	one	not drawn	four	superstructure
ST5	F4	ST5F4	South Tower 5 Face 4		andesite, marble, basalt, brick, mortar	sculpture building block	sculpture building block	one	two	not drawn	none	superstructure
ST6	F1	ST6F1	South Tower 6 Face 1		andesite, marble, basalt, brick, mortar	building block	building block	none?	two	not drawn	none	superstructure

ST6	F2	ST6F2	South Tower 6 Face 2		andesite, marble, basalt alt brick mortar	building block	building block	one	one	not drawn	none	superstructure
ST6	F3	ST6F3	South Tower 6 Face 3		superstructure andesite, marble, basalt brick mortar	building block	building block	none?	one	not drawn	none	superstructure
ST6	F4	ST6F4	South Tower 6 Face 4		superstructure andesite, marble, basalt brick mortar	building block	building block	?	two	not drawn	none	superstructure
ST7	F1	ST7F1	South Tower 7 Face 1		superstructure andesite, marble, basalt brick mortar	building block	building block	?	two	not drawn	none	superstructure
ST7	F2	ST7F2	South Tower 7 Face 2		superstructure andesite, marble, basalt brick mortar	architrave building block, facing block?	building block	?	one	not drawn	none	superstructure
ST7	F3	ST7F3	South Tower 7 Face 3		superstructure andesite, marble, basalt brick mortar	architrave building block	architrave building block	?	one	not drawn	none	superstructure
ST7	F4	ST7F4	South Tower 7 Face 4		superstructure andesite, marble, basalt brick mortar	building block	building block	?	two	not drawn	none	superstructure
ET1	F1	ET1F1	East Tower 1 Face 1	12.02m	superstructure: andesite, marble, basalt alt brick mortar	architrave building block	architrave building block	none	none	Drawn at scale	none	superstructure
ET1	F2	ET1F2	East Tower 1 Face 2	12.96m	superstructure: andesite, marble, basalt alt brick mortar	architrave, column drum, building block	architrave, column drum, building block	one	none	Drawn at scale	none	superstructure
ET1	F3	ET1F3	East Tower 1 Face 3		superstructure: andesite, marble, basalt alt brick mortar	?	?	?	?	not drawn		superstructure
ET1	F4	ET1F4	East Tower 1 Face 4		superstructure: andesite, marble, basalt alt brick mortar	?	?	?	?	not drawn		superstructure
ET2	F1	ET2F1	East Tower 2 Face 1		superstructure: andesite, marble, basalt alt brick mortar	building block	building block	none	one (blocked)	not drawn	none	not restored
ET2	F2	ET2F2	East Tower 2 Face 2		superstructure: andesite, marble, basalt alt brick mortar	building block, column drum, architrave	building block, column drum, architrave	one? (blocked?)	one? (blocked?)	not drawn	one?	not restored
ET2	F3	ET2F3	East Tower 2 Face 3		superstructure: andesite, marble, basalt alt brick mortar	building block, column drum? architrave, waterpipe?	building block, column drum? architrave, waterpipe?	?	?	not drawn	none	not restored

TABLE 4. CURTAINS

Curtain Name	Description	Devşirme Reused marble	Reused stones (andesite/basalt)	Rubble stone	Brick	Height
WC1	West Curtain 1	building block,facing block,waterpipe?	building block,facing block,waterpipe?(andesite)	superstructure	superstructure	
WC2	West Curtain 2	building block,facing block	building block,facing block (andesite)	superstructure	superstructure	11.01m.
WC3	West Curtain 3	Drainage corner cover block, architrave, sculpture with garland	building block,facing block (andesite)	superstructure	superstructure	
WC4	West Curtain 4	building block,facing block	building block,facing block (andesite)	superstructure	superstructure	
WC5	West Curtain 5	building block,facing block	building block,facing block (andesite)	superstructure	none	
WC6	West Curtain 6	unidentified block,building block,architrave	building block,facing block (andesite)	none	none	
WC7	West Curtain 7	cornice, building block,facing block	building block,facing block (andesite)	superstructure	none	9.17m.
WC8	West Curtain 8	architrave,entablature?	TABLE 4. CURTAINS	none?	none?	
WC9	West Curtain 9	doorframe, capital, base block?	building block,facing block (andesite)	superstructure	superstructure	
WC10	West Curtain 10	capital,building block	building block (andesite)	superstructure	none	
WC11	West Curtain 11	architrave,building block	building block (andesite)	superstructure	none	



WC12	West Curtain 12	capital, architrave, entablature, building block	waterpipe, building block (andesite)	superstructure	none	
WC13	West Curtain 13	architrave, cornice, building block	building block (andesite)	superstructure	none	
WC14	West Curtain 14	architrave, building block	building block	superstructure	superstructure	
WC15	West Curtain 15	altar element, architrave, soffit of lintel	cornice, building block, facing block	superstructure	superstructure	
WC16	West Curtain 16	pedestal, architrave?, building block	cornice, building block, facing block	superstructure	superstructure	
WC17	West Curtain 17	entablature, column drum, building block	building block (andesite)	superstructure	superstructure	9.50m.
WC18	West Curtain 18	twin column, building block,				
SC1	South Curtain 1	obstructed by modern houses				
SC2	South Curtain 2	obstructed by modern houses				
SC3	South Curtain 3	obstructed by modern houses				
SC4	South Curtain 4	altar, pedestal, sculpture, column, architrave	building block	superstructure	superstructure	14.2m.
SC5	South Curtain 5	architrave, building block	building block	superstructure	none	
SC6	South Curtain 6	obstructed by modern houses				

SC7	South Curtain 7	obstructed by modern houses					
EC1	East Curtain 1	doorframe, building block, facing block, grave stele	building block	superstructure	postern, superstructure	13.55m.	
EC2	East Curtain 2	column, building block, facing block	building block	superstructure	superstructure		
BF7	Bastion Face 7	architrave, columns, building blocks	water pipe, building block	superstructure	superstructure	14.19m.	
BF6	Bastion Face 6	architrave, acroterion, building block,	building block, water pipe	superstructure	superstructure	14.45m.	
BF5	Bastion Face 5	architrave, building block, block with garland	building block, water pipe	superstructure	superstructure		
BF4	Bastion Face 4	building block, architrave	building block, water pipe	superstructure	superstructure		
BF3	Bastion Face 3	architrave, building block	water pipe, building block	superstructure	superstructure		
BF2	Bastion Face 2	architrave, building block	water pipe, building block	superstructure	superstructure		
BF1	Bastion Face 1		water pipe, building block	superstructure	superstructure		

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## APPENDICES

### A. GPS SURVEY REPORT

07. 02.2002

The site was examined and a preliminary measurement was taken. The points determined during previous restoration were used including new reference points. The points fixed during the earlier restoration were used for static GPS measurement by means of satellites. However, bad weather conditions or occasional problems in the reception of signals from the satellites caused transmission of wrong data. Data collected in this way were logged in the computer and new measurements were taken in the following days.

08.02.2002

The success of measurement largely depended on the conditions of weather and reception from the satellites. GPS equipment was reinstalled on the fixed points to determine the coordinates of the points after which the static survey was completed. The data obtained in this way were logged in the computer and processed to start the next step of kinematical survey. Points were collected by using a mobile GPS receptor and by walking certain distances on the walls. The survey continued in the following days after the data had been processed in the computer,

13.02.2002

The static survey was conducted by measuring the values of 5 points. The data was logged in the computer to start the kinematical survey at the terrace overlooking the Zindan Kapı region. The work was interrupted occasionally because of the closeness of the electrical wires. Nevertheless the survey was successful as shown by data

obtained from the data logger. However efforts to bring the whole data on the screen resulted in failure.

14.02.2002

The results obtained after the static survey of the previous day were taken as invariables for the rest of the survey. Yet it was impossible to process this data as the values obtained from the same points at different periods varied from each other. The kinematical survey continued at places which were not covered because of icy surfaces. The survey was postponed to another day due to difficulties involving data. Some of the problems occurred at the site. The high walls of the fortress and walls of modern houses nearby caused the signals to rebound and intercepted transmission to the satellites and receiver (lost initialization).

18.02.2002

The problems confronted during the previous attempts necessitated the repetition of the kinematical survey. At this stage continuous kinematical survey was also applied as well as stop and go method. The curtains and towers were obstructed by modern houses in some sections of the south and east sides of the citadel. Therefore no survey was carried out in these areas. The work was interrupted to process the accumulated data.

19.02.2002

“The invalid start and stop times” which was one of the problems occurred during the field work was solved. In this way access to all data became possible. The other problem was to process the data obtained by the two kinematical surveys. This was solved by processing the data obtained by both stop and go method and continuous kinematical survey as continuous kinematics.

24.02.2002

The text files obtained by data in the GPS program from the system of WGS84 to UTM North36 were opened in Arcview and the points to be cancelled were determined. A TIN model was drawn after wrong points were deleted to obtain a three dimensional model.

## CURRICULUM VITAE

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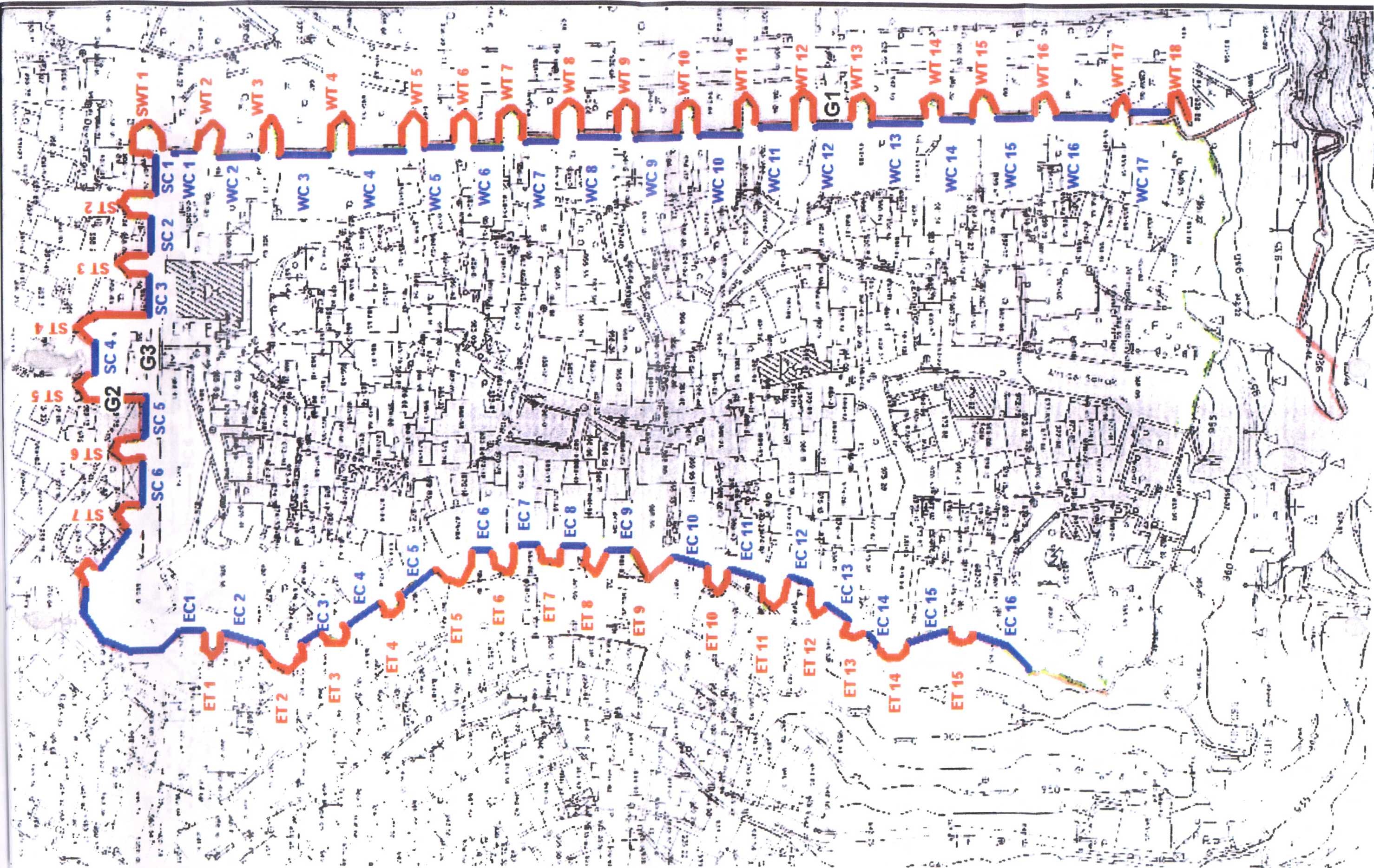
### PUBLICATION

1. Sülüner H.S. "Savaş Teknikleri ve Savunma Sistemlerinin Gelişimi ile Ortaya Çıkan Kale Mekanları ve Tasarımları. Ankara Kalesi Örneği", Eski Çağın Mekanları, Zamanları, İnsanları, 2003, ODTÜ, Ankara (inprint)

### HOBBIES

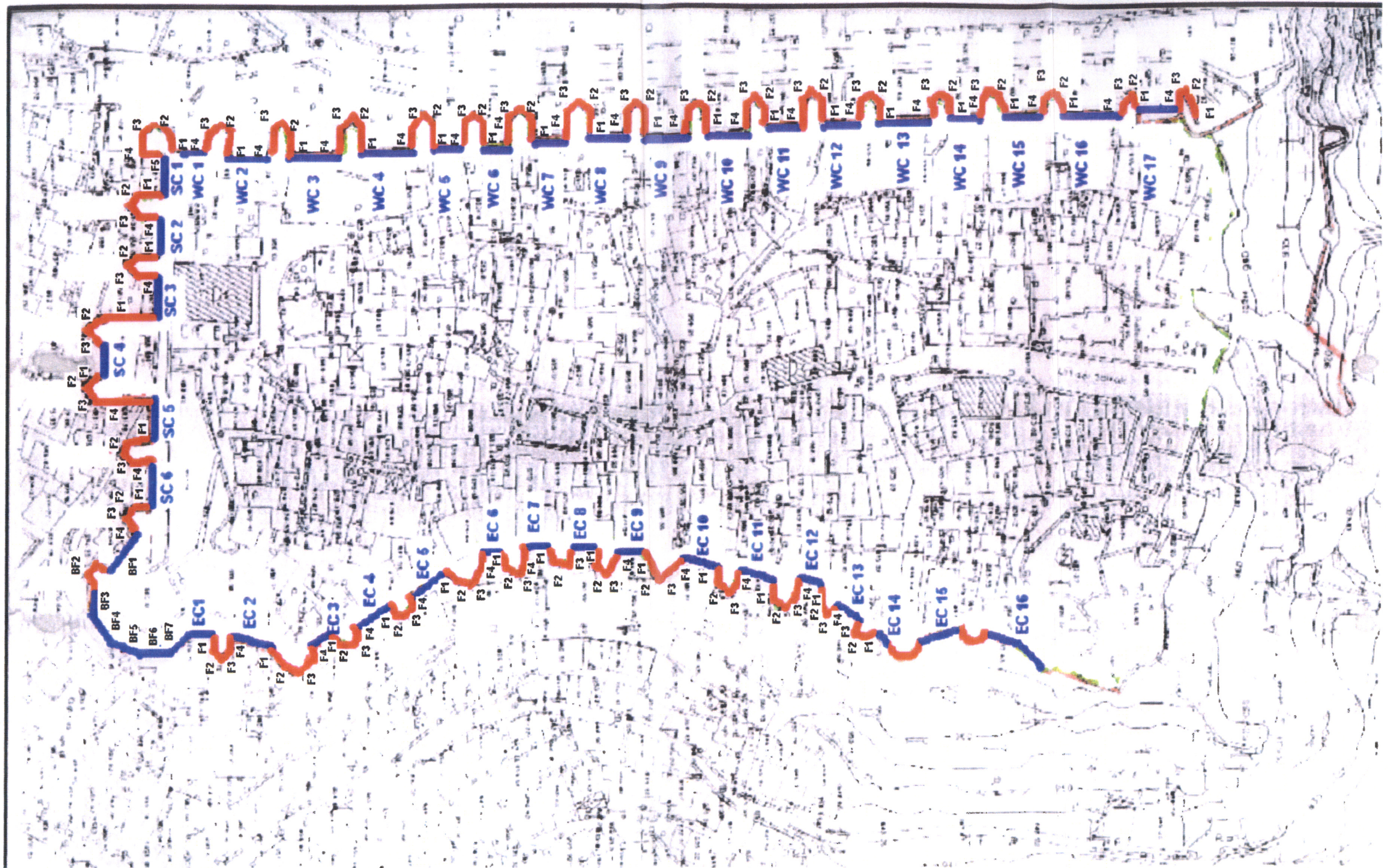
Swimming, Reading, Opera





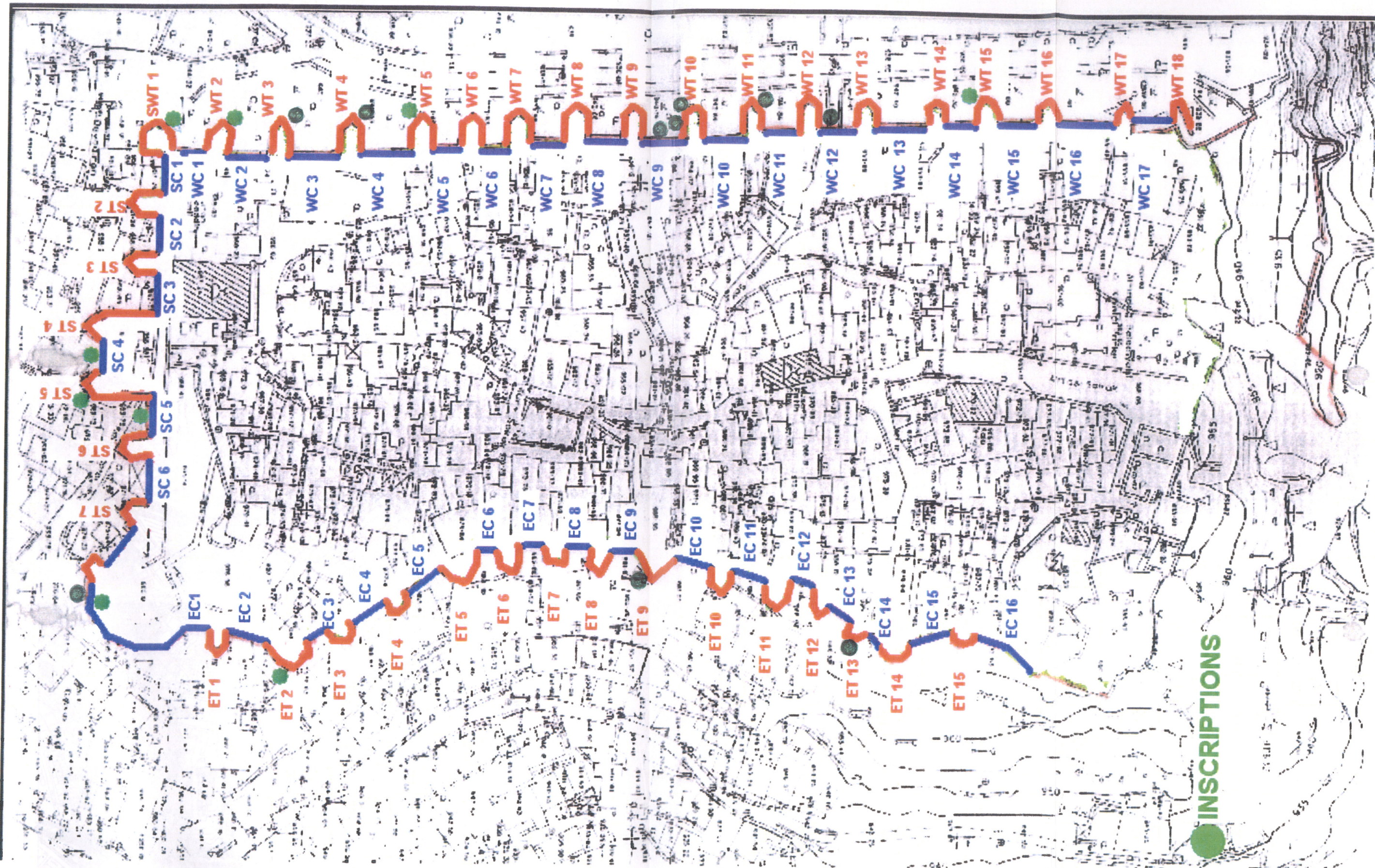
Map 1. Towers, curtains, and gates at the Ankara castle





Map 2. Tower faces and curtains at the Ankara castle





Map 3. Distribution of inscriptions at the Ankara castle





Map 4. Conjectural course of the Roman and Ottoman walls

Blue: Roman Period

Black: Ottoman Period

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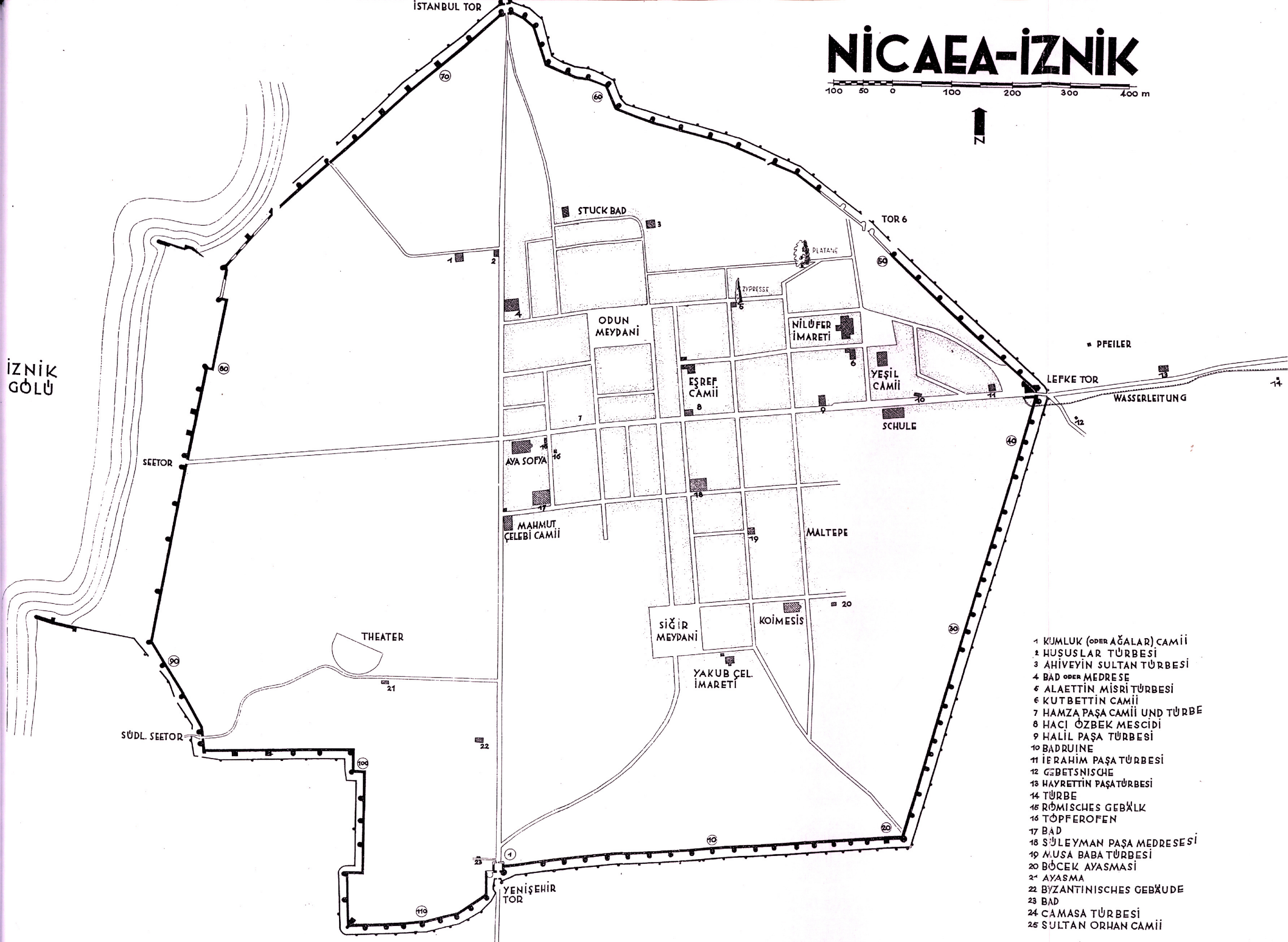


Map 5. Aerial view of the citadel at Ankara



# NİCAEA-İZNİK

100 50 0 100 200 300 400 m



- 1 KUMLUK (ODER AĞALAR) CAMİİ
- 2 HUSUSLAR TÜRBESİ
- 3 AHİVEYİN SULTAN TÜRBESİ
- 4 BAD ODER MEDRESE
- 5 ALAETTİN MİSİRİ TÜRBESİ
- 6 KUTBETTİN CAMİİ
- 7 HAMZA PAŞA CAMİİ ÜND TÜRBE
- 8 HACI ÖZBEK MESCİDİ
- 9 HALİL PAŞA TÜRBESİ
- 10 BADRUİNE
- 11 İBRAHİM PAŞA TÜRBESİ
- 12 GEBETSNISCHE
- 13 HAYRETTİN PAŞA TÜRBESİ
- 14 TÜRBE
- 15 RÖMİSCHES GEBÄULK
- 16 TÖPFEROFEN
- 17 BAD
- 18 SÜLEYMAN PAŞA MEDRESESİ
- 19 MUSA BABA TÜRBESİ
- 20 BÖCEK AYASMASI
- 21 AYASMA
- 22 BYZANTINISCHES GEBÄUDE
- 23 BAD
- 24 CAMASA TÜRBESİ
- 25 SULTAN ORHAN CAMİİ